

## NATIONAL MARINE FISHERIES SERVICE REPORT

National Marine Fisheries Service (NMFS) Northwest Region will briefly report on recent regulatory developments relevant to groundfish fisheries and issues of interest to the Pacific Fishery Management Council (Council).

NMFS Northwest Fisheries Science Center (NWFSC) will also briefly report on groundfish-related science and research activities.

### **Council Task:**

### **Discussion.**

### **Reference Materials:**

1. Agenda Item B.1.a, Attachment 1: *Federal Register Notices* Published Since the Last Council Meeting.

### **Agenda Order:**

- a. Regulatory Activities
- b. Fisheries Science Center Activities
- c. Reports and Comments of Advisory Bodies and Management Entities
- d. Public Comment
- e. Council Discussion

**Frank Lockhart**  
**Elizabeth Clarke**

PFMC  
05/18/10

**FEDERAL REGISTER NOTICES**

**Groundfish and Halibut Notices  
3/25/2010 through 5/26/2010**

**Documents available at NMFS Sustainable Fisheries Website**

<http://www.nwr.noaa.gov/Groundfish-Halibut/Groundfish-Fishery-Management> Groundfish  
<http://www.nwr.noaa.gov/Groundfish-Halibut/Pacific-Halibut> Halibut

75 FR 16787. Environmental Impact Statements and Regulations; Availability of EPA Comments. EIS No. 20100017, ERP No. D-NOA-L91035-00, Amendment 21 to the Pacific Coast Groundfish Fishery Management Plan - 4/2/10

75 FR 23615. Pacific Coast Groundfish Fishery; Biennial Specifications and Management Measures; Inseason Adjustments; Pacific Halibut Fisheries - 5/4/10

75 FR 23620. Pacific Coast Groundfish Fishery; Biennial Specifications and Management Measures. Final rule; inseason adjustments to groundfish management measures - 5/4/10

75 FR 26702. Pacific Coast Groundfish Fishery Management Plan; Amendment 20 and 21; Trawl Rationalization Program. Action: Availability of amendments to a fishery management plan; request for comments - 5/12/10

PFMC  
05/26/10



FISHERY MANAGEMENT PLAN AMENDMENT 23,  
ANNUAL CATCH LIMITS AND ACCOUNTABILITY MEASURES

Fishery Management Plan (FMP) Amendment 23 concerns a new framework for deciding groundfish harvest specifications consistent with new National Standard 1 (NS1) guidelines. These new NS1 guidelines were compelled by the passage of the Magnuson-Stevens Reauthorization Act of 2006 that mandated more stringent measures be implemented by 2011 to prevent overfishing.

The Council decided to proceed with Amendment 23 at their April 2009 meeting and adopted a preliminary preferred alternative for the amendment at their March 2010 meeting. A draft environmental assessment describing and analyzing a No Action alternative that maintains the existing harvest specification framework and a preliminary preferred alternative that incorporates the recommendations in the new NS1 guidelines as well as other details decided by the Council for Amendment 23 is provided as Agenda Item B.2.a, Attachment 1. Agenda Item B.2.a, Attachment 2 provides the draft FMP language for Amendment 23 consistent with the Council's guidance on their preferred alternative.

The Council is tasked at this meeting with adopting a final preferred alternative FMP framework for Amendment 23. The Council should consider the advice of its advisory bodies and public comment solicited when the preliminary preferred alternative was adopted for public review before adopting a final preferred alternative.

**Council Action: Adopt a Final Preferred Alternative for Amendment 23.**

Reference Materials:

1. Agenda Item B.2.a, Attachment 1: Preliminary Draft Environmental Assessment for Amendment 23: Considerations for a New Harvest Specification Framework That Incorporate Revised National Standard 1 Guidelines to Prevent Overfishing.
2. Agenda Item B.2.a, Attachment 2: Draft Groundfish Fishery Management Plan Amendatory Language Proposed Under Amendment 23.
3. Agenda Item B.2.c, Public Comment.

Agenda Order:

- a. Agenda Item Overview
- b. Reports and Comments of Advisory Bodies and Management Entities
- c. Public Comment
- d. **Council Action:** Adopt Final Amendment

**John DeVore**

PPMC  
05/27/10

## **AMENDMENT 23**

# **CONSIDERATIONS FOR A NEW HARVEST SPECIFICATION FRAMEWORK THAT INCORPORATES REVISED NATIONAL STANDARD 1 GUIDELINES TO PREVENT OVERFISHING**

## **Preliminary Draft Environmental Assessment**

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# CHAPTER 1    **PURPOSE AND NEED FOR THE PROPOSED ACTION**

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## **1.1      Introduction**

This document provides background information about, and analyses for, an alternative groundfish harvest specification alternative to incorporate new National Standard 1 (NS1) guidelines to prevent overfishing. The proposed action would require an amendment to the Pacific Coast Groundfish Fishery Management Plan (FMP), which contains the policies and framework for allocating the harvestable surplus of groundfish. The proposed action must conform to the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the principal legal basis for fishery management within the Exclusive Economic Zone (EEZ), which extends from the outer boundary of the territorial sea to a distance of 200 nautical miles from shore.

In addition to addressing MSA mandates, this document is an environmental assessment (EA), pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended. This document is organized so that it contains the analyses required under NEPA. For brevity, this document is referred to as an EA.

## **1.2      Description of the Proposed Action**

The Council/NMFS *proposed action*, evaluated in this document, is to revise relevant sections of the Groundfish FMP to ensure they are consistent with the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 (MSRA) and guidelines published in Federal regulations at Section 600.310. The guidelines describe fishery management approaches to meet the objectives of National Standard 1 found in the MSA, Section 301. National Standard 1) states “Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield (OY) from each fishery for the U.S. fishing industry.” The MSRA amended the MSA to include new requirements for annual catch limits (ACLs) and accountability measures (AMs) and other provisions regarding preventing and ending overfishing and rebuilding fisheries. The MSRA requires NMFS to revise National Standard 1 (NS1) guidelines in response to these changes in the MSA. The NS1 guidelines were published in the Federal Register on January 16, 2009. These revisions to the NS1 guidelines address, among other things, new requirements to have annual catch limits (ACLs) and accountability measures (AMs) for fisheries subject to overfishing by 2010, and for all fisheries by 2011. A stock or stock complex may not require an ACL and AMs if it qualifies for a statutory exception under the Magnuson-Stevens Act. The NS1 guidelines also discuss how stocks should be classified in the FMP. As part of this action the Groundfish Management Team (GMT) evaluated all the

species and stocks identified in the FMP in light of available information on catch to consider possible reclassification.

The guidelines are intended to meet the objectives of NS1 by providing guidance on:

1. Specifying maximum sustainable yield (MSY) and optimum yield (OY);
2. Specifying status determination criteria (SDC) so that overfishing and overfished determinations can be made for stocks and stock complexes that are part of a fishery;
3. Preventing overfishing and achieving OY, incorporation of scientific and management uncertainty in control rules, and adaptive management using annual catch limits (ACL) and accountability measures (AMs) to ensure ACLs are not exceeded; and
4. Rebuilding stocks and stock complexes.

The Council is revising the Groundfish FMP to be consistent with revised NS1 Guidelines in order to more effectively prevent overfishing and rebuild overfished stocks, or stocks that may become overfished.

### **1.3 Purpose and Need for the Proposed Actions**

The purpose and need for Amendment 23 is to amend the harvest specifications framework in the FMP to better meet new mandates in the MSRA to prevent overfishing. The MSRA and amended NS1 guidelines introduce new fishery management concepts including overfishing limits (OFLs), an acceptable biological catch (ABC) to incorporate a scientific uncertainty buffer in specifications, ACLs, annual catch targets (ACTs), and AMs that are designed to better account for scientific and management uncertainty and to prevent overfishing. These important aspects of the MSRA are required to be implemented by 2011 for most species and by 2010 for those species designated as being subject to overfishing. There are no groundfish species currently subject to overfishing, so 2011 is the implementation goal.

### **1.4 Scoping Process**

#### **1.4.1 Council and Agency NEPA Scoping**

The Council process, which is based on stakeholder involvement and allows for public participation and public comment on fishery management proposals during Council, subcommittee, and advisory body meetings, is the principal mechanism to scope the EA. The advisory bodies involved in groundfish management include the Groundfish Management Team (GMT), with representation from state, federal, and tribal fishery scientists; and the Groundfish Advisory Subpanel (GAP), whose members are drawn from the commercial, tribal, and recreational fisheries, fish processors, and environmental advocacy organizations. Meetings of the Council and its advisory bodies constitute the Council scoping process, involving the development of alternatives and consideration of the impacts of the alternatives.

The Council first determined the need for a new harvest specification framework in April 2009 and accordingly decided to proceed with Amendment 23.

#### **1.4.2 Summary of Comments Received**

In April 2009, Laura Pagano representing the Natural Resources Defense Council (NRDC), Ken Stump representing the Marine Fish Conservation Network (MFCN), and Jen Kassakian representing The Ocean Conservancy recommended the Council proceed with Amendment 23. All three organizations

recommended that the following elements be incorporated within the Amendment 23 harvest specification framework:

- ACLs should be specified for all stocks that are “in the fishery”. They further noted that the vast majority of stocks managed under the FMP are in the fishery;
- Review current stock complex groupings to ensure that the species in each complex are sufficiently similar in geographic distribution, life history, and vulnerabilities to the fishery such that management impacts are similar;
- The Council, in consultation with the SSC and the regional science centers, should evaluate and include in the FMP any species or stocks not currently listed in the FMP that qualify as “stocks in the fishery,” based on a vulnerability analysis or other relevant information;
- The Council must establish an ABC control rule that accounts for scientific uncertainty. Further, the NRDC and MFCN recommended a significant modification of the current ABC control rule is needed to adequately account for scientific uncertainty; and
- Adequate accountability measures are needed in the FMP to ensure ACLs are not exceeded to prevent overfishing.

The NRDC and MFCN further recommended that if the ABC control rule is structured to account for different levels of information available for each stock in the FMP, then the system of uncertainty buffers for each category or “tier” should provide increasing precaution with decreasing levels of information and increasing uncertainty. They also recommended that the FMP complies fully with the new requirements of the law and the revised NS1 and NS2 guidelines.

The Ocean Conservancy further recommended that the Council consider whether additional species outside of the scope of the FMP should be considered “ecosystem components”.

In June 2009, Karen Garrison representing NRDC commented that Amendment 23 needs to have meaningful control rules. She agreed with the SSC approach for developing ABC control rules and encouraged timely completion of that task so that Amendment 23 can be implemented by 2011 as mandated by the re-authorized MSA.

In June 2009, Ben Enticknap representing Oceana commented that Amendment 23 should include all species caught in west coast groundfish fisheries. He recommended developing ACLs for species such as spiny dogfish and including the grenadier and skate species that are currently not in the FMP and specifying ACLs for all these species under Amendment 23.

In November 2009, Chris Dorsett representing Oceana reiterated the need for a more comprehensive approach for defining scientific uncertainty and urged new ABC control rules for category 1, 2, and 3 species with larger scientific uncertainty buffers for stocks with greater scientific uncertainty. He recommended the use of the Productivity and Susceptibility Assessment (PSA) in developing new ABC control rules and in determining stock complexes. He further recommended a full suite of AMs in the FMP including the ACT with specific triggers for these AMs. He also recommended objective criteria be developed for determining species relationships when deciding new stock complexes.

In November 2009, Ralph Brown, a groundfish trawl fisherman from Brookings, Oregon and Brad Pettinger, executive director of the Oregon Trawl Commission, expressed concern that Amendment 23 was overly conservative in that too many precautionary buffers were being considered. They both believed there was adequate precaution built into the current harvest specification framework.

## CHAPTER 2 DESCRIPTION OF THE ALTERNATIVES

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There are two alternatives analyzed in this EA: a no action alternative which maintains the existing harvest specification framework and an action alternative that incorporates the new NS1 guidelines. Figure 2-1 depicts a simple comparison of the harvest specifications under these two alternatives. The Council decided in March 2010 that the action alternative incorporating the new NS1 guidelines is their preliminary preferred alternative for Amendment 23.

No Action Alternative Current Harvest Specification Framework		Preliminary Preferred Action Alternative Am. 23 Harvest Specification Framework	
ABC	Overfishing Limit	OFL	Overfishing Limit
OY	Buffer accommodates scientific uncertainty, management uncertainty, socioeconomic concerns, rebuilding concerns, etc.	ABC	Buffer accommodates scientific uncertainty
		ACL	Buffer accommodates management uncertainty, socioeconomic concerns, rebuilding concerns, etc.
HG	Buffer accommodates ad hoc sector allocations and other management objectives	ACT	Buffer could accommodate management uncertainty, inseason catch monitoring uncertainty, ad hoc sector allocations and other management objectives

**Figure 2-1. A comparison of the current harvest specifications under the No Action Alternative to the contemplated harvest specifications under the Amendment 23 Action Alternative.**

## **2.1.1 The No Action Alternative: The Existing Harvest Specification Framework**

### **2.1.1.1 Harvest Specifications**

Harvest specifications are decided biennially under the existing framework with two one-year ABCs, OYs, and, in some cases, harvest guidelines (HGs), specified for each actively managed stock and stock complex in the FMP. Chapter 4 of the FMP details how these specifications are determined and chapter 5 details the process for deciding biennial harvest specifications.

The existing harvest specification framework mandates specification of an ABC, which is the maximum sustainable yield (MSY) harvest level associated with current stock abundance. The ABC under the existing framework is the overfishing limit. For assessed stocks, the ABC is derived by applying a deterministic or proxy harvest rate estimated to result in MSY ( $F_{MSY}$ ) to the estimated exploitable biomass of the stock. Detailed biological information is not routinely available for unassessed stocks, and ABC levels are typically established on the basis of average historical landings, trends in a fishery independent survey, or some other index of current biomass.

The principle harvest specification under the existing framework used to manage fisheries and achieve MSA and FMP objectives is the OY. The MSA and FMP defines the OY as “the amount of fish which will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities and taking into account the protection of marine ecosystems; that is prescribed on the basis of the MSY from the fishery, as reduced by any relevant economic, social, or ecological factor; and, in the case of an overfished fishery, that provides for rebuilding to a level consistent with producing the MSY in such fishery. OY may be established at the stock or stock complex level, or at the fishery level. Achieving, on a continuing basis, the optimum yield from each fishery means producing, from each stock, stock complex, or fishery: a long-term series of catches such that the average catch is equal to the OY, overfishing is prevented, the long term average biomass is near or above  $B_{MSY}$ , and overfished stocks and stock complexes are rebuilt consistent with timing and other requirements of section 304(e)(4) of the Magnuson-Stevens Act.” The OY specification can be set equal to the ABC for healthy stocks that have an estimated biomass at or above the  $B_{MSY}$  target for that stock. The OY can be set below the ABC as a buffer to accommodate scientific uncertainty, management uncertainty, socioeconomic concerns, rebuilding concerns, and any other considerations. Harvest control rules (described in section 2.1.1.2) determine the default approaches for setting OYs for stocks below the  $B_{MSY}$  target but above the minimum stock size threshold (MSST) below which a stock is considered overfished (see section 2.1.1.5). Adopted rebuilding plans determine the fishing mortality rate, and hence the OYs, for stocks that are overfished.

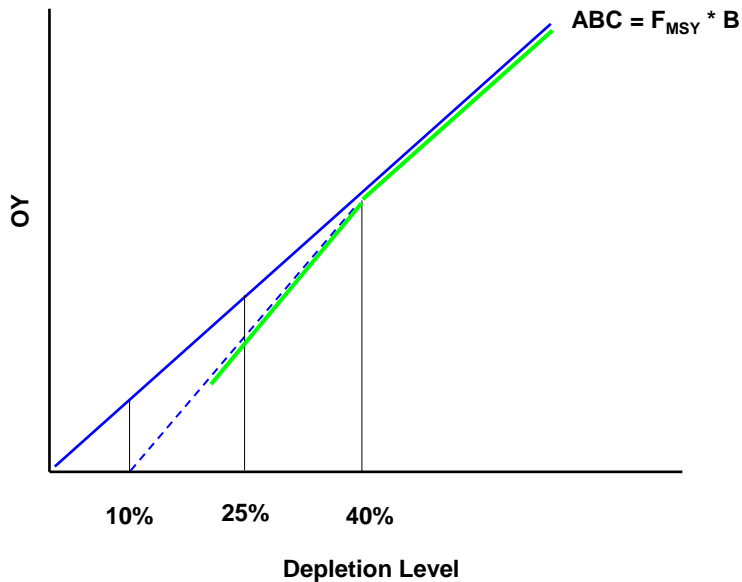
Harvest guidelines (HGs) are used to specify sector allocations (both long-term formal allocations and ad hoc two-year allocations) or to allocate a prescribed OY geographically (e.g., southern black rockfish HGs have been specified for Oregon and California fisheries in recent years). Harvest guidelines are determined in the biennial specifications process and can be exceeded and/or changed inseason as determined by a Council/NMFS decision. Automatic actions are often prescribed if an HG is prematurely attained before a fishery managed with an HG is set to close.

### **2.1.1.2 Harvest Control Rules**

The default harvest control rule in the FMP is called the “40-10” rule and is an adjustment of the OY below the ABC for a stock in the precautionary zone (i.e., estimated biomass below the  $B_{MSY}$  target but above the MSST). The OY is adjusted progressively lower as the stock’s depletion (i.e., estimated



biomass relative to its estimated unfished biomass) is progressively lower than the target of 40% of unfished biomass (denoted  $B_{40\%}$ ) until at  $B_{10\%}$ , the OY is set to zero (Figure 2-2). The slope of the line describing the OY adjustment relative to the ABC is defined by intersecting the ABC line at  $B_{40\%}$  and the x-axis at  $B_{10\%}$ . In practice, the 40-10 adjustment is only applied to stocks in the precautionary zone that are managed using the proxy  $B_{40\%} B_{MSY}$  target with an MSST of  $B_{25\%}$ . For overfished stocks with an estimated depletion below the MSST, OYs are decided using analyses and considerations for developing a rebuilding plan.



**Figure 2-2. The default “40-10” harvest control rule.**

#### 2.1.1.3 *Species Managed in the FMP*

The stocks and stock complexes currently managed in the FMP are shown in Table 2-1. The FMP specifies that all rockfish genera and species of the family *Scorpaenidae* endemic to the west coast are included in the FMP.

The harvest specifications denoted in section 2.1.1.1 are applied at the level of aggregation (as of May 2010) shown in Table 2-1. New stock assessments and other considerations could compel a change in the level of stock aggregation that harvest specifications are applied. Such decisions are made every other year during the biennial specifications process and do not require an FMP amendment. However, adding species to or removing species from the FMP does require an FMP amendment.

**Table 2-1. Stocks and stock complexes managed under the Pacific Coast Groundfish Fishery Management Plan at the level of aggregation where harvest specifications are specified (as of May 2010). Component stocks of a managed complex have common names in *italics*.**

Stock or Stock Complex	Harvest Specifications Used in Management	Proposed Amendment 23 Action
<b>OVERFISHED SPECIES</b>		
Bocaccio S. of 40°10' N lat.	ABC/OFL & OY/ACL	
Canary Rockfish	ABC/OFL & OY/ACL	
Cowcod S. of 40°10' N lat.	ABC/OFL & OY/ACL	
Darkblotched Rockfish	ABC/OFL & OY/ACL	
Pacific Ocean Perch	ABC/OFL & OY/ACL	
Widow Rockfish	ABC/OFL & OY/ACL	
Yelloweye Rockfish	ABC/OFL & OY/ACL	
Petrale Sole	ABC/OFL & OY/ACL	
<b>NON-OVERFISHED SPECIES</b>		
Lingcod N. of 42° N lat. (OR & WA)	ABC/OFL & OY/ACL	
Lingcod S. of 42° N lat. (CA)	ABC/OFL & OY/ACL	
Pacific Cod	ABC/OFL & OY/ACL	
Pacific Whiting	ABC & OY	International treaty exemption
Sablefish (coastwide)	ABC/OFL	
Sablefish N. of 36° N lat.	OY/ACL	
Sablefish S. of 36° N lat.	OY/ACL	
Shortbelly Rockfish	ABC/OFL & OY/ACL	
Chilipepper (coastwide)	ABC/OFL & OY/ACL	
Splitnose S. of 40°10' N lat.	ABC/OFL & OY/ACL	
Yellowtail N. of 40°10' N lat.	ABC/OFL & OY/ACL	
Shortspine Thornyhead (coastwide)	ABC/OFL	
Shortspine Thornyhead - N. of 34°27' N lat.	OY/ACL	
Shortspine Thornyhead - S. of 34°27' N lat.	OY/ACL	
Longspine Thornyhead (coastwide)	ABC/OFL	
Longspine Thornyhead - N. of 34°27' N lat.	OY/ACL	
Longspine Thornyhead - S. of 34°27' N lat.	OY/ACL	
Black Rockfish (WA)	ABC/OFL & OY/ACL	
Black Rockfish (OR-CA)	ABC/OFL & OY/ACL	
California scorpionfish	ABC/OFL & OY/ACL	
Cabezon (CA)	ABC/OFL & OY/ACL	
Cabezon (OR)	ABC/OFL & OY/ACL	
Dover Sole	ABC/OFL & OY/ACL	
English Sole	ABC/OFL & OY/ACL	
Arrowtooth Flounder	ABC/OFL & OY/ACL	
Starry Flounder	ABC/OFL & OY/ACL	
Longnose skate	ABC/OFL & OY/ACL	
<b>STOCK COMPLEXES</b>		
Minor Rockfish North	ABC/OFL & OY/ACL	
Minor Nearshore Rockfish North	OY/ACL	
<i>Black and yellow</i>		
<i>Blue</i>		
<i>Brown</i>		
<i>Calico</i>		
<i>China</i>		
<i>Copper</i>		
<i>Gopher</i>		
<i>Grass</i>		

Stock or Stock Complex	Harvest Specifications Used in Management	Proposed Amendment 23 Action
<i>Kelp</i>		
<i>Olive</i>		
<i>Quillback</i>		
<i>Treefish</i>		
Minor Shelf Rockfish North	OY/ACL	
<i>Bronzespotted</i>		
<i>Bocaccio</i>		
<i>Chameleon</i>		
<i>Chilipepper</i>		
<i>Cowcod</i>		
<i>Dusky</i>		Remove from FMP
<i>Dwarf-red</i>		Remove from FMP
<i>Flag</i>		
<i>Freckled</i>		
<i>Greenblotched</i>		
<i>Greenspotted</i>		
<i>Greenstriped</i>		
<i>Halfbanded</i>		
<i>Harlequin</i>		
<i>Honeycomb</i>		
<i>Mexican</i>		
<i>Pink</i>		
<i>Pinkrose</i>		
<i>Puget Sound</i>		
<i>Pygmy</i>		
<i>Redstripe</i>		
<i>Rosethorn</i>		
<i>Rosy</i>		
<i>Silvergray</i>		
<i>Speckled</i>		
<i>Squarespot</i>		
<i>Starry</i>		
<i>Stripetail</i>		
<i>Swordspine</i>		
<i>Tiger</i>		
<i>Vermilion</i>		
Minor Slope Rockfish North	OY/ACL	
<i>Aurora</i>		
<i>Bank</i>		
<i>Blackgill</i>		
<i>Redbanded</i>		
<i>Rougheye</i>		
<i>Sharpchin</i>		
<i>Shortraker</i>		
<i>Splitnose e/</i>		
<i>Yellowmouth</i>		
Minor Rockfish South	ABC/OFL & OY/ACL	
Minor Nearshore Rockfish South	OY/ACL	
<i>Shallow Nearshore Species</i>		
<i>Black and yellow</i>		
<i>China</i>		

Stock or Stock Complex	Harvest Specifications Used in Management	Proposed Amendment 23 Action
<i>Gopher</i>		
<i>Grass</i>		
<i>Kelp</i>		
<i>Deeper Nearshore Species</i>		
<i>Blue</i>		
<i>Brown</i>		
<i>Calico</i>		
<i>Copper</i>		
<i>Olive</i>		
<i>Quillback</i>		
<i>Treefish</i>		
Minor Shelf Rockfish South	OY/ACL	
<i>Bronzespotted</i>		
<i>Chameleon</i>		
<i>Dusky</i>		Remove from FMP
<i>Dwarf-red</i>		Remove from FMP
<i>Flag</i>		
<i>Freckled</i>		
<i>Greenblotched</i>		
<i>Greenspotted</i>		
<i>Greenstriped</i>		
<i>Halfbanded</i>		
<i>Harlequin</i>		
<i>Honeycomb</i>		
<i>Mexican</i>		
<i>Pink</i>		
<i>Pinkrose</i>		
<i>Pygmy</i>		
<i>Redstripe</i>		
<i>Rosethorn</i>		
<i>Rosy</i>		
<i>Silvergray</i>		
<i>Speckled</i>		
<i>Squarespot</i>		
<i>Starry</i>		
<i>Stripetail</i>		
<i>Swordspine</i>		
<i>Tiger</i>		
<i>Vermilion</i>		
<i>Yellowtail</i>		
Minor Slope Rockfish South	OY/ACL	
<i>Aurora</i>		
<i>Bank</i>		
<i>Blackgill</i>		
<i>Pacific ocean perch</i>		
<i>Redbanded</i>		
<i>Roughey</i>		
<i>Sharpchin</i>		
<i>Shortraker</i>		
<i>Yellowmouth</i>		
Other Flatfish	ABC/OFL & OY/ACL	

Stock or Stock Complex	Harvest Specifications Used in Management	Proposed Amendment 23 Action
<i>Butter sole</i>		
<i>Curlfin sole</i>		
<i>Flathead sole</i>		
<i>Pacific sanddab</i>		
<i>Rex sole</i>		
<i>Rock sole</i>		
<i>Sand sole</i>		
Other Fish	ABC/OFL & OY/ACL	
<i>Big skate</i>		
<i>California skate</i>		
<i>Leopard shark</i>		
<i>Southern shark</i>		
<i>Spiny dogfish</i>		
<i>Finescale codling</i>		
<i>Pacific rattail</i>		
<i>Ratfish</i>		
<i>Cabezon (WA)</i>		
<i>Kelp greenling</i>		

#### 2.1.1.4 Species Categories

Species are categorized in the FMP relative to the amount of data informing a stock's harvest specifications. For the purpose of setting MSY, ABC, the maximum fishing mortality threshold (MFMT), the MSST, OY, and rebuilding standards, three categories of species are identified. The first are those species for which a relatively data-rich quantitative stock assessment can be conducted on the basis of catch-at-age, catch-at-length, or other data. ABCs and overfished/rebuilding thresholds can generally be calculated for these species. The second category includes a large number of species for which some biological indicators are available, including a relatively data-poor quantitative assessment or a nonquantitative assessment. It is difficult to estimate overfished and overfishing thresholds for the second category of species a priori, but indicators of long-term, potential overfishing can be identified. ABCs for species in this category are typically set at a constant level and some monitoring is necessary to determine if this level of catch is causing a slow decline in stock abundance. The third category includes minor species which are caught, but for which there is, at best, only information on landed biomass. For species in this category, there is limited data to quantitatively determine MSY, ABC, or an overfished threshold. Typically, average catches are used to determine the ABC for category 3 species.

Precautionary adjustments to OYs to account for scientific and management uncertainty are typically specified for category 2 and 3 species with a greater reduction of the OY from the ABC for category 3 species than for category 2 species. Typically, 25% and 50% OY reductions have been specified for category 2 and 3 species, respectively.

#### 2.1.1.5 Status Determination Criteria

National Standard 1 guidelines recommend specification of status determination criteria (SDC), which are the quantifiable factors, MFMT, ABC, and MSST, or their proxies, that are used to determine if overfishing has occurred, or if the stock or stock complex is overfished. Magnuson-Stevens Act (section 3(34)) defines both "overfishing" and "overfished" to mean a rate or level of fishing mortality that jeopardizes the capacity of a fishery to produce the MSY on a continuing basis. "Overfished" relates to

biomass of a stock or stock complex, and “overfishing” pertains to a rate or level of removal of fish from a stock or stock complex.

These SDC are already included in the FMP and all actively managed stocks and stock complexes are required to have estimated or proxy ABCs, MFMT, and MSST specified in regulations. The MFMT is the  $F_{MSY}$  harvest rate used to establish the ABC. The current MFMTs are proxy values, although estimated  $F_{MSY}$  can be specified as an MFMT for category 1 stocks if recommended by the SSC and adopted by the Council. The current default proxy  $F_{MSY}$ /MFMT harvest rates are  $F_{30\%}$  for flatfish,  $F_{40\%}$  for flatfish and whiting,  $F_{50\%}$  for rockfish, and  $F_{45\%}$  for other species such as sablefish and lingcod.

The MSST is the estimated biomass level of the stock relative to its unfished biomass (i.e., depletion level) below which the stock is considered overfished. Development of a rebuilding plan is required once a stock’s biomass declines below the MSST. The MSST can be estimated for a category 1 stock from an assessment or can be a proxy depletion level as recommended by the SSC and adopted by the Council. The NS1 guidelines recommend the MSST can be no lower than 50% of the  $B_{MSY}$  target; this limit is specified in the FMP. The current default proxy MSST for all the actively managed groundfish stocks and stock complexes, other than the assessed flatfish species, is  $B_{25\%}$ , which is 62.5% of the  $B_{MSY}$  target of  $B_{40\%}$ . The current default proxy MSST for the assessed flatfish species is  $B_{12.5\%}$ , which is 50% of the  $B_{MSY}$  target of  $B_{25\%}$ .

#### **2.1.1.6 Accountability Measures**

Inseason catch monitoring and adjustments to fisheries to stay within specified OYs are the principal AMs under the No Action Alternative. Other AMs used in the current management framework include automatic closure of sectors or other management actions (e.g., automatic depth restrictions) that are implemented in cases where there is early attainment of sector-specific total catch limits specified for some species (these AMs are currently applied to minimize bycatch of some overfished species in the whiting trawl fishery). Likewise, automatic actions, such as fishery closure or changes in season length or depth restrictions, can occur when HGs are attained early. Sector-specific total catch limits and automatic actions associated with early attainment of HGs are decided in the biennial specifications process.

### **2.1.2 The Preliminary Preferred Action Alternative: The Amendment 23 Harvest Specification Framework**

In March 2010, the Council decided to adopt the new NS1 guidelines to redefine the current harvest specification framework as their preliminary preferred alternative for Amendment 23. The Council will decide their final preferred alternative at the June 2010 meeting in Foster City, California.

#### **2.1.2.1 Harvest Specifications**

The harvest specifications depicted in the column labeled, “Preliminary Preferred Action Alternative Am. 23 Harvest Specification Framework” in Figure 2-1 are recommended in the new NS1 guidelines. The OFL is the recommended MSY harvest level and is defined exactly as the ABC specification in the current harvest specification framework in the FMP. The Council’s preliminary preferred Amendment 23 alternative is to redefine the current ABC specification as the OFL. The Council adopts OFLs that are recommended by the SSC.

The ABC control rule, according to the new revised NS1 guidelines, incorporates a scientific uncertainty buffer that will in most cases result in an ABC below the OFL. The Council’s preliminary

preferred Amendment 23 includes a control rule for determining ABC as outlined in the new NS1 guidelines.

The OY is maintained as a long term average harvest level that best meets MSA objectives (see the legal definition of OY in section 2.1.1.1). The Council's preliminary preferred Amendment 23 alternative is to retain the OY as recommended in the new NS1 guidelines and defined in the MSA. Under Amendment 23, the FMP language is modified slightly to incorporate the verbatim legal definition of OY from the NS1 guidelines.

The ACL is described in the revised NS1 guidelines as the harvest specification which is the effective fishing mortality limit used to annually manage fisheries and which counts all sources of fishing-related mortality, including discard mortalities, against the limit. The ACL specification can be based on a buffer below the ABC to accommodate management uncertainty, socioeconomic concerns, rebuilding considerations, and other considerations. The revised NS1 guidelines recommend the ACL can be set equal to the ABC if those concerns and considerations do not exist. The Council has been using the OY under the current harvest specification framework as a de facto ACL since 1999 and characterizing the OY as a total catch OY to differentiate its use from the legal definition of OY in the MSA and NS1 guidelines. The Council's preliminary preferred Amendment 23 alternative incorporates the ACL specification as described in the revised NS1 guidelines. Sector-specific ACLs can be used to specify formal sector allocations, such as those decided under Amendment 21.

The ACT is a level of harvest below the ACL that can be exceeded inseason or can cause closure of a fishery upon attainment. The ACT is an accountability measure but can also be considered a harvest specification similar to the current HG. Sector-specific ACTs are contemplated in the NS1 guidelines as a substitute for the sector-specific HGs used to allocate harvest opportunities biennially (i.e., for short-term ad hoc allocations). The definition and specification of the HG is recommended by the GMT to be maintained in the FMP given current California Department of Fish and Game (CDFG) statutory authority to close their fishery upon attainment of an HG. If the law changes such that CDFG has the authority to close fisheries upon attainment of a sector-specific ACT, there may be no need to maintain the HG specification in the FMP. The Council's preliminary preferred Amendment 23 alternative incorporates the ACT as an AM and as a harvest specification as described in the revised NS1 guidelines in the FMP. An ACT is specified, if needed, for any stock or stock complex during the biennial specifications process.

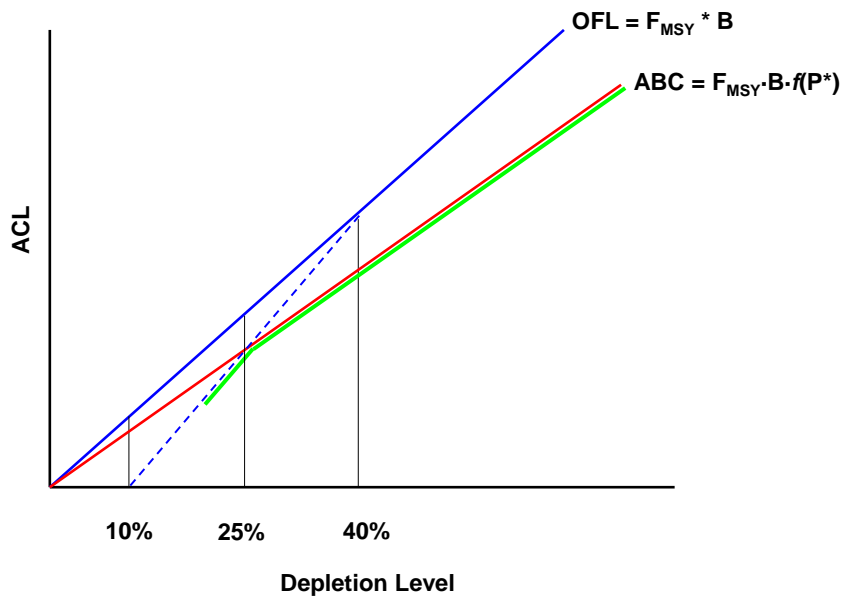
#### *2.1.2.2 Harvest Control Rules*

Under the Council's preliminary preferred alternative for Amendment 23, there are harvest control rules for deciding the ABC specification and a translation of the existing 40-10 default rule for deciding the ACL for stocks in the precautionary zone.

The ABC control rules contemplated under Amendment 23 are different approaches to deciding the size of scientific uncertainty buffers that define the ABC for all actively managed stocks and stock complexes. The ABC is decided by the Council based on its preferred level of overfishing risk aversion. The ABC control rules framework under the Council's preliminary preferred alternatives include either a straight percentage reduction of the OFL that is recommended by the SSC and adopted by the Council or one that incorporates an estimated probability of overfishing ( $P^*$ ) based on the uncertainty of the "true" OFL. Under the  $P^*$  approach, scientific uncertainty associated with estimating an OFL ( $\sigma$ ) is quantified by the SSC and the percentage reduction that defines the scientific uncertainty buffer and the ABC can be determined by translating the estimated  $\sigma$  to a range of  $P^*$  values. Each  $P^*$

value is then mapped to its corresponding buffer fraction<sup>1</sup>. The Council then determines the preferred level of risk aversion by selecting an appropriate P\* value, accordingly. In cases where the P\* approach is used, the upper limit of P\* values considered will be 0.45.

There are two options for translating the existing 40-10 harvest control rule under the new Amendment 23 alternative. Option 1 adjusts the ACL relative to the OFL by progressively reducing the ACL from the OFL as depletion decreases below the B<sub>40%</sub> target (Figure 2-3). ACL adjustments under the Option 1 40-10 rule are nullified if the ABC is lower than the 40-10 adjusted ACL, since an ACL cannot exceed an ABC.



**Figure 2-3. Option 1 for translating the “40-10” harvest control under Amendment 23 by adjusting the ACL from the OFL.**

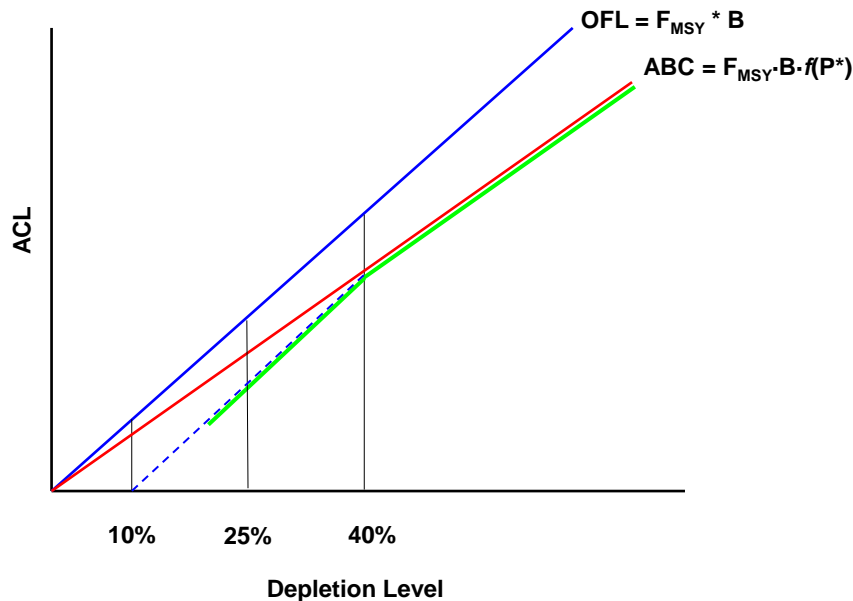
Option 2 adjusts the ACL relative to the ABC by progressively reducing the ACL from the ABC as depletion decreases below the B<sub>40%</sub> target (Figure 2-4). Option 2 for translating the existing 40-10 rule under the new Amendment 23 alternative is more precautionary than the Option 1 harvest control rule since the ABC is applied before the 40-10 ACL adjustment is made. Option 2 is the Council’s preliminary preferred alternative for Amendment 23.

The SSC recommended and the Council decided to specify an analogous “25-5” harvest control rule for assessed flatfish species. The 25-5 rule works exactly like 40-10 rule except the ACL adjustment begins when the stock’s depletion drops below B<sub>25%</sub> and at B<sub>5%</sub>, the ACL is set to zero. However, in practice, as in the current application of the 40-10 rule for all other taxa than flatfish, the 25-5 rule would be applied for assessed flatfish species in the precautionary zone. This rule was recommended based on the decision to establish a new B<sub>MSY</sub> proxy of B<sub>25%</sub> for assessed flatfish species (with a corresponding MSST of half the B<sub>MSY</sub> target or B<sub>12.5%</sub>). The 2011-12 biennial specifications EIS {PFMC 2010} provides the analysis and discussion of these new proxy reference points for assessed flatfish species.

<sup>1</sup> Since estimated OFLs are median estimates, there is a 50% probability that the OFL is overestimated. Therefore, a P\* of 0.5 equates to no scientific uncertainty or, in other words, the ABC is set equal to the OFL.



The Option 2 25-5 rule, where the ACL adjustment is applied after specifying an ABC, is the Council’s preliminary preferred alternative for Amendment 23.



**Figure 2-4. Option 2 for translating the “40-10” harvest control rule under Amendment 23 by adjusting the ACL from the ABC. Option 2 is the Council’s preliminary preferred alternative under Amendment 23.**

#### 2.1.2.3 *Species Managed in the FMP*

The species complexes noted in Table 2-1 are recommended to remain under the preliminary preferred action alternative with the exception that dusky and dwarf-red rockfish are recommended to be removed from the FMP. These species, which are currently included in the northern and southern minor shelf rockfish complexes, are not in the fishery since they do not significantly occur on the west coast.

The concept of indicator stocks for managing complexes is included in the Amendment 23 alternative. An indicator stock is a stock with measurable SDC that can be used to help manage and evaluate more poorly known stocks that are in a stock complex. If an indicator stock is used to evaluate the status of a complex, it should be representative of the typical status of each stock within the complex, due to similarity in vulnerability. If the stocks within a stock complex have a wide range of vulnerability, they should be reorganized into different stock complexes that have similar vulnerabilities; otherwise the indicator stock should be chosen to represent the more vulnerable stocks within the complex. In instances where an indicator stock is less vulnerable than other members of the complex, management measures need to be more conservative so that the more vulnerable members of the complex are not at risk from the fishery. More than one indicator stock can be selected to provide more information about the status of the complex. When indicator stock(s) are used, periodic re-evaluation of available quantitative or qualitative information (e.g., catch trends, changes in vulnerability, fish health indices, etc.) is needed to determine whether a stock is subject to overfishing, or is approaching (or in) an overfished condition.

Pacific whiting is recommended to be exempted from the Amendment 23 action under the preliminary preferred alternative since this stock is managed under an international treaty between the U.S. and Canada. An international Pacific Whiting Commission will likely develop a harvest specification framework for Pacific whiting once the Commission process is fully implemented. Until that time, the existing harvest specification framework described under the No Action Alternative is recommended to be used to manage Pacific whiting.

No new species are recommended to be included in the FMP under the preliminary preferred alternative for Amendment 23.

No species currently managed under the FMP are recommended to be categorized as Ecosystem Component species under the proposed Amendment 23 action. However, the proposed Amendment 23 action does include frameworking the category of Ecosystem Component species in the FMP as recommended in the new NS1 guidelines for future consideration of such a categorization for any FMP species.

#### **2.1.2.4 *Species Categories***

The species categories described in section 2.1.1.3 are maintained under the preferred Amendment 23 alternative, although the description of each category is refined under the proposed action. Scientific uncertainty informing stock harvest specifications is progressively greater for category 1, 2, and 3 stocks and, under the preferred alternative, scientific uncertainty buffers defining the ABC are generally greater for stocks categorized under the progressively more uncertain categories 2 and 3.

A new category of Ecosystem Component (EC) species is proposed under the preferred Amendment 23 alternative. These species are not “in the fishery” and therefore not actively managed. EC species are not targeted in any fishery and are not generally retained for sale or personal use. EC species are not determined to be subject to overfishing, approaching an overfished condition, or overfished, nor are they likely to become subject to overfishing or overfished in the absence of conservation and management measures. While EC species are not considered to be “in the fishery,” the Council should consider measures for the fishery to minimize bycatch and bycatch mortality of EC species consistent with National Standard 9, and to protect their associated role in the ecosystem. EC species do not require specification of reference points but should be monitored to the extent that any new pertinent scientific information becomes available (e.g., catch trends, vulnerability, etc.) to determine changes in their status or their vulnerability to the fishery. If necessary, they should be reclassified as “in the fishery.” Any future categorization of existing species as EC species or reclassification of EC species as stocks that are “in the fishery” will require an FMP amendment.

#### **2.1.2.5 *Status Determination Criteria***

The SDC currently in the FMP (described in section 2.1.1.5) comply with the new NS1 guidelines and are maintained in the Council’s preferred alternative for Amendment 23. The only recommended change for SDC is the redefinition of the ABC to the OFL as recommended in the revised NS1 guidelines.

#### **2.1.2.6 *Accountability Measures***

The AMs described in section 2.1.1.6 are maintained under the Council’s preliminary preferred Amendment 23 alternative. Additionally, the Council recommends the incorporation of the ACT as an

AM in the FMP. The ACT is a harvest level set below the ACL and provides a means to better stay within specific ACLs in cases where there is greater management and catch monitoring uncertainty. The revised NS1 guidelines recommend specifying an ACT if an ACL is exceeded more often than once every four years, which is the performance standard incorporated in the FMP under the Council's preliminary preferred Amendment 23 alternative. Other possible uses of the ACT are discussed in section 4.6.

## CHAPTER 3    **AFFECTED ENVIRONMENT**

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This section will be developed after the June 2010 Council meeting when the final preferred alternative for Amendment 23 is decided. It is anticipated that the description of the affected environment in this chapter will be largely incorporated by reference to other published Council documents in this EA.

# CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

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The Council's preliminary preferred Amendment 23 alternative essentially incorporates all the relevant elements of the revised NS1 guidelines into the FMP. The proposed action to modify the existing harvest specification framework is not anticipated to have any direct impacts on the physical environment (i.e., habitats, including EFH; and the marine ecosystem) since there are no associated management measures associated with Amendment 23. The Council's preferred alternative under Amendment 23 is also not anticipated to have direct impacts to the biological environment (i.e., affected species) or the socioeconomic environment (i.e., fishing sectors and fishing communities) for the same reason since the proposed modification of the harvest specification framework does not propose annual harvest levels, but does propose a modified framework and considerations for setting harvest levels relative to the No Action alternative. The relatively modest impacts associated with the proposed Amendment 23 action relative to the No Action alternative are detailed below with further elaboration of the initial analyses done to inform Amendment 23 considerations.

## 4.1 Harvest Specifications

The harvest specifications recommended in the revised NS1 guidelines and under the Council's preferred Amendment 23 alternative are not significantly different than those in the existing harvest specification framework and described under the No Action alternative.

As described in section 2.1.2.1, the OFL is defined and determined exactly as the ABC specification in the current framework. The preferred alternative is to simply redefine the ABC in the current FMP as the OFL.

The new ABC specification recommended in the NS1 guidelines and in the preferred alternative is the specification that is arguably the most divergent in the proposed Amendment 23 alternative relative to the No Action alternative. Explicitly considering the scientific uncertainty in estimating the MSY harvest level (i.e., the OFL under the proposed Amendment 23 alternative and the ABC under the existing No Action alternative) will require new considerations and new harvest control rules (see sections 2.1.2.2 and 4.2). Under the No Action alternative, scientific uncertainty in estimating MSY was one of many considerations in deciding the total catch OY. Under Amendment 23, scientific uncertainty is considered independently of management uncertainty, socioeconomic considerations,

rebuilding considerations, and all other considerations that entered into an OY decision under the old framework. Also, under the No Action alternative, OYs were often set equal to ABCs for healthy stocks with biomass estimated at or above the target  $B_{MSY}$  levels. This will not occur under the preferred alternative for Amendment 23 given that a scientific uncertainty buffer below the OFL will be decided in setting future ABCs. In cases where a  $P^*$  approach is used, the upper limit of  $P^*$  is 0.45 (a  $P^*$  of 0.5 equates to no scientific uncertainty buffer (i.e.,  $ABC=OFL$ )). Alternatively, the proposed Amendment 23 alternative would establish a straight percentage reduction from the OFL for deciding the ABC if a  $P^*$  approach is not used.

The ACL specification is not a significantly new harvest threshold in the proposed Amendment 23 alternative relative to the existing No Action alternative. While the OY, as described in the existing FMP and maintained in the Amendment 23 preferred alternative, is inherently different from the ACL recommended in the NS1 guidelines and the preferred Amendment 23 alternative, the use of total catch OYs in Council decision making since 1999 complies with the new ACL definition.

The ACT and its use as a sector HG under the preferred Amendment 23 alternative is not different from the use of the HG under the No Action alternative. Further discussion of the ACT and its uses as a sector HG and as an AM are provided in section 4.6.

## **4.2 Harvest Control Rules**

The proposed ABC control rules under the preferred Amendment 23 alternative include a straight percentage reduction of the OFL to determine a scientific uncertainty buffer and the ABC. This approach is not significantly different from the precautionary adjustments to OYs under the No Action alternative in consideration of scientific uncertainty. The most significant difference is that the proposed Amendment 23 alternative considers scientific uncertainty in setting harvest levels independently of other uncertainties and considerations, which were all part of the OY decision under the existing No Action harvest specification alternative. The ABC control rule using the  $P^*$  approach is a new one under the Amendment 23 alternative. As the SSC noted, the difference between a straight percentage reduction from the OFL and the  $P^*$  approach when deciding an ABC is that the  $P^*$  approach allows the Council to express its views and preferences on overfishing risk aversion. All recommended ABCs will require an SSC endorsement as recommended in the revised NS1 guidelines and the preferred Amendment 23 alternative. The process can work either by the SSC recommending the buffers by species category and the Council following that advice or the Council takes the first step in deciding the buffer followed by an SSC evaluation and endorsement that the buffer adequately addresses scientific uncertainty. In the  $P^*$  approach, the SSC “endorsement” comes from their deciding the assessment uncertainty variance ( $\sigma$ ) by stock category. This  $\sigma$  value is mapped to a range of  $P^*$  values to decide the scientific uncertainty buffer. The Council chooses the  $P^*$  value as a risk assessment decision to decide the magnitude of the scientific uncertainty buffer. The SSC recommended that  $P^*$  had to be less than 0.5 since a  $P^*$  of 0.5 equates to no scientific uncertainty buffer and implies that the OFL is estimated with no uncertainty or error. The Council’s decision to only consider  $P^*$  values up to 0.45 when a  $P^*$  approach is used to decide an ABC was deemed a satisfactory upper limit by the SSC and constitutes their endorsement of the ABC when the  $P^*$  approach is used. Where the Council decides to adopt a straight percentage reduction of the OFL to determine the ABC, it will solicit the SSC’s endorsement.

The 40-10 harvest control rule options considered under Amendment 23 vary by whether the 40-10 ACL adjustment is made before the ABC adjustment (i.e., Option 1, Figure 2-3) or after the ABC adjustment (i.e., Option 2, Figure 2-4). Option 1 may be considered the closest to the status quo rule described under the No Action alternative (Figure 2-2) in that the ACL adjustment is made directly off the OFL curve. Under the status quo rule, the OY is adjusted using this harvest control rule from the

ABC curve and the proposed preferred Amendment 23 alternative is to redefine the current ABC as the OFL. However, under Option 2, the 40-10 adjustment is made after the scientific uncertainty buffer or the ABC is specified. Therefore, the 40-10 adjusted ACLs under Option 2 will always be lower than the resulting ACLs under the Option 1 rule. An example of resulting 2011 sablefish ACLs under the two 40-10 adjustment options considered during the current biennial specifications process is shown in Table 4-1. Given the OFL and depletion level projected from the most recent sablefish assessment, the resulting ACL under the Option 1 rule is independent of an ABC decision. In this case, the 40-10 adjustment does not affect the resulting ACL under a wide range of P\* values between 0.15 and 0.45 since the ACL cannot exceed the ABC. However, under the Option 2 rule, the ABC is decided before the 40-10 adjustment is made resulting in ACLs that are lower and vary by the choice of P\*. Option 2 is therefore a more precautionary harvest control rule than Option 1. The Council chose the Option 2 harvest control rule as their preferred alternative under Amendment 23. They further adopted the SSC-recommended 25-5 rule for assessed flatfish species with the same Option 2 structure where the ACL adjustment is made after the ABC control rule is applied as their preferred alternative. The Council's rationale for the Option 2 ACL harvest control rule(s) was that the 40-10 adjustment (and the new 25-5 adjustment) was never intended to address scientific uncertainty as the new ABC specification is intended, but is intended to rebuild stocks to target biomass levels when stock biomass declines below the target. Therefore, the ACL harvest control rule should be applied independently of the ABC control rule as is the case with the Option 2 rule.

**Table 4-1. Coastwide 2011 sablefish ACL alternatives under the two 40-10 adjustment options considered under Amendment 23.**

2011 OFL (mt)	8,808						
2011 depletion	36.0%						
	Overfishing Probability (P*)						
	0.45	0.40	0.35	0.30	0.25	0.20	0.15
2011 ABC (mt)	8,418	8,040	7,667	7,293	6,909	6,506	6,065
2011 ACL under option 1 40-10 adj	8,485						
2011 ACL under option 2 40-10 adj	7,296	6,968	6,645	6,321	5,988	5,639	5,256

### 4.3 Species Managed in the FMP

The NSI guidelines suggest that the Council set ACLs for target stocks, any non-target stocks that are overfished, or those non-target stocks potentially vulnerable to overfishing. The GMT analyzed the vulnerability of each stock in the FMP with a Productivity and Susceptibility Assessment (reported in Agenda Item E.2.b, Supplemental GMT Report, April 2010, which is available online at <http://www.pcouncil.org/resources/archives/briefing-books/march-2010-briefing-book/#groundfish>).

Based on that analysis, the GMT did not recommend removing any species from the FMP other than dusky and dwarf-red rockfish. These two species were included in the FMP based on very few occurrences. Dusky rockfish are distributed to the north of the U.S. west coast EEZ. There are records of only a few fish being landed into Washington. There is only one occurrence of dwarf-red rockfish in the Channel Islands when two individuals were observed following a Navy underwater demolition. The GMT concluded that setting an ACL for these species would serve no purpose and therefore the Council recommended removing these two species from the FMP under their preferred Amendment 23 alternative.

The GMT also evaluated the current stock complexes by looking at latitudinal and depth distributions of FMP species, vulnerability scores from the above cited PSA analysis, and fishery interactions of each species currently managed within a complex. This analysis showed that improvements can be made in the composition of the stock complexes. Such changes include rearranging current complexes and

possibly adding other species into the FMP and consideration for constructing the complexes around indicator species. The GMT concluded that the analyses needed to create ACLs for any new or reconfigured complexes are not likely feasible within the short timeframe for Amendment 23.

The Other Fish complex is of most concern to the GMT given the lack of a quantitative basis for its current harvest specifications and the relatively high vulnerability of its component elasmobranch species. Preliminary discussions have identified various alternatives for decomposing this complex into a few new stock complexes.

In November 2009, the Council gave lower priority to the GMT's suggestion to evaluate species not in the FMP. Using publically available WCGOP reports on the non-whiting trawl fishery in 2007 and 2008, and a simple method for expanding total catch, the GMT was able to roughly compare the relative magnitude of total catch of FMP species versus species not in the FMP. As shown in Table 4-2, some species not in the FMP are caught in greater amounts than FMP species. It is clear that the vulnerability scores of these species would be indistinguishable from those of the current FMP species. The GMT concluded they could not complete the necessary analyses and discussion to fully implement the changes to stock complexes suggested by the NS1 guidelines on the timeline for implementing Amendment 23. They recommended revisiting the "in the fishery" classification following this biennial cycle and consider these changes to stock complexes in the 2013-2014 cycle.

**Table 4-2. Estimated total catch of select FMP and non-FMP species in the non-whiting trawl fisheries, 2007 and 2008.**

<b>Other Flatfish</b>	<b>2007</b>	<b>2008</b>	<b>Select Other Fish</b>	<b>2007</b>	<b>2008</b>
butter sole	0.7	0.3	big skate	123.2	51.6
curlfin sole/turbot	8.8	1.8	California skate	7.2	5.9
flathead sole	4.0	1.2	finescale codling/Pacific flatnose	14.7	4.7
Pacific sanddab	395.9	235.1	Pacific rattail/grenadier	183.7	81.3
rex sole	647.3	459.2	ratfish	183.7	169.9
rock sole	8.3	0.1	<b>Non-FMP Skates</b>	<b>2007</b>	<b>2008</b>
sand sole	21.7	11.9	Aleutian skate	5.9	14.0
<b>Non-FMP Flatfish</b>	<b>2007</b>	<b>2008</b>	Black skate	61.0	128.3
Deepsea sole	43.1	76.5	Other & Unidentified skate	422.2	308.2
Slender sole	45.1	21.6	<b>Non-FMP Sharks</b>	<b>2007</b>	<b>2008</b>
			Brown cat shark	33.0	50.2
			Shark (unidentified)	16.9	28.7
			<b>Non-FMP Grenadiers</b>	<b>2007</b>	<b>2008</b>
			Giant grenadier	265.4	144.8
			Other & Unidentified grenadier	3.3	15.6

#### 4.4 Species Categories

The three species categories in the existing FMP and described under the No Action alternative are maintained under the Council's preferred Amendment 23 alternative. Additionally, a fourth category of Ecosystem Component species is recommended to be incorporated in the FMP as recommended in the revised NS1 guidelines and under the Council's preferred Amendment 23 alternative. However, based on the GMT's recommendation, no FMP species are recommended to be categorized as EC species



under Amendment 23. The GMT was generally in favor of their inclusion but was not prepared to do so until a better understanding of how designation of EC species might benefit management and a more thorough consideration of species both in and out of the FMP as potential EC species is done. The GMT recommended deferring any EC species designation to the next management cycle. It is therefore anticipated that a trailing amendment to Amendment 23 will be developed during the 2013-14 biennial specifications decision making process to consider adding new species to the FMP and refining the current structure of stock complexes.

#### **4.5 Status Determination Criteria**

There is no significant difference in the SDC described in the existing FMP (i.e., under the No Action alternative) relative to the amended FMP as recommended under the Council's preferred Amendment 23 alternative since the existing SDC are the recommended SDC in the revised NS1 guidelines. The only difference in the Preferred and No Action alternatives is the redefinition of the ABC to the OFL as recommended in the revised NS1 guidelines.

#### **4.6 Accountability Measures**

The existing AMs (e.g., inseason catch monitoring and adjustments) are recommended in the revised NS1 guidelines and are maintained under the Council's preferred Amendment 23 alternative. The Council also recommends incorporating the use the ACT as an AM to keep from exceeding ACLs as recommended in the revised NS1 guidelines by directly addressing management and catch monitoring uncertainty.

The new NS1 guidelines recommend effective AMs to keep from exceeding specified ACLs. The guidelines recommend consideration for a further yield buffer, termed the ACT, which can be set below the ACL if there is great uncertainty in the ability of the management system to effectively keep total fishing mortality below the prescribed ACL. The NS1 guidelines recommend an ACT does not need to be specified in the FMP if there are effective AMs, such as an inseason monitoring program, that can be demonstrated to keep harvest below the ACL. The performance standard recommended in the new NS1 guidelines for AMs is ACLs cannot be exceeded more often than once in four years.

The performance of the current management system was evaluated to determine if there are stocks and/or instances where an ACT may need to be specified. The current management system has evolved since 2002 with the advent of the West Coast Groundfish Observer Program (WCGOP) and better tracking of discard mortality. The Groundfish Management Team (GMT) has been using a report provided by the Pacific Fisheries Information Network (PacFIN) called the Quota Species Monitoring (QSM) report to track commercial landings of stocks and stock complexes managed under OYs or harvest guidelines. The GMT and the states track discard mortality of these species which are also posted on the QSM report based on impact projection models developed by the GMT and the NMFS Northwest Fisheries Science Center that associates species' discards with landings of target species using bycatch rates obtained from the WCGOP. The QSM is updated every two weeks and a program within PacFIN tracks total catches (landings plus discard mortalities) for monitored species relative to past years' catches. A companion program that tracks recreational catches is maintained on the Recreational Fisheries Information Network (RecFIN) and is used by the GMT and the states to track that catch component, ensuring that all catches are counted against annual harvest specifications to better ensure these catch limits are not exceeded.

Total catch estimates of stocks and stock complexes with specified OYs were compared with the specified OY during 1999-2008 to evaluate the effectiveness of the current management system to stay

within specified OYs. This period was used since total catch OYs, where all sources of fishing-related mortality are counted against the OY, were specified beginning in 1999<sup>2</sup>. The analysis extends through 2008 since this is the most recent year with an available total mortality report from the NMFS Northwest Fisheries Science Center. Table 4-3 depicts those instances when the annual total catch of a species has exceeded the specified OY.

**Table 4-3. Instances when groundfish OYs have been exceeded in the recent management period, 1999-2008.**

Species	Year OY was exceeded	Specified total catch OY (mt)	Estimated total catch (mt)	Percent of OY overage
Bocaccio	2000	100	112.0	12.0%
	2001	100	109.0	9.0%
Cabezon (CA)	2004	69	101.8	47.5%
	2005	69	85.4	23.8%
Canary	2001	93	133.0	43.0%
	2002	93	98.1	5.5%
	2003	44	59.9	36.1%
	2004	47	50.3	6.3%
	2005	47	60.4	29.1%
	2006	47	62.0	31.9%
	2007	44	44.7	1.6%
Darkblotched	2001	130	274.0	110.8%
	2002	168	179.0	6.5%
	2004	240	252.0	5.0%
Dover sole	2005	7,476	7,507.0	0.4%
	2006	7,564	7,730.0	2.2%
Petrale sole	2005	2,762	2,960.0	7.2%
POP	2001	303	307.0	1.3%
	2007	150	156.0	4.0%
Shortspine	1999	805	1,001.0	24.3%
	2000	970	1,037.0	6.9%
	2002	955	960.0	0.5%
	2003	955	1,014.0	6.2%
Sablefish (coastwide)	2008	5,934	6,078.0	2.4%

Prior to implementing rockfish conservation areas (RCAs) in 2003, which closed the core areas to groundfish fishing where overfished species occur, it was more difficult to manage fishery impacts to the low OYs prescribed in rebuilding plans. This led to higher magnitude OY overages prior to RCA management. Also, the precision of impact projection models has improved since 2003 as more WCGOP data became available to inform these models with more representative bycatch rates. These two factors and an adaptive management process where the GMT and Council have learned which management measures (e.g., RCA configurations and cumulative landing limits) work best under rebuilding regimes has led to improved management performance in recent years. However, there has been a persistent problem in managing the low canary rockfish OYs. Also, there have been instances where OYs for other species were exceeded in more recent years that require further explanation.

<sup>2</sup> Prior to 1999, landed catch OYs were specified where only landings and not discard mortalities were counted against the OY.

The canary rockfish management challenge has been extreme. This species is caught in all groundfish fisheries by a variety of gears and has therefore been one of the most constraining stocks limiting fishing opportunities since it was declared overfished in 2000. It is also apparent that the patterns of canary rockfish distribution, both seasonally and from year to year, are relatively unpredictable. The impact projection model used for the limited entry trawl fishery does a relatively good job of predicting impacts for the overfished species; however, there has always been a problem projecting canary rockfish impacts with relative precision. The lack of real-time reporting of canary discards in the trawl fishery has led to a reliance on the impact projection model. The imprecision of that model has led to a persistent problem of exceeding the specified canary rockfish OY despite increasingly stringent management measures imposed on the trawl fleet (e.g., shelf area closures north of Cape Alava and between Humbug Mt. and Cape Arago). Further, recreational catch projections are also relatively uncertain and canary rockfish are readily caught as bycatch in coastwide recreational fisheries as well. Therefore, current catch monitoring systems and impact projection models have failed to adequately perform in managing fishery impacts within canary rockfish OYs.

Other species' OY overages are a little more easily explained and the result of either human error (e.g., petrale sole in 2005 and sablefish in 2008), poor catch monitoring systems that have since been improved (e.g., bocaccio in 2000 and 2001), or a relatively rare and unexpected bycatch event (e.g., POP in 2007).

For example, the petrale sole OY was exceeded in 2005 due to human error. The petrale catch had been higher than normal during the first half of the year; however, managers were not paying adequate attention to this fact and did not react in time. It was realized over the summer that the petrale catch was projected to exceed the OY by a significant amount. In September, the Council reacted by closing the fishery and was able to mitigate this management miscue by minimizing the OY overage. The sablefish overage was also due to human error. The GMT's examination of the sablefish catch overage indicated there was a coding error in the QSM system that resulted in approximately 400 mt of catch going unreported inseason. As such, cumulative limit adjustments during 2008 were based on underestimated catch and resulting in the higher impacts. The GMT was able to confirm with PacFIN staff that the coding error was corrected and that this affected QSM reported catch for sablefish, longspine, and shortspine thornyheads in 2008, although only the sablefish OY was exceeded.

The bocaccio OY overages in 2000 and 2001 were due to recreational catches exceeding projections due largely to a very imprecise recreational census program called the Marine Recreational Fisheries Statistical Survey (MRFSS). The MRFSS program was designed to gauge gross catch and effort trends in marine recreational fisheries nationwide and it did not have the precision necessary for inseason management. However, MRFSS catch estimates were the best available data, so the Council and NMFS used them for management decision-making. The imprecision of MRFSS for monitoring recreational catch stems from the fact that effort is tracked through a telephone survey of coastal residents nationwide leading to highly uncertain and variable effort estimates that were used in California for estimating recreational catch. This lack of precision and the difficulty managing recreational fishery impacts using MRFSS led to the implementation of the California Recreational Fisheries Survey (CRFS) in 2004, which bolsters catch sampling and surveys effort using the California angler license frame. Since the implementation of CRFS, estimated catches of recreationally important species in California such as bocaccio have been more certain and recreational impact projections more precise.

The POP OY overage in 2007 was the result of one high landing in the shoreside whiting fishery at the end of the year. There was a hiatus in the whiting fishery that year when the widow total catch limit was attained prior to attaining whiting quotas. The fishery was shut down in July and re-opened in October when available widow yield was added to the total catch limit by the Council and NMFS. However, there was concern that the canary total catch limit would be exceeded that fall without a

mitigating management restriction on the fishery. Therefore, the Council and NMFS re-opened the fishery with a 150 fm depth restriction, which forced the fleets to fish in deeper waters than they normally fished to avoid canary. The shoreside whiting vessel that had the high POP catch was consequently operating in waters unfamiliar to the skipper at a time when the shoreside whiting fishery would not normally be open. This bycatch event that led to the POP OY overage was therefore not anticipated and occurred too late in the season to react to with an inseason adjustment to the fishery.

The other instances of species OY overages depicted in Table 4-3 (i.e., those for darkblotched, Dover sole, and shortspine thornyheads) were due to trawl catches that exceeded projections (these are all trawl-dominant species). Some of these overages occurred late in the season from effort that was higher than projected and other overages were due to imprecise trawl bycatch projections from modeling non-representative bycatch rates, especially early in the period depicted in Table 4-3. Management decisions subsequent to these OY overage instances adapted from these miscues with better understanding of expected catch and effort late in the season under a range of management measures.

The performance standard of not exceeding total catch limits more often than once in four years on average has clearly not been met for all groundfish species. For this reason, the Council elected to add the ACT as another AM to ensure ACLs are not exceeded in the future. While there may be no compelling reason to specify an ACT for most groundfish stocks, it is clear that it may be an important AM for a stock like canary rockfish under our current management system.

There are anticipated improvements to the management system that may make it less necessary to add the ACT to the FMP. The trawl fishery under the preferred alternative for Amendment 20 rationalization will have 100% observer coverage and real-time reporting of all catch, including discard mortality. This is a significant improvement in trawl catch monitoring and will eliminate management reliance on the trawl bycatch model and is a very precise AM for this fishery, which has historically had the highest groundfish bycatch. Trawl allocations will not likely be exceeded and, for the trawl-dominant species in Table 4-3 (i.e., all species other than bocaccio, cabezon, and canary), total catch limits will not likely be exceeded under the trawl rationalization program. However, the ACT may still be a useful AM for species like bocaccio, cabezon, and canary that are caught significantly in recreational fisheries. Catch estimation and projection in recreational fisheries is relatively uncertain and an ACT may be a reasonable measure for managing recreational impacts given this management uncertainty.

There are also other potential uses for the ACT. Since the ACT is a target and not a total catch limit, the ACT can be exceeded without penalty. Therefore, the ACT could be specified in a rebuilding strategy where the ACL defines the limit of acceptable fishing related mortality under a rebuilding plan and the ACT can be set lower in an attempt to get the fishery to perform better at avoiding the overfished species. For instance, the Council and NMFS have decided rebuilding strategies for bocaccio in the past where OYs were specified according to the adopted rebuilding plan, but the Council and NMFS stated a management intent to do better than that and set a target impact less than the OY. Likewise, the 2009-2010 rebuilding strategy for canary rockfish was to maintain the target harvest rate prescribed in the Amendment 16-4 rebuilding plan (the SPR harvest rate in the rebuilding plan projected a 155 mt OY in 2009 and 2010), but to set OYs under a lower harvest rate (i.e., 105 mt in 2009 and 2010). In both the bocaccio and canary cases, the ACL could be specified according to the rebuilding plan harvest rates and a lower ACT could be specified to attempt a more aggressive rebuilding strategy than prescribed in the adopted rebuilding plan. Given the management uncertainty associated with trying to balance conservation and socioeconomic objectives in a rebuilding plan (i.e., trying to rebuild overfished species in as short a time as possible while considering socioeconomic impacts on fishing communities), the strategic use of the ACT may be helpful.

The ACT may also be a helpful AM for species with relatively high rates of discard. Discard estimates tend to be highly variable from year to year and there is about a year and a half lag before discard mortality is reported in the total mortality reports provided by the NMFS Northwest Fisheries Science Center. Therefore, the uncertainty associated with high rates of discard mortality could be addressed by specifying an ACT. While this uncertainty is expected to be addressed for the trawl sectors under trawl rationalization, there are still some species such as arrowtooth flounder, spiny dogfish, and skates that are discarded at a relatively high rate in some limited entry and open access fixed gear fisheries. Such species may be good candidates for an ACT specification.

Finally, the ACT could be used as an HG in groundfish management as described in section 2.1.2.6 since both specifications are annual catch targets and not limits. The new NS1 guidelines suggest ACTs could also be specified as sector-specific targets, which is analogous to the current use of harvest guidelines in groundfish management. The GMT discussed this aspect of managing with ACTs at their October 2009 meeting, including the potential of supplanting the current use of a harvest guideline in the FMP with the ACT. In concept, this was considered a reasonable Amendment 23 consideration. However, one practical impediment to this action is the California statute that says in effect that CDFG can close or modify fishing seasons and/or pursue other management actions to prevent exceeding a federally-specified OY or harvest guideline<sup>3</sup>. Unless the statute is amended to allow such an automatic agency action (i.e., without a decision from the California Fish and Wildlife Commission, which is a more protracted process), redefining the harvest guideline as the ACT in the FMP may be untenable. However, such a change in the California statute may be needed anyway to allow automatic agency action to prevent exceeding a federally-specified ACL.

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<sup>3</sup> The Washington and Oregon Departments of Fish and Wildlife already have relatively broad authority from their respective commissions to automatically close or modify their fisheries.

# **PACIFIC COAST GROUND FISH FISHERY MANAGEMENT PLAN**

**FOR THE CALIFORNIA, OREGON, AND  
WASHINGTON GROUND FISH FISHERY**

**AS AMENDED THROUGH AMENDMENT 1923**  
~~INCLUDING AMENDMENTS 15 AND 21~~

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## Changes to the FMP since the Version Published in July 1993

The table below shows how the FMP chapters have been reorganized in comparison to the last generally available version produced in July 1993.

Current Chapters	Previous Chapters (July 1993 Version)	Summary of Amendment Changes
Chapter 1 Introduction	Chapter 1 Introduction	Updated by Amendment 18
Chapter 2 Goals and Objectives	Chapter 2 Goals and Objectives	Amendments and additions, no substantial change in organization. (Amendments 12, 13, 16-1, 17, and 18.)
Chapter 3 Areas and Stocks Involved	Chapter 3 Areas and Stocks Involved	Amendments and additions, no substantial change in organization. (Amendment 16-1.)
Chapter 4 Optimum Yield	Chapter 4 Optimum Yield	Substantially changed and expanded by Amendment 16-1, which moved and revised material on determining <u>ABCOFL</u> , OY, precautionary thresholds, and rebuilding overfished species that was in Chapter 5 into this chapter. Amendments 16-2 and 16-3 add rebuilding plan summaries to section 4.5.4. Amendment 16-4 revises rebuilding plans in section 4.5.4. <u>Substantially changed and expanded by Amendment 23, which provided material on specifying OFLs, redefined ABCs, ACLs, and ACTs.</u>
Chapter 5 Specification and Apportionment of Harvest Levels	Chapter 5 Specification and Apportionment of Harvest Levels	Substantially changed by Amendment 16-1, which moved material to Chapter 4, as noted above. Discussion of DAH, DAP, JVP, and TALFF deleted. (Also Amendments 12, 13, 17, and 18.) <u>Substantially changed by Amendment 23, which incorporated new National Standard 1 guidelines and mandates of the 2006 reauthorization of the Magnuson-Stevens Act.</u>
Chapter 6 Management Measures	Chapter 6 Management Measures	Substantially reorganized and changed by Amendment 18 and 19. (Also Amendments 10, 11, 13, 16-1, 17.)
	Chapter 7 Experimental Fisheries	Renumbered Chapter 8
	<del>1.1.1.</del> Chapter 8 Scientific Research	<del>1.1.2.</del> Renumbered Chapter 9
<del>1.1.3.</del> Chapter 7 Essential Fish Habitat		New Chapter created by Amendment 19 from substantially revised material previously in Chapter 6



Current Chapters	Previous Chapters (July 1993 Version)	Summary of Amendment Changes
Chapter 8 Experimental Fisheries		Renumbered and revised by Amendment 18
Chapter 9 Scientific Research		Renumbered, no other changes
	Chapter 9 Restrictions on Other Fisheries	Deleted with material incorporated into Chapter 6
Chapter 10 Procedures for Reviewing State Regulations	Chapter 10 Procedures for Reviewing State Regulations	Background section revised by Amendment 18
	Chapter 11 Appendices	Published under separate cover
	Chapter 12 Management Measures that Continue in Effect with Implementation of Amendment 4	Deleted with material incorporated into Chapter 6
	Chapter 13 References	Moved to an unnumbered section at the end of the document.
Chapter 11 Groundfish Limited Entry	Chapter 14 Groundfish Limited Entry	Renumbered; Amendment 15 modification to section 11.2.12, current section 11.5 inserted as new
References		Previously Chapter 13
Guide to Appendices		Previously Chapter 11 contained descriptive information brought forward from the original FMP. This material moved to Appendix A. Three new appendices (B-D) were added by Amendment 19

*A note on other annotations: Amended parts of the FMP subsequent to Amendment 4, which substantially revised the original FMP, are denoted at the end of chapters or sections by amendment number.*

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## LIST OF ACRONYMS AND ABBREVIATIONS

ABC	<del>allowable</del> <u>acceptable</u> biological catch
ACL	<u>annual catch limit</u>
ACT	<u>annual catch target</u>
AM(s)	<u>accountability measure(s)</u>
BCCA	Bottom Contact Closed Area
BTCA	Bottom Trawl Closed Area
CCA	Cowcod Conservation Area
CDFG	California Department of Fish and Game
CRCZ	Columbia River Conservation Zone
CRFS	California Recreational Fisheries Survey
DAH	domestic annual harvest
DAP	domestic annual processing
EEZ	exclusive economic zone
EFH	essential fish habitat
EFP	experimental fishing permit
ESA	Endangered Species Act
FMP	fishery management plan
FMU	fishery management unit
GAP	Groundfish Advisory Subpanel
GCA	Groundfish Conservation Area
GIS	geographic information system
GMT	Groundfish Management Team
<del>HAPC</del>	<del>Habitat area of particular concern</del>
HAPC	Habitat Area of Particular Concern
HG	harvest guideline
HSP	habitat suitability probability
HUD	Habitat Use Database
IFQ	individual fishing quota
INPFC	International North Pacific Fisheries Commission
JV	joint-venture
JVP	joint-venture processing
KRCZ	Klamath River Conservation Zone
LE	limited entry
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MARPOL	International Convention for the Prevention of Pollution from Ships
MBTA	Migratory Bird Treaty Act
<u>MFMT</u>	<u>maximum fishing mortality threshold</u>
MHHW	mean higher high water level
MLR	minimum landing requirement
MMPA	Marine Mammal Protection Act
MPA	marine protected area
MRFSS	Marine Recreational <del>Fisheries</del> <u>Statistics</u> Survey
MSST	minimum stock size threshold
MSY	maximum sustainable yield
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service

ODFW	Oregon Department of Fish and Wildlife
<u>OFL</u>	<u>overfishing limit</u>
ORBS	Ocean Recreational Boat Survey (Oregon Department of Fish and Wildlife)
OSP	Washington Department of Fish and Wildlife Ocean Sampling Program
OY	optimum yield
POP	Pacific ocean perch
PRA	Paperwork Reduction Act
PSMFC	Pacific States Marine Fisheries Commission
RCA	Rockfish Conservation Area
RecFIN	Recreational Fisheries Information Network
SAFE	Stock Assessment and Fishery Evaluation
<u>SDC</u>	<u>Status Determination Criteria</u>
SEBS	Shore and Estuary Boat Survey (Oregon Department of Fish and Wildlife)
Secretary	U.S. Secretary of Commerce
SFA	Sustainable Fisheries Act
SPR	spawning biomass per recruit
SSC	Scientific and Statistical Committee
SSC	Scientific and Statistical Committee
STT	Salmon Technical Team
USFWS	U.S. Fish and Wildlife Service
VMS	vessel monitoring system
YRCA	Yelloweye Rockfish Conservation Area

## **21 INTRODUCTION**

### **2.1.1.1. History of the FMP**

The Pacific Coast Groundfish Fishery Management Plan (FMP) was approved by the U.S. Secretary of Commerce (Secretary) on January 4, 1982, and implemented on October 5, 1982. Prior to implementation of the FMP, management of domestic groundfish fisheries was under the jurisdiction of the states of Washington, Oregon, and California. State regulations have been in effect on the domestic fishery for more than 100 years, with each state acting independently in both management and enforcement. Furthermore, many fisheries overlapped state boundaries and participants often operated in more than one state. Management and a lack of uniformity of regulations had become a difficult problem, which stimulated the formation of the Pacific States Marine Fisheries Commission (PSMFC) in 1947. PSMFC had no regulatory power but acted as a coordinating entity with authority to submit specific recommendations to states for their adoption. The 1977 Fishery Conservation and Management Act (later amended and renamed the Magnuson-Stevens Fishery Conservation and Management Act or Magnuson-Stevens Act) established eight regional fishery management Councils, including the Pacific Council. Between 1977 and the implementation of the groundfish FMP in 1982, state agencies worked with the Council to address conservation issues. Specifically, in 1981, managers proposed a rebuilding program for Pacific ocean perch. To implement this program, the states of Oregon and Washington established landing limits for Pacific ocean perch in the Vancouver and Columbia management areas.

Management of foreign fishing operations began in February 1967 when the U.S. and U.S.S.R. signed the first bilateral fishery agreement affecting trawl fisheries off Washington, Oregon, and California. The U.S. later signed bilateral agreements with Japan and Poland for fishing off the U.S. West Coast. Each of these agreements was renegotiated to reduce the impact of foreign fishing on important West Coast stocks, primarily rockfish, Pacific whiting, and sablefish. When the U.S. extended its jurisdiction to 200 miles (upon signing the Fishery Conservation and Management Act of 1976), the National Marine Fisheries Service (NMFS) developed and the Secretary implemented the preliminary management plan for the foreign trawl fishery off the Pacific Coast. From 1977 to 1982, the foreign fishery was managed under that plan. Many of these regulations were incorporated into the FMP, which provided for continued management of the foreign fishery.

Joint-venture fishing, where domestic vessels caught the fish to be processed aboard foreign vessels, began in 1979 and by 1989 had entirely supplanted directed foreign fishing. These joint ventures primarily targeted Pacific whiting. Joint-venture fisheries were then rapidly replaced by wholly domestic processing; by 1991 foreign participation had ended and U.S.-flagged motherships, catcher-processors, and shore-based vessels had taken over the Pacific whiting fishery. Since then U.S. fishing vessels and seafood processors have fully utilized Pacific Coast fishery resources. Although the Council may entertain applications for foreign or joint venture fishing or processing at any time, provisions for these activities have been removed from the FMP. Re-establishing such opportunities would require another FMP amendment.

Since it was first implemented in 1982, the Council has amended the groundfish FMP 20 times in response to changes in the fishery, reauthorizations of the Magnuson-Stevens Act, and litigation that invalidated provisions incorporated by earlier amendments. During the first 10 years of plan implementation, up to 1992, the Secretary approved six amendments. Amendment 4, approved in 1990, was the most significant early amendment; in addition to a comprehensive update and reorganization of the FMP, it established additional framework procedures for establishing and modifying management measures. Another important change was implemented in 1992 with Amendment 6, which established a license limitation (limited entry) program intended to address overcapitalization by restricting further participation in groundfish trawl, longline, and trap fisheries.

The next decade, through 2002, saw the approval of another seven amendments. Amendment 9 modified the limited entry program by establishing a sablefish endorsement for longline and pot permits. Amendments 11, 12, and 13 were responses to changes in the Magnuson-Stevens Act due to the 1996 Sustainable Fisheries Act. These changes required FMPs to identify essential fish habitat (EFH), more actively reduce bycatch and bycatch mortality, and strengthen conservation measures to both prevent fish stocks from becoming overfished and promote rebuilding of any stocks that had become overfished. Amendment 14, implemented in 2001, built on Amendment 9 to further refine the limited entry permit system for the economically important fixed gear sablefish fishery. It allowed a vessel owner to “stack” up to three limited entry permits on one vessel along with associated sablefish catch limits. This in effect established a limited tradable quota system for participants in the primary sablefish fishery.

Most of the amendments adopted since 2001 deal with legal challenges to the three Sustainable Fisheries Act of 1996 (SFA)-related amendments mentioned above, which were remanded in part by the Federal Court. These have required new amendments dealing with overfishing, bycatch monitoring and mitigation, and EFH. In relation to the first of these three issues, the Magnuson-Stevens Act now requires FMPs to identify thresholds for both the fishing mortality rate constituting overfishing and the stock size below which a stock is considered overfished. Once the Secretary determines a stock is overfished, the Council must develop and implement a plan to rebuild it to a healthy level. Since these thresholds were established for Pacific Coast groundfish, nine stocks have been declared overfished. The Court found that the rebuilding plan framework adopted by Amendment 12 did not comply with the Magnuson-Stevens Act. In response, Amendments 16-1, 16-2, and 16-3 established the current regime for managing these overfished species. Amendment 16-1, approved in 2003, incorporated guidelines for developing and adopting rebuilding plans and substantially revised Chapters 4 and 5. Amendments 16-2 and 16-3, approved in 2004, incorporated key elements of rebuilding plans into Section 4.5.4. In 2005, a Court of Appeals ruling refined court interpretation of the Magnuson-Stevens Act rebuilding period requirements. Amendment 16-4, partially approved in 2006, revised the FMP to specify that rebuilding periods will be as short as possible, taking into account the status and biology of the stocks, the needs of fishing communities, and interactions of overfished stocks with the marine ecosystem. As a result of this ruling, Amendment 16-4 also revised the rebuilding periods for darkblotched rockfish, Pacific ocean perch, canary rockfish, bocaccio, cowcod, widow rockfish, and yelloweye rockfish.

Amendment 17 modified the periodic process the Council uses to establish and modify harvest specifications and management measures for the groundfish fishery. Although not an SFA-related issue, this change did solve a procedural problem raised in litigation. The Council now establishes specifications and management measures every two years, allowing more time for them to be developed during the Council’s public meetings.

Amendment 18, approved in 2006, addresses a remand of elements in Amendment 11 related to bycatch monitoring and mitigation. It incorporates a description of the Council’s bycatch-related policies and programs into Chapter 6. It also effected a substantial reorganization and update of the FMP, so that it better reflects the Council’s and the NMFS’s evolving framework approach to management. Under this framework, the Council may recommend a range of broadly defined management measures for NMFS to implement. In addition to the range of measures, this FMP specifies the procedures the Council and NMFS must follow to establish and modify these measures. When first implemented, the FMP specified a relatively narrow range of measures, which were difficult to modify in response to changes in the fishery. The current framework allows the Council to effectively respond when faced with the dynamic challenges posed by the current groundfish fishery.

Amendment 19, also approved in 2006, revises the definition of groundfish EFH, identified habitat areas of particular concern, and describes management measures intended to mitigate the adverse effects of fishing on EFH. This amendment supplants the definition of EFH added to the FMP by Amendment 11.

Amendment 15 was initiated in 1999 in response to provisions in the American Fisheries Act (AFA) intended to shield West Coast fisheries from certain effects of that legislation. Because of competing workload and no threatened imminent harm, the Council tabled action on Amendment 15 in 2001. Work on the amendment was re-initiated in 2007 in response to changes in the Pacific whiting fishery. Its purpose is to address conservation and socioeconomic issues in the shoreside, catcher/processor, and mothership sectors of the Pacific whiting fishery by requiring vessels to qualify for an additional license to participate in a given sector, based on their historical participation. It is an interim measure, which will sunset when the trawl rationalization program (Amendment 20) is implemented.

Amendment 23 was initiated in 2009 to incorporate new National Standard 1 guidelines to prevent overfishing. These new National Standard 1 guidelines were developed in response to the Magnuson-Stevens Act re-authorization of 2006 which mandated an end to overfishing.

#### 2.2.1.2. How This Document is Organized

The groundfish FMP is organized into 11 chapters

- Chapter 1 (this chapter) describes the development of the FMP and how it is organized.
- Chapter 2 describes the goals and objectives of the plan and defines key terms and concepts.
- Chapter 3 specifies the geographic area covered by this plan and lists the species managed by it, referred to as the fishery management unit (FMU).
- Chapter 4 describes how the Council determines harvest levels. These harvest limits are related to the maximum sustainable yield (MSY) and ~~allowable biological catch~~overfishing limit (ABC/OFL) for FMU species. Precautionary reductions from these thresholds may be applied, depending on the management status of a given stock. If, according to these thresholds, a stock is determined to be overfished, the Council must recommend measures to end overfishing and develop a rebuilding plan, as specified in this chapter. Based on the thresholds, criteria, and procedures described in this chapter, the Council specifies an ~~optimum yield (OY)~~annual catch limit (ACL), or harvest limit, for managed stocks or stock complexes.
- Chapter 5 describes how the Council periodically specifies harvest levels and the management measures needed to prevent catches from exceeding those levels. Currently, the Council develops these specifications over the course of three meetings preceding the start of a two-year management period. ~~(Separate OYs are specified for each of the two years in this period.)~~ This chapter also describes how the stock assessment/fishery evaluation (SAFE) document, which provides information important to management, is developed.
- Chapter 6 describes the management measures used by the Council to meet the objectives of the Magnuson-Stevens Act and this FMP. As noted above, this FMP is a framework plan; therefore, the range of management measures is described in general terms while the processes necessary to establish or modify different types of management measures are detailed. Included in the description of management measures is the Council's program for monitoring total catch (which includes bycatch) and minimizing bycatch.



- Chapter 7 identifies EFH for groundfish FMU species and the types of measures that may be used to mitigate adverse impacts to EFH from fishing.
- Chapter 8 describes procedures followed by the Council to evaluate and recommend issuing exempted fishing permits (EFPs). Permitted vessels are authorized, for limited experimental purposes, to harvest groundfish by means or in amounts that would otherwise be prohibited by this FMP and its implementing regulations. These permits allow experimentation in support of FMP goals and objectives. EFPs have been used, for example, to test gear types that result in less bycatch.
- Chapter 9 provides criteria for determining what activities involving groundfish would qualify as scientific research and could therefore qualify for special treatment under the management program.
- Chapter 10 describes the procedures used to review state regulations in order to ensure that they are consistent with this FMP and its implementing regulations.
- Chapter 11 describes the groundfish limited entry program.
- Appendix A contains descriptions of the biological, economic, social, and regulatory characteristics of the groundfish fishery.
- Appendix B contains detailed information on groundfish EFH.
- Appendix C describes the effects of fishing on groundfish EFH.
- Appendix D describes the effects of activities other than fishing on groundfish EFH.

The appendices contain supporting information for the management program. Because these appendices do not describe the management framework or Council groundfish management policies and procedures, and only supplement the required and discretionary provisions of the FMP described in §303 of the Magnuson-Stevens Act, they may be periodically updated without being subjected to the Secretarial review and approval process described in §304(a) of the Magnuson-Stevens Act. These appendices are published under separate cover.

[Amended: 11, 18, 19, 16-4]

## **32 GOALS AND OBJECTIVES**

### **3.1.2.1. Goals and Objectives for Managing the Pacific Coast Groundfish Fishery**

The Council is committed to developing long-range plans for managing the Washington, Oregon, and California groundfish fisheries that will promote a stable planning environment for the seafood industry, including marine recreation interests, and will maintain the health of the resource and environment. In developing allocation and harvesting systems, the Council will give consideration to maximizing economic benefits to the United States, consistent with resource stewardship responsibilities for the continuing welfare of the living marine resources. Thus, management must be flexible enough to meet changing social and economic needs of the fishery as well as to address fluctuations in the marine resources supporting the fishery. The following goals have been established in order of priority for managing the West Coast groundfish fisheries, to be considered in conjunction with the national standards of the Magnuson-Stevens Act.

#### **Management Goals**

Goal 1 - Conservation. Prevent overfishing and rebuild overfished stocks by managing for appropriate harvest levels and prevent, to the extent practicable, any net loss of the habitat of living marine resources.

Goal 2 - Economics. Maximize the value of the groundfish resource as a whole.

Goal 3 - Utilization. Within the constraints of overfished species rebuilding requirements, achieve the maximum biological yield of the overall groundfish fishery, promote year-round availability of quality seafood to the consumer, and promote recreational fishing opportunities.

**Objectives.** To accomplish these management goals, a number of objectives will be considered and followed as closely as practicable:

#### **Conservation**

Objective 1. Maintain an information flow on the status of the fishery and the fishery resource which allows for informed management decisions as the fishery occurs.

Objective 2. Adopt harvest specifications and management measures consistent with resource stewardship responsibilities for each groundfish species or species group. Achieve a level of harvest capacity in the fishery that is appropriate for a sustainable harvest and low discard rates, and which results in a fishery that is diverse, stable, and profitable. This reduced capacity should lead to more effective management for many other fishery problems.

Objective 3. For species or species groups that are overfished, develop a plan to rebuild the stock as soon as possible, taking into account the status and biology of the stock, the needs of fishing communities, recommendations by international organizations in which the United States participates, and the interaction of the overfished stock within the marine ecosystem..

Objective 4. Where conservation problems have been identified for non-groundfish species and the best scientific information shows that the groundfish fishery has a direct impact on the ability of that species to maintain its long-term reproductive health, the Council may consider establishing management measures to control the impacts of groundfish fishing on those species. Management measures may be imposed on the groundfish fishery to reduce fishing mortality of a non-groundfish species for documented conservation reasons. The action will be designed to minimize disruption of the groundfish fishery, in so

far as consistent with the goal to minimize the bycatch of non-groundfish species, and will not preclude achievement of a quota, harvest guideline, or allocation of groundfish, if any, unless such action is required by other applicable law.

Objective 5. Describe and identify essential fish habitat (EFH), adverse impacts on EFH, and other actions to conserve and enhance EFH, and adopt management measures that minimize, to the extent practicable, adverse impacts from fishing on EFH.

### Economics

Objective 6. Within the constraints of the conservation goals and objectives of the FMP, attempt to achieve the greatest possible net economic benefit to the nation from the managed fisheries.

Objective 7. Identify those sectors of the groundfish fishery for which it is beneficial to promote year-round marketing opportunities and establish management policies that extend those sectors fishing and marketing opportunities as long as practicable during the fishing year.

Objective 8. Gear restrictions to minimize the necessity for other management measures will be used whenever practicable. Encourage development of practicable gear restrictions intended to reduce regulatory and/or economic discards through gear research regulated by EFP.

### Utilization

Objective 9. Develop management measures and policies that foster and encourage full utilization (harvesting and processing), in accordance with conservation goals, of the Pacific Coast groundfish resources by domestic fisheries.

Objective 10. Recognizing the multispecies nature of the fishery and establish a concept of managing by species and gear or by groups of interrelated species.

Objective 11. Develop management programs that reduce regulations-induced discard and/or which reduce economic incentives to discard fish. Develop management measures that minimize bycatch to the extent practicable and, to the extent that bycatch cannot be avoided, minimize the mortality of such bycatch. Promote and support monitoring programs to improve estimates of total fishing-related mortality and bycatch, as well as those to improve other information necessary to determine the extent to which it is practicable to reduce bycatch and bycatch mortality.

### Social Factors.

Objective 12. When conservation actions are necessary to protect a stock or stock assemblage, attempt to develop management measures that will affect users equitably.

Objective 13. Minimize gear conflicts among resource users.

Objective 14. When considering alternative management measures to resolve an issue, choose the measure that best accomplishes the change with the least disruption of current domestic fishing practices, marketing procedures, and the environment.

Objective 15. Avoid unnecessary adverse impacts on small entities.

Objective 16. Consider the importance of groundfish resources to fishing communities, provide for the

sustained participation of fishing communities, and minimize adverse economic impacts on fishing communities to the extent practicable.

Objective 17. Promote the safety of human life at sea.

[Amended; 7, 11, 13, 16-1, 18, 16-4]

### 3.2.2.2. Operational Definition of Terms

Acceptable Biological Catch (ABC) is a biologically based estimate of the amount of fish that may be harvested from the fishery each year without jeopardizing the resource. It is a seasonally determined catch that may differ from MSY for biological reasons. It may be lower or higher than MSY in some years for species with fluctuating recruitment. The ABC may be modified to incorporate biological safety factors and risk assessment due to uncertainty. Lacking other biological justification, the ABC is defined as the MSY exploitation rate multiplied by the exploitable biomass for the relevant time period. harvest specification that is set below the overfishing limit to incorporate a scientific uncertainty buffer accounts for the scientific uncertainty in the estimate of OFL, and any other scientific uncertainty, against exceeding the overfishing limit.

Accountability Measures (AMs) are management controls, such as inseason adjustments to fisheries or annual catch targets, to prevent annual catch limits, including sector-specific annual catch limits, from being exceeded, and to correct or mitigate overages of the annual catch limit if they occur. Accountability measures should address and minimize both the frequency and magnitude of overages and correct the problems that caused the overage in as short a time as possible.

Annual Catch Limit (ACL) is a harvest specification set equal to or below the acceptable biological catch (ABC) ~~threshold~~ in consideration of conservation objectives, socioeconomic concerns, management uncertainty and other factors. All sources of fishing-related mortality including landings, discard mortality, research catches, and catches in exempted fishing permit activities are counted against the annual catch limit. Sector-specific annual catch limits can be specified, especially in cases where a sector has a formal, long-term allocation of the harvestable surplus of a stock or stock complex. The ACL serves as the basis for invoking AMs.

Annual Catch Target (ACT) is a ~~harvest specification~~ management target set below the annual catch limit and ~~is may be~~ used as an accountability measure in cases where there is ~~great~~ uncertainty in inseason catch monitoring to ensure against exceeding an annual catch limit. Since the annual catch target is a target and not a limit it can be used in lieu of harvest guidelines or strategically to accomplish other management objectives. Sector-specific annual catch targets can also be specified to accomplish management objectives.

Biennial fishing period is defined as a 24-month period beginning January 1 and ending December 31.

Bottom (or flatfish bottom) trawl is a trawl in which the otter boards or the footrope of the net are in contact with the seabed. It includes roller (or bobbin) trawls, Danish and Scottish seine gear, and pair trawls fished on the bottom.

Bottom-contact gear by design, or as modified, and through normal use makes contact with the sea floor

Bycatch means fish which are harvested in a fishery, but which are not sold or kept for personal use and includes economic discards and regulatory discards. Such term does not include fish released alive under a recreational catch and release fishery management program.

Chafing gear is webbing or other material attached to the codend of a trawl net to protect the codend from wear.

Charter fishing means fishing from a vessel carrying a passenger for hire (as defined in section 2101(21a) of title 46, United States Code) who is engaged in recreational fishing.

Closure, when referring to closure of a fishery, means that taking and retaining, possessing or landing the particular species or species complex is prohibited.

Council means the Pacific Fishery Management Council, including its Groundfish Management Team (GMT), Scientific and Statistical Committee (SSC), Groundfish Advisory Subpanel (GAP), and any other committee established by the Council.

Commercial fishing is (1) fishing by a person who possesses a commercial fishing license or is required by law to possess such license issued by one of the states or the federal government as a prerequisite to taking, landing, and/or sale; or (2) fishing which results in or can be reasonably expected to result in sale, barter, trade, or other disposition of fish for other than personal consumption.

~~Density dependence is the degree to which recruitment declines as spawning biomass declines. Typically we assume that a Beverton-Holt form is appropriate and that the level of density dependence is such that the recruitment only declines by ten percent when the spawning biomass declines by 50%.~~

Double-walled codend is a codend constructed of two walls of webbing.

Economic discards means fish which are the target of a fishery, but which are not retained because they are of an undesirable size, sex, quality, or for other economic reasons.

Essential fish habitat means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.

Exploitable biomass is the biomass that is available to a unit of fishing effort. Defined as the sum of the population biomass at age (calculated as the mean within the fishing year) multiplied by the age-specific availability to the fishery. Exploitable biomass is equivalent to the catch biomass divided by the instantaneous fishing mortality rate.

F is the instantaneous rate of fishing mortality. F typically varies with age, so the F values are presented for the age with maximum F. Fish of other ages have less availability to the fishery, so a unit of effort applies a lower relative level of fishing mortality to these fish.

F<sub>MSY</sub> is the fishing mortality rate that maximizes catch biomass in the long term.

~~F<sub>0.1</sub> is the fishing mortality rate at which a change in fishing mortality rate will produce a change in yield per recruit that is ten percent of the slope of the yield curve at nil levels of fishing mortality.~~

~~F<sub>OF</sub> is the rate of fishing mortality defined as overfishing.~~

F<sub>x%</sub> is the rate of fishing mortality that will reduce female spawning biomass per recruit to x percent of its unfished level. F<sub>100%</sub> is zero fishing mortality, and ~~F<sub>35%</sub>~~ is a reasonable proxy for F<sub>MSY</sub> is likely to be in the range of F<sub>30%</sub> to F<sub>50%</sub>.

Fishing means (1) the catching, taking, or harvesting of fish; (2) the attempted catching, taking, or harvesting of fish; (3) any other activity which can reasonably be expected to result in the catching, taking, or harvesting of fish; or (4) any operations at sea in support of, or in preparation for, any activity described above. This term does not include any activity by a vessel conducting authorized scientific research.

Fishing year is defined as January 1 through December 31.

Fishing community means a community which is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economy needs and includes fishing vessel owners, operators, crew, and recreational fishers and United States fish processors that are based in such community.

Fixed gear (anchored non-trawl gear) includes longline, trap or pot, set net, and stationary hook-and-line gear (including commercial vertical hook-and-line) gears.

Gillnet is a single-walled, rectangular net which is set upright in the water.

Harvest guideline (HG) is a specified numerical harvest objective which is not a quota. Attainment of a HG does not require closure of a fishery.

Hook-and-line means one or more hooks attached to one or more lines. Commercial hook-and-line fisheries may be mobile (troll) or stationary (anchored).

Incidental catch or incidental species means groundfish species caught when fishing for the primary purpose of catching a different species.

Individual fishing quota (IFQ) means a federal permit under a limited access system to harvest a quantity of fish expressed by a unit or units representing a percentage of the total allowable catch of a fishery that may be received or held for exclusive use by a person.

Longline is a stationary, buoyed, and anchored groundline with hooks attached, so as to fish along the seabed.

Maximum fishing mortality threshold (MFMT) is the level of fishing mortality (F), on an annual basis, above which overfishing is occurring. The MFMT or reasonable proxy may be expressed either as a single number (a fishing mortality rate or F value), or as a function of spawning biomass or other measure of reproductive potential.

Maximum sustainable yield is an estimate of the largest average annual catch or yield that can be taken over a significant period of time from each stock under prevailing ecological and environmental conditions. It may be presented as a range of values. One MSY may be specified for a group of species in a mixed-species fishery. Since MSY is a long-term average, it need not be specified annually, but may be reassessed periodically based on the best scientific information available.

Midwater (pelagic or off-bottom) trawl is a trawl in which the otter boards may occasionally contact the seabed, but the footrope of the net remains above the seabed. It includes pair trawls if fished in midwater. A midwater trawl has no rollers or bobbins on the net.

MSY stock size means the largest long-term average size of the stock or stock complex, measured in terms of spawning biomass or other appropriate units that would be achieved under an MSY control rule

in which the fishing mortality rate is constant. The proxy typically used in this fishery management plan is 40% of the estimated unfished biomass, although other values based on the best scientific information are also authorized.

Minimum stock size threshold (MSST) is the level of biomass below which the stock or stock complex is considered to be overfished.

Nontrawl gear means all legal commercial gear other than trawl gear.

Optimum yield means the amount of fish which will provide the greatest overall benefit to the U.S., particularly with respect to food production and recreational opportunities, and taking into account the protection of marine ecosystems, is prescribed as such on the basis of the maximum sustainable yield from the fishery as reduced by any relevant economic, social, or ecological factor; and in the case of an overfished fishery, provides for rebuilding to a level consistent with producing the maximum sustainable yield in such fishery.

Overfished describes any stock or stock complex whose size is sufficiently ~~small~~diminished that a change in management practices is required to achieve an appropriate level and rate of rebuilding. The term generally describes any stock or stock complex determined to be below its overfished/rebuilding threshold. The default proxy is generally 25% of its estimated unfished biomass; however, other scientifically valid values are also authorized.

Overfishing means fishing at a rate or level that jeopardizes the capacity of a stock or stock complex to produce MSY on a continuing basis. More specifically, overfishing is defined as exceeding a maximum allowable fishing mortality rate. For any groundfish stock or stock complex, the maximum allowable mortality rate will be set at a level not to exceed the corresponding MSY rate ( $F_{MSY}$ ) or its proxy (e.g.,  $F_{35\%}$ ).

Overfishing limit (OFL) is the MSY harvest level or the annual abundance of exploitable biomass of a stock or stock complex multiplied by the maximum fishing mortality threshold or proxy thereof and is an estimate of the catch level above which overfishing is occurring.

Processing or to process means the preparation or packaging of groundfish to render it suitable for human consumption, retail sale, industrial uses, or long-term storage, including, but not limited to, cooking, canning, smoking, salting, drying, filleting, freezing, or rendering into meal or oil, but does not mean heading and gutting unless additional preparation is done.

Processor means a person, vessel, or facility that (1) engages in processing, or (2) receives live groundfish directly from a fishing vessel for sale without further processing.

Prohibited species are those species and species groups which must be returned to the sea as soon as is practicable with a minimum of injury when caught and brought aboard except when their retention is authorized by other applicable law. Exception may be made in the implementing regulations for tagged fish, which must be returned to the tagging agency, or for examination by an authorized observer.

Quota means a specified numerical harvest objective, the attainment (or expected attainment) of which causes closure of the fishery for that species or species group. Groundfish species or species groups under this FMP for which quotas have been achieved shall be treated in the same manner as prohibited species.

Recreational fishing means fishing for sport or pleasure, but not for sale.

Regulatory discards are fish harvested in a fishery which fishermen are required by regulation to discard whenever caught or are required by regulation to retain, but not sell.

Roller (or bobbin) trawl is a bottom trawl that has footropes equipped with rollers or bobbins made of wood, steel, rubber, plastic, or other hard material ~~which intended to~~ keep the footrope above the seabed, thereby protecting the net.

Set net is a stationary, buoyed, and anchored gillnet or trammel net.

Spawning biomass is the biomass of mature female fish at the beginning of the year. If the production of eggs is not proportional to body weight, then this definition should be modified to be proportional to expected egg production.

Spawning biomass per recruit is the expected egg production of a female fish over its lifetime. Alternatively, this is the mature female biomass of an equilibrium stock divided by the mean level of recruitment that produced this stock.

Spear is a sharp, pointed, or barbed instrument on a shaft. Spears may be propelled by hand or by mechanical means.

Stock Assessment and Fishery Evaluation (SAFE) document is a document prepared by the Council that provides a summary of the most recent biological condition of species in the fishery management unit, and the social and economic condition of the recreational and commercial fishing industries, ~~and the fish processing industry~~. It summarizes, on a periodic basis, the best available information concerning the past, present, and possible future condition of the stocks and fisheries managed by the FMP.

Target fishing means fishing for the primary purpose of catching a particular species or species group (the target species).

~~A total catch limit is a portion of the OY for a groundfish FMU species, stock, or stock complex assigned to a defined fishery sector or to an individual vessel. Total catch is defined as landed catch plus bycatch (discard) mortality. The Council may specify total catch limits that are transferable or nontransferable among sectors or tradable or non-tradable between vessels.~~

Trammel net is a gillnet made with two or more walls joined to a common float line.

Trap (or pot) is a portable, enclosed device with one or more gates or entrances and one or more lines attached to surface floats.

Vertical hook-and-line gear (commercial) is hook-and-line gear that involves a single line anchored at the bottom and buoyed at the surface so as to fish vertically.

[Amended: 5, 11, 13, 17, 18, 19]





## **43 AREAS AND STOCKS INVOLVED**

### **4.1.3.1. Area to Which this Fishery Management Plan Applies**

The management regime of this FMP applies to:

1. The U.S. EEZ of the northeast Pacific ocean that lies between the U.S.-Canada border (as specified in *Federal Register*, Volume 42, Number 44, March 7, 1977, page 12938) and the U.S.-Mexico border (Figure).
2. All foreign and domestic commercial and recreational vessels which are used to fish for groundfish in the management area.
3. All groundfish stocks which comprise this fishery management unit (see Section 3.1).

Management Areas. Upon consideration of stock distribution and domestic and foreign historical catch statistics, the following statistical areas (Figure 3-1) have been determined by the Pacific Fishery Management Council (Council) to be the most convenient administrative and biological management areas. These areas are based on International North Pacific Fisheries Commission (INPFC) statistical areas, but in some cases have been modified slightly. The areas are, from south to north:

Conception - Southern boundary of EEZ to 36°00' N latitude  
Monterey - 36°00' N latitude to 40°30' N latitude  
Eureka - 40°30' N latitude to 43°00' N latitude  
Columbia - 43°00' N latitude to 47°30' N latitude  
Vancouver - 47°30' N latitude to northern boundary of the EEZ

These areas may be modified or deleted and additional statistical reporting and management areas may be added, modified, or deleted if necessary to refine information or management of a species or species group. Changes will be implemented in accordance with the procedures in Chapters 5 and 6.

### **4.2.3.2. Species Managed by this Fishery Management Plan**

Table 3-1 is the listing of species managed under this FMP.

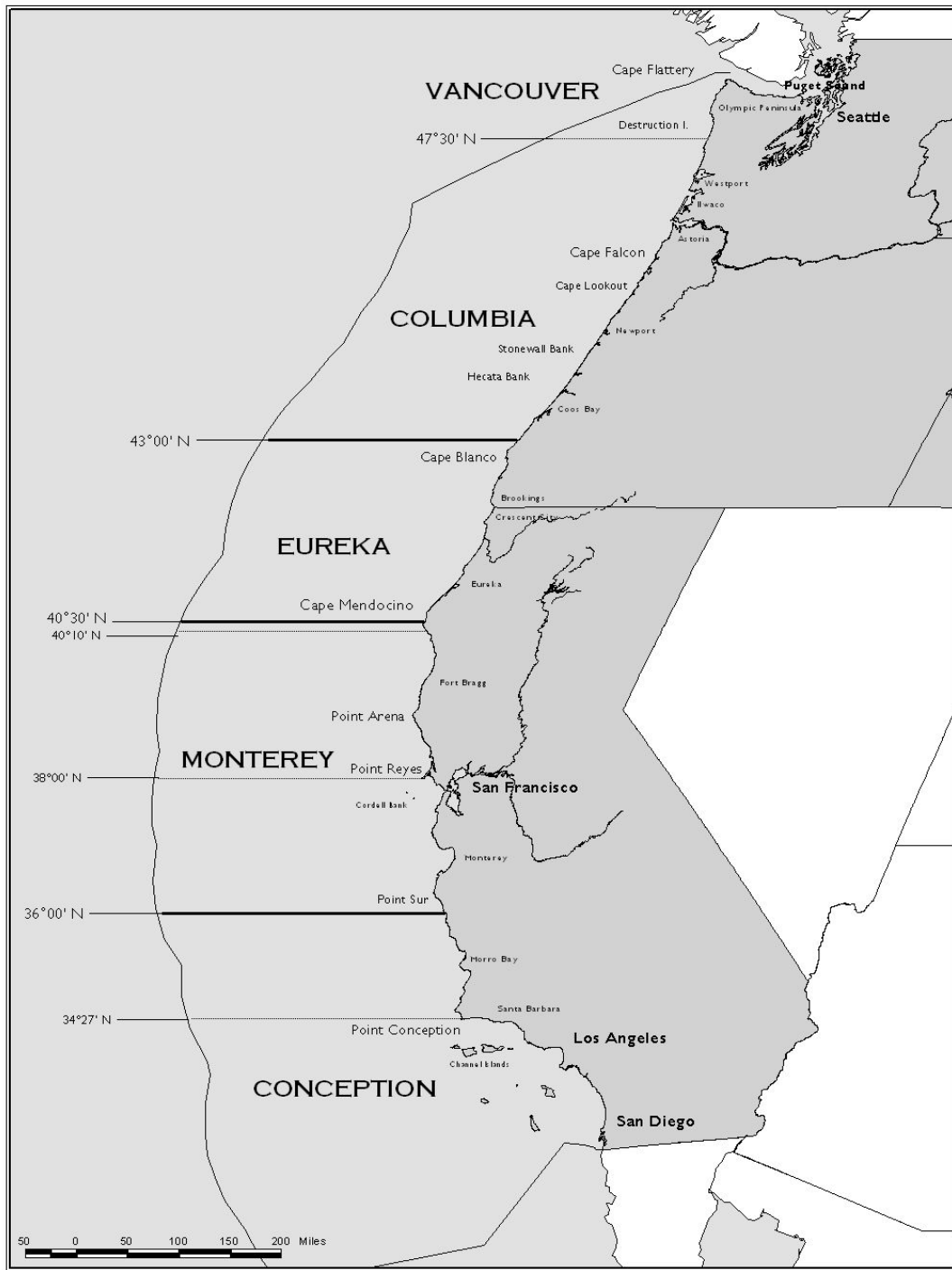
**Table 3-1. Common and scientific names of species included in this FMP.**

Common Name	Scientific Name
<b>SHARKS</b>	
Big skate	<i>Raja binoculara</i>
California skate	<i>R. inornata</i>
Leopard shark	<i>Triakis semifasciata</i>
Longnose skate	<i>R. rhina</i>
Southern shark	<i>Galeorhinus galeus</i>
Spiny dogfish	<i>Squalus acanthias</i>
<b>RATFISH</b>	
Ratfish	<i>Hydrolagus coliei</i>
<b>MORIDS</b>	
Finescale codling	<i>Antimora microlepis</i>
<b>GRENADIERS</b>	
Pacific rattail	<i>Coryphaenoides acrolepis</i>
<b>ROUNDFISH</b>	
Cabezon	<i>Scorpaenichthys marmoratus</i>
Kelp greenling	<i>Hexagrammos decagrammus</i>
Lingcod	<i>Ophiodon elongatus</i>
Pacific cod	<i>Gadus macrocephalus</i>
Pacific whiting (hake)	<i>Merluccius productus</i>
Sablefish	<i>Anoplopoma fimbria</i>
<b>ROCKFISH<sup>a/</sup></b>	
Aurora rockfish	<i>Sebastes aurora</i>
Bank rockfish	<i>S. rufus</i>
Black rockfish	<i>S. melanops</i>
Black and yellow rockfish	<i>S. chrysomelas</i>
Blackgill rockfish	<i>S. melanostomus</i>
Blue rockfish	<i>S. mystinus</i>
Bocaccio	<i>S. paucispinis</i>
Bronzespotted rockfish	<i>S. gilli</i>
Brown rockfish	<i>S. auriculatus</i>
Calico rockfish	<i>S. dallii</i>
California scorpionfish	<i>Scorpaena guttata</i>
Canary rockfish	<i>Sebastes pinniger</i>
Chameleon rockfish	<i>S. phillipsi</i>
Chilipepper	<i>S. goodei</i>
China rockfish	<i>S. nebulosus</i>
Copper rockfish	<i>S. caurinus</i>
Cowcod	<i>S. levis</i>
Darkblotched rockfish	<i>S. crameri</i>
<del>Dusky rockfish</del>	<del><i>S. ciliatus</i></del>
<del>Dwarf red rockfish</del>	<del><i>S. rufinatus</i></del>
Flag rockfish	<i>S. rubrivinctus</i>
Freckled rockfish	<i>S. lentiginosus</i>
Gopher rockfish	<i>S. carnatus</i>
Grass rockfish	<i>S. rastrelliger</i>
Greenblotched rockfish	<i>S. rosenblatti</i>
Greenspotted rockfish	<i>S. chlorostictus</i>
Greenstriped rockfish	<i>S. elongatus</i>
Halfbanded rockfish	<i>S. semicinctus</i>
Harlequin rockfish	<del><i>S. variegatus</i></del> <i>variegatus</i>
Honeycomb rockfish	<i>S. umbrosus</i>
Kelp rockfish	<i>S. atrovirens</i>
Longspine thornyhead	<i>Sebastolobus altivelis</i>
Mexican rockfish	<i>Sebastes macdonaldi</i>
Olive rockfish	<i>S. serranoides</i>
Pink rockfish	<i>S. eos</i>

Common Name	Scientific Name
Pinkrose rockfish	<i>S. simulator</i>
Pygmy rockfish	<i>S. wilsoni</i>
Pacific ocean perch	<i>S. alutus</i>
Quillback rockfish	<i>S. maliger</i>
Redbanded rockfish	<i>S. babcocki</i>
Redstripe rockfish	<i>S. proriger</i>
Rosethorn rockfish	<i>S. helvomaculatus</i>
Rosy rockfish	<i>S. rosaceus</i>
Rougheye rockfish	<i>S. aleutianus</i>
Sharpchin rockfish	<i>S. zacentrus</i>
Shortbelly rockfish	<i>S. jordani</i>
Shortraker rockfish	<i>S. borealis</i>
Shortspine thornyhead	<i>Sebastolobus alascanus</i>
Silvergray rockfish	<i>Sebastes brevispinis</i>
Speckled rockfish	<i>S. ovalis</i>
Splitnose rockfish	<i>S. diploproa</i>
Squarespot rockfish	<i>S. hopkinsi</i>
Starry rockfish	<i>S. constellatus</i>
Stripetail rockfish	<i>S. saxicola</i>
Swordspine rockfish	<i>S. ensifer</i>
Tiger rockfish	<i>S. nigrocinctus</i>
Treefish	<i>S. serripes</i>
Vermilion rockfish	<i>S. miniatus</i>
Widow rockfish	<i>S. entomelas</i>
Yelloweye rockfish	<i>S. <del>ruberrimus</del> ruberrimus</i>
Yellowmouth rockfish	<i>S. reedi</i>
Yellowtail rockfish	<i>S. flavidus</i>
<b>FLATFISH</b>	
Arrowtooth flounder (turbot)	<i>Atheresthes stomias</i>
Butter sole	<i>Isopsetta isolepis</i>
Curlfin sole	<i>Pleuronichthys decurrens</i>
Dover sole	<i>Microstomus pacificus</i>
English sole	<i>Parophrys vetulus</i>
Flathead sole	<i>Hippoglossoides elassodon</i>
Pacific sanddab	<i>Citharichthys sordidus</i>
Petrable sole	<i>Eopsetta jordani</i>
Rex sole	<i>Glyptocephalus zachirus</i>
Rock sole	<i>Lepidopsetta bilineata</i>
Sand sole	<i>Psettichthys melanostictus</i>
Starry flounder	<i>Platichthys stellatus</i>

<sup>a/</sup> The category “rockfish” includes all genera and species of the family Scorpaenidae, even if not listed, that occur in the Washington, Oregon, and California area. The Scorpaenidae genera are *Sebastes*, *Scorpaena*, *Sebastolobus*, and *Scorpaenodes*.

[Amended: 11, 16-1]



**Figure 3-1. International North Pacific Fisheries Commission (INPFC) statistical areas in the U.S. exclusive economic zone seaward of Washington, Oregon, and California.**

## 54 PREVENTING OVERFISHING AND ACHIEVING OPTIMUM YIELD

### 5.1.4.1. National Standard 1 Guidelines

National Standard 1 requires that “Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the OY from each fishery for the U.S. fishing industry” (@ 50 CFR 600.310(a)).

The determination of OY ~~and ACL~~ is a decisional mechanism for resolving the Magnuson-Stevens Act’s multiple purposes and policies, implementing an FMP’s objectives and balancing the various interests that comprise the national welfare. OY is based on MSY, or on MSY as it may be reduced ... [in consideration of social, economic or ecological factors].... The most important limitation on the specification of OY ~~and ACL~~ is that the choice of OY ~~and ACL~~ and the conservation and management measures proposed to achieve it must prevent overfishing @ (50 CFR Section 600.310(b)).

This chapter addresses the essential considerations suggested for National Standard 1, as identified in the NMFS guidelines on the standard (600.310):

- Estimating MSY, estimated the MSY biomass and setting the MSY control rule (50 CFR 600.310(c); Section 4.2 of this Chapter).
- Specifying stock status determination criteria (maximum fishing mortality threshold and minimum stock size threshold, or reasonable proxies thereof) (50 CFR 600.310(d); Section 4.4 of this Chapter).
- Actions for ending overfishing and rebuilding overfished stocks (including the development and adoption of rebuilding plans) (50 CFR 600.310(e); Section 4.5 of this Chapter).
- Setting OY and apportionment of harvest levels (50 CFR 600.310(f); Section 4.6 of this Chapter).

In establishing OYs ~~and ACLs~~ for West Coast groundfish, this FMP uses the interim step of calculating ~~ABCOFLs and, ABCs, and ACLs~~ for major stocks or management units (groups of species). ~~ABCOFL~~ is the MSY harvest level associated with the current stock abundance. Over the long term, if ~~ABCOFLs~~ are fully harvested, the average of the ~~ABCOFLs~~ would be MSY. ~~ABC is a threshold below the OFL, which incorporates a scientific uncertainty buffer accounts for scientific uncertainty in the estimate of OFL. ACL is a-in harvest specifications set at or below ABC and is intended-designed to prevent overfishing.~~

OYs ~~and ACLs are-is~~ set and apportioned under the procedures outlined in Chapter 5.

[Added: 16-1, Amended 16-4 and 23]

### 5.2.4.2. Species Categories

B<sub>MSY</sub>, ~~ABCOFL~~ and the overfished/rebuilding stock size threshold cannot be precisely defined for all species, because of the absence of available information for many species managed under the FMP. For the purpose of setting MSY, ~~ABCOFL~~, the maximum fishing mortality threshold (MFMT), the minimum stock size threshold (MSST), ~~ABC~~, OY, ~~ACL~~ and rebuilding standards, three categories of species are identified. The first are ~~the relatively few those~~ species for which a relatively data-rich quantitative stock assessment can be conducted on the basis of catch-at-age, catch-at-length or other data. ~~ABCOFLs and overfished/rebuilding thresholds can generally be calculated for these species. ABCs can also be calculated for these species based on the uncertainty of the biomass estimated within an assessment or the variance in biomass estimates between assessments for all species in this category.~~ The second category includes a large number of species for which some biological indicators are available, ~~but-including a relatively data-poor quantitative assessment or a nonquantitative analysis cannot be conducted assessment.~~

It is difficult to estimate overfished and overfishing thresholds for the second category of species a priori, but indicators of long-term, potential overfishing can be identified. ABCOFLs and ABCs for species in this category are typically set at a constant level and some monitoring is necessary to determine if this level of catch is causing a slow decline in stock abundance. The third category includes minor species which are caught, but for which there is, at best, only information on landed biomass. For species in this category, it is impossible there is limited data to quantitatively determine MSY, ABCOFL, or an overfished threshold. Typically, average catches are used to determine the OFL for category 3 species. [For species in this category, it is not possible to define MSY and the overfished threshold while the OFL is based on historical catches]

A fourth category of species is identified as ecosystem component (EC) species. These species are not “in the fishery” and therefore not actively managed. EC species are not targeted in any fishery and are not generally retained for sale or personal use. EC species are not determined to be subject to overfishing, approaching an overfished condition, or overfished, nor are they likely to become subject to overfishing or overfished in the absence of conservation and management measures. Harvest specifications are not decided for EC species, although the bycatch of EC species is monitored to ensure they continue to be classified correctly. While EC species are not considered to be “in the fishery,” the Council should consider measures for the fishery to minimize bycatch and bycatch mortality of EC species consistent with National Standard 9, and to protect their associated role in the ecosystem. EC species do not require specification of reference points but should be monitored to the extent that any new pertinent scientific information becomes available (e.g., catch trends, vulnerability, etc.) to determine changes in their status or their vulnerability to the fishery. If necessary, they should be reclassified as “in the fishery.”

[Amended: 16-1 and 23]

#### 5.3.4.3. Determination of MSY, or MSY Proxy, and $B_{MSY}$

Harvest policies are to be specified according to standard reference points such as MSY (MSY, interpreted as a maximum average achievable catch under prevailing ecological and environmental conditions over a prolonged period). The long-term average biomass associated with fishing at  $F_{MSY}$  is  $B_{MSY}$ . In this FMP, MSY generally refers to a constant  $F$  control rule that is assumed to produce the maximum average yield over time while protecting the spawning potential of the stock. Thus the constant  $F$  control rule is generally the proxy for the MSY control rule. Fishing rates above  $F_{MSY}$  eventually result in biomass smaller than  $B_{MSY}$  and produce less harvestable fish on a sustainable basis. The biomass level that produces MSY (i.e.,  $B_{MSY}$ ) is generally unknown and assumed to be variable over time due to long-term fluctuations in ocean conditions, so that no single value is appropriate. During periods of unfavorable environmental conditions it is important to account for reduced sustainable yield levels.

The problem with an  $F_{MSY}$  control rule is that it is tightly linked to an assumed level of density-dependence in recruitment, and there is insufficient information to determine the level of density-dependence in recruitment for many West Coast groundfish stocks. Therefore, the use of approximations or proxies is necessary. Absent a more accurate determination of  $F_{MSY}$ , the Council will apply default MSY proxies. The current (2004-2009) proxies are:  $F_{40\%-30\%}$  for flatfish, and  $F_{40\%}$  for whiting,  $F_{50\%}$  for rockfish (including thornyheads) and  $F_{45\%}$  for all species such as sablefish and lingcod. However, values ( $F_{40\%-30\%}$ ,  $F_{40\%}$ ,  $F_{45\%}$ , and  $F_{50\%}$ ) are provided here as examples only and are expected to be modified from time to time as scientific knowledge improves. If available information is sufficient, values of  $F_{MSY}$ ,  $B_{MSY}$ , and more appropriate harvest control rules may be developed for any species or species group.

At this time, it is generally believed that, for many species,  $F_{45\%}$  strikes a balance between obtaining a large fraction of the MSY if recruitment is highly insensitive to reductions in spawning biomass and

preventing a rapid depletion in stock abundance if recruitment is found to be extremely sensitive to reductions in spawning biomass. The long-term expected yield under an  $F_{45\%}$  policy depends upon the (unknown) level of density-dependence in recruitment. The recommended level of harvest will reduce the average lifetime egg production by each female entering the stock to 45% of the lifetime egg production for females that are unfished.

Because the level of recruitment is expected to decline somewhat as a stock is fished at  $F_{45\%}$ , the expected  $B_{MSY}$  proxy is less than 45% of the unfished biomass. A biomass level of 40% is a reasonable proxy for  $B_{MSY}$ . The short-term yield under an  $F_{45\%}$  policy will vary as the abundance of the exploitable stock varies. This is true for any fishing policy that is based on a constant exploitation rate. The abundance of the stock will vary, because of the effects of fishing, and because of natural variation in recruitment. When stock abundance is high (i.e., near its average unfished level), short-term annual yields can be approximately two to three times greater than the expected long-term average annual yield. For many of the long-lived groundfish species common on the West Coast, this “fishing down” transition can take decades. Many of the declines in ABC that occurred during the 1980s were the result of this transition from a lightly exploited, high abundance stock level to a fully exploited, moderately abundant stock level. Further declines below the overfished levels in the 1990s were due in large part to harvest rate policies that were later discovered to not be sustainable. More recent stock assessments indicate that West Coast groundfish stocks likely have lower levels of productivity than other similar species worldwide. Based on this retrospective information, harvest rate policies in the 1990s were too high to maintain stocks at  $B_{MSY}$ . The Council revised its harvest rate policies for lower levels of production, described below.

Scientific information as of 1997 (Clark 1993; Ianelli and Heifetz 1995; Mace 1994) indicated that  $F_{35\%}$  may not be the best approximation of  $F_{MSY}$ , given more realistic information about recruitment than was initially used by Clark in 1991. In his 1993 publication Clark extended his 1991 results by improving the realism of his simulations and analysis. In particular he (1) modeled stochasticity into the recruitment process, (2) introduced serial correlation into recruitment time series, and (3) performed separate analyses for the Ricker and Beverton-Holt spawner-recruit functions. For rockfish, these changes improved the realism of his spawning biomass per recruit (SPR) harvest policy calculations, because these species are known to have stochastic recruitment and they appear to display serial correlation in recruitments (especially on interdecadal time scales), and because the Beverton-Holt spawner-recruit curve may be biologically the most plausible recruitment model. The effect of each of these changes, in isolation and in aggregate, was to decrease the estimate of  $F_{MSY}$ . Consequently, the estimated SPR reduction needed to provide an optimal  $F_{MSY}$  proxy (defined as that level of fishing which produces the largest assured proportion of MSY), must necessarily be increased. Clark concluded that  $F_{40\%}$  is the optimal rate for fish stocks exhibiting recruitment variability similar to Alaska groundfish stocks. Likewise, Mace (Mace 1994) recommended the use of  $F_{40\%}$  as the target mortality rate when the stock-recruitment relationship is unknown. Lastly, Ianelli and Heifetz (Ianelli and Heifetz 1995) determined that  $F_{44\%}$  was a good  $F_{MSY}$  proxy for Gulf of Alaska Pacific ocean perch, although they subsequently indicated that a recent recruitment to that stock was larger than expected and that  $F_{44\%}$  may be too conservative in that case.

Based on this information and advice by its Groundfish Management Team, in 1997 the Council concluded that  $F_{40\%}$  should be used as the proxy for  $F_{MSY}$  for rockfish in the absence of specific knowledge of recruitment or life history characteristics which would allow a more accurate determination of  $F_{MSY}$ . This proxy was later revised based on further Scientific and Statistical Committee (SSC) investigation into the appropriate  $F_{MSY}$  proxies in 2000.

In the spring of 2000, the Council’s SSC sponsored a workshop to review the Council’s groundfish exploitation rate policy. The workshop explored the historic use of different fishing mortality (F) rates and found that the Council’s past practices have generally changed in response to new information from the scientific community. Starting in the early 1990s, the Council used a standard harvest rate of  $F_{35\%}$ .



The SSC's workshop participants reported that new scientific studies in 1998 and 1999 had shown that the  $F_{35\%}$  and  $F_{40\%}$  rates used by the Council had been too aggressive for some Pacific Coast groundfish stocks, such that some groundfish stocks could not maintain a viable population over time. A 1999 study, The Meta-Analysis of the Maximum Reproductive Rate for Fish Populations to Estimate Harvest Policy; a Review (Myers, *et al.* 2000) showed that Pacific Coast groundfish stocks, particularly rockfish, have very low productivity compared to other, similar species worldwide. One prominent theory about the reason for this low productivity is the large-scale North Pacific climate shifts that are thought to cycle Pacific Coast waters through warm and cool phases of 20-30 years duration. Pacific Coast waters shifted to a warm phase around 1977-1978, with ocean conditions less favorable for Pacific Coast groundfish and other fish stocks. Lower harvest rates are necessary to guard against steep declines in abundance during these periods of low productivity (low recruitment). After an intensive review of historic harvest rates, and current scientific literature on harvest rates and stock productivity, the SSC workshop concluded that  $F_{40\%}$  is too aggressive for many Pacific Coast groundfish stocks, particularly for rockfish. For 2001 and beyond, the Council adopted the SSC's new recommendations for harvest policies of:  $F_{40\%}$  for flatfish and whiting,  $F_{50\%}$  for rockfish (including thornyheads) and  $F_{45\%}$  for other groundfish such as sablefish and lingcod. In 2009, based on an SSC meta-analysis of flatfish productivity and the relationship between stock-recruitment steepness and fishing mortality rate, the SSC recommended and the Council adopted a new proxy  $F_{MSY}$  harvest rate for assessed flatfish species of  $F_{30\%}$ .

In the past,  $F_{MSY}$  fishing rates were treated by the Council (as intended) as targets. Under the Magnuson-Stevens Act as amended in 1996, these fishing rates are more appropriately considered to be thresholds that should not be exceeded (see Section 4.4).

The Council will consider any new scientific information relating to calculation of MSY or MSY proxies and may adopt new values based on improved understanding of the population dynamics and harvest of any species or group of species.

While  $B_{MSY}$  may be set based on the averaged unfished abundance ( $B_{unfished}$ ) there are many possible approximations and estimates of mean  $B_{unfished}$ . The option currently preferred by the SSC is to set  $B_{unfished}$  to the -equilibrium point of the stock-recruitment relationship in the absence of exploitation. If the necessary data exist, the following standard methodology is the preferred approach:

$$\text{mean } B_{unfished} = \text{mean } R * SPR(F=0)$$

Where mean R is the average estimated recruitment expected under unfished conditions, and  $SPR(F=0)$  is the spawning potential per recruit at zero fishing mortality rate.  $SPR(F=0)$  is normally available as part of the calculation leading to determination of  $F_{45\%}$  and is equivalent to  $F_{100\%}$ .

[Amended: 5, 11, 16-1, 23]

#### 5.4.4.4. Determination of ABCOFL and ABC

In establishing OYs and ACLs for West Coast groundfish, this FMP utilizes the interim step of calculating ABCOFLs and ABCs for major stocks or management units (groups of species). ABCOFL is the MSY harvest level associated with the current stock abundance. Over the long term, if ABCOFLs are fully harvested, the average of the ABCOFLs would be MSY. ABC is a harvest specification set below the OFL and is a threshold that incorporates a scientific uncertainty buffer against overfishing (i.e., exceeding the OFL). The SSC recommends the OFL based on application of a proxy or deterministic  $F_{MSY}$  harvest rate to the estimated exploitable biomass of the stock or, for unassessed stocks, an historical catch-based approach (e.g., average catch, depletion-corrected average catch, or depletion-based stock reduction analysis).

The ABC is a harvest specification set below the OFL and is a threshold that incorporates a scientific uncertainty buffer against overfishing (i.e., exceeding the OFL). The ABC is decided by the Council based on its preferred level of overfishing risk aversion. The ABC is based on a percentage reduction of the OFL. In cases where scientific uncertainty associated with estimating an OFL ( $\sigma$ ) is quantified by the SSC, the percentage reduction that defines the scientific uncertainty buffer and the ABC can be determined by translating the estimated  $\sigma$  to a range of probability of overfishing ( $P^*$ ) values. Each  $P^*$  value is then mapped to its corresponding buffer fraction<sup>1</sup>. The Council then determines the preferred level of risk aversion by selecting an appropriate  $P^*$  value, accordingly. In cases where the  $P^*$  approach is used, the upper limit of  $P^*$  values considered will be 0.45.

#### 5.4.1.4.4.1. Stocks with OFL and ABC Set by Relatively Data-Rich Quantitative Assessments, Category 1

The stocks with relatively data-rich quantitative assessments are those that have recently been assessed by a catch-at-age or catch-at-length analysis and judged to be informative for deciding stock-specific harvest specifications by the SSC. Annual evaluation of the appropriate MSY proxy (e.g.,  $F_{45\%}$ ) for species in this category will require some specific information in the SAFE document. Estimated age- or length-specific maturity, growth, and availability to the fishery (with evaluation of changes over time in these characteristics) are sufficient to determine the relationship between fishing mortality and yield-per-recruit and spawning biomass-per-recruit. The estimated time series of recruitment, spawning biomass, and fishing mortality are also required to determine whether recent trends indicate a point of concern. In general,  $ABCOFL$  will be calculated by applying  $F_{45\%}$  (or  $F_{40\%}$ ,  $F_{50\%}$ , or other established MSY proxy) to the best estimate of current biomass. This current biomass estimate may be for a single year or the average of the present and several future years. Thus,  $ABCOFL$  may be intended to remain constant over a period of three or more years.

~~The ABC, which incorporates a scientific uncertainty buffer against overfishing, can be calculated for category 1 species using the  $P^*$  approach. The SSC quantifies the variability in biomass estimates ( $\sigma$ ) for category 1 species from stock assessments and the Council chooses the probability of overfishing ( $P^*$ ) as described above to determine the size of the scientific uncertainty buffer. as a basis for evaluating the size of a scientific uncertainty buffer (i.e., the difference between the OFL and the ABC) and the risk of overfishing the stock. Approaches to quantifying the variability in biomass estimates include using the standard error about the estimated biomass of a stock in the most recently approved assessment and estimating the between-assessment variance in biomass estimates for a stock with multiple assessments or for all category 1 stocks with multiple assessments in a meta-analysis. A proxy variance ( $\sigma$ ) can be calculated using this latter approach for all or some category 1 species. None of these approaches are mutually exclusive and the SSC may recommend stock-specific approaches to quantifying scientific uncertainty for category 1 species. Once scientific uncertainty is quantified, it is mapped to an estimated probability of overfishing ( $P^*$ ). The Council chooses the ABC from the SSC recommended range based on the estimated  $P^*$ .~~

#### 5.4.2.4.4.2. Stocks with $ABCOFL$ and ABC Set by Relatively Data-Poor Quantitative or Nonquantitative Assessment, Category 2

<sup>1</sup> Since estimated OFLs are median estimates, there is a 50% probability that the OFL is overestimated. Therefore, a  $P^*$  of 0.5 equates to no scientific uncertainty or, in other words, the ABC is set equal to the OFL.

These stocks with ABCOFL set by relatively data-poor quantitative or nonquantitative assessments typically do not have a recent, quantitative assessment, but there may be a previous assessment or some indicators of the status of the stock. Category 2 stocks may also have a recent assessment that was judged to be relatively data-poor by the SSC. Detailed biological information is not routinely available for these stocks, and ABCOFL levels have typically been established on the basis of an historical catch-based approach (e.g., average catch, depletion-corrected average catch, or depletion-based stock reduction analysis).~~average historical landings,~~ trends in a fishery independent survey or some other index of current biomass. Typically, the spawning biomass, level of recruitment, or the current fishing mortality rate for Category 2 stocks are unknown. The Council places high priority on improving the information for managing these stocks so that they may be moved to Category 1 status.

Since there is greater scientific uncertainty for category 2 stocks relative to category 1 stocks, the scientific uncertainty buffer is generally greater than that recommended for category 1 stocks. A P\* approach can be used to determine the ABC. In such cases, the SSC recommends a value for  $\sigma$ , which is typically larger than an associated  $\sigma$  for category 1 stocks, and the Council chooses the P\* value to determine the size of the scientific uncertainty buffer.~~The SSC recommends the ABC for category 2 stocks.~~

#### 5.4.3.4.4.3. Stocks Without ABCOFL and ABC Values Set by Less Quantitative or Nonquantitative Assessment, Category 3

Of the ~~8090~~<sup>2532</sup> plus groundfish species managed under the FMP, ABCOFL values have been established for only about ~~2532~~. The remaining species are incidentally landed and usually are not listed separately on fish landing receipts. Information from fishery independent surveys are often lacking for these stocks, because of their low abundance or they are not vulnerable to survey sampling gear. Until sufficient quantities of at-sea observer program data are available or surveys of other fish habitats are conducted, it is unlikely that there will be sufficient data to upgrade the assessment capabilities or to evaluate the overfishing potential of these stocks. Interim ABCOFL values ~~may be~~<sup>are</sup> established for these stocks based on an historical catch-based approach (e.g., average catch, depletion-corrected average catch, or depletion-based stock reduction analysis).~~average historic catch~~ or qualitative information, including advice from the Council's advisory entities.

Since there is greater scientific uncertainty for category 3 stocks relative to category 1 or 2 stocks, the scientific uncertainty buffer for such stocks is generally greater than that recommended for category 1 and 2 stocks. A P\* approach can be used to determine the ABC. In such cases, the SSC recommends a value for  $\sigma$ , which is typically larger than an associated  $\sigma$  for category 1 or 2 stocks, and the Council chooses the P\* value to determine the size of the scientific uncertainty buffer.~~The SSC recommends the ABC for category 3 stocks.~~

#### 4.4.4. Ecosystem Component Stocks Without OFL Values

Ecosystem Component species do not require specification of reference points (i.e., OFLs, ABCs, and ACLs) but are monitored to the extent that any new pertinent scientific information becomes available (e.g., catch trends, vulnerability, etc.) to determine changes in their status or their vulnerability to the fishery. For this classification, such species should:

- 1) be a non-target species or stock;
- 2) not be determined to be subject to overfishing, approaching overfished, or overfished;
- 3) not be likely to become subject to overfishing or overfished, according to the best available information, in the absence of conservation and management measures; and
- 4) not generally be retained for sale or personal use.

Categorizing FMP species as ~~Ecosystem Component~~ Category 1, 2 or 3 species ~~is may be~~ done biennially in the specifications decision process; ~~however,~~ recategorizing species as in the fishery or as Ecosystem Component species requires an FMP amendment. A productivity and susceptibility assessment ~~(PSA; Patrick et al. 2009)~~ ~~is can be~~ done for FMP species in the biennial specifications process to guide a decision on whether stocks are actively managed with harvest specifications (i.e., category 1, 2, or 3 stocks) or are monitored as Ecosystem Component species. ~~Recategorizing species as in the fishery or as Ecosystem Component species requires an FMP amendment.~~

[Amended: 11, 12, 16-1, 23]

#### 5.5.4.5. Precautionary Thresholds and Overfishing Status Determination Criteria

The National Standard Guidelines define two thresholds that are necessary to maintain a stock at levels capable of producing MSY: the maximum fishing mortality threshold (MFMT) and a minimum stock size threshold (MSST). These two limits are intended for use as benchmarks to decide if a stock or stock complex is being overfished or is in an overfished state. The MFMT and MSST are intrinsically linked through the MSY control rule, which specifies how fishing mortality or catches could vary as a function of stock biomass in order to achieve yields close to MSY.

##### 5.5.1.4.5.1. Determination of Precautionary Thresholds

The precautionary threshold is the biomass level at which point the harvest rate will be reduced to help the stock return to the MSY level (see Section 4.6.1 - Default Precautionary and Interim Rebuilding ~~OYACL~~ Calculation). The precautionary biomass threshold is in addition to the overfishing and overfished/rebuilding thresholds required under the Magnuson-Stevens Act (MFMT and MSST). The precautionary biomass threshold is higher than the overfished biomass (MSST). Because  $B_{MSY}$  is a long term average, biomass will by definition be below  $B_{MSY}$  in some years and above  $B_{MSY}$  in other years. Thus, even in the absence of overfishing, biomass may decline to levels below  $B_{MSY}$  due to natural fluctuation. By decreasing harvest rates when biomass is below  $B_{MSY}$  but maintaining MSY control rule (or proxy control rule) harvest rates for biomass levels above MSY, the precautionary threshold and accompanying response effectively constitute a control rule that manages for harvests lower than MSY and an average biomass above MSY.

The precautionary threshold is established only for category 1 species. The precautionary threshold will be the  $B_{MSY}$  level, if known. The default precautionary threshold will be 40% of the estimated unfished biomass level. The Council may recommend different precautionary thresholds for any species or species group based on the best scientific information about that species or group. It is expected the threshold will be between 25% and 50% of the estimated unfished biomass level.

##### 5.5.2.4.5.2. Determination of Overfishing Threshold

In this FMP, for Category 1 species, the term "overfishing" is used to denote situations where catch exceeds or is expected to exceed the established ~~ABCOFL or MSY proxy ( $F_{x\%}$ ).~~ ~~This can also be expressed as where catch exceeds or is expected to exceed the MFMT.~~ The term "overfished" describes a stock whose abundance is below its overfished/rebuilding threshold, or MSST. Overfished/rebuilding thresholds, in general, are linked to the same productivity assumptions that determine the ~~ABCOFL~~ levels. The default value of this threshold is 25% of the estimated unfished biomass level or 50% of  $B_{MSY}$ , if known. The MFMT is simply the value(s) of fishing mortality in the MSY control rule, which is used to calculate the OFL. Technically, exceeding  $F_{MSY}$  constitutes overfishing; therefore, exceeding the OFL is used in this FMP to constitute overfishing since all stocks classified as "in the fishery" have specified OFLs.

For Category 2 species, the following may be evaluated as potential indicators of overfishing:

- catch that exceeds the OFL or an effective harvest rate higher than  $F_{MSY}$
- catch per effort from logbooks
- catch area from logbooks
- index of stock abundance from surveys
- stock distribution from surveys
- mean size of landed fish

If declining trends persist for more than three years, then a focused evaluation of the status of the stock, its ABC~~OFL~~, and overfishing threshold will be quantified. If data are available, such an evaluation should be conducted at approximately five year intervals even when negative trends are not apparent. In fact, many stocks are in need of re-evaluation to establish a baseline for monitoring of future trends. Whenever an evaluation indicates the stock may be declining and approaching an overfished state, the Council should:

1. Improve data collection for this species so it can be moved to Category 1.
2. Determine the rebuilding rate that would allow the stock to return to MSY in no longer than ten years or as prescribed in an adopted rebuilding plan.~~---~~

Information from fishery independent surveys is often lacking for Category 3 species because of their low abundance or because they are not vulnerable to survey sampling gear. Until sufficient data become available from the at-sea observer program, the risk of overfishing these species cannot be fully evaluated.

#### ~~5.5.3.4.5.3.~~ Determination of Overfished/Rebuilding Thresholds

The MSST (overfished/rebuilding threshold) is the default value of 25% of the estimated unfished biomass level or 50% of  $B_{MSY}$ , if known. The overfished/rebuilding threshold (also referred to as  $B_{rebuild}$ ), is generally in the range of 25% to 40% of  $B_{unfished}$ .~~and may also be written as~~

$$B_{rebuild} = x\% * \text{mean } R * SPR(F=0)$$

~~The~~<sup>[pun009 1]</sup> default overfished/rebuilding threshold for category 1 groundfish is  $0.25B_{unfished}$ . The Council may establish different thresholds for any species based on information provided in stock assessments, the SAFE document, or other scientific or groundfish management-related report. For example, if  $B_{MSY}$  is known, the overfished threshold may be set equal to 50% of that amount. The Council may also specify a lower level of abundance where catch or fishing effort is reduced to zero. This minimum abundance threshold ( $B_{MIN}$ ) would correspond to an abundance that severely jeopardizes the stock's ability to recover to  $B_{MSY}$  in a reasonable length of time.

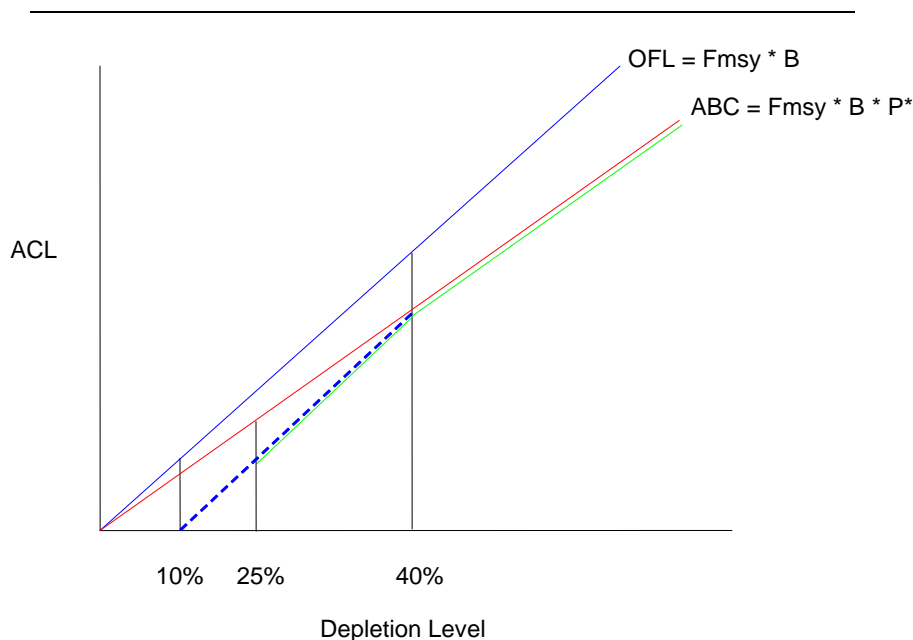
[Amended: 11, 12, 16-1]

#### ~~5.6.4.6.~~ Ending Overfishing and Rebuilding

##### ~~5.6.1.4.6.1.~~ Default Precautionary and Interim Rebuilding ~~or~~ ACL ~~Calculation~~

The precautionary threshold, defined in Section ~~4.5.1~~<sup>4.4.1</sup>, is used to trigger a precautionary management

approach. If biomass declines to a level that requires rebuilding (below the MSST), the precautionary management approach also provides an interim rebuilding harvest control policy to guide the setting of  $\text{ACL}$  until the Council sets a new rebuilding policy specific to the conditions of the stock and fishery. The default  $\text{ACL}$ /rebuilding policy can be described as an “ICES-type catch-based approach” that consists of a modification of the catch policy, where catch ( $C$ ) declines from  $C(F_{\text{MSY}})$  at the precautionary threshold in a straight line to  $F=0$  at the minimum abundance threshold of ten percent of the estimated mean unfished biomass (sometimes called pristine or virgin biomass or reproductive potential). This approach could also be described as an  $\text{ACL}$  based on a variable  $F_{\text{SPR}}$  that is progressively more conservative at low biomass levels. The abbreviated name for this is the “40-10” default adjustment for species managed to a  $B_{40\%}$   $B_{\text{MSY}}$  target and, in the case of flatfish species that are managed to a  $B_{25\%}$  target, the “25-5” adjustment. In most cases, there is inadequate information to estimate  $F_{\text{MSY}}$ ; in such cases, the best proxy for  $F_{\text{MSY}}$  will be used. The default proxy values will be  $F_{30\%}$  for flatfish,  $F_{40\%}$  for flatfish and whiting,  $F_{50\%}$  for rockfish, in the *Sebastes* complex and  $F_{45\%}$  for other species such as sablefish and lingcod. The Council anticipates scientific information about the population dynamics of the various stocks will improve over time and that this information will result in improved estimates of appropriate harvest rates and MSY proxies. Thus, these initial default proxy values will be replaced from time to time. Such changes will not require amendment to the FMP, but the scientific basis for new values must be documented.



**Figure 4-1. Illustration of the default “40-10” ACL rule compared to OFL and ABC.**

The greater amount of catch reduction applied below the precautionary threshold will foster quicker return to the MSY level. If a stock falls below its overfished/rebuilding threshold, this line would be used as the interim rebuilding plan during the year until the Council develops a formal rebuilding plan. The point at which the line intersects the horizontal axis does not necessarily imply zero catch would be allowed, but rather is for determining the slope of the line.



In order to apply this default approach, a minimal amount of information is necessary; only stocks in Category 1 and those Category 2 stocks with a quantitative assessment of estimated biomass can be managed in this way. For stocks with inadequate information to apply this approach, the Council will ~~consider other methods of ensuring that overfishing will be avoided. The Council will consider the approaches discussed in the National Standard Guidelines in developing such recommendations for stocks in Categories 2 and 3~~ strive to develop the information necessary to estimate biomass and employ this harvest control mechanism if needed.

#### 5.6.2.4.6.2. *Procedures for Calculating Rebuilding Parameters*

The Magnuson-Stevens Act and National Standard Guidelines provide a descriptive framework for developing strategies to rebuild overfished stocks. This framework identifies three parameters: a minimum time in which an overfished stock can rebuild to its target biomass (denoted  $T_{\text{MIN}}$ ), a maximum permissible time period for rebuilding the stock to its target biomass ( $T_{\text{MAX}}$ ), and a target year, falling within the time period between  $T_{\text{MIN}}$  and  $T_{\text{MAX}}$  and representing the year by which the stock can be rebuilt, as soon as possible, taking into account the status and biology of the stock, the needs of fishing communities, and the interaction of the stock of fish within the marine ecosystem ( $T_{\text{TARGET}}$ ).

$T_{\text{MIN}}$ , the lower limit of the specified time period for rebuilding, will be determined by the status and biology of the stock or stock complex and its interactions with other components of the marine ecosystem or environmental conditions and is defined as the amount of time that would be required for rebuilding if fishing mortality were eliminated entirely.

If  $T_{\text{MIN}}$  is less than ten years, then the specified time period for rebuilding may be adjusted upward so that the rebuilding period is as short as possible, taking into account the status and biology of the stock, the needs of fishing communities, and the interaction of the stock of fish within the marine ecosystem,, except that no such upward adjustment may result in the specified time period exceeding ten years (which would then constitute  $T_{\text{MAX}}$ ), unless management measures under an international agreement in which the United States participates dictate otherwise.

If  $T_{\text{MIN}}$  is ten years or greater, then the specified time period for rebuilding may be adjusted upward so that the rebuilding period is as short as possible, taking into account the status and biology of the stock, the needs of fishing communities, and the interaction of the stock of fish within the marine ecosystem, except that no such upward adjustment can exceed the rebuilding period calculated in the absence of fishing mortality, plus one mean generation time or equivalent period based on the species' life history characteristics. For example, if a stock could be rebuilt within 12 years in the absence of any fishing mortality, and has a mean generation time of eight years, the maximum allowable time to rebuild would be 20 years, which is  $T_{\text{MAX}}$ .

The Council may consider a number of factors in determining the time period for rebuilding, including:

1. The status and biology of the stock or stock complex.
2. Interactions between the stock or stock complex and other components of the marine ecosystem or environmental conditions.
3. The needs of fishing communities.
4. Recommendations by international organizations in which the United States participates.
5. Management measures under an international agreement in which the United States participates.

#### 5.6.2.1.4.6.2.1. Calculating Rebuilding Probabilities

Stock assessment results form the basis of a rebuilding analysis, which in turn is used to develop rebuilding policies and choose the rebuilding parameters identified in each rebuilding plan. The elements of rebuilding analyses are described in the SSC Terms of Reference for Rebuilding Analyses (SSC 2001). This guidance has been incorporated into a computer program (Punt 2002). In the analysis the probability that the overfished stock will reach its target biomass is determined with respect to  $T_{MIN}$ ,  $T_{MAX}$ , and  $T_{TARGET}$ . The methods for calculating the values of these parameters are described below. This is a simplified explanation of the current methodology; for example, equations and technical specifications are omitted. The SSC may revise their terms of reference in the future and the computer program undergoes continued refinement and elaboration.

The rebuilding analysis program uses “Monte Carlo simulation” to derive a probability estimate for a given rebuilding strategy. This method projects population growth many times in separate simulations. It accounts for possible variability by randomly choosing the value of a key variable, in this case total recruitment or recruits per spawner from a range of values. These values can be specified empirically, by listing some set of historical values, or by a relationship based on a model. The SSC recommends that the rebuilding analyses use historical values. Because of this variability in a key input value, each simulation will show a different pattern of population growth. As a result, a modeled population may reach the target biomass that defines a rebuilt stock ( $B_{MSY}$ ) in a different year in each of the simulations.

This technique is first used to calculate  $T_{MIN}$  in probabilistic terms, which is defined as the time needed to reach the target biomass in the absence of fishing with a 50% probability. In other words, in half the simulations the target biomass was reached in some year up to and including the computed  $T_{MIN}$ . Given  $T_{MIN}$ ,  $T_{MAX}$  is computed as 10 years or by adding the value of one mean generation time to  $T_{MIN}$ , if  $T_{MIN}$  is greater than or equal to 10 years.

A target year,  $T_{TARGET}$ , is set as a year at  $T_{MIN}$  or greater, which does not exceed  $T_{MAX}$ , and which is as short as possible, taking into account the status and biology of the stock, the needs of fishing communities, and the interaction of the stock of fish within the marine ecosystem. Prior to Amendment 16-4, the Council set  $T_{TARGET}$  in part by considering the probability of rebuilding the stock by  $T_{MAX}$ . The Council may continue to review the probability of rebuilding the stock by  $T_{MAX}$  given differing  $F$  rates, a reference parameter known as “ $P_{MAX}$ .” The Magnuson-Stevens Act, however, simply requires that rebuilding periods be as short as possible, taking into account:

- the status and biology of any overfished stocks of fish;
- the needs of fishing communities;
- recommendations by international organizations in which the United States participates;
- the interaction of the overfished stock of fish within the marine ecosystem (§304(e)(4)(A)(i)).

It is important to recognize that some of the terms introduced and described above represent policy decisions at the national level and the Council **does not have a choice** in setting their values. The dates for  $T_{MIN}$  and  $T_{MAX}$  are determined based on guidelines established at the national level. Mean generation time is a biological characteristic that cannot be chosen by policymakers. Thus, the Council cannot choose these values and then use them as a basis for management. Defined in national guidelines,  $T_{MIN}$  is a consequence of the productivity of the fish stock and is calculated by fishery biologists based on information they get from a particular stock. Similarly,  $T_{MAX}$ , which is calculated from  $T_{MIN}$ , does not represent a Council choice.

Policy flexibility comes into play in determining  $T_{TARGET}$ , or the time by which the stock is projected to



rebuild. As explained earlier, the time to rebuild must be as short as possible, taking into account the status and biology of the stock, the needs of fishing communities, and the interaction of the stock of fish within the marine ecosystem. When developing a management strategy the Council **can** choose a fishing mortality rate and corresponding annual level of fishing. However, when rebuilding overfished species, the choice of  $F$  is based on the value of  $T_{\text{TARGET}}$ , keeping in mind that these values cannot be chosen independently of one another. In other words, the Council may choose one value and derive the other from it, but they cannot choose these values independently of the each other.

#### **5.6.3.4.6.3. Stock Rebuilding Plans**

As required by the Magnuson-Stevens Act, within one year of being notified by the Secretary that a stock is overfished or approaching a condition of being overfished, the Council will prepare a recommendation to end the overfished condition and rebuild the stock(s) or to prevent the overfished condition from occurring. For a stock that is overfished, the rebuilding plan will specify a time period for ending the overfished condition and rebuilding the stock. Overfishing restrictions and recovery benefits should be fairly and equitably allocated among sectors of the fishery.

Certain elements of a rebuilding plan developed by the Council, as specified in Section 4.5.3.2 (Contents of Rebuilding Plans), will be submitted to the Secretary as an FMP amendment and implementing regulations. Changes to key rebuilding plan elements will be accomplished through full (notice and comment) rulemaking. Once approved by the Secretary, a rebuilding plan will remain in effect for the specified duration of the rebuilding program, or until modified. The Council will make all approved rebuilding plans available in the annual SAFE document or by other means. The Council may recommend that the Secretary implement interim measures to reduce overfishing until the Council's program has been developed and implemented.

The Council intends its stock rebuilding plans to provide targets, checkpoints, and guidance for rebuilding overfished stocks to healthy and productive levels. They should provide a clear vision of the intended results and the means to achieve those results. They will provide the strategies and objectives that regulations are intended to achieve, and proposed regulations and results will be measured against the rebuilding plans. It is likely that rebuilding plans will be revised over time to respond to new information, changing conditions, and success or lack of success in achieving the rebuilding schedule and other goals. If, in response to these revisions, the Council recommends changes to the management target for a particular stock, such changes will be published through full (notice and comment) rulemaking as described in Section 6.2 of this FMP. As with all Council activities, public participation is critical to the development, implementation and success of management programs.

#### **5.6.3.1.4.6.3.1. Goals and Objectives of Rebuilding Plans**

The overall goals of rebuilding programs are to (1) achieve the population size and structure that will support the maximum sustainable yield within a specified time period that is as short as possible, taking into account the status and biology of the stock, the needs of fishing communities, and the interaction of the stock of fish within the marine ecosystem; (2) minimize, to the extent practicable, the adverse social and economic impacts associated with rebuilding, including adverse impacts on fishing communities; (3) fairly and equitably distribute both the conservation burdens (overfishing restrictions) and recovery benefits among commercial, recreational, and charter fishing sectors; (4) protect the quantity and quality of habitat necessary to support the stock at healthy levels in the future; and (5) promote widespread public awareness, understanding and support for the rebuilding program. More specific goals and objectives may be developed in the rebuilding plan for each overfished species.

To achieve the rebuilding goals, the Council will strive to (1) explain the status of the overfished stock,

pointing out where lack of information and uncertainty may require that conservative assumptions be made in order to maintain a risk-averse management approach; (2) identify present and historical harvesters of the stock; (3) where adequate harvest sharing plans are not already in place, develop harvest sharing plans for the rebuilding period and for when rebuilding is completed; (4) set harvest levels that will achieve the specified rebuilding schedule; (5) implement any necessary measures to allocate the resource in accordance with harvest sharing plans; (6) promote innovative methods to reduce bycatch and bycatch mortality of the overfished stock; (7) monitor fishing mortality and use available stock assessment information to evaluate the condition of the stock; (8) identify any critical or important habitat areas and implement measures to ensure their protection; and (9) promote public education regarding these goals, objectives, and the measures intended to achieve them.

#### **5.6.3.2.4.6.3.2. Contents of Rebuilding Plans**

Generally, rebuilding plans will contain:

1. A description of the biology and status of the overfished stock and fisheries affected by stock rebuilding measures.
2. A description of how rebuilding parameters for the overfished stock were determined (including any calculations that demonstrate the scientific validity of parameters).
3. Estimates of rebuilding parameters ( $B_{unfished}$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{MAX}$ , and the probability of reaching target biomass by this date, and  $T_{TARGET}$ ) at the time of rebuilding plan adoption.
4. A description of the fishing communities' needs that were considered at the time of adoption of the plan.
5. The process, and any applicable standards, that will be used during periodic review to evaluate progress in rebuilding the stock to the target biomass (see Section 4.5.3.5).
6. Any management measures the Council may wish to specifically describe in the FMP, which facilitate stock rebuilding in the specified period. (These measures would be in addition to any existing measures typically implemented through annual or biennial management. See Section 4.5.3.4 for more information.)
7. Any goals and objectives in addition to or different from those listed in the preceding section.
8. Potential or likely allocations among sectors.
9. For fisheries managed under international agreement, a discussion of how the rebuilding plan will reflect traditional participation in the fishery, relative to other nations, by fishermen of the United States.
10. Any other information that may be useful to achieve the rebuilding plan's goals and objectives.

The following questions also serve as a guide in developing rebuilding plans:

1. What is the apparent cause of the current condition (historical fishing patterns, a declining abundance or recruitment trend, a change in assessment methodology, or other factors)?
2. Is there a downward trend in recruitment that may indicate insufficient compensation in the

spawner-recruitment relationship?

3. Based on a comparison of historical harvest levels (including discards) relative to recommended ~~ABCOFL-ACL~~ levels, has there been chronic over-harvest?
4. Is human-induced environmental degradation implicated in the current stock condition? Have natural environmental changes been observed that may be affecting growth, reproduction, and/or survival?
5. Would reduction in fishing mortality be likely to improve the condition of the stock?
6. What types of fishing communities rely on catch of this particular stock, or on catch of stocks that co-occur with this stock?
7. Is the particular species caught incidentally with other species? Is it a major or minor component in a mixed-stock complex?
8. What types of management measures are anticipated and/or appropriate to achieve the biological, social, economic, and community goals and objectives of the rebuilding plan?

Rebuilding plan documents are distinct from the analytical documents required by the National Environmental Policy Act and other legal mandates, although they will reflect the contents of those analyses in a much briefer form. Rebuilding plan elements incorporated into the FMP (in Section 4.5.4) summarize the contents enumerated in this section. Rebuilding plans as a whole will be published in the next annual SAFE document after their approval.

Any new rebuilding program will commence as soon as the first measures to rebuild the stock or stock complex are implemented.

Fishing communities need a sustainable fishery that: is safe, well-managed, and profitable; provides jobs and incomes; contributes to the local social fabric, culture, and image of the community; and helps market the community and its services and products.

#### **5.6.3.3.4.6.3.3. Process for Development and Approval of Rebuilding Plans**

Upon receiving notification that a stock is overfished, the Council will identify one or more individuals to draft the rebuilding plan. A draft of the plan will be reviewed and preliminary action taken (tentative adoption or identification of preferred alternatives), followed by final adoption at a subsequent meeting. The tentative plan or alternatives will be made available to the public and considered by the Council at a minimum of two meetings, unless stock conditions suggest more immediate action is warranted. Upon completing its final recommendations, the Council will submit the proposed rebuilding plan or revision to an existing plan to NMFS for concurrence. A rebuilding plan will be developed following the standard procedures for considering and implementing an FMP amendment under the Magnuson-Stevens Act and other applicable law.

The following elements in each rebuilding plan will be incorporated into the FMP in Section 4.5.4:

1. A brief description of the status of the stock and fisheries affected by stock rebuilding measures at the time the rebuilding plan was prepared.
2. The methods used to calculate stock rebuilding parameters, if substantially different from those

described in Section 4.5.2.

3. An estimate at the time the rebuilding plan was prepared of:
  - unfished biomass ( $B_{\text{unfished}}$  or  $B_0$ ) and target biomass ( $B_{\text{MSY}}$ );
  - the year the stock would be rebuilt in the absence of fishing ( $T_{\text{MIN}}$ );
  - $T_{\text{MIN}}$  plus one mean generation time ( $T_{\text{MAX}}$ ); and
  - the year in which the stock would be rebuilt based on the application of stock rebuilding measures that achieve rebuilding as soon as possible, taking into account the status and biology of the stock, the needs of fishing communities, and the interaction of the overfished stock within the marine ecosystem ( $T_{\text{TARGET}}$ ).
4. A description of the harvest control rule (e.g., constant catch or harvest rate) and the specification of this parameter. The types of management measures that will be used to constrain harvests to the level implied by the control rule will also be described (see also Section 4.5.3.4). These two elements, the harvest control rule and a description of management measures, represents the rebuilding strategy intended to rebuild the stock by the target year.

It is likely that over time the parameters listed above will change. It must be emphasized that the values enumerated in the FMP represent estimates at the time the rebuilding plan is prepared. Therefore, the FMP need not be amended if new estimates of these values are calculated. The values for these parameters found in the FMP are for reference, so that managers and the public may track changes in the strategy used to rebuild an overfished stock. However, any new estimates of the parameters listed above will be published in the SAFE documents as they become available.

#### **5.6.3.4.4.6.3.4. Updating Key Rebuilding Parameters**

In addition to an initial specification in the FMP, the target year ( $T_{\text{TARGET}}$ ) and the harvest control rule (type and numerical value) will also be specified in regulations. If new information indicates a need to change the value of either of these two parameters, such a change will be accomplished through full (notice and comment) rulemaking as described in Section 6.2 of this FMP. The target year is the year by which the stock would be rebuilt to its target biomass. Therefore, if a subsequent analysis identifies an earlier target year for the current fishing mortality rate (based on the harvest control rule), there is no obligation to change in regulations either the target year (to the computed earlier year) or the harvest control rule (to delay rebuilding to the original target year). Stock assessments for overfished species are typically conducted every two years. Stock assessments and rebuilding analyses use mathematical models to predict a stock's current abundance, as well as project future abundance and recruitment. In any mathematical model that uses a variety of data sources, as the stock assessments do, model results tend to vary from one assessment to the next within some range of values. This expected variation means that, when the Council and SSC review a new overfished species stock assessment and rebuilding model, they must also consider whether the result of that model or models show a rebuilding trajectory that varies from the previously-predicted trajectory to a significant degree. If the variation between the stock assessments and rebuilding analyses for a particular species do not show significant differences in the rebuilding trajectory for that species, they are mathematically considered to be essentially the same. In that circumstance, the Council will likely not need to revise the  $T_{\text{TARGET}}$  or harvest control rule for that species. Since the target year is the key rebuilding parameter, it should only be changed after careful deliberation. For example, the Council might recommend that the target year be changed if, based on new information about the status and/or biology of the stock, they determine that the existing target year is later than the recomputed maximum rebuilding time ( $T_{\text{MAX}}$ ) or if a recomputed harvest control rule would result in such a low optimum yield as to cause substantial socioeconomic impacts. These examples are not definitive: the Council may elect to change the target year because of other circumstances. However,

any change to the target year or harvest control rule must be supported by commensurate analysis that demonstrates that the new target year is a target to rebuild the stock as soon as possible, taking into account the status and biology of the stock, the needs of fishing communities, and the interaction of the stock within the marine ecosystem.

#### **5.6.3.5.4.6.3.5. Implementation of Actions Required Under the Rebuilding Plan**

NMFS will implement or adjust, with the adoption of the rebuilding plan, any management measures not already in effect that are necessary to implement the rebuilding plan. Many necessary measures may already be in place through the standard management process. Because of the complex nature of the fishery and the interaction of various stocks, regulations will need to be adjusted over the periods of the rebuilding plans. Management measures will be adjusted, or new measures will be developed and implemented in the future, in order to best implement each rebuilding plan throughout the life of that plan.

Once a rebuilding plan is adopted, certain measures required in the rebuilding plan may need to be implemented through authorities and processes already described in the FMP. Management actions to ~~stay within specified ACLs~~~~achieve OY harvest~~, and objectives related to rebuilding requirements of the Magnuson-Stevens Act and goals and objectives of the FMP (each of which may require a slightly different process) include: automatic actions, notices, abbreviated rulemaking actions, and full rulemaking actions. (These actions are detailed in Section 4.6, Chapter 5, and Section 6.2.) Allocation proposals require consideration as specified in the allocation framework (see Section 6.2.3.1). Any proposed regulations to implement the rebuilding plan will be developed in accordance with the framework procedures of this FMP.

Any rebuilding management measures that are not already authorized under the framework of the existing FMP, or specified in the FMP consequent of rebuilding plan adoption, will be implemented by further FMP amendments. These plan amendments may establish the needed measures or expand the framework to allow the implementation of the needed measures under framework procedures.

The Council may designate a state or states to take the lead in working with its citizens to develop management proposals to achieve stock rebuilding.

#### **5.6.3.6.4.6.3.6. Periodic Review of Rebuilding Plans**

Rebuilding plans will be reviewed periodically, but at least every two years, although the Council may propose revisions to an adopted rebuilding plan at any time. These reviews will take into account the goals and objectives listed in Section 4.5.3.1, recognizing that progress towards the first goal, to achieve the population size and structure that will support MSY within the specified time period, will only be evaluated on receipt of new information from the most recent stock assessment.

The Council, in consultation with the SSC and GMT, will determine on a case-by-case basis whether there has been a significant change in a parameter such that the chosen management target must be revised. If, based on this review, the Council decides that the harvest control rule or target year must be changed, the procedures outlined in Section 4.5.3.3 will be followed. Regardless of the Council's schedule for reviewing overfished species rebuilding plans, the Secretary of Commerce, through NMFS, is required to review the progress of overfished species rebuilding plans toward rebuilding goals every two years, per Magnuson-Stevens Act at 16 U.S.C. ' 304(e)(7).

#### **~~5.6.3.7.4.6.3.7.~~ Precedence of a Recovery Plan or “No Jeopardy” Standard Issued Pursuant to the Endangered Species Act**

Like rebuilding plans pursuant to National Standard 1 in the Magnuson-Stevens Act, a recovery plan pursuant to the Endangered Species Act outlines measures for the conservation and survival of the designated species. Under Section 7 of the Endangered Species Act an agency must consult NMFS when any activity permitted, funded, or conducted by that agency may affect a listed marine species or its designated critical habitat. (In the case of fishery management actions, NMFS is both the action and consulting agency.) As part of these consultations, a biological opinion is produced describing standards that must be met when permitting or implementing the action to ensure that the action is not likely to jeopardize the continued existence of the listed species; these are referred to as *No jeopardy* standards.

Measures under a recovery plan or “no jeopardy” standards in a biological opinion will supersede rebuilding plan measures and targets if they will result in the stock rebuilding to its target biomass by an earlier date than the target year identified in the current rebuilding plan. (If expressed probabilistically, any ESA standard expressed as a combination of date and probability that constitutes a higher standard will take precedence over the equivalent target and probability in the rebuilding plan. For example, an ESA standard requiring recovery by the rebuilding plan target year, but with a higher probability, would take precedence over the rebuilding plan.) If a stock is de-listed before reaching its target biomass, the rebuilding plan will come back into effect until such time as the stock is fully rebuilt.

#### **~~5.6.4.4.6.4.~~ Summary of Rebuilding Plan Contents**

As noted in Section 4.5.3.3, this section summarizes the contents of rebuilding plans, including the values for rebuilding parameters, at the time of their adoption. The specified numerical values for these parameters are likely to change over time. This section will not be amended to incorporate any revised values. As described in Section 4.5.3.4, if the numerical specification of the harvest control rule or target year for a given overfished species is changed the new value will be published in federal groundfish regulations. In addition, subsequent SAFE documents may include updated values for the parameters listed in Section 4.5.3.3 and Table 4-1.

In 2005, the Council decided to pursue Amendment 16-4 to re-evaluate and revise, if necessary, adopted rebuilding plans for seven depleted (overfished) groundfish species, so that the rebuilding periods are as short as possible, taking into account the status and biology of the depleted species, the socioeconomic needs of West Coast fishing communities, and the interaction of the depleted stocks within the marine ecosystem. The revised rebuilding plans under Amendment 16-4 are based on 2005 stock assessments and, in the case of yelloweye rockfish, a new assessment done in 2006. The revised rebuilding plan parameters are presented in Table 4-2. Table 4-2 presents a new rebuilding parameter,  $T_{F=0}$ , which is the median time to rebuild the stock if all fishing-related mortality were eliminated with the implementation of a revised rebuilding plan (which for Amendment 16-4 is 2007) and is considered the shortest possible time to rebuild the stocks under consideration in Amendment 16-4. This parameter is distinguished from  $T_{MIN}$ , which is the shortest time to rebuild based on the assumption of no fishing-related mortality from the onset of the initial rebuilding plan, which is usually the year after the stock was declared overfished.

In 1999, NMFS notified the Council that the coastwide lingcod stock was considered overfished. Amendment 16-2 to the FMP included a rebuilding plan for lingcod that set a  $T_{TARGET}$  rebuilding date of 2009. However, the lingcod stock rebuilt faster than the Council had initially anticipated. The 2005 lingcod stock assessment showed that the coastwide stock had rebuilt to a level exceeding statutory requirements,  $B_{MSY}$  or  $B_{40\%}$ . Amendment 16-4, therefore, removed the lingcod rebuilding plan from the FMP.

#### **5.6.4.1.4.6.4.1. Bocaccio Rockfish**

##### **Status of the Bocaccio Stock and Fisheries Affected by Stock Rebuilding Measures at the Time of Rebuilding Plan Adoption (April 2004)**

Assessment scientists and managers have treated West Coast bocaccio as independent stocks north and south of Cape Mendocino. The southern stock, which has been declared overfished, occurs south of Cape Mendocino and the northern stock north of 48° N latitude in northern Washington (off Cape Flattery). The overfished southern bocaccio rockfish stock occurs in Central and Southern California waters, on the continental shelf and in nearshore areas, often in rocky habitat. They are caught in both commercial and recreational fisheries in approximately equal amounts. Commercial catches mainly occur in limited entry trawl fisheries.

Bocaccio have long been an important component of California rockfish fisheries. Catches increased to high levels in the 1970s and early 1980s as relatively strong year-classes recruited to the stock. The Council began to recommend increasingly restrictive regulations after an assessment of the southern stock in 1990 (Bence and Hightower 1990) indicated that fishing rates were too high. The southern stock has been assessed six times (Bence and Hightower 1990; Bence and Rogers 1992; MacCall, *et al.* 1999; MacCall 2002; MacCall 2003b; Ralston, *et al.* 1996) and has suffered poor recruitment during the warm water conditions that have prevailed off Southern California since the late 1980s. The 1996 assessment (Ralston, *et al.* 1996) indicated the stock was in severe decline. NMFS formally declared the stock overfished in March 1999 after the groundfish FMP was amended to incorporate the tenets of the Sustainable Fisheries Act. MacCall *et al.* (MacCall, *et al.* 1999) confirmed the overfished status of bocaccio and estimated spawning output of the southern stock to be 2.1% of its unfished biomass and 5.1% of the maximum sustainable yield (MSY) level. The northern stock of bocaccio has not been assessed.

While previous assessments only used data from Central and Northern California, an assessment in 2002 (MacCall and He 2002) also included data for southern California. While relative abundance increased slightly from the last assessment (4.8% of unfished biomass), potential productivity appears lower than previously thought, making for a more pessimistic outlook. The Council assumed a medium recruitment scenario for the 1999 year class, which was not assessed (MacCall, *et al.* 1999). The 2002 assessment revealed the 1999 year class experienced relatively lower recruitment. Therefore, although the 1999 year class contributed a substantial quantity of fish to the population, it did not contribute as much to rebuilding as was previously thought.

The 2003 bocaccio assessment differs greatly from the 2002 assessment. It is driven by the strength of the incoming 1999 year class that had not recruited into the indices used for the 2002 assessment and by a revised lower estimate of natural mortality (MacCall 2003b). In addition to the 2001 Triennial Survey data, the 2003 assessment used larval abundance data from recent CalCOFI surveys as well as length and catch per unit effort (CPUE) data from recreational fisheries. In calculating the recreational CPUE information, a new method was used that identifies relevant fishing trips by species composition and adjusts the catch history for regulatory changes that affect the level of discard and avoidance. The results of these calculations suggest that recreational CPUE has increased dramatically in recent years and is at a record high level in Central California north of Pt. Conception. The STAR Panel recommended the use of two assessment models as a means of bracketing uncertainty from the very different signals between the Triennial Survey and the recreational CPUE data. Following the Stock Assessment Review (STAR) Panel meeting, MacCall presented a third Ahybrid@ model that incorporated the data from all of the indices. The Scientific and Statistical Committee (SSC) recommended, and the Council approved, the use of this third modeling approach. This resulted in modest improvement in estimated stock size, but

significantly affected the estimated productivity of the stock. These results had substantial effects on the rebuilding outlook for bocaccio which, under the 2002 assessment, was not expected to rebuild within  $T_{MAX}$  even with no fishing related mortality. Total mortality in 2003 fisheries was restricted to less than 20 mt as a means of conserving the stock while minimizing adverse socioeconomic impacts to communities. The current rebuilding analysis (MacCall 2003a), using the “hybrid” model, suggests the stock could rebuild to  $B_{MSY}$  within 25 years while sustaining an optimum yield (OY) of approximately 300 mt in 2004.

The Council adopted a rebuilding plan for bocaccio rockfish at its April 2004 meeting, as described by the parameter values listed in Table 4-1. These values are based on a rebuilding analysis conducted by MacCall (2003b).

Amendment 16-4, adopted by the Council at its June 2006 meeting, revised the rebuilding parameters for bocaccio, as listed in Table 4-2. These values are based on a rebuilding analysis conducted by MacCall (2006) which had determined that the bocaccio stock was at 10.7% of its unfished level in 2005.

Fisheries in central and southern California are affected by the bocaccio rebuilding plan because the overfished population occurs in these waters. Recreational and limited entry trawl fisheries in this region have accounted for the bulk of landings in recent years.

#### Methods Used to Calculate Stock Rebuilding Parameters

The methods used in the rebuilding analysis (MacCall 2003a) upon which the original rebuilding plan was based, and those used for the rebuilding plan revision under Amendment 16-4 (MacCall 2006) do not differ substantially from the approach described in Section 4.5.2.

#### Rebuilding Parameter Values at the Time of Rebuilding Plan Adoption

Table 4-1 lists the numerical values for  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{MAX}$ ,  $P_{MAX}$ ,  $T_{TARGET}$  and  $F$ . The values of  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ , and  $T_{MAX}$  are derived from the rebuilding analysis used in formulating the rebuilding plan (MacCall 2003a). Using the STATc base model from the most recent stock assessment (MacCall 2003b), the Council chose a value of 70% for  $P_{MAX}$ , based on a harvest control rule of  $F = 0.0498$ . This results in a target year of 2023.

#### Rebuilding Parameter Values from Amendment 16-4 Rebuilding Plan Update

Table 4-2 lists the numerical values for  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{MAX}$ ,  $T_{F=0}$ ,  $P_{MAX}$ ,  $T_{TARGET}$  and an SPR harvest rate. The values of  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{F=0}$ , and  $T_{MAX}$  are derived from the rebuilding analysis used in formulating the rebuilding plan (MacCall 2006). The Council chose a target rebuilding year of 2026.

#### Bocaccio Fishing Communities

Amendment 16-4 revised the Council’s approach to rebuilding plans, requiring an analysis of the needs of fishing communities in relation to overfished species rebuilding times, in addition to the traditional analysis of rebuilding times in relation to the status and biology of the stock. For Amendment 16-4 and the 2007-2008 fisheries, fishing community needs are described and analyzed in an EIS (PFMC 2006). Chapter 7 of that EIS discusses the communities that make up the socio-economic environment of the Pacific Coast groundfish fisheries. In general, bocaccio is a continental shelf species that is most frequently taken south of 40°10’ N. latitude- in all of the groundfish fisheries, commercial and recreational. All groundfish fishing communities off the southern U.S. West Coast are affected by



bocaccio rebuilding measures.

### Bocaccio Rockfish Rebuilding Strategy

As shown in Table 4-1, at the inception of the rebuilding plan the harvest control rule for bocaccio rockfish was a fishing mortality rate of 0.0498. Based on the 2003 rebuilding analysis, this harvest rate is likely to rebuild the stock by the target year of 2023. This value is likely to change over time as stock size and structure changes. Any updated value will be published in federal groundfish regulations. The fishing mortality rate is applied to the exploitable biomass estimate to determine the OY for a given fishing period.

Management measures are implemented through the biennial harvest specification and management process described in Chapter 5. The types of management measures that may be implemented through this process are described in Chapter 6. In 2004, at the time of rebuilding plan adoption, measures intended to limit bycatch of overfished species included prohibiting retention of certain overfished species during some parts of the year, reducing landing limits (cumulative trip limits) on co-occurring species, establishing extensive time/area closures, and restricting the use of trawl nets equipped with large footropes. (By using large footropes with heavy roller gear, bottom trawlers can access rocky habitat on the continental shelf. This is the preferred habitat for some overfished species.)

Beginning in 2002, time/area closures known as GCAs came into use as a way of decreasing bycatch of overfished species. GCAs enclose depth ranges where bycatch of overfished species is most likely to occur, based on information retrieved from logbooks and the at-sea observer program. The boundaries vary by season and fishery sector, and may be modified in response to new information about the geographic and seasonal distribution of bycatch.

As noted, a large proportion of bocaccio catch occurs in recreational fisheries in Central and Southern California. Recreational depth closures, restricting fishing to shallow waters, bag limits, and seasonal closures have been used to reduce recreational bocaccio catches.

The Council's rebuilding measures for 2007-2008, adopted at the same time as the Council's adoption of Amendment 16-4, continue the Council's strategy of constraining bocaccio total mortality by restricting fishing on co-occurring healthy stocks, particularly chilipepper rockfish, and preventing fishing in areas where bocaccio may be taken incidentally.

### 5.6.4.2.4.6.4.2. Canary Rockfish

#### Status of the Canary Rockfish Stock and Fisheries Affected by Stock Rebuilding Measures at the Time of the Council's Rebuilding Plan Adoption (June 2003)

Canary rockfish exploitation began in the early 1940s when World War II increased demand for protein (Alverson, *et al.* 1964; Browning 1980). Through this decade the trawl fishery expanded in Oregon and Washington, accounting for most of the canary rockfish catch; in California longlines were mainly used to target rockfish during this period. Other gear historically used to catch canary rockfish include hook-and-line (primarily vertical longline), shrimp trawls, and pots and traps. From 1966 until 1976 foreign trawlers were responsible for most of the harvest. After passage of the Magnuson Act in 1977 domestic vessels became the dominant harvesters of this species. In recent years canary rockfish have become an important recreational target north of Cape Mendocino.

Overfishing, or exceeding the MFMT, was detected by a 1994 stock assessments and subsequent update

(Sampson 1996; Sampson and Stewart 1994). In both cases the harvest rate exceeded the F20% threshold. In 1999 two age-based stock assessments showed that the stock was overfished in a northern area comprising the Columbia and U.S. Vancouver management zones (Crone, *et al.* 1999) and in a southern area comprising Conception, Monterey, and Eureka management zones (Williams, *et al.* 1999). Based on these assessments, the stock was declared overfished in January 2000.

The first rebuilding analysis (Methot 2000a) used results from the northern area assessment to project rates of potential stock recovery. The stock was found to have extremely low productivity, defined as production of recruits in excess of the level necessary to maintain the stock at its current low level. According to the analysis, rates of recovery are highly dependent on the level of recent recruitment, which could not be estimated with high certainty.

A subsequent assessment (Methot and Piner 2002c) treated the stock as a single coastwide unit (covering the area from the Monterey zone through the U.S. Vancouver zone). This differed from past assessments, where northern and southern areas were treated separately. The lack of older, mature females in surveys and other assessment indices was another consideration in this assessment. Older females may simply have a higher natural mortality rate, or survey and fishing gear may be less effective at catching them. If these fish are in fact un-sampled, productivity estimates should be higher because older, larger fish are more fecund. Methot and Piner (Methot and Piner 2002c) combined these two hypotheses in a single age-structured version of the SSC-endorsed stock synthesis assessment model (Methot 2000b). They estimated the 2002 abundance of canary rockfish coastwide was about 8% of  $B_0$ .

The Canary rockfish rebuilding plan was adopted by the Council at its June 2003 meeting and is based on a 2002 rebuilding analysis (Methot and Piner 2002a). The 2002 rebuilding analysis updated the first rebuilding analysis for canary rockfish, completed in 2000, using information from the aforementioned stock assessment. The Council's rebuilding strategy, when combined with the results of this rebuilding analysis, required a substantial reduction in the OY for 2003. As a result, fisheries must be managed for canary rockfish bycatch, often limiting the amount of target species that may be harvested.

Amendment 16-4, adopted by the Council at its June 2006 meeting, revised the rebuilding parameters for canary rockfish, as listed in Table 4-2. These values are based on a rebuilding analysis conducted by Methot (2006) which had determined that the canary rockfish stock was at 9.4% of its unfished level in 2005.

Canary rockfish are encountered in a relatively wide variety of both commercial and recreational fisheries. However, limited entry trawlers targeting flatfish and arrowtooth flounder account for a large proportion of the landed catch, mainly north of Cape Mendocino. Much smaller amounts are caught in the whiting and DTS limited entry trawl fisheries, and by fixed gear vessels targeting groundfish on the continental shelf. Charter vessels account for most of recreationally-caught canary rockfish, mainly off of Northern California and Oregon.

#### Methods Used to Calculate Stock Rebuilding Parameters

The methods used in the rebuilding analysis (Methot and Piner 2002a) upon which the original rebuilding plan was based, and those used for the rebuilding plan revision under Amendment 16-4 (Methot and Stewart 2006) do not differ substantially from the approach described in Section 4.5.2.

#### Rebuilding Parameter Values at the Time of Rebuilding Plan Adoption

Table 4-1 lists the numerical values for  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{MAX}$ ,  $P_{MAX}$ ,  $T_{TARGET}$  and  $F$ . The values of  $B_0$ ,

$B_{MSY}$ ,  $T_{MIN}$ , and  $T_{MAX}$  are derived from the rebuilding analysis used in formulating the rebuilding plan (Methot and Piner 2002a). The Council chose a value of 60% for  $P_{MAX}$ , based on a harvest control rule of  $F = 0.022$ . This results in a target year of 2074.

#### Rebuilding Parameter Values from Amendment 16-4 Rebuilding Plan Update

Table 4-2 lists the numerical values for  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{MAX}$ ,  $T_{F=0}$ ,  $P_{MAX}$ ,  $T_{TARGET}$  and an SPR harvest rate. The values of  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{F=0}$ , and  $T_{MAX}$  are derived from the rebuilding analysis used in formulating the rebuilding plan (Methot and Stewart 2006). The Council chose a target rebuilding year of 2063.

#### Canary Rockfish Fishing Communities

Amendment 16-4 revised the Council's approach to rebuilding plans, requiring an analysis of the needs of fishing communities in relation to overfished species rebuilding times, in addition to the traditional analysis of rebuilding times in relation to the status and biology of the stock. For Amendment 16-4 and the 2007-2008 fisheries, fishing community needs are described and analyzed in an EIS (PFMC 2006). Chapter 7 of that EIS discusses the communities that make up the socio-economic environment of the Pacific Coast groundfish fisheries. In general, canary rockfish is a continental shelf species that is taken coastwide in all of the groundfish fisheries, commercial and recreational, as well as in many commercial and recreational fisheries targeting species other than groundfish. All groundfish fishing communities and many non-groundfish fishing communities off the U.S. West Coast are affected by canary rockfish rebuilding measures.

#### Canary Rockfish Rebuilding Strategy

As shown in Table 4-1, at the inception of the rebuilding plan the harvest control rule for canary rockfish was a fishing mortality rate of 0.022. Based on the 2002 canary rockfish rebuilding analysis (Methot and Piner 2002a), this harvest rate is likely to rebuild the stock by the target year of 2074. This value is likely to change over time as stock size and structure changes. Any updated value will be published in federal groundfish regulations. The fishing mortality rate is applied to the exploitable biomass estimate to determine the OY for a given fishing period.

Management measures are implemented through the biennial harvest specification and management process described in Chapter 5. The types of management measures that may be implemented through this process are described in Chapter 6. In 2003, at the time of rebuilding plan adoption, measures intended to limit bycatch of overfished species included prohibiting retention of certain overfished species during some parts of the year, reducing landing limits (cumulative trip limits) on co-occurring species, establishing extensive time/area closures, and restricting the use of trawl nets equipped with large footropes. (By using large footropes with heavy roller gear, bottom trawlers can access rocky habitat on the continental shelf. This is the preferred habitat for some overfished species.)

Beginning in 2002 time/area closures, referred to as Groundfish Conservation Areas (GCAs), came into use as a way of decreasing bycatch of overfished species. GCAs enclose depth ranges where bycatch of overfished species is most likely to occur, based on information retrieved from log books and the at-sea observer program. The boundaries vary by season and fishery sector, and may be modified in response to new information about the geographic and seasonal distribution of bycatch.

Canary rockfish prefer rocky areas on the continental shelf so management measures in use at the time of rebuilding plan adoption were intended to discourage fishing in these areas. Under the regulations in

place during 2003, bottom trawling is prohibited in the GCA, which encompasses depth ranges where canary rockfish are most frequently caught. In addition, the aforementioned restrictions on the use of trawl nets equipped with large footropes discourage fishing in the rocky habitat preferred by this species. In areas shoreward of the GCA large footrope gear is prohibited, preventing trawlers from assessing rocky habitat in these shallower depths. In areas deeper than the GCA, either small or large footrope gear may be used, although large footrope gear is the preferred type in these depths. In addition, cumulative trip limits are structured to encourage vessels to fish exclusively in deep water where canary rockfish (as well as some other overfished species) are not encountered. Vessels are allowed to use all gear configurations during any given cumulative limit period (currently two months). However, vessels which use the small footrope configuration are restricted to lower cumulative trip limits than vessels using large footrope configurations. Since the large footrope configuration may only be used offshore of the GCA, these measures encourage fishing exclusively in deeper water to take advantage of the higher limits afforded this gear type.

Recreational fisheries are managed mainly through bag limits, size limits, and fishing seasons established for each West Coast state. Bag and size limits have been established for canary rockfish. In addition, managers have the option of closing areas to recreational fishing if needed to prevent the canary rockfish OY from being exceeded.

The Council's rebuilding measures for 2007-2008, adopted at the same time as the Council's adoption of Amendment 16-4, continue the Council's strategy of constraining canary rockfish total mortality by restricting fishing on co-occurring healthy stocks and preventing fishing in areas where canary rockfish may be taken incidentally. Additionally, the Council has adopted a requirement that trawl vessels operating north of 40°10' N. latitude use selective flatfish trawl gear when operating in nearshore waters, a gear that minimizes rockfish bycatch during flatfish trawl fishing. The Council has also adopted canary rockfish bycatch limits for the Pacific whiting fishery, which has some canary rockfish incidental catch.

#### **5.6.4.3.4.6.4.3. Cowcod**

##### Status of the Cowcod and Fisheries Affected by Stock Rebuilding Measures at the Time of Rebuilding Plan Adoption (April 2004)

Relatively little is known about cowcod, a species of large rockfish that ranges from Ranger Bank and Guadalupe Island in central Baja California to Usal, Mendocino County, California (Miller and Lea 1972), and may infrequently occur as far north as Newport, Oregon. Cowcod have been assessed only once (Butler, *et al.* 1999). Adult cowcod are primarily found over high relief rocky areas (Allen 1982). They are generally solitary, but occasionally aggregate (Love, *et al.* 1990).

While cowcod are not a major component of the groundfish fishery, they are highly desired by both recreational and commercial fishers because of their bright color and large size. In recent years small amounts have been caught by limited entry trawl vessels and recreational anglers in Southern California. The cowcod stock south of Cape Mendocino has experienced a long-term decline. The cowcod stock in the Conception area was assessed in 1998 (Butler, *et al.* 1999). Abundance indices decreased approximately tenfold between the 1960s and the 1990s, based on commercial passenger fishing vessel (CPFV) logs (Butler, *et al.* 1999). Recreational and commercial catch also declined substantially from peaks in the 1970s and 1980s, respectively.

$B_0$  was estimated to be 3,370 mt, and 1998 spawning biomass was estimated at 7% of  $B_0$ , well below the 25% overfishing threshold. As a result, NMFS declared cowcod in the Conception and Monterey management areas overfished in January 2000. Large areas off Southern California (the Cowcod

Conservation Areas [CCAs]) have been closed to fishing for cowcod. The stock's low productivity and declined spawning biomass also necessitates an extended rebuilding period, estimated at 62 years with no fishing-related mortality ( $T_{MIN}$ ), to achieve a 1,350 mt BMSY for the Conception management area.

There is relatively little information about the cowcod stock, and there are major uncertainties in the one assessment that has been conducted. The assessment authors needed to make estimates of early landings based on more recent data and reported total landings of rockfish. Age and size composition of catches are poorly sampled, population structure is unknown, and the assessment was restricted to Southern California waters.

A cowcod rebuilding review was completed in 2003, which validated the assumption that non-retention regulations and area closures have been effective in constraining cowcod fishing mortality (Butler, *et al.* 2003). These results, although encouraging, are based on cowcod fishery-related removals from CPFV observations and angler reported discards. Non-retention regulations and limited observation data have increased the need for fishery independent population indices.

The Council adopted a rebuilding plan for cowcod at its April 2004 meeting, as described by the parameter values listed in Table 4-1. These values are based on a rebuilding analysis conducted by Butler and Barnes (Butler and Barnes 2000).

Amendment 16-4, adopted by the Council at its June 2006 meeting, revised the rebuilding parameters for cowcod, as listed in Table 4-2. These values are based on a rebuilding analysis conducted by Piner (2006) which had determined that the cowcod stock was between 14% and 21% of its unfished level in 2005.

#### Methods Used to Calculate Stock Rebuilding Parameters

The Cowcod rebuilding analysis (Butler and Barnes 2000) was completed before the SSC default rebuilding analysis methodology (Punt 2002), described in Section 4.5.2, had been developed. Instead, it uses a surplus production model using a log-normal distribution fitted to recruitment during 1951-1998. At the time of rebuilding plan adoption (2004) a new cowcod stock assessment and rebuilding analysis had not been completed. In April 2004 the SSC recommended that future cowcod stock assessments use a model whose output can be used in the default rebuilding analysis methodology.

The methods in the rebuilding analysis (Piner 2006) used to develop the revised cowcod rebuilding plan under Amendment 16-4 do not differ substantially from the approach described in Section 4.5.2.

#### Rebuilding Parameter Values at the Time of Rebuilding Plan Adoption

Table 4-1 lists the numerical values for  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{MAX}$ ,  $P_{MAX}$ ,  $T_{TARGET}$  and  $F$ . The values of  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ , and  $T_{MAX}$  are derived from the rebuilding analysis (Butler and Barnes 2000) used in formulating the rebuilding plan. The Council chose a value of 60% for  $P_{MAX}$ , based on a harvest control rule of  $F = 0.009$ . This results in a target year of 2090.

#### Rebuilding Parameter Values from Amendment 16-4 Rebuilding Plan Update

Table 4-2 lists the numerical values for  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{MAX}$ ,  $T_{F=0}$ ,  $P_{MAX}$ ,  $T_{TARGET}$  and an SPR harvest rate. The values of  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{F=0}$ , and  $T_{MAX}$  are derived from the rebuilding analysis used in formulating the rebuilding plan (Piner 2006). The Council chose a target rebuilding year of 2039.

### Cowcod Fishing Communities

Amendment 16-4 revised the Council's approach to rebuilding plans, requiring an analysis of the needs of fishing communities in relation to overfished species rebuilding times, in addition to the traditional analysis of rebuilding times in relation to the status and biology of the stock. For Amendment 16-4 and the 2007-2008 fisheries, fishing community needs are described and analyzed in an EIS (PFMC 2006). Chapter 7 of that EIS discusses the communities that make up the socio-economic environment of the Pacific Coast groundfish fisheries. In general, cowcod is a sedentary and site-loyal continental shelf species that is most frequently taken off southern California in commercial non-trawl and recreational fisheries. All groundfish fishing communities off the southern U.S. West Coast are affected by cowcod rebuilding measures.

### Cowcod Rebuilding Strategy

As shown in Table 4-1, at the inception of the rebuilding plan the harvest control rule for cowcod was a fishing mortality rate of 0.009. Based on the 2000 cowcod rebuilding analysis (Butler and Barnes 2000), this harvest rate is likely to rebuild the stock by the target year of 2090. This value is likely to change over time as stock size and structure changes. Any updated value will be published in federal groundfish regulations. The fishing mortality rate is applied to the exploitable biomass estimate to determine the OY for a given fishing period.

Management measures are implemented through the biennial harvest specification and management process described in Chapter 5. The types of management measures that may be implemented through this process are described in Chapter 6. In 2004, at the time of rebuilding plan adoption, measures intended to limit bycatch of overfished species included prohibiting retention of certain overfished species during some parts of the year, reducing landing limits (cumulative trip limits) on co-occurring species, establishing extensive time/area closures, and restricting the use of trawl nets equipped with large footropes. (By using large footropes with heavy roller gear, bottom trawlers can access rocky habitat on the continental shelf. This is the preferred habitat for some overfished species.)

Beginning in 2002, time/area closures known as GCAs came into use as a way of decreasing bycatch of overfished species. GCAs enclose depth ranges where bycatch of overfished species is most likely to occur, based on information retrieved from logbooks and the at-sea observer program. The boundaries vary by season and fishery sector, and may be modified in response to new information about the geographic and seasonal distribution of bycatch.

Because cowcod is a fairly sedentary species, establishment of a marine protected area, considered one of the GCAs, is the key strategy for limiting cowcod fishing mortality. The CCAs in the Southern California Bight encompasses two areas of greatest cowcod density, as estimated in 2000, based on historical cowcod catch and catch rates in commercial and recreational fisheries. To aid in enforcement, the CCAs are bounded by straight lines enclosing simple polygons. Butler, et al. (Butler, *et al.* 2003) concluded that the CCAs have been effective in reducing bycatch to levels projected to allow stock rebuilding. Estimated fishery removals have been at levels sufficient to rebuild the stock, since the CCAs were implemented, except in 2001 when 5.6 mt was caught in the Conception management area. Most of this catch occurred in the spot prawn trawl fishery, which subsequently has been phased out.

Given the particular life history characteristics of cowcod, the Council will continue to use species-specific area closures to protect cowcod. As new information becomes available on cowcod behavior and fisheries interactions with cowcod, the boundaries or related regulations concerning the current CCAs may change, and additional CCAs may be established by regulation.

The Council's rebuilding measures for 2007-2008, adopted at the same time as the Council's adoption of Amendment 16-4, continue the Council's strategy of constraining cowcod total mortality by restricting or eliminating fishing in areas where cowcod commonly occur and may be taken incidentally.

#### **5.6.4.4.4.6.4.4. Darkblotched Rockfish**

##### **Status of the Darkblotched Stock and Fisheries Affected by Stock Rebuilding Measures at the Time of the Council's Rebuilding Plan Adoption (June 2003)**

Historically, darkblotched rockfish were managed as part of a coastwide *Sebastes* complex, which was later segregated into north and south management units divided at 40°30' N latitude. As a result, fishery-dependent data from this period are generally unavailable. The first darkblotched rockfish stock assessment estimated the proxy MSY harvest rate and overfishing rate for the stock (Lenarz 1993).

Rogers et al. (Rogers, *et al.* 2000) assessed darkblotched stock status in 2000 and determined the stock was at 14% to 31% of its unfished level. This range in biomass estimates encompasses the MSST threshold of 25%; uncertainty in past catches by foreign vessels, which targeted Pacific ocean perch and also caught darkblotched rockfish, was the most important contributor to this wide range for the biomass estimate. A larger unfished biomass ( $B_0$ ) is computed using larger historic catch estimates. Since the MSST is expressed as a percent of unfished biomass, a larger  $B_0$  increases the absolute value of this threshold, making an overfished determination more likely. Without definitive information on foreign catches, managers assumed darkblotched comprised 10% of this catch, leading to the conclusion that the spawning stock biomass was 22% of its unfished level. Because this is below the MSST, the stock was declared overfished in 2000.

The Council adopted a rebuilding plan for darkblotched rockfish at its June 2003 meeting, as described by the parameter values listed in Table 4-1. These values are based on a rebuilding analysis conducted by Methot and Rogers (Methot and Rogers 2001).

Darkblotched rockfish occur on the outer continental shelf and continental slope, mainly north of Point Reyes. Because of this distribution they are caught exclusively by commercial vessels. Most landings have been made by bottom trawl vessels targeting flatfish on the continental shelf, rockfish on the continental slope, and the Dover sole-thornyhead-sablefish complex, also on the slope.

##### **Methods Used to Calculate Stock Rebuilding Parameters**

The methods used in the rebuilding analysis (2001) upon which the original rebuilding plan was based, and those used for the rebuilding plan revision under Amendment 16-4 (2006), do not differ substantially from the approach described in Section 4.5.2.

##### **Rebuilding Parameter Values at the Time of Rebuilding Plan Adoption**

Table 4-1 lists the numerical values for  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{MAX}$ ,  $P_{MAX}$ ,  $T_{TARGET}$  and  $F$ . The values of  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ , and  $T_{MAX}$  are derived from the rebuilding analysis used in formulating the rebuilding plan (Methot and Rogers 2001). The Council chose a value of 80% for  $P_{MAX}$ , based on a harvest control rule of  $F = 0.027$ . This results in a target year of 2030.

##### **Rebuilding Parameter Values from Amendment 16-4 Rebuilding Plan Update**

Table 4-2 lists the numerical values for  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{MAX}$ ,  $T_{F=0}$ ,  $P_{MAX}$ ,  $T_{TARGET}$  and an SPR harvest rate. The values of  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{F=0}$ , and  $T_{MAX}$  are derived from the rebuilding analysis used in formulating the rebuilding plan (Rogers 2006). The Council chose a target rebuilding year of 2011.

### Darkblotched Rockfish Fishing Communities

Amendment 16-4 revised the Council's approach to rebuilding plans, requiring an analysis of the needs of fishing communities in relation to overfished species rebuilding times, in addition to the traditional analysis of rebuilding times in relation to the status and biology of the stock. For Amendment 16-4 and the 2007-2008 fisheries, fishing community needs are described and analyzed in an EIS (PFMC 2006). Chapter 7 of that EIS discusses the communities that make up the socio-economic environment of the Pacific Coast groundfish fisheries. In general, darkblotched rockfish is a continental slope species that is most frequently taken in the commercial trawl fisheries north of 38° N. latitude. Fishing communities that participate in the slope trawl fisheries of the northern U.S. West Coast are most strongly affected by darkblotched rebuilding measures.

### Darkblotched Rockfish Rebuilding Strategy

As shown in Table 4-1, at the inception of the rebuilding plan the harvest control rule for darkblotched rockfish was a fishing mortality rate of 0.027. Based on the 2001 rebuilding analysis, this harvest rate is likely to rebuild the stock by the target year of 2030. This value is likely to change over time as stock size and structure changes. Any updated value will be published in federal groundfish regulations. The fishing mortality rate is applied to the exploitable biomass estimate to determine the OY for a given fishing period.

Management measures are implemented through the biennial harvest specification and management process described in Chapter 5. The types of management measures that may be implemented through this process are described in Chapter 6. In 2003, at the time of rebuilding plan adoption, measures intended to limit bycatch of overfished species included prohibiting retention of certain overfished species during some parts of the year, reducing landing limits (cumulative trip limits) on co-occurring species, establishing extensive time/area closures, and restricting the use of trawl nets equipped with large footropes. (By using large footropes with heavy roller gear, bottom trawlers can access rocky habitat on the continental shelf. This is the preferred habitat for some overfished species.)

Beginning in 2002 time/area closures, referred to as Groundfish Conservation Areas (GCAs), came into use as a way of decreasing bycatch of overfished species. GCAs enclose depth ranges where bycatch of overfished species is most likely to occur, based on information retrieved from log books and the at-sea observer program. The boundaries vary by season and fishery sector, and may be modified in response to new information about the geographic and seasonal distribution of bycatch.

To limit darkblotched rockfish bycatch, an outer boundary of the GCA was set to move fishing activity into deeper water, away from the depth range of higher abundance for this species. In 2003 this outer boundary was modified during the winter months to allow targeting of petrale sole and other flatfish in shallower depths while still minimizing bycatch. The cumulative trip limits for minor slope rockfish north of Cape Mendocino, the species complex that darkblotched rockfish are managed under, and for splitnose rockfish, a co-occurring target species, were also lowered. Trip limits for other target species also may be adjusted to reduce darkblotched rockfish bycatch.

The Council's rebuilding measures for 2007-2008, adopted at the same time as the Council's adoption of Amendment 16-4, continue the Council's strategy of constraining darkblotched rockfish total mortality by



restricting fishing on co-occurring healthy stocks and preventing fishing in areas where darkblotched rockfish may be taken incidentally. Additionally, the Council has adopted darkblotched rockfish bycatch limits for the Pacific whiting fishery, which has some darkblotched rockfish incidental catch.

#### **5.6.4.5.4.6.4.5. Pacific Ocean Perch**

##### **Status of the Pacific Ocean Perch Stock and Fisheries Affected by Stock Rebuilding Measures at the Time of the Council's Rebuilding Plan Adoption (June 2003)**

Pacific Ocean Perch (POP) were targeted by Soviet and Japanese factory trawlers between 1965 and 1975. Their large catches during this period substantially contributed to a decline in the West Coast stock. In 1981, just before this FMP was implemented, the Council declared the POP stock depleted and recommended conservative harvest policies. Although management measures discouraged targeting POP while allowing continued fishing on other species, the stock did not recover and the Council recommended still more restrictive measures. A 1998 stock assessment (Ianelli and Zimmerman 1998) estimated POP biomass was 13% of the unfished level, leading NMFS to declare the stock overfished in 1999.

The Council adopted a rebuilding plan for POP at its June 2003 meeting, as described by the parameter values listed in Table 4-1. These values are based on a 2000 stock assessment (Ianelli, *et al.* 2000) and subsequent rebuilding analysis (Punt and Ianelli 2001). A retrospective analysis of foreign fleet catches, underway at the time of rebuilding plan adoption, may change the rebuilding period estimates on which the rebuilding plan is based.

Amendment 16-4, adopted by the Council at its June 2006 meeting, revised the rebuilding parameters for POP, as listed in Table 4-2. These values are based on a rebuilding analysis conducted by Hamel (2006), which had determined that the POP stock was at 23.4% of its unfished level in 2005.

POP tend to occur at similar depths as darkblotched rockfish, although they have a more northerly geographic distribution. As a result, POP are caught in similar fisheries as darkblotched rockfish, but only north of Cape Mendocino. At the time the rebuilding plan was adopted, limited entry trawl vessels targeting flatfish, including petrale sole and arrowtooth flounder, accounted for more than 90% of all POP landings. POP are not an important component of the recreational fishery.

##### **Methods Used to Calculate Stock Rebuilding Parameters**

The methods in the rebuilding analysis (Punt and Ianelli 2001) upon which the original rebuilding plan was based, and those used for the rebuilding plan revision under Amendment 16-4 (Hamel 2006), do not differ substantially from the approach described in Section 4.5.2.

##### **Rebuilding Parameter Values at the Time of Rebuilding Plan Adoption**

Table 4-1 lists the numerical values for  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{MAX}$ ,  $P_{MAX}$ ,  $T_{TARGET}$  and  $F$ . The values of  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ , and  $T_{MAX}$  are derived from the rebuilding analysis used in formulating the rebuilding plan (Punt and Ianelli 2001). The Council chose a value of 70% for  $P_{MAX}$ , based on a harvest control rule of  $F = 0.0082$ . This results in a target year of 2027.

##### **Rebuilding Parameter Values from Amendment 16-4 Rebuilding Plan Update**

Table 4-2 lists the numerical values for  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{MAX}$ ,  $T_{F=0}$ ,  $P_{MAX}$ ,  $T_{TARGET}$  and an SPR harvest

rate. The values of  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{F=0}$ , and  $T_{MAX}$  are derived from the rebuilding analysis used in formulating the rebuilding plan (Hamel 2006). The Council chose a target rebuilding year of 2017.

### Pacific Ocean Perch Fishing Communities

Amendment 16-4 revised the Council's approach to rebuilding plans, requiring an analysis of the needs of fishing communities in relation to overfished species rebuilding times, in addition to the traditional analysis of rebuilding times in relation to the status and biology of the stock. For Amendment 16-4 and the 2007-2008 fisheries, fishing community needs are described and analyzed in an EIS (PFMC 2006). Chapter 7 of that EIS discusses the communities that make up the socio-economic environment of the Pacific Coast groundfish fisheries. In general, POP is a continental slope species that is most frequently taken in the commercial trawl fisheries north of 40° 10' N. latitude. Fishing communities that participate in the slope trawl fisheries of the northern U.S. West Coast are most strongly affected by POP rebuilding measures.

### Pacific Ocean Perch Rebuilding Strategy

As shown in Table 4-1, at the inception of the rebuilding plan the harvest control rule for POP was a fishing mortality rate of 0.0082. Based on the 2001 POP rebuilding analysis (Punt and Ianelli 2001), this harvest rate is likely to rebuild the stock by the target year of 2027. This value is likely to change over time as stock size and structure changes. Any updated value will be published in federal groundfish regulations. The fishing mortality rate is applied to the exploitable biomass estimate to determine the OY for a given fishing period.

Management measures are implemented through the biennial harvest specification and management process described in Chapter 5. The types of management measures that may be implemented through this process are described in Chapter 6. In 2003, at the time of rebuilding plan adoption, measures intended to limit bycatch of overfished species included prohibiting retention of certain overfished species during some parts of the year, reducing landing limits (cumulative trip limits) on co-occurring species, establishing extensive time/area closures, and restricting the use of trawl nets equipped with large footropes. (By using large footropes with heavy roller gear, bottom trawlers can access rocky habitat on the continental shelf. This is the preferred habitat for some overfished species.)

Beginning in 2002 time/area closures, referred to as Groundfish Conservation Areas (GCAs), came into use as a way of decreasing bycatch of overfished species. GCAs enclose depth ranges where bycatch of overfished species is most likely to occur, based on information retrieved from log books and the at-sea observer program. The boundaries vary by season and fishery sector, and may be modified in response to new information about the geographic and seasonal distribution of bycatch.

Because POP tend to co-occur with darkblotched rockfish, management measures applicable to that species also serve to constrain catches of POP. These measures include configuring the outer boundary of the GCA so that vessels fish in deeper water, where POP are less abundant. A cumulative trip limit, which represents the maximum amount of an identified species or species group that may be landed within the cumulative limit period (in 2003, two months) is also established for this species. Trip limits for overfished species are intended to discourage targeting on them while permitting any incidental catch to be landed. (Bycatch discarded at sea is more difficult to monitor.) As with darkblotched rockfish, trip limits for target species also may be adjusted in order to minimize bycatch of overfished species.

The Council's rebuilding measures for 2007-2008, adopted at the same time as the Council's adoption of Amendment 16-4, continue the Council's strategy of constraining POP total mortality by restricting

fishing on co-occurring healthy stocks and preventing fishing in areas where POP may be taken incidentally.

#### **5.6.4.6.4.6. Widow Rockfish**

##### Status of the Widow Rockfish Stock and Fisheries Affected by Stock Rebuilding Measures at the Time of Rebuilding Plan Adoption (April 2004)

Widow rockfish are an important commercial species from British Columbia to central California, particularly since 1979, when an Oregon trawl fisherman demonstrated the ability to make large catches at night using midwater trawl gear. Since that time, many more participants entered the fishery and landings of widow rockfish increased rapidly (Love, *et al.* 2002). Because widow rockfish are commonly distributed in the mesopelagic (midwater) zone they are most commonly caught in with midwater trawl gear, which sweeps this zone (in contrast to bottom trawl gear used to target most groundfish species). Historically, widow rockfish were a major target species. Landings peaked at 12,473 mt in 1989 and as recently as 2000 stood at 3,866 mt (PFMC 2002). Target fisheries were eliminated after widow rockfish were declared overfished in 2001. Currently, the Pacific whiting fishery accounts for about three-quarters of widow rockfish catches; a small directed fishery for yellowtail rockfish, prosecuted by Washington treaty Indian Tribes, and the limited entry fixed gear sector account for almost all of the remaining incidental catches. Most catches occur in the U.S.-Vancouver, Columbia, and Eureka management areas.

Williams, *et al.* (Williams, *et al.* 2000) assessed the widow rockfish in 2000. The spawning output level (8,223 mt), based on that assessment and a revised rebuilding analysis (Punt and MacCall 2002) adopted by the Council in June 2001, was at 23.6% of the unfished level (33,490 mt) in 1999. This result was computed using the average recruitment from 1968 to 1979 multiplied by the spawning output-per-recruit at  $F = 0$ . The analysis concluded the rebuilding period in the absence of fishing is 22 years, and with a mean generation time of 16 years, the maximum allowable time to rebuild ( $T_{MAX}$ ) is 38 years. Widow rockfish were declared overfished in 2001 based on these analyses.

The most recent assessment (He, *et al.* 2003b) concluded that the widow rockfish stock size is 22.4% of the unfished biomass, but indicates stock productivity is considerably lower than previously thought. Data sparseness was a significant problem in this widow rockfish assessment (Conser, *et al.* 2003; He, *et al.* 2003b). Limited logbook data prior to 1990 is available from bottom trawl fisheries, a questionable data source for a midwater species. The NMFS laboratory at Santa Cruz conducts a midwater trawl survey from which a juvenile index is derived. This index has been highly variable in its ability to predict recruitment, in part, due to the survey's limited geographical area relative to the overall distribution of widow rockfish. The widow rockfish rebuilding analysis considered a wide range of model formulations that investigated different hypothesis on natural mortality, stock-recruitment variability, and the use of a power coefficient to reduce variability of the Santa Cruz midwater juvenile survey. The SSC recommended model formulations that pre-specify the recruitment for 2003-2005, do not use a stock-recruitment relationship (recruits per spawner ratios were used instead to project future recruitment), and vary the power coefficient between two and four in the Santa Cruz midwater juvenile survey. The SSC did not recommend a power coefficient higher than four because the relationship between the Santa Cruz midwater survey recruitment index and other recruitment indices changed dramatically with higher powers. The previous rebuilding analysis (Punt and MacCall 2002) had used a power coefficient of 10 that dampened the estimate of recruitment variability and suggested much higher stock productivity.

Many of the rebuilding parameters for widow rockfish did not change dramatically with the new rebuilding analysis. The rebuilding period in the absence of fishing increased to 25 years and, with a

mean generation time of 16 years; the maximum allowable time to rebuild ( $T_{MAX}$ ) is 41 years. However, the harvest rate associated with different rebuilding strategies dropped significantly in response to the new understanding of decreased stock productivity. Thus, the interim rebuilding OY for 2003 using the 2000 rebuilding analysis was 832 mt, while in 2004, using the 2003 rebuilding analysis (He, *et al.* 2003a), the OY was 284 mt (using the base model, Model 8, which uses a power coefficient of three).

The Council adopted a rebuilding plan for widow rockfish at its April 2004 meeting, as described by the parameter values listed in Table 4-1. These values are based on a rebuilding analysis conducted by He, *et al.* (He, *et al.* 2003a).

Amendment 16-4, adopted by the Council at its June 2006 meeting, revised the rebuilding parameters for widow rockfish, as listed in Table 4-2. These values are based on a rebuilding analysis conducted by He, *et al.* (2006) which had determined that the widow rockfish was at 31.1% of its unfished level in 2004.

#### Methods Used to Calculate Stock Rebuilding Parameters

The methods used in the rebuilding analysis (He, *et al.* 2003a) upon which the original rebuilding plan was based, and those used for the rebuilding plan revision under Amendment 16-4 (He, *et al.* 2006), do not differ substantially from the approach described in Section 4.5.2.

#### Rebuilding Parameter Values at the Time of Rebuilding Plan Adoption

Table 4-1 lists the numerical values for  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{MAX}$ ,  $P_{MAX}$ ,  $T_{TARGET}$ , and  $F$ . The values of  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ , and  $T_{MAX}$  are derived from the rebuilding analysis used in formulating the rebuilding plan (He, *et al.* 2003a). Using Model 8, the base model from the 2003 stock assessment (He, *et al.* 2003b), the Council chose a value of 60% for  $P_{MAX}$ , based on a harvest control rule of  $F = 0.0093$ . This results in a target year of 2038.

#### Rebuilding Parameter Values from Amendment 16-4 Rebuilding Plan Update

Table 4-2 lists the numerical values for  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{MAX}$ ,  $T_{F=0}$ ,  $P_{MAX}$ ,  $T_{TARGET}$  and an SPR harvest rate. The values of  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{F=0}$ , and  $T_{MAX}$  are derived from the rebuilding analysis used in formulating the rebuilding plan (He, *et al.* 2006). The Council chose a target rebuilding year of 2015.

#### Widow Rockfish Fishing Communities

Amendment 16-4 revised the Council's approach to rebuilding plans, requiring an analysis of the needs of fishing communities in relation to overfished species rebuilding times, in addition to the traditional analysis of rebuilding times in relation to the status and biology of the stock. For Amendment 16-4 and the 2007-2008 fisheries, fishing community needs are described and analyzed in an EIS (PFMC 2006). Chapter 7 of that EIS discusses the communities that make up the socio-economic environment of the Pacific Coast groundfish fisheries. In general, widow rockfish is a continental shelf species that is most frequently taken as incidental catch in the mid-water trawl Pacific whiting fisheries north of 40°10' N. latitude, but which is also taken incidentally in all groundfish fishing sectors in this area. Measures to rebuild widow rockfish by eliminating its directed harvest and to preventing its incidental catch affect all groundfish fishing communities off the central and northern U.S. West Coast.

#### Widow Rockfish Rebuilding Strategy

As shown in Table 4-1, at the inception of the rebuilding plan the harvest control rule for canary rockfish

was a fishing mortality rate of 0.0093. Based on the 2003 widow rockfish rebuilding analysis (He, et al. 2003a), this harvest rate is likely to rebuild the stock by the target year of 2038. This value is likely to change over time as stock size and structure changes. Any updated value will be published in federal groundfish regulations. The fishing mortality rate is applied to the exploitable biomass estimate to determine the OY for a given fishing period.

Management measures are implemented through the biennial harvest specification and management process described in Chapter 5. The types of management measures that may be implemented through this process are described in Chapter 6. In 2004, at the time of rebuilding plan adoption, measures intended to limit bycatch of overfished species included prohibiting retention of certain overfished species during some parts of the year, reducing landing limits (cumulative trip limits) on co-occurring species, establishing extensive time/area closures, and restricting the use of trawl nets equipped with large footropes. Because widow rockfish are mainly caught in the water column, bottom trawl gear restrictions have little effect on widow rockfish catch rates.

Beginning in 2002, time/area closures known as GCAs came into use as a way of decreasing bycatch of overfished species. GCAs enclose depth ranges where bycatch of overfished species is most likely to occur, based on information retrieved from logbooks and the at-sea observer program. The boundaries vary by season and fishery sector, and may be modified in response to new information about the geographic and seasonal distribution of bycatch.

Because widow rockfish occur in midwater and aggregate at night, elimination of target fishery opportunities is a relatively easy way of reducing widow rockfish bycatch. The Council has taken a policy approach of establishing management measures to reduce incidental catch in the Pacific whiting fishery sufficient to constrain total mortality below harvest levels (OYs) needed to rebuild the stock. At the time of rebuilding plan adoption, catch in other fisheries is sufficiently small so that rebuilding targets can be met without applying any special measures, beyond those needed to discourage targeting, to reduce widow rockfish fishing mortality in these fishery sectors.

Widow rockfish catches in recreational fisheries are relatively modest. Catches in this sector are managed mainly through bag limits, size limits, and fishing seasons established for each West Coast state. No recreational bag and size limits have been established for widow rockfish. However, general bag limits for rockfish may have some constraining effect on widow recreational catches.

The Council's rebuilding measures for 2007-2008, adopted at the same time as the Council's adoption of Amendment 16-4, continue the Council's strategy of constraining widow rockfish total mortality by eliminating the directed mid-water yellowtail and widow rockfish fishery, restricting fishing on co-occurring healthy stocks and preventing fishing in areas where widow rockfish may be taken incidentally. Additionally, the Council has adopted a requirement that trawl vessels operating north of 40°10' N. latitude use selective flatfish trawl gear when operating in nearshore waters, a gear that minimizes rockfish bycatch during flatfish trawl fishing. The Council has also adopted widow rockfish bycatch limits for the Pacific whiting fishery, which tends to take widow rockfish incidentally.

#### **5.6.4.7.4.6.4.7. Yelloweye Rockfish**

##### **Status of the Yelloweye Rockfish Stock and Fisheries Affected by Stock Rebuilding Measures at the Time of Rebuilding Plan Adoption (April 2004)**

Yelloweye rockfish are common from Central California northward to the Gulf of Alaska. They are bottom-dwelling, generally solitary, rocky reef fish, found either on or just over reefs (Eschmeyer, *et al.* 1983; Love 1991; Miller and Lea 1972; O'Connell and Funk 1986). Boulder areas in deep water (>180 m) are the most densely populated habitat type, and juveniles prefer shallow-zone broken-rock habitat (O'Connell and Carlile 1993). They also reportedly occur around steep cliffs and offshore pinnacles (Rosenthal, *et al.* 1982). The presence of refuge spaces is an important factor affecting their occurrence (O'Connell and Carlile 1993). Yelloweye rockfish are potentially caught in a range of both commercial and recreational fisheries. Because of their preference for rocky habitat, they are more vulnerable to hook and line gear.

The first ever yelloweye rockfish stock assessment was conducted in 2001 (Wallace 2002). This assessment incorporated two area assessments: one from Northern California using CPUE indices constructed from Marine Recreational Fisheries Statistical Survey (MRFSS) sample data and California Department of Fish and Game (CDFG) data collected on board commercial passenger fishing vessels, and the other from Oregon using Oregon Department of Fish and Wildlife (ODFW) sampling data. The assessment concluded current yelloweye rockfish stock biomass is about 7% of unexploited biomass in Northern California and 13% of unexploited biomass in Oregon. The assessment revealed a thirty-year declining biomass trend in both areas with the last above average recruitment occurring in the late 1980s. The assessment's conclusion that yelloweye rockfish biomass was well below the 25% of unexploited biomass threshold for overfished stocks led to this stock being separated from the rockfish complexes in which it was previously listed. Until 2002, when yelloweye rockfish were declared overfished, they were listed in the Aremaining rockfish@ complex on the shelf in the Vancouver, Columbia, and Eureka management areas and the Aother rockfish@ complex on the shelf in the Monterey and Conception areas. As with the other overfished stocks, yelloweye rockfish harvest is now tracked separately.

In June 2002 the SSC recommended that managers should conduct a new assessment incorporating Washington catch and age data. This recommendation was based on evidence that the biomass distribution of yelloweye rockfish on the West Coast was centered in waters off Washington and that useable data from Washington were available. Based on that testimony, the Council recommended completing a new assessment in the summer of 2002, before a final decision was made on 2003 management measures. Methot et al. (Methot and Piner 2002b) did the assessment, which was reviewed by a STAR Panel in August 2002. The assessment result was much more optimistic than the one prepared by Wallace (Wallace 2002), largely due to the incorporation of Washington fishery data. While the overfished status of the stock was confirmed (24% of unfished biomass), Methot et al. (Methot and Piner 2002b) provided evidence of higher stock productivity than originally assumed. The assessment also treated the stock as a coastwide assemblage. This assessment was reviewed and approved by the SSC and the Council at the September 2002 Council meeting. Methot and Piner (2002) prepared a rebuilding analysis based on this assessment.

The Council adopted a rebuilding plan for yelloweye rockfish at its April 2004 meeting, as described by the parameter values listed in Table 4-1. These values are based on a rebuilding analysis conducted by Methot and Piner (Methot and Piner 2002a).

Amendment 16-4, adopted by the Council at its June 2006 meeting, revised the rebuilding parameters for yelloweye rockfish, as listed in Table 4-2. These values are based on a rebuilding analysis conducted by

Tsou and Wallace (2006) which had determined that the yelloweye rockfish stock was at 17.7% of its unfished level in 2006.

Because yelloweye rockfish prefer rocky reef habitat on the continental shelf, they are most vulnerable to recreational and commercial fixed gear fisheries. In the past, the groundfish trawl sector has accounted for a large proportion of the catch: from 1990 to 1997 trawlers took an average of 46% of the catch coastwide (although most catches occur in Washington and Oregon waters). (This discussion is based on data in the table on page 3 of Methot, *et al.* 2003) Trip limit reductions after 1997 and the imposition of restrictions on large footrope trawl gear in 2000 have substantially diminished the amount of yelloweye rockfish caught by the trawl sector. (Large footrope gear had made it possible for trawlers to access the rocky habitat where yelloweye live.) Trawl vessels accounted for only 14% of the catch on average from 1998 to 2001. Commercial fixed gear catches have also taken a significant share of the catch, 38% in the years 1990-1997. However, the implementation of the non-trawl RCA, which encloses much yelloweye habitat, has resulted in their share falling also. Open access directed groundfish fisheries and the Pacific halibut longline fleet also catch small amounts of yelloweye rockfish. Recreational catches have become more significant with the reduction in commercial catches. Comparing the 1990-1997 and 1998-2001 periods, their share of the total coastwide catch almost doubled to 30%, although actual average catches declined slightly. Most recreational catches occur in Washington State waters.

#### Methods Used to Calculate Stock Rebuilding Parameters

The methods used in the rebuilding analysis (Methot and Piner 2002a) upon which the original rebuilding plan was based, and those used for the rebuilding plan revision under Amendment 16-4 (Tsou and Wallace 2006), do not differ substantially from the approach described in Section 4.5.2.

#### Rebuilding Parameter Values at the Time of Rebuilding Plan Adoption

Table 4-1 lists the numerical values for  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{MAX}$ ,  $P_{MAX}$ ,  $T_{TARGET}$ , and  $F$ . The values of  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ , and  $T_{MAX}$  are derived from the rebuilding analysis used in formulating the rebuilding plan (Methot and Piner 2002a). The Council chose a value of 80% for  $P_{MAX}$ , based on a harvest control rule of  $F = 0.0153$ . This results in a target year of 2058.

#### Rebuilding Parameter Values from Amendment 16-4 Rebuilding Plan Update

Table 4-2 lists the numerical values for  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{MAX}$ ,  $T_{F=0}$ ,  $P_{MAX}$ ,  $T_{TARGET}$  and an SPR harvest rate. The values of  $B_0$ ,  $B_{MSY}$ ,  $T_{MIN}$ ,  $T_{F=0}$ , and  $T_{MAX}$  are derived from the rebuilding analysis used in formulating the rebuilding plan (Tsou and Wallace 2006). The Council chose a target rebuilding year of 2084.

#### Yelloweye Rockfish Fishing Communities

Amendment 16-4 revised the Council's approach to rebuilding plans, requiring an analysis of the needs of fishing communities in relation to overfished species rebuilding times, in addition to the traditional analysis of rebuilding times in relation to the status and biology of the stock. For Amendment 16-4 and the 2007-2008 fisheries, fishing community needs are described and analyzed in an EIS (PFMC 2006). Chapter 7 of that EIS discusses the communities that make up the socio-economic environment of the Pacific Coast groundfish fisheries. In general, yelloweye rockfish is a site-loyal continental shelf species that is most frequently taken in recreational and commercial hook-and-line fisheries north of 40°10' N. lat. Measures to rebuild yelloweye rockfish by eliminating its directed harvest and preventing its incidental catch affect all hook-and-line groundfish fishing off the northern U.S. West Coast.

## Yelloweye Rockfish Rebuilding Strategy

As shown in Table 4-1, at the inception of the rebuilding plan the harvest control rule for canary rockfish was a fishing mortality rate of 0.0153. Based on the 2002 rebuilding analysis (Methot and Piner 2002), this harvest rate is likely to rebuild the stock by the target year of 2058. This value is likely to change over time as stock size and structure changes. Any updated value will be published in federal groundfish regulations. The fishing mortality rate is applied to the exploitable biomass estimate to determine the OY for a given fishing period.

Management measures are implemented through the biennial harvest specification and management process described in Chapter 5. The types of management measures that may be implemented through this process are described in Chapter 6. In 2004, at the time of rebuilding plan adoption, measures intended to limit bycatch of overfished species included prohibiting retention of certain overfished species during some parts of the year, reducing landing limits (cumulative trip limits) on co-occurring species, establishing extensive time/area closures, and restricting the use of trawl nets equipped with large footropes. (By using large footropes with heavy roller gear, bottom trawlers can access rocky habitat on the continental shelf. This is the preferred habitat for some overfished species.)

Beginning in 2002, time/area closures known as GCAs came into use as a way of decreasing bycatch of overfished species. GCAs enclose depth ranges where bycatch of overfished species is most likely to occur, based on information retrieved from logbooks and the at-sea observer program. The boundaries vary by season and fishery sector, and may be modified in response to new information about the geographic and seasonal distribution of bycatch.

In addition to the more general measures described above, which are intended to reduce bycatch of all overfished species, the Yelloweye Rockfish Conservation Area (YRCA), a C-shaped closed area off the Washington coast, near Cape Flattery, prevents recreational groundfish and halibut anglers from targeting this species in an area where they are concentrated. Recreational bag and size limits are also used to manage total yelloweye rockfish fishing mortality.

Given the particular life history characteristics of yelloweye rockfish, the Council will continue to use a species-specific area closure or closures to protect yelloweye rockfish. As new information becomes available on yelloweye rockfish behavior and fisheries interactions with yelloweye rockfish, the boundaries or related regulations concerning the current YRCA may change, and additional YRCAs may be established by regulation.

The Council's rebuilding measures for 2007-2008, adopted at the same time as the Council's adoption of Amendment 16-4, continue the Council's strategy of constraining yelloweye rockfish total mortality by restricting fishing on co-occurring healthy stocks and preventing fishing in areas where yelloweye rockfish may be taken incidentally. Additionally, the Council has adopted yelloweye rockfish rebuilding measures in the Pacific halibut fisheries and new YRCAs for the commercial groundfish and salmon fisheries operating off the northern U.S. West Coast.

The Council recognized the need to restrict the fisheries based on the new yelloweye rockfish assessment, but also took into account the potentially widespread negative effects of an immediate reduction in OY and recommended an OY ramp-down strategy over a 5-year period (see the footnote to Table 4-2). The ramp-down strategy provides time to collect much-needed additional data that could better inform new management measures for greater yelloweye rockfish protection, and reduces the immediate adverse impacts to fishing communities while altering the rebuilding period by less than one year.





**Table 4-1. Specified rebuilding plan parameters at the time of plan adoption.**

Species	Year Stock Declared Overfished	Year Rebuilding Plan Adopted	B <sub>0</sub>	B <sub>MSY</sub>	T <sub>MIN</sub>	T <sub>MAX</sub>	P <sub>MAX</sub>	T <sub>TARGET</sub>	Harvest Control Rule
Darkblotched Rockfish	2000	2003	29,044 mt	11,618 mt	2014	2047	80%	2030	F = 0.027
Pacific Ocean Perch	1999	2003	60,212 units of spawning output	24,084 units of spawning output	2012	2042	70%	2027	F = 0.0082
Canary Rockfish	2000	2003	31,550 mt	12,620 mt	2057	2076	60%	2074	F = 0.022
Lingcod	1999	2003	28,882 mt N; 20,971 mt S	9,153 mt N; 8,389 mt S	2007	2009	60%	2009	F = 0.0531 N; F = 0.061 S
Bocaccio*	1999	2004	13,387 B eggs in 2003	5,355 B eggs	2018	2032	70%	2023	F = 0.0498
Cowcod	2000	2004	3,367 mt	1,350 mt	2062	2099	60%	2090	F = 0.009
Widow Rockfish**	2001	2004	43,580 M eggs	17,432 M eggs	2026	2042	60%	2038	F = 0.0093
Yelloweye Rockfish	2002	2004	3,875 mt	1,550 mt	2027	2071	80%	2058	F = 0.0153

\*Based on the STATc base model in MacCall (MacCall 2003b).

\*\*Based on the Model 8 base model in He, *et al.* (He, *et al.* 2003b).

**Table 4-2. Specified rebuilding plan parameters revised under Amendment 16-4.**

Species	B <sub>0</sub>	B <sub>MSY</sub>	T <sub>MIN</sub> *	T <sub>MAX</sub>	T <sub>F=0</sub> *	P <sub>MAX</sub>	T <sub>TARGET</sub>	Harvest Control Rule (SPR Harvest Rate)
Darkblotched Rockfish	26,650 M eggs	10,660 M eggs	2009	2033	2010	100%	2011	F60.7%
Pacific Ocean Perch	37,838 units of spawning output	15,135 units of spawning output	2015	2043	2015	92.9%	2017	F86.4%
Canary Rockfish	34,155 mt	13,662 mt	2048	2071	2053	55.4%	2063	F88.7%
Bocaccio	13,402 B eggs in 2005	5,361 B eggs	2018	2032	2021	77.7%	2026	F77.7%
Cowcod	3,045 mt	1,218 mt	2035	2074	2035	90.6%	2039	F90.0%
Widow Rockfish	49,678 M eggs	19,871 M eggs	2013	2033	2013	95.2%	2015	F95.0%
Yelloweye Rockfish	3,322 mt	1,328 mt	2046	2096	2048	80%	2084	F71.9% **

\* T<sub>MIN</sub> is the shortest time to rebuild from the onset of the rebuilding plan or from the first year of a rebuilding plan, which is usually the year after the stock was declared overfished. The shortest possible time to rebuild the stocks with rebuilding plans under consideration in Amendment 16-4 is T<sub>F=0</sub>, which is the median time to rebuild the stock if all fishing-related mortality were eliminated beginning in 2007.

\*\* The yelloweye rebuilding plan specifies a harvest rate ramp-down strategy before resuming a constant harvest rate in 2011. F71.9% is the constant harvest rate beginning in 2011.

[Amended: 11, 12, 16-1, 16-2, 16-3, 16-4]

#### 5.7.4.7. Determination of OY, ACL, and ACT

Optimum yield (OY) is defined in the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) as the amount of fish which will provide the greatest overall benefit to the Nation—, particularly with respect to food production and recreational opportunities and taking into account the protection of marine ecosystems; that is prescribed on the basis of the MSY from the fishery, as reduced by any relevant economic, social, or ecological factor; and, in the case of an overfished fishery, that provides for rebuilding to a level consistent with producing the MSY in such fishery. OY may be established at the stock or stock complex level, or at the fishery level. Achieving, on a continuing basis, the optimum yield from each fishery” means producing, from each stock, stock complex, or fishery: a long-term series of catches such that the average catch is equal to the OY, overfishing is prevented, the long term average biomass is near or above  $B_{MSY}$ , and overfished stocks and stock complexes are rebuilt consistent with timing and other requirements of section 304(e)(4) of the Magnuson-Stevens Act. The Magnuson-Stevens Act also specifies that OY is based on maximum sustainable yield (MSY), and may be equal to or less than MSY. The fishery management plan (FMP) authorizes establishment of a numerical or non-numerical OY for any groundfish species or species group and lays out the procedures the Council will follow in determining appropriate numerical OY values. An OY may be specified for the fishery management area as a whole or for specific subareas. ~~Numerical one-year OYs will be specified biennially, based on acceptable biological catch/overfishing limits (ABCOFLs) for major species or species groups, which are in turn based on quantitative or qualitative stock assessments.~~ Control rules for determining the numerical values of OYs ensure they will not exceed the ABCOFLs except under tightly limited conditions.

~~The annual catch limit (ACL) is a level of annual catch, which counts all sources of annual fishing-related mortality, including discard mortalities, and is the harvest threshold used to manage west coast fisheries. The ACL is decided in a manner to achieve OY without exceeding a specified OFL or ABC. ACLs are specified for each stock or stock complex actively managed in the fishery and serves as the basis for invoking accountability measures (AMs). The ACL may not exceed the ABC and may be set equal to the ABC if the Council and NMFS judge there are no reasons to buffer the ABC to account for management uncertainty, socioeconomic concerns, or rebuilding concerns. If ACLs are exceeded more often than 1 in 4 years, then AMs, such as catch monitoring and inseason adjustments to fisheries, need to improve or additional AMs may need to be implemented. Such additional AMs may include setting—Otherwise, an annual catch target (ACT), which is a level of harvest below the ACL, may need to be specified. The ACT, which is yet another AM, may be especially important for a stock subject to highly uncertain inseason catch monitoring. Unlike an ACL, the ACT can be exceeded annually. However, it is expected that inseason adjustments to fisheries will occur upon projected attainment of an ACT. OYs, ACLs, and ACTs, if needed, are annual specifications that are specifidetermined every other year in the biennial specifications process described in section 5.1.~~

ACLs and ACTs can ~~also~~ be specified for sectors of a fishery ~~as well as for the entire fishery~~. In such cases, the sector-specific ACLs and/or ACTs would sum to the ACL or ACT specified for the stock ~~for the entire fishery~~. Sector-specific ACLs may be decided for sectors with a formal, long-term allocation of the harvestable surplus of a stock (see section 6.3.2). A sector-specific ACT may serve as a harvest guideline for a sector or used strategically in a rebuilding plan to attempt to reduce mortality of an overfished stock more than the rebuilding plan limits prescribe.

Most of the ~~80~~90-plus species managed by the FMP have never been assessed in either a quantitative or qualitative manner. In some cases even basic catch statistics are unavailable, because many species (rockfish, for example) are not sorted unless specifically required by regulation. Species of this type have generally not been subject to numerical harvest limits, but rather harvest is limited by gear restrictions and market demand. Other management measures which determine the total amount of harvest each year

include trip landing and frequency limits. Those species without a specified OY and not included in a multi-species OY will be included in a non-numerical OY, which is defined as all the fish that can be taken under the regulations, specifications, and management measures authorized by the FMP and promulgated by the U.S. Secretary of Commerce. This non-numerical OY is not a predetermined numerical value, but rather the harvest that results from regulations, specifications, and management measures as they are changed in response to changes in the resource and the fishery. In many cases, the absence of a numerical specification reflects the absence of basic management information, such as abundance estimates and catch statistics. The non-numerical OY concept allows for a variable amount of groundfish to be harvested annually, limited by such constraints as gear restrictions, management measures for other species, and/or absence of consumer acceptance or demand.

The close spatial relationship of many groundfish species throughout the management area results in commercial and recreational catches often consisting of mixtures of several species. This is especially the case in the trawl fishery where fishermen may target on one species, but unavoidably harvest several other species. In such cases, the optimum harvest strategy often is to target on a group (complex or assemblage) of groundfish species.

The Council will avoid allowing overfishing individual stocks and control harvest mortality to allow overfished stocks to rebuild to the MSY level. In the event the Council determines that greater long-term benefits will be gained from the groundfish fishery by overfishing individual stocks or by preventing a stock from recovering to its MSY level, it will justify the action in writing in accordance with the procedures and standards identified in this section and the National Standard Guidelines (50 CFR 600.310(d)). Conversely, the Council may determine that greater benefits will accrue from protecting an individual stock by constraining the multiple species complex or specific components of that complex.

~~Prior to implementation of the FMP in 1982, the states of Washington, Oregon, and California managed the groundfish fishery without the use of quotas. State regulations since the mid 1940s took the form of area closures (such as San Francisco Bay), legal gear definitions, minimum codend mesh regulations, size limits, bag limits, and other non-quota management measures. Implementation of the FMP built upon those historical management practices by increasing the level of catch monitoring, improving the assessment of stock conditions, and establishing other mechanisms for responding to management needs. It provides for continuation of the historical fishery on traditionally harvested groundfish species while allowing for the development of new fisheries for underutilized species. The FMP, as amended, provides for the establishment of resource conservation measures such as harvest guidelines or quotas through the annual specification procedure and annual and inseason management measures through the Apoints of concern@ and socioeconomic framework mechanisms.~~

Reduction in catches or fishing rates for either precautionary or rebuilding purposes is an important component of converting values of ~~ABCOFL~~ to values of ~~OYACL~~. This relationship is specified by the [ABC control rule, which accounts for scientific uncertainty in the determination of the OFL, and the harvest control rule](#). All ~~OYs-ACLs~~ will remain in effect until revised, and, whether revised or not, will be announced at the beginning of the fishing period along with other specifications (see Chapter 5).

Groundfish stock assessments generally provide the following information to aid in determination of ~~ABCOFL~~ and ~~OYACL~~.

1. Current biomass (and reproductive potential) estimate.
2.  $F_{MSY}$  or proxy, translated into exploitation rate.
3. Estimate of MSY biomass ( $B_{MSY}$ ), or proxy, unfished biomass (based on average recruitment),

precautionary threshold, and/or overfished/rebuilding threshold.

4. Precision estimate (e.g., confidence interval) for current biomass estimate.

~~5.7.1.4.7.1.~~ Determination of Numerical  $\Theta Y$ s  $\underline{ACL}$ s If Stock Assessment Information Is Available from a Relatively Data-Rich Assessment (Category 1)

The Council will follow these steps in determining numerical  $\Theta Y$ s  $\underline{ACL}$ s. The recommended numerical  $\Theta Y$ - $\underline{ACL}$  values will include any necessary adjustments to harvest mortality needed to rebuild any stock determined to be below its overfished/rebuilding threshold and may include adjustments to address uncertainty in the status of the stock.

1. ABC<sub>OFL</sub>: Multiply the current fishable biomass estimate times the  $F_{MSY}$  exploitation rate or its proxy to get ABC<sub>OFL</sub>.
2. ABC: Determine an appropriate scientific uncertainty buffer to set the ABC below the OFL.
23. Precautionary adjustment: If the abundance is above the specified precautionary threshold,  $\Theta Y$ - $\underline{ACL}$  ~~may will~~ be equal to or less than ABC. If current biomass estimate is less than the precautionary threshold (Section 4.5.14.4.1), the harvest rate will be reduced according to the harvest control rule specified in Section 4.6.14.5.1 in order to accelerate a return of abundance to optimal levels. If the abundance falls below the overfished/rebuilding threshold (Section 4.5.34.4.2), the harvest control rule will generally specify a greater reduction in exploitation as an interim management response toward rebuilding the stock while a formal rebuilding plan is being developed. The rebuilding plan will include a specific harvest control rule designed to rebuild the stock, and that control rule will be used in this stage of the determination of  $\Theta Y$ - $\underline{ACL}$ .
3. ~~Uncertainty adjustments: In cases where there is a high degree of uncertainty about the biomass estimate and other parameters,  $\Theta Y$ - $\underline{ACL}$  may be further reduced accordingly.~~
4. Other adjustments to  $\Theta Y$ - $\underline{ACL}$ : Adjustments to  $\Theta Y$ - $\underline{ACL}$  for other social, economic, or ecological considerations may be made.  $\Theta Y$ - $\underline{ACL}$  will be reduced for anticipated bycatch mortality (i.e. mortality of discarded fish). Amounts of fish harvested as compensation for private vessels participating in NMFS resource survey activities will also be deducted from ABC prior to setting  $\Theta Y$ - $\underline{ACL}$ .
5.  $\Theta Y$ - $\underline{ACL}$  recommendations will be consistent with established rebuilding plans and achievement of their goals and objectives.
  - (a) In cases where overfishing is occurring, Council action will be sufficient to end overfishing.
  - (b) In cases where a stock or stock complex is overfished, Council action will specify  $\Theta Y$ - $\underline{ACL}$  in a manner that complies with rebuilding plans developed in accordance with Section 4.6.24.5.2.
  - (c) For fisheries managed under an international agreement, Council action must reflect traditional participation in the fishery, relative to other nations, by fishermen of the United States. This will allow the Council and Secretary of Commerce to consider domestic regulations that will help address international overfishing in cases where that is occurring.
  - (d) For any stock that has been declared overfished, the open access/limited entry allocation shares may be temporarily revised for the duration of the rebuilding period by amendment to the regulations in accordance with the normal allocation process described

in this FMP. However, the Council may at any time recommend the shares specified in chapter 12 of this FMP be reinstated without requiring further analysis. Once reinstated, any change may be made only through the allocation process.

- (e) For any stock that has been declared overfished, any vessel with a limited entry permit may be prohibited from operating in the open access fishery when the limited entry fishery has been closed.

- 6. Adjustments to ~~ØYACL~~ could include increasing ~~ØYACL~~ above the default value up to the ~~overfishing level~~ABC as long as the management still allows achievement of established rebuilding goals and objectives. In limited circumstances, these adjustments could include increasing ~~ØYACL~~ above the overfishing level as long as the harvest meets the standards of the mixed stock exception in the National Standard 1 Guidelines.÷

- (a) ~~The Council demonstrates by analysis that such action will result in long-term net benefits to the Nation.~~
- (b) ~~The Council demonstrates by analysis that mitigating measures have been considered and that a similar level of long-term net benefits cannot be achieved by modifying fleet behavior, gear selection/ configuration, or other technical characteristic in a manner such that no overfishing would occur.~~
- (c) ~~The resulting rate or level of fishing mortality will not cause any species or evolutionarily significant unit thereof to require protection under the Endangered Species Act.~~

~~Exceptions to the requirement to prevent overfishing could apply under certain limited circumstances. Harvesting one stock at its optimum level may result in overfishing of another stock when the two stocks tend to be caught together (This can occur when the two stocks are part of the same fishery or if one is bycatch in the other's fishery). Before the Council and NMFS may decide to allow this type of overfishing, an analysis must be performed and the analysis must contain a justification in terms of overall benefits, including a comparison of benefits under alternative management measures, and an analysis of the risk of any stock or stock complex falling below its MSST. The Council may decide to allow this type of overfishing if the fishery is not overfished and the analysis demonstrates that all of the following conditions are satisfied:~~

~~1) Such action will result in long-term net benefits to the Nation.~~

~~2) Mitigating measures have been considered and it has been demonstrated that a similar level of long-term net benefits cannot be achieved by modifying fleet behavior, gear selection/configuration, or other technical characteristic in a manner such that no overfishing would occur; and~~

~~3) The resulting rate of fishing mortality will not cause any stock or stock complex to fall below its MSST more than 50 percent of the time in the long term, although it is recognized that persistent overfishing is expected to cause the affected stock to fall below its B<sub>MSY</sub> more than 50 percent of the time in the long term.~~

- 7. For species complexes (such as ~~Sebastes~~the minor rockfish complexes), the ~~ØYACL~~ will generally be set equal to the sum of the individual component ~~ACLs~~, as appropriate.

#### ~~5.7.2.4.7.2.~~ Determination of a Numerical ØYACL If ABCOFL Is Based on a Relatively Data-Poor Quantitative or Non-quantitative Assessment (Category 2)

- 1. ~~ABCOFL~~ may be based on an historical catch-based approach (e.g., average catch, depletion-corrected average catch, or depletion-based stock reduction analysis)~~average of past landings, a previous relatively data-poor assessment, a non-quantitative assessment, or other qualitative information.~~

2. ABC: Determine an appropriate scientific uncertainty buffer to set the ABC below the OFL.

23. Precautionary adjustments, if any, would be based on relevant information. In general, the Council will follow a risk-averse approach and may recommend an ~~OY~~ACL below ABC if there is a perception the stock is below its MSY biomass level -or to accommodate management uncertainty, socioeconomic concerns, or other considerations. If a declining trend persists for more than three years, then a focused evaluation of the status of the stock, its ~~ABC~~OFL, and the overfishing parameters will be quantified. If data are available, such an evaluation should be conducted at approximately five-year intervals even when negative trends are not apparent. In fact, many stocks are in need of re-evaluation to establish a baseline for monitoring of future trends. Whenever an evaluation indicates the stock may be declining and approaching an overfished state, then the Council should:
- (a) Recommend improved data collection for this species.
  - (b) Determine the rebuilding rate that would increase the multispecies value of the fishery.
34. Uncertainty adjustment: In cases where there is a high degree of uncertainty about the condition of the stock or stocks, ~~OY~~ACL may be reduced accordingly.
45. Amounts of fish harvested as compensation for industry research activities will also be deducted.
56. These adjustments could include increasing ~~OY~~ACL above the default value as indicated for Category 1 stocks, items 5 and 6 above.

5.7.3.4.7.3. ~~Non-numerical~~Numerical ~~OY~~ACL for Stocks with No ABC OFL Values Set by Nonquantitative Assessment (Category 3)

Fish of these species are incidentally landed and usually are not listed separately in fish landing receipts. Information from fishery-independent surveys are often lacking for these stocks, because of their low abundance or they are not vulnerable to survey sampling gear. Until sufficient quantities of at-sea observer program data are available or surveys of other fish habitats are conducted and/or requirements that landings of all species be recorded separately, it is unlikely that there will be sufficient data to upgrade the assessment capabilities or to evaluate the overfishing potential of these stocks.

~~These species typically may be included in a non-numerical OY that is defined as all the fish that can be taken under the regulations, specifications, and management measures authorized by the FMP and promulgated by the Secretary. Such an OY may not be a predetermined numerical value, but rather that harvest that results from regulations, specifications, and management measures as they are changed in response to changes in the resource and the fishery. Nothing in this FMP prevents inclusion of these species in a numerical OY if the Council believes that is more appropriate.~~have OFL values based on an historical catch-based approach (e.g., average catch, depletion-corrected average catch, or depletion-based stock reduction analysis)on average historical landings, often from a species composition estimate of landings from port sampling, and a precautionary reduction of the ABC and ACL ~~of half the OFL amount~~generally greater than that specified for category 2 species. Another approach typically used for deciding the OFL value for a category 3 species is based on a fishing mortality rate (F) associated with the species estimated or assumed natural mortality rate (M); such as  $F = .75M$ .

Most category 3 species are managed in a stock complex, where harvest specifications are set for the complex in its entirety. "Stock complex" means a group of stocks that are sufficiently similar in geographic distribution, life history, and vulnerabilities to the fishery such that the impact of management actions on the stocks is similar. At the time a stock complex is established, the FMP should provide a full and explicit description of the proportional composition of each stock in the stock complex, to the extent



possible. Stocks may be grouped into complexes for various reasons, including where stocks in a multispecies fishery cannot be targeted independent of one another and MSY cannot be defined on a stock-by-stock basis (see paragraph (e)(1)(iii) of this section); where there is insufficient data to measure their status relative to SDC; or when it is not feasible for fishermen to distinguish individual stocks among their catch. The vulnerability of stocks to the fishery should be evaluated when determining if a particular stock complex should be established or reorganized, or if a particular stock should be included in a complex. Stock complexes may be comprised of: one or more indicator stocks, each of which has SDC and ACLs, and several other stocks; several stocks without an indicator stock, with SDC and an ACL for the complex as a whole; or one of more indicator stocks, each of which has SDC and management objectives, with an ACL for the complex as a whole.

An indicator stock is a stock with measurable SDC that can be used to help manage and evaluate more poorly known stocks that are in a stock complex. If an indicator stock is used to evaluate the status of a complex, it should be representative of the typical status of each stock within the complex, due to similarity in vulnerability. If the stocks within a stock complex have a wide range of vulnerability, they should be reorganized into different stock complexes that have similar vulnerabilities; otherwise the indicator stock should be chosen to represent the more vulnerable stocks within the complex. In instances where an indicator stock is less vulnerable than other members of the complex, management measures need to be more conservative so that the more vulnerable members of the complex are not at risk from the fishery. More than one indicator stock can be selected to provide more information about the status of the complex. When indicator stock(s) are used, periodic re-evaluation of available quantitative or qualitative information (e.g., catch trends, changes in vulnerability, fish health indices, etc.) is needed to determine whether a stock is subject to overfishing, or is approaching (or in) an overfished condition.

[Amended: 11, 16-1, 17, 23]





## 65 PERIODIC SPECIFICATION AND APPORTIONMENT OF HARVEST LEVELS

The ability to establish and adjust harvest levels is the first major tool at the Council's disposal to exercise its resource stewardship responsibilities. Each biennial fishing period, the Council will assess the biological, social, and economic condition of the Pacific Coast groundfish fishery and update maximum sustainable yield (MSY) estimates or proxies for specific stocks (management units) where new information on the population dynamics is available. The Council will make this information available to the public in the form of the *Stock Assessment and Fishery Evaluation (SAFE)* document described in Section 5.1. Based upon the best scientific information available, the Council will evaluate the current level of fishing relative to the MSY level for stocks where sufficient data are available. Estimates of the acceptable biological catch (~~ABCOFL~~) for major stocks will be developed, as well as an ABC that accounts for the scientific uncertainty of the stock's estimated biomass. ~~and~~ The Council will identify those species or species groups which it proposes to be managed by the establishment of numerical harvest levels (optimum yields [OYs], ACLs, ACTS, harvest guidelines [HGs], or quotas). For those stocks judged to be below their overfished/rebuilding threshold, the Council will develop a stock rebuilding management strategy.

The process for specification of numerical harvest levels includes the estimation of ~~ABCOFL~~, an ABC specification set below the OFL to account for scientific uncertainty, the establishment of OYs and ACLs for various stocks (may be set equal to the ABC), and the calculation of specified allocations between harvest sectors. The specification of numerical harvest levels described in this chapter is the process of designating and adjusting overall numerical limits for a stock either throughout the entire fishery management area or throughout specified subareas. The process normally occurs biennially between November and June, but can occur under specified circumstances, at other times of the fishing year. The Council will identify those OYs which should be designated for allocation between limited entry and open access sectors of the commercial industry. Other numerical limits which allocate the resource or which apply to one segment of the fishery and not another would be imposed through one of the management measures processes at either 6.2 C or D in Chapter 6.

The National Marine Fisheries Service (NMFS) Regional Administrator will review the Council's recommendations, supporting rationale, public comments, and other relevant information; and, if it is approved, will undertake the appropriate method of implementation. Rejection of a recommendation will be explained in writing.

The procedures specified in this chapter do not affect the authority of the U.S. Secretary of Commerce (Secretary) to take emergency regulatory action as provided for in Section 305(c) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) if an emergency exists involving any groundfish resource or to take such other regulatory action as may be necessary to discharge the Secretary's responsibilities under Section 305(d) of the Magnuson-Stevens Act.

This chapter describes the steps in this process.

[Amended: 5, 12, 16-1, 17, 18]

### 6.1.5.1. General Overview of the Harvest Specifications and Management Process

The specifications and management process, in general terms, occurs as follows:

1. The Council will determine the MSY or MSY proxy and ~~ABCOFL~~ for each major stock. Typically, the MSY proxy will be in terms of a fishing mortality rate ( $F_{x\%}$ ), and ~~ABCOFL~~ will be

the  $F_{x\%}$  applied to the current biomass estimate. The MSY is the maximum long-term average yield expected from annual application of the MSY (or proxy) harvest policy under prevailing ecological and environmental conditions.

2. The Council and SSC will determine an appropriate scientific uncertainty buffer to set the ABC below the OFL. The ABC accommodates the uncertainty in estimating the OFL and may be determined using either a straight percentage reduction of the OFL as recommended by the SSC or by the P\* approach.
23. Every species will either have its own designated ~~OYACL~~ or be included in a multispecies ~~OYACL~~. Species which are included in a multispecies ~~OYACL~~ may also have individual ~~OYACL~~s, have individual HGs, or be included in a HG for a subgroup of the multispecies ~~OYACL~~. ~~Stocks without quantitative or qualitative assessment information may be included in a numerical or non-numerical OY.~~
34. To determine the ~~OYACL~~ for each stock, the Council will determine the best estimate of current abundance and its relation to its precautionary and overfished thresholds. If the abundance is above the precautionary threshold, ~~OYACL~~ will be equal to or less than ABC. If abundance falls below the precautionary threshold, ~~OYACL~~ will be reduced according to the harvest control rule for that stock. If abundance falls below the overfished/rebuilding threshold, ~~OYACL~~ will -be set according to the interim rebuilding rule until the Council develops a formal rebuilding plan for that species.
45. For any stock or stock complex where the Secretary identifies that overfishing is occurring, the Council will take remedial action to end overfishing and prevent the stock or stock complex from falling below the minimum stock size threshold. For any stock the Secretary has declared overfished or approaching the overfished condition, or for any stock the Council determines is in need of rebuilding, the Council will implement such periodic management measures as are necessary to rebuild the stock by controlling harvest mortality, habitat impacts, or other effects of fishing activities that are subject to regulation under this biennial process. These management measures will be consistent with any approved rebuilding plan.
56. The Council may reserve and deduct a portion of the ~~ABC-ACL~~ of any stock to provide for compensation for vessels conducting scientific research authorized by NMFS. Prior to the research activities, the Council will authorize amounts to be made available to a research reserve. However, the deduction from the ~~ABC-ACL~~ will be made in the year after the compensation fishing; the amounts deducted from the ~~ABC-ACL~~ will reflect the actual catch during compensation fishing activities.
67. The Council will identify stocks which are likely to be fully harvested (i.e., the ~~ABCOFL~~, ~~OYACL~~, or ~~ACT~~/HG achieved) in the absence of specific management measures and for which allocation between limited entry and open access sectors of the fishery is appropriate.
78. The groundfish resource is fully utilized by U.S. fishing vessels and seafood processors. The Council may entertain applications for foreign or joint venture fishing or processing at any time, but fishing opportunities may be established only through amendment to this FMP. This section supersedes other provisions of this FMP relating to foreign and joint venture fishing.

[Amended: 5, 12, 16-1, 17, 23]

#### 6.2.5.2. ~~5.2~~—SAFE Document

For the purpose of providing the best available scientific information to the Council for evaluating the status of the fisheries relative to the MSY and overfishing definition, developing ABCOFLs, determining the need for individual species or species group management, setting and adjusting numerical harvest levels, assessing social and economic conditions in the fishery, and updating the appendices of this fishery management plan (FMP); a SAFE document is prepared annually. Not all species and species groups can be reevaluated every year due to limited state and federal resources. However, the SAFE document or the biennial specifications and management measures NEPA document will in general contain the following information:

1. A report on the current status of Washington, Oregon, and California groundfish resources by major species or species group.
2. Specify and update estimates of harvest control rule parameters for those species or species groups for which information is available. (The Council anticipates scientific information about the population dynamics of the various stocks will improve over time and that this information will result in improved estimates of appropriate harvest rates and MSY proxies. Thus, initial default proxy values will be replaced from time to time. Such changes will not require amendment to the FMP, but the scientific basis for new values must be documented.)
3. Estimates of MSY and ABCOFL for major species or species groups.
4. Catch statistics (landings and value) for commercial, recreational, and charter sectors.
5. Recommendations of species or species groups for individual management by OYsACLs.
6. A brief history of the harvesting sector of the fishery, including recreational sectors.
7. A brief history of regional groundfish management.
8. A summary of the most recent economic information available, including number of vessels and economic characteristics by gear type.
9. Other relevant biological, social, economic, ecological, and essential fish habitat information which may be useful to the Council.
10. A description of the maximum fishing mortality threshold (MFMT) and the minimum stock size threshold (MSST) for each stock or stock complex, along with other information the Council may use to determine whether overfishing is occurring or a stock or stock complex is overfished. (The default overfished/rebuilding threshold for most category 1 groundfish is  $0.25B_{\text{unfished}}$  or 0.125  $B_{\text{unfished}}$  for assessed flatfish species. The Council may establish different thresholds for any species based on information provided in stock assessments, the SAFE document, or other scientific or groundfish management-related report.)
11. A description of any rebuilding plans currently in effect, a summary of the information relevant to the rebuilding plans, and any management measures proposed or currently in effect to achieve the rebuilding plan goals and objectives.

12. A list of annual specifications and management measures that have been designated as routine under processes described in the FMP at Section 6.2.

Under a biennial specifications and management measures process, elements 2, 5, 6, 7, and 11 would not need to be included in a SAFE document in years when the Council is not setting specifications and management measures for an upcoming biennial fishing period. The stock assessment section of the SAFE document is normally completed when the most current stock assessment and fisheries performance information is available and prior to the meeting at which the Council approves its final management recommendations for the upcoming biennial fishing period. The Council will announce the availability of the stock assessment section of the SAFE document to the public by such means as mailing lists or newsletters, and will provide copies upon request. The fishery evaluation section of the SAFE may be prepared after the Council has made its final recommendations for the upcoming biennial fishing period and will include the final recommendations, an estimate of the previous year's catch, and including summaries of rebuilding plans. Availability will be similarly announced and copies made available upon request.

[Amended: 5, 12, 13, 16-1, 17]

#### 6.3.5.3. Authorization and Accounting for Fish Taken as Compensation for Authorized Scientific Research Activities.

At a Council meeting, NMFS will advise the Council of upcoming resource surveys that would be conducted using private vessels with groundfish as whole or partial compensation. For each proposal, NMFS will identify the maximum number of vessels expected or needed to conduct the survey, an estimate of the species and amounts of compensation fish likely to be needed to compensate vessels for conducting the survey, when the fish would be taken, and when the fish would be deducted from the ABC in determining the ~~OY~~ACL/harvest guideline. NMFS will initiate a competitive solicitation to select vessels to conduct resource surveys. NMFS will consult with the Council regarding the amounts and types of groundfish species to be used to support the surveys. If the Council approves NMFS' proposal, NMFS may proceed with awarding the contracts, taking into account any modifications requested by the Council. If the Council does not approve the proposal to use fish as compensation to pay for resource surveys, NMFS will not use fish as compensation.

Because the species and amounts of fish used as compensation will not be determined until the contract is awarded, it may not be possible to deduct the amount of compensation fish from the ABC or harvest guideline in the year that the fish are caught. Therefore, the compensation fish will be deducted from the ABC the year or biennial fishing period after the fish are harvested. During the specification and management measures process, NMFS will announce the total amount of fish caught during the year or biennial fishing period as compensation for conducting a resource survey, which then will be deducted from the following year's ABCs in setting the ~~OY~~sACLs.

[Amended: 11, 17]

#### 6.4.5.4. Biennial Implementation Procedures for Specifications and Management Measures

Biennially, the Council will develop recommendations for the specification of ~~ABCOFLs~~, ABCs, ACLs, OYs, and any ACTs, HGs or quotas over the span of three Council meetings. In addition during this process, the Council may recommend establishment of ACTs, HGs and/or quotas for species or species groups within an ~~OY~~ACL. Depending on stock assessment availability and fishery management interactions with Canada, the Council may also develop recommendations for the specification of the

Pacific whiting ABC/OY and quotas in a separate, annual process governed by the Pacific whiting treaty.

The Council will develop preliminary recommendations at the first of three meetings (usually in November) based upon the best stock assessment information available to the Council at the time and consideration of public comment. After the first meeting, the Council will provide a summary of its preliminary recommendations and their basis to the public through its mailing list as well as providing copies of the information at the Council office and to the public upon request. The Council will notify the public of its intent to develop final recommendations at its third meeting (usually in June) and solicit public comment both before and at its second meeting.

At its second and/or third meeting, the Council will again consider the best available stock assessment information which should be contained in the recently completed SAFE report or preliminary NEPA documents and consider public testimony before adopting final recommendations to the Secretary. Following the third meeting, the Council will submit its recommendations along with the rationale and supporting information to the Secretary for review and implementation.

Upon receipt of the Council's recommendations supporting rationale and information, the Secretary will review the submission, and, if it is sufficient for public review, publish a proposed rule in the *Federal Register*, making the Council's recommendations available for public comment and agency review. Following the public comment period on the proposed rule, the Secretary will review the proposed rule, taking into account any comments or additional information received, and will publish a final rule in the Federal Register, possibly modified from the proposed rule in accordance with the Secretary's consideration of the proposed rule. All ABCOFLs, ABCs, ACLs, OYs, and any ACTs, HGs or quotas will remain in effect until revised, and, whether revised or not, will be announced at the beginning of the biennial fishing period along with other specifications.

In the event that the Secretary disapproves one or more of the Council's recommendations, he may implement those portions approved and notify the Council in writing of the disapproved portions along with the reasons for disapproval. The Council may either provide additional rationale or information to support its original recommendation, if required, or may submit alternative recommendations with supporting rationale. In the absence of an approved recommendation at the beginning of the biennial fishing period, the current specifications in effect at the end of the previous biennial fishing period will remain in effect until modified, superseded, or rescinded.

[Amended: 5, 11, 17]

#### 6.5.5.5. Inseason Procedures for Establishing or Adjusting Specifications

##### 6.5.1.5.5.1. Inseason Adjustments to ABCOFLs, ABCs, and ACLs

Under the biennial specifications and management measures process, stock assessments for most species will become available every other year, prior to the November Council meeting that begins the three-meeting process for setting specifications and management measures. The November Council meeting that begins that three-meeting process will be the November of the first fishing year in a biennial fishing period. If the Council determines that any of the ABCOFLs, ABCs, ACLs or OYs set in the prior management process are not adequately conservative to meet rebuilding plan goals for an overfished species, harvest specifications for that overfished species and/or for co-occurring species may be revised for the second fishing year of the then current biennial management period.

Beyond this process, ABCOFLs, ABCs, ACLs, OYs, ACTs, HGs, and quotas may only be modified in cases where an annual harvest specification announced at the beginning of the biennial fishing period is

found to have resulted from incorrect data or from computational errors. If the Council finds that such an error has occurred, it may recommend the Secretary publish a notice in the *Federal Register* revising the incorrect harvest specification at the earliest possible date.

~~6.5.2.5.5.2.~~ *Inseason Establishment and Adjustment of ACLs, OYs, ACTs, HGs, and Quotas*

ACLs, OYs, ACTs, and HGs or quotas may be established and adjusted inseason (1) for resource conservation through the “points of concern” framework described in Chapter 6; (2) in response to a technical correction to ABCOFL described above; or, (3) under the socioeconomic framework described in Chapter 6.

Quotas may be established and adjusted inseason only for resource conservation or in response to a technical correction to ABCOFL. These constraints on establishing and adjusting ACLs, OYs, ACTs, HGs, and quotas do not apply to the process for establishing and adjusting sector-specific catch limits, which is provided in section 6.5.3.2.

[Amended: 11, 17, 18, 23]

## GROUND FISH MANAGEMENT TEAM REPORT ON FISHERY MANAGEMENT PLAN AMENDMENT 23, ANNUAL CATCH LIMITS AND ACCOUNTABILITY MEASURES

The Groundfish Management Team (GMT) reviewed the materials for the Pacific Coast Groundfish Fishery Management Plan (FMP) Amendment 23, annual catch limits (ACL) and accountability measures, under this agenda item and provides the following comments for Council consideration.

### Clarification of Optimum Yield (OY)

At the April 2010 Council meeting, the GMT discussed the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and the concept and definition of OY and the confusion about the relationship to the annual catch limit (ACL) (Agenda Item I.2.b, Supplemental GMT Report). Here we just reiterate that the acronym that represents the annual limit on harvest has changed to the ACL and OY is not an annual harvest specification anymore. It is still the intent of the Council to set annual harvests (ACLs) at the level the Council expects to achieve OY. **The GMT, therefore recommends that the last sentence in Section 4.7 describing OY in the draft FMP language on p. 54 be stricken or modified to make clear that it is the ACL that is now the annual numerical harvest specification.** Otherwise we find the revisions Council staff has made to the proposed FMP language are consistent with the Council's intent and the National Standard 1 (NS1) guidelines.

### ACL Control Rule – translating the 40-10 harvest control rule

The objective of the 40-10 harvest control rule is unchanged – it is to provide a default precautionary and rebuilding calculation of the OY (now ACL). This default methodology reduces fishing mortality as stock size declines (for stocks within the precautionary zone).

There are two options for translating the existing 40-10 harvest control rule under the new Amendment 23 framework. Option 1 adjusts the ACL relative to the overfishing limit (OFL) by progressively reducing the ACL from the OFL as depletion decreases below the  $B_{40\%}$  target (See Figure 2-3 of the Preliminary Draft Environmental Assessment (PDEA), Agenda Item B.2.a, Attachment 1). Option 2, the preliminary preferred alternative, adjusts the ACL relative to the ABC by progressively reducing the ACL from the ABC as depletion decreases below the  $B_{40\%}$  target (Figure 2-4 of the PDEA, Agenda Item B.2.a, Attachment 1).

The GMT offers the following considerations on the Council's decision which option should be chosen as the default policy for setting the ACLs for species in the precautionary zone.

First, this decision should be made at an overarching level and not based on the outcomes for any particular stock. The reasons for this are threefold: (1) post-hoc decisions on how to prevent overfishing are inappropriate for a default policy; (2) under the preliminary FMP language, the Council will retain the ability to make stock-specific decisions on how to make adjustments for species in the precautionary zone that may diverge from the default acceptable biological catch (ABC) control rule; and (3) the stock status changes over time as new scientific information is



gained. Therefore, under either option, the Council maintains flexibility to use other methods for reducing the ACL from the OFL and ABC as the management environment and our understanding of stock status change over time.

For ACLs calculated using Option 1, the resultant yield from the ABC buffer (i.e.,  $P^*$  approach) may be more conservative than the 40-10 adjustment from the OFL, thus subsuming any 40-10 modifications to the ABC. This relationship depends on both  $P^*$  and the scientific uncertainty. Figure 1 demonstrates under what ABC buffer components and stock status the 40-10 rule will not be applied. For example, under default stock category 1 values of  $P^*=0.45$  and  $\sigma = 0.36$ , the yield calculation will default to the ABC buffer value and not use the 40-10 adjustment when stock status  $\geq 0.36$ . For a category 2 stock, a status  $\geq 0.32$  will also not use the 40-10 adjustment. For ACLs calculated using Option 2, the 40-10 adjustment is always used because the adjustment is taken from the ABC, not the OFL. When considering whether to reaffirm the preliminary preferred option, the fundamental questions on why the 40-10 adjustment is being applied in the precautionary zone and whether the ABC buffer is sufficient under certain conditions must be confronted. A management strategy evaluation could help develop methods for more fully accounting for scientific uncertainty (e.g. in the  $F_{msy}$  proxy and not just in estimates of biomass). This could change how the Council perceives risk that stocks in the precautionary zone will not return to maximum sustainable yield (MSY) levels.

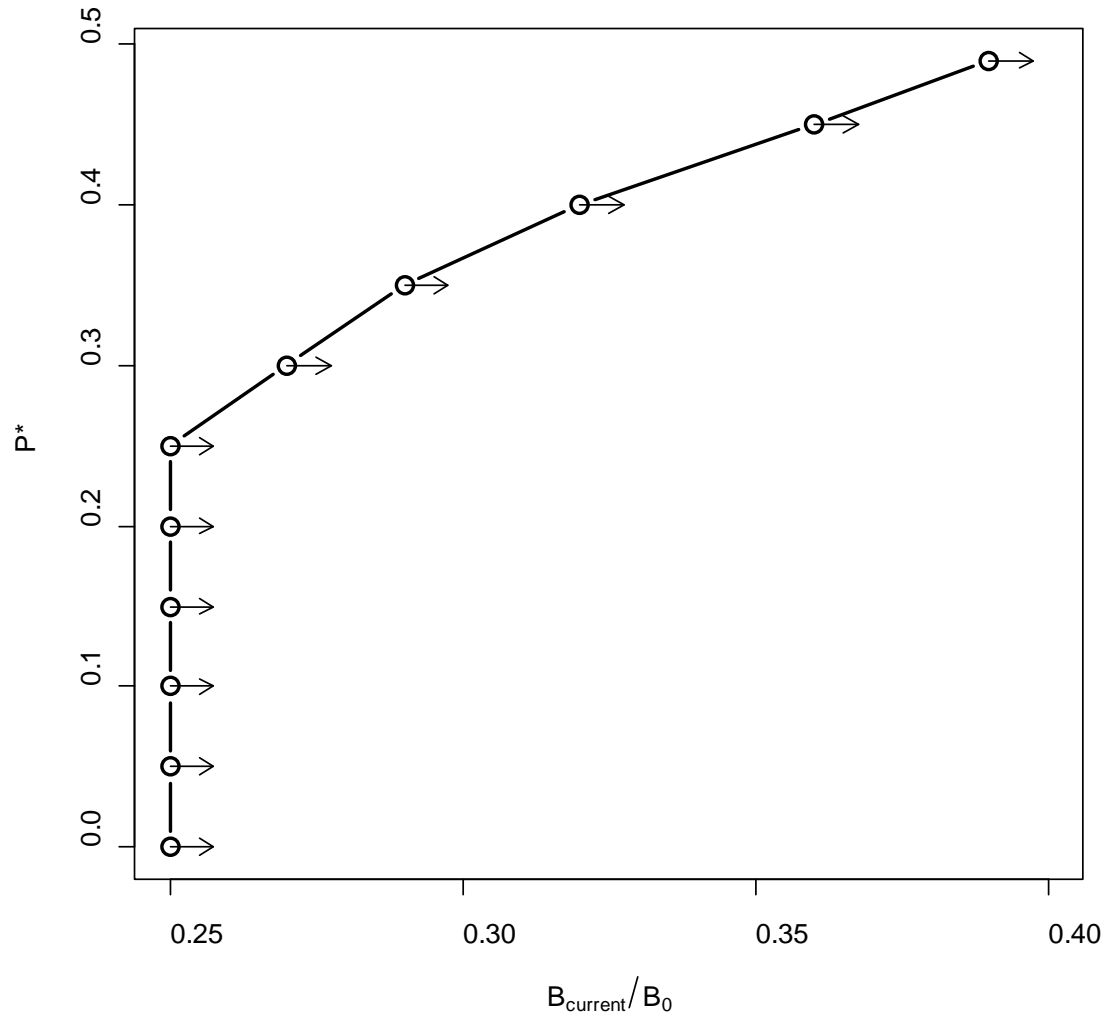


Figure 1. Stock status (current biomass ( $B_{\text{current}}$ ) relative to unfished biomass ( $B_0$ )) as it relates to  $P^*$  for different measures of scientific uncertainty (sigma) relating to each stock category (category 1 = 0.36; category 2 = 0.72). Arrows indicate that depletion values greater than the point are subsumed by the ABC control rule under ACL Option 1, thus the 40-10 rule is not used. The broken line indicates the Council default  $P^* = 0.45$ .

**The GMT recommends that the Council reaffirm Option 2 (the Preliminary Preferred Alternative) for translating the 40-10 harvest control rule as the default precautionary rebuilding strategy, or provide rationale for choosing Option 1.** Depending on which control rule Option is chosen, the Council may want to revisit ACLs for precautionary zone species (sablefish and blue rockfish) under Agenda Item B.3.

### Annual Catch Targets (ACTs) and Harvest Guidelines (HGs)

The Council's preliminary preferred Amendment 23 alternative incorporates annual catch targets (ACTs) as an accountability measure (as described in the revised NS1 guidelines) and as a harvest specification in the FMP. An ACT is a numerical value that results after the ACL is reduced for management uncertainty. The GMT requests that the Amendment 23 FMP language include several examples of how an ACT would be used, including how mortality in relation to an ACT will be tracked; whether or not action will be required or not if an ACT is attained (or projected to be attained); who would be responsible for taking action, if necessary; etc. **The GMT recommends that ACTs be used consistently across species/complexes, as an accountability measure to account for management uncertainty, and that guidance is provided in the FMP on how an ACT should be used for management.**

Relative to harvest guidelines, the GMT notes that the proposed measures to initiate implementation of Amendments 20 and 21 to the Pacific Coast Groundfish Fishery Management Plan (June 10, 2010, 76 FR 32994) include changes to how harvest guidelines are defined. For example, this rule defines the "Fishery harvest guideline" as the harvest guideline or quota after subtracting from the OY [ACL] any allocation or set-asides for the Pacific Coast treaty Indian tribes, projected research catch, deductions for fishing mortality in non-groundfish fisheries, as necessary, and set-asides for EFPs. The GMT notes that there are likely other instances where the proposed regulations under FMP Amendments 20 and 21 may need to be amended for consistency with FMP Amendment 23. As with ACTs, **the GMT recommends that HGs be used consistently across species/complexes. The GMT also recommends that guidance is provided in the FMP on how HGs should be used for management, and that that guidance under Amendment 23 is consistent, to the extent practicable, with the Amendment 20 and 21 FMP language.**

### Inseason Adjustments to HGs

FMP section 5.5. "Inseason Procedures for Establishing or Adjusting Specifications" specifically states that HGs and quotas may not be adjusted inseason unless they resulted from incorrect data or from computational errors. **The GMT recommends correcting section 2.1.1.1 of the preliminary draft EA (Agenda Item B.2.a Attachment 1) which states that under the no action alternative HGs may be "changed inseason as determined by a Council/NMFS decision".**

### **GMT Recommendations:**

- 1. The GMT therefore recommends that the last sentence in Section 4.7 describing OY in the draft FMP language on p. 54 be stricken or modified to make clear that it is the ACL that is now the annual numerical harvest specification.**
- 2. The GMT recommends that the Council reaffirm Option 2 (the PPA) for translating the 40-10 harvest control rule as the default precautionary rebuilding strategy, or provide rationale for choosing Option 1.**
- 3. The GMT recommends that ACTs be used consistently across species/complexes, as an accountability measure to account for management uncertainty, and that guidance is provided in the FMP on how an ACT should be used for management.**

4. **The GMT recommends that HGs be used consistently across species/complexes. The GMT also recommends that guidance is provided in the FMP on how HGs should be used for management, and that that guidance under Amendment 23 is consistent, to the extent practicable, with the Amendment 20 and 21 FMP language.**
5. **The GMT recommends correcting section 2.1.1.1 of the preliminary draft EA (Agenda Item B.2.a Attachment 1) which states that under the no action alternative HGs may be “changed inseason as determined by a Council/NMFS decision”.**

PFMC  
06/13/10



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
Sustainable Fisheries Division F/NWR2  
7600 Sand Point Way N.E., Bldg. 1  
Seattle, WA 98115-0070

Agenda Item B.2.b  
Supplemental NMFS Comment  
June 2010

JUN 03 2010

Mr. David Ortmann, Chair  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, Oregon 97220

Dear Mr. Ortmann:

The National Marine Fisheries Service (NMFS) is submitting these comments on Agenda Item B.2: Fishery Management Plan Amendment 23, Annual Catch Limits and Accountability Measures, for consideration by the Pacific Fishery Management Council (Council) and its advisory bodies at the June, 2010 Council meeting.

First, NMFS suggests that Acceptable Biological Catch (ABC) control rules in the groundfish fishery management plan (FMP) be explicit enough so as to constitute reasonable control rules and mechanisms for specifying Annual Catch Limits (ACLs). The Magnuson Stevens Act (MSA), as amended, requires the each FMP to "establish a mechanism for specifying ACLs . . ." 303(a)(15). The National Standard 1 guidelines say that "The ABC control rule must articulate how ABC will be set compared to the OFL based on the scientific knowledge about the stock or stock complex and the scientific uncertainty in the estimate of OFL and any other scientific uncertainty." (f)(4) The proposed ABC control rule in FMP Amendment 23 for Category 1 stocks provides that "The SSC quantifies the variability in biomass estimates for category 1 species from stock assessments as a basis for evaluating the size of a scientific uncertainty buffer and the risk of overfishing the stock. The Council chooses the ABC from the SSC-recommended range, which is a risk-assessment policy decision." We note that previous drafts of proposed FMP Amendment 23 language included more description of the SSC's current approach to quantifying uncertainty for category 1 stocks, but that language has been omitted in the current version. For clarity, we recommend that this language be reinserted. Specifically, the language (slightly modified from section 4.4.1 of Agenda Item B.2.a Attachment 2) is as follows:

"Approaches to quantifying the variability on biomass estimates include using the standard error about the estimated biomass of a stock in the most recently approved assessment and estimating the between-assessment variance in biomass estimates for a stock with multiple assessments or for all category 1 stocks with multiple assessments in a meta-analysis. A proxy variance (sigma) can be calculated using this latter approach for all or some category 1 species. These approaches are not exclusive and the SSC may recommend additional approaches to quantifying scientific uncertainty for category 1 species, including approaches that are specific to individual stocks. Once scientific uncertainty is quantified, it is mapped to an estimated probability of overfishing



(P\*). The Council chooses the ABC from the SSC-recommended range based on its choice of P\*, which is a risk-assessment policy decision.”

The proposed ABC control rules for category 2 and 3 stocks are basically as follows: the SSC will recommend an OFL based on the appropriate information. For some category 2 and category 3 stocks the SSC may be able to quantify uncertainty, and in those cases the Council will choose a P\* value that will be used in conjunction with SSC recommendations regarding scientific uncertainty to determine the difference between OFL and ABC. Amendment 23 as proposed also says that the scientific uncertainty "buffers" for category 2 and category 3 will in general be larger than for category 1 and category 2, respectively, and that "the SSC recommends the ABC" for these stocks. The determination of ABCs for category 2 and category 3 stocks in the proposed version of Amendment 23 is less detailed and clear when compared to category 1 stocks. The Scientific and Statistical Committee (SSC) report to the Council in April 2010 recommended that until a method for determining the appropriate value of sigma to represent scientific uncertainty for these stocks can be developed, one of two approaches may be used: 1) straight percentage reductions from OFL; 2) setting sigma for category 2 and 3 stocks at two and four times that for category 1 stocks, respectively. We suggest that the Council consider adding these options to FMP Amendment 23, with a statement that these approaches are not exclusive and that the SSC may develop and use additional approaches in the future.

In addition, we note that Amendment 23 contains language that is ambiguous regarding the role of the SSC in determining ABCs. The National Standard 1 Guidelines state that “the SSC must recommend the ABC to the Council.” 50 CFR 600.310(f)(3). In section 4.4, proposed Amendment 23 states that “[t]he ABC is decided by the Council based on its preferred level of risk aversion.” To make this statement consistent with the Guidelines and with language elsewhere in proposed Amendment 23, we suggest modifying this sentence to read: “[t]he ABC is adopted by the Council based on its preferred level of risk aversion in combination with the recommendations of the SSC regarding scientific uncertainty.”

The National Marine Fisheries Service (NMFS) suggests that the Council consider whether ABC control rules need to address sources of scientific uncertainty that the SSC has not yet determined how to quantify. This issue came up at the March Council meeting and has not been resolved in the context of the proposed FMP Amendment 23. The SSC has stated that to date it has developed methods to analyze only a portion of the potential sources of scientific uncertainty relevant to determination of the ABC but that in the future additional analyses will likely be developed. NMFS suggests that where scientific uncertainty cannot be specifically quantified as the SSC has done for uncertainty within and among stock assessments, the FMP should expressly state that other sources of uncertainty may be included in the determination of the ABC where the SSC can recommend an approach to analyze those sources of uncertainty.

It is not clear from proposed Amendment 23 how the FMP deals with management uncertainty. With respect to Accountability Measures, the FMP already includes a relatively extensive suite of measures that address management uncertainty in-season and between seasons. Language could be added to the proposed FMP Amendment 23, or alternatively in the Council record to explain how these measures address such uncertainty. Proposed Amendment 23 provides that the Council may adopt Annual Catch Targets (ACTs), but does not specify under what



circumstances that may be appropriate. Language in the amendment that clarifies when ACTs will be considered would improve the document and provide guidance during the development of specifications and management measures.

The proposed Amendment 23 FMP includes language explaining that stock complexes will be delineated as set forth in the NS1 guidelines. The Supplemental GMT Report from March 2010 states that based on the GMT's analysis of stock vulnerability to the fishery, fishery interactions, and stock distributions, "improvements can be made in the composition of the stock complexes. Such changes include rearranging current complexes and possibly adding other species into the FMP and consideration for constructing the complexes around indicator species." However, the GMT concluded that work to improve the stock complexes cannot be completed in a short time frame. In the proposed FMP Amendment 23, the Council should consider adding a statement to the existing description of stock complexes that they are using current stock complexes until its' advisory bodies can complete their analysis and provide recommendations regarding reconfiguration of those complexes according to the factors discussed in the NS1 guidelines.

If you have any questions on these matters, contact me at your convenience. I can be reached at 206-526-6142.

Sincerely,



Frank Lockhart  
Assistant Regional Administrator

cc: Dr. Don McIsaac  
Eileen Cooney  
Mariam McCall

SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON GROUND FISH FISHERY  
MANAGEMENT PLAN AMENDMENT 23  
ANNUAL CATCH LIMITS AND ACCOUNTABILITY MEASURES

The Scientific and Statistical Committee (SSC) reviewed the proposed amendment, the Preliminary Draft Environmental Assessment (Agenda Item B.2.a, Attachment 1), a letter from National Resources Defense Council (NRDC), Ocean Conservancy and Oceana (Agenda Item B.2.c, Public Comment), and a letter from Mr. Frank Lockhart, Assistant Regional Administrator, National Marine Fisheries Service (NMFS), Northwest Regional Office (Agenda Item B.2.b, Supplemental NMFS Report).

The SSC recommends that Amendment 23 be finalized at this Council meeting. We have several suggestions that need attention in the current version and other comments for the future.

Current Amendment

The SSC understands that the procedure for setting acceptable biological catch (ABC) will involve the sequence of the SSC determining the value of  $\sigma$  and the Council setting the value of  $P^*$ , then the SSC verifying the consequent value of the ABC. The SSC will provide a final endorsement of all ABCs.

Where optimum yield (OY) occurs in the Fishery Management Plan (FMP), for example in Section 5.4, it is meant in the sense that it is described in National Standard 1, (e) (3) (ii) and (iii), i.e., as a long-term average characteristic, not a value set annually. The SSC recommends Council staff revise wording accordingly. Also, the definition of overfishing on p. 10 of the proposed amendment to the FMP is in error. It should say, "Overfishing occurs when catch exceeds the OFL."

There is an error in Table 4-1 of the Draft Environmental Assessment; specifically the row describing the 2011 annual catch limits (ACLs) for sablefish under the option 2 40-10 adjustment is incorrect. The corrected table will appear in the GMT report.

Future Amendments

The SSC emphasizes that there remains more to do regarding the new approach to deal with uncertainty, beyond the current version of this framework. Several sources of uncertainty have been identified that deserve further consideration, and the estimate of overall uncertainty may increase.

The SSC notes the need to examine and possibly restructure the various complexes identified in the FMP.





May 26, 2010

BY FAX, EMAIL, and U.S. MAIL

Chairman Ortmann and PFMC Council Members  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, Oregon 97220-1384

Re: Public Comments on Amendment 23 and 2011-12 Groundfish Specifications and Management Measures Preferred Alternative

Dear Chairman Ortmann and PFMC Council Members:

The organizations of Ocean Conservancy, Oceana, and Natural Resources Defense Council hereby jointly submit the following comments concerning Draft Amendment 23 and 2011-2012 Groundfish Specifications and Management Measures Preferred Alternative. As the Pacific Fisheries Management Council (“Council”) is aware, this is a highly significant set of regulatory actions. It constitutes how the Council proposes to bring the Groundfish Fishery Management Plan (“FMP”) into compliance with statutory requirements enacted as part of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006, P.L. 109-479, that all FMPs include mechanisms to set annual catch limits (“ACLs”) “at a level such that overfishing does not occur in the fishery” and accountability measures (“AMs”) for the ACLs.<sup>1</sup>

We seek to ensure that Amendment 23 sets appropriate ABCs, ACLs, and AMs each year, and that such rules ensure, based on best available science, that overfishing will not occur in the fishery, consistent with the detailed framework for implementation of the ACL/AM requirements set out in the revised National Standard 1 Guidelines (“NS1 Guidelines” or “Guidelines”).<sup>2</sup> To this end, we have the following comments on the draft amendment and on the 2011-12 specifications, by which the new requirements for ABCs/ACLs/AMs are seeing their initial implementation.

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<sup>1</sup> 16 U.S.C. § 1853(a)(15).

<sup>2</sup> 50 CFR § 600.310.

**Draft Amendment 23 and the 2011-12 specifications fail to properly apply the ACL/AM requirement to all stocks in the fishery**

ACLs and AMs are required for all stocks in a fishery, and all stocks in the FMP should be considered “in the fishery” unless otherwise specified through rulemaking.<sup>3</sup> This includes non-target stocks that are caught incidentally as bycatch during the pursuit of target stocks in a fishery, as well as “regulatory discards” as defined under the Magnuson-Stevens Act (“MSA”), 16 U.S.C. 1802 (38), which may or may not be retained for sale or personal use.<sup>4</sup>

In the case of stock complexes, the FMP should include an evaluation of the vulnerability of the stocks in the complex.<sup>5</sup> Vulnerability is determined by both stock productivity and its susceptibility to a fishery.<sup>6</sup> NMFS and MRAG Americas have developed Productivity and Susceptibility Analysis (“PSA”) to measure such vulnerability.<sup>7</sup> The NS1 Guidelines direct the appropriate organization of stock complexes according to vulnerabilities and use of vulnerable species as indicator stocks with periodic re-evaluation about their status.<sup>8</sup> This is to ensure that an individual species does not experience overfishing prior to the ACL for an entire complex being reached. According to the Guidelines:

[i]f the stocks within a stock complex have a wide range of vulnerability, measured in terms of both productivity and susceptibility to fishing impacts, they should be reorganized into different stock complexes that have similar vulnerabilities; otherwise the indicator stock should be chosen to represent the more vulnerable stocks within the complex. In instances where an indicator stock is less vulnerable than other members of the complex, management measures need to be more conservative so that the more vulnerable members of the complex are not at risk from the fishery. More than one indicator stock can be selected to provide more information about the status of the complex. When indicator stock(s) are used, periodic re-evaluation of available quantitative or qualitative information (e.g., catch trends, changes in vulnerability, fish health indices, etc.) is needed to determine whether a stock is subject to overfishing, or is approaching (or in) an overfished condition.<sup>9</sup>

The Council’s preliminary preferred alternative sets several ACLs at the stock complex level, rather than using species-specific ACLs, setting complex ACLs using appropriate indicator species, or limiting complexes to component species with similar vulnerabilities. As a result, Amendment 23 fails to ensure that overfishing does not occur on the most vulnerable members of the complex, as required by the law. The Groundfish

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<sup>3</sup> 50 C.F.R. § 600.310(d)(1).

<sup>4</sup> 50 C.F.R. § 600.310(d)(3-4).

<sup>5</sup> 50 C.F.R. § 600.310(d)(8).

<sup>6</sup> 50 C.F.R. § 600.310(d)(10).

<sup>7</sup> NS1 Guidelines Final Rule, 74 Fed. Reg. 3178, 3185 (Jan. 16, 2009).

<sup>8</sup> 50 C.F.R. § 600.310(d)(9).

<sup>9</sup> 50 C.F.R. § 600.310(d)(9).

Management Team (GMT) has highlighted this problem, noting, for example, that “[t]he Other Fish Complex is of most concern ... given the lack of a quantitative basis for its current harvest specifications and the *relatively high vulnerability of its component elasmobranch species*.”<sup>10</sup> Examples of complex component species of particular concern about overfishing include china, quillback and copper rockfish, as well as black, yellowtail and shortraker rockfish.<sup>11</sup>

We urge the Council to set species-specific ACLs in all cases, rather than rely on ACLs set at the complex level. To do this, the Council should be able to rely on the species-specific information used to compile the complex-level ABC. At a minimum, the Council must identify appropriate indicator species which will be used to establish ACLs at the sub-complex level and tracked as part of the management measures. This, however, is a less preferred method than setting species-specific ACLs.

### **Draft Amendment 23 does not yet include an adequate ABC control rule**

Pursuant to the NS1 Guidelines, each FMP’s ACL-setting mechanism must include an ABC control rule. Because they are a critical part of the “mechanism to set ACLs,”<sup>12</sup> ABC control rules must be a component of the FMPs themselves.<sup>13</sup> The Guidelines define the ABC control rule as a “specified approach to setting the ABC for a stock or stock complex as a function of the scientific uncertainty in the estimate of OFL and any other scientific uncertainty.”<sup>14</sup> As stated in the Guidelines, “[t]he determination of ABC should be based, when possible, on the probability that an actual catch equal to the stock’s ABC would result in overfishing.”<sup>15</sup>

It is critical to carefully tailor the ABC control rule to the specific stocks covered. The control rule

must articulate how ABC will be set compared to the OFL based on the scientific knowledge about the stock or stock complex and the scientific uncertainty in the estimate of OFL and any other scientific uncertainty. The ABC control rule should consider uncertainty in factors such as stock assessment results, time lags in updating assessments, the degree of retrospective revision of assessment results, and projections.<sup>16</sup>

In sum, the NS1 Guidelines now require managers to specifically identify and account for scientific uncertainty inherent in the process of responsibly managing fish stocks. By

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<sup>10</sup> PFMC March 2010 Agenda, Item E.4.b, Supplemental GMT Report at 2 (emphasis added).

<sup>11</sup> See, e.g., PFMC March 2010 Agenda, Item E.2.b, GMT Report at 4 (“The group with the greatest vulnerability is the nearshore trio of China, copper and quillback rockfishes, all of which are longer-lived, deeper-dwelling nearshore rockfishes.”).

<sup>12</sup> 50 C.F.R. § 600.310(c)(4) (ACLs are to be specified “in relationship to the ABC”).

<sup>13</sup> 50 C.F.R. § 600.310(c)(3) (FMP must evaluate and describe ABC control rule); see also NS1 Guidelines Final Rule, 74 Fed. Reg. 3178, 3192 (January 16, 2009); 16 U.S.C. § 1853(a)(15).

<sup>14</sup> 50 C.F.R. § 600.310(f)(2)(iii).

<sup>15</sup> 50 CFR § 600.310(f)(4).

<sup>16</sup> 50 C.F.R. § 600.310(f)(4).

developing and following formal control rules with buffers for scientific uncertainty, managers can ensure that each species is being managed in a precautionary way, appropriate to the risk levels associated with that fish stock or complex.

For the Groundfish FMP, the Council has developed an ABC control rule by which different values for “P\*,” intended to represent a probability of overfishing, are applied to probability distributions of the overfishing level (“OFL”) in order to generate an ABC. For every Category 1 stocks, including overfished species and those in the precautionary zone (*i.e.*, sablefish), a P\* value of 0.45 is applied to a probability distribution with a sigma of 0.36. This probability distribution was adopted from the SSC’s analysis of among-assessment variability in current stock biomass in seventeen groundfish and coastal pelagic stocks, and a quantification of this uncertainty that the SSC identified as a “lower bound on total uncertainty.”<sup>17</sup> For Category 2 (data-moderate) stocks, the Council chose to apply a P\* of 0.40 to a probability distribution with a sigma of 0.72; for Category 3 (data-poor) stocks, they chose to apply a P\* of 0.40 to a probability distribution with a sigma of 1.44. These values for sigma represent an arbitrary doubling and quadrupling, respectively, of the sigma that had been estimate for the suite of Category 1 stocks. While the SSC has recognized that there is substantially greater scientific uncertainty associated with the OFL estimates for Category 2 stocks compared to Category 1 stocks, and Category 3 compared to Category 2, the Council has chosen to apply the same risk tolerance (P\*=0.4) to Category 2 and 3 stocks.

Before getting to the substance of the ABC control rules, we want to express concern that the December 2009 draft of Amendment 23, the most recent draft that has been made available to the public, only references the control rule’s existence and the status of its development as of that time. To be consistent with the 2006 amendments and the NS1 Guidelines, Amendment 23 itself must detail and incorporate the final set of ABC control rules which it has not yet done.

With respect to their substance, we also have significant concerns about the ABC control rules which have been developed as part of the Amendment 23 process and used in the setting of the proposed 2011-12 specifications. Because they inadequately account for scientific uncertainty in the estimated OFLs for the various groundfish stocks, the control rules are likely to result in ABCs for most, if not all, stocks with an actual probability of exceeding OFLs higher than that represented by the Council’s preferred P\* values. The fact that scientific uncertainty has been incompletely estimated for Category 1 stocks, and essentially guessed at for Category 2 and 3 stocks, should be a strong reason for choosing a more conservative, risk adverse, P\*, rather than the highly risk-tolerant values chosen by the Council, as well as higher sigma values. As explained further below, the problems with the control rules stem from probability distributions that represent an incomplete, underestimated and/or inaccurate picture of scientific uncertainty in conjunction with P\* values that are too high.

*Incomplete, underestimated and/or inaccurate quantification of scientific uncertainty*

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<sup>17</sup> PFMC March 2010 Agenda, Item E.4.b, Supplemental SSC Report 1 at 5.

With respect to Category 1 stocks, the SSC's approach to quantifying scientific uncertainty does not represent a complete – or sufficient – treatment of scientific uncertainty. The sigma of 0.36 they report is the result of their quantification of 'among-model variability' in the estimate of current-year biomass gathered through a retrospective analysis of biomass trends for a series of stock assessments conducted over time for each given stock. The SSC suggests that this estimate captures some, but not all, of the variability contributed by several sources of scientific uncertainty, such as model error, process error, observation error, retrospective error, and human error. Because their sigma does not fully capture these sources of uncertainty, and because, as discussed below, it does not contain contributions from other important sources of scientific uncertainty (e.g. error in estimating  $F_{msy}$ ), the SSC has acknowledged that their estimates of sigma are underestimates and can be thought of as lower bounds on the scientific uncertainty in OFL. Furthermore, we note that because there are sources that are unaccounted for (i.e. they are effectively assuming those errors are zero), they cannot be certain that they have even accounted for the major elements of uncertainty. In other words, they cannot be certain that an estimate of sigma by their method is not a substantial underestimate of the true uncertainty.

Sources of error that are not included in the SSC's quantification exercise include forecast error, time between assessments, uncertainty in the optimal harvest rates ( $F_{msy}$ ), uncertainty in the effects of climate or environmental conditions, and ecosystem interactions.<sup>18</sup> Although the SSC also examined one other type of error, characterized as "within stock assessment," it would be a mistake to assume that this error is subsumed within the sigma of 0.36. "Within-assessment" variation can be considered precision while "among-assessment" variation is better thought of as accuracy. These are related but separate sources of error. Indeed, the SSC itself acknowledged that the sigma of 0.36 recommended for Category 1 stocks "is only a first step, in part because it just considers uncertainty in biomass. Going forward, it will be important to consider other sources of uncertainty, such as  $F_{msy}$ . Because of that it was also recognized that *the present analysis underestimates total variance*."<sup>19</sup>

We also have concerns that the SSC's particular measure of sigma could be underestimating model error. The SSC's rationale for estimating "sigma" is that differences in biomass estimates among repeat assessments for the same species and in the same year capture elements of model error. A well-understood problem of this approach is that the true underlying population trajectory is unknown and must be assumed. After considering three different ways to address this problem, the SSC decided to calculate deviations in biomass estimates from the mean in each year. This choice has two important implications: (1) it does not give weight to the most recent assessment, which one would presume to be the most accurate due to recent data, and (2) it does not account for biases that exist in multiple assessment models.

In addition, the deviations from the mean  $B$  are always symmetric, which implies that there is no bias in the equation error. Bias in stock assessments is much more serious

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<sup>18</sup> PFMC March 2010 Agenda, Item E.4.b, Supplemental SSC Report at 5.

<sup>19</sup> PFMC March 2010 Agenda, Item E.4.b, Supplemental SSC Report 2 (emphasis added).

than symmetric equation errors. If the process errors are random and uncorrelated, overfishing one year could be followed by “underfishing” the next and to some extent the errors would cancel out. However, a stock assessment that is consistently biased high would overestimate  $B_t$  each year, leading to overfishing (if, for example, all the stock assessments incorrectly underestimated natural mortality,  $M$ ). Therefore, the assumption that these residuals are independent and follow a lognormal distribution is not supported.

With respect to Category 2 and Category 3 stocks, the preferred sigma values for the probability distributions for these stocks (0.72 for Category 2 and 1.44 for Category 3) lack a technical basis and thus are arbitrary.<sup>20</sup> The failure to use other readily-available means of buffer-setting that would have considered the relevant factors in a meaningful manner, such as the distributions of OFLs for each stock or PSA, means that in addition the Council has failed to use the best available science. As discussed further below, while the SSC has rejected the inclusion of PSA into the ABC control rule for Category 1 species, that does not preclude the Council from using PSA to generate an appropriate  $P^*$ , as is being done in the South Atlantic and the Gulf of Mexico.

#### *The ABC control rule’s $P^*$ values are too high*

The  $P^*$  values in the ABC control rule are far too high to satisfy the MSA’s requirement to prevent overfishing, particularly given their application to, as described above, an incomplete and/or inaccurate quantification of scientific uncertainty for the various groundfish species. Indeed, for Category 2 and 3 stocks, the record indicates that the SSC and GMT recommended that the Council choose particular  $P^*$  values more to approximate the status quo harvest policies already in place than to provide a scientifically-defensible buffer.<sup>21</sup> But while the Council preliminarily approved sigma values recommended by the SSC to approximate the status quo buffers for these stocks, they chose  $P^*$  values higher than those recommended by the SSC, resulting in buffers that are smaller than the status quo.<sup>22</sup>

First, it is critical to recognize that – by law – OFL is a limit, not a target. It is threshold not to be exceeded, *i.e.*, the relevant legal requirements are to set ACLs such that “overfishing does not occur” and to “prevent” overfishing. The MSA’s fisheries management standard in this context is not to hover around the threshold of overfishing, but rather to stay below it. As a consequence, applying a  $P^*$  value as high as 0.40-0.45 is not appropriate. By choosing a  $P^*$  value of 0.45, the Council is taking a 45% chance of overfishing a stock in any given year (if the uncertainty was characterized properly). The consequence will be that on average, *45% of the stocks will experience overfishing in any given year* (if the uncertainty was characterized properly, and an even higher percentage

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<sup>20</sup> See PFMC April 2010 Agenda, Item I.2.b, Supplemental SSC Report (“[A]t present [there is] no analysis available for determining the appropriate value of  $\sigma$  [sigma] to represent scientific uncertainty for stocks in [Categories 2 and 3].”).

<sup>21</sup> See, e.g., PFMC April 2010 Agenda, Item I.2.b, Supplemental SC Report at 3 (“The difference between [sigma values of] .72 and 1.44 corresponds fairly closely to the difference between the current buffers for category 2 and 3 stocks (0.25 versus 0.5) when  $P^*$  is in the range 0.3 ~ 0.35.”).

<sup>22</sup> See attached Table 1.

if the uncertainty has been underestimated). When this probability is compounded among the 26 Category 1 groundfish stocks that the Council has proposed to set  $P^* = 0.45$ , this means there is a 99.99% chance that overfishing will occur for at least one of these stocks.<sup>23</sup> This is inconsistent with the MSA mandate to end overfishing. Rather, a  $P^*$  value (used in the manner chosen by the Council, i.e., applied to a threshold legal requirement) must be much lower.

Fisheries science and management has long recognized that managing using MSY as a target (which is the equivalent of selecting a  $P^*$  of 0.5) is overly risk prone and consistently leads to high rates of overfishing. The history of fisheries science has entailed an ongoing effort to find yield targets that are sufficiently below MSY (OFL in our case) to make the chance of overfishing unlikely while not foregoing too much yield. The use of  $P^*$  and an estimate of scientific uncertainty (plus the addition of ACLs) is the latest attempt to achieve optimal yield, but it will fail if values of  $P^*$  are chosen that are hardly distinguishable from 0.5, in which case the Council will have reverted using OFL as a management target, rather than the limit that it must be. The new approach can only work if  $P^*$  values are selected conservatively enough so that ABCs are set sufficiently low enough to avoid ever exceeding OFL.

It is worth noting that in many other sectors and industries, very low acceptable probabilities of failure are used. The use of a  $p = 0.05$  and the 95% confidence interval are currently widely accepted standards of certainty used in statistics and in the sciences to determine whether results of scientific studies are significant (i.e., whether to accept or reject a null hypothesis).

Ultimately, an analysis that would generate a robust, non-arbitrary level of acceptable risk in the context of overfishing should assess the trade-offs between the consequences of overfishing (both economic and ecological) and the short-term costs associated with more precautionary buffers. The reason for setting such buffers is that while the SSC can provide a central estimate for OFLs, the relatively high uncertainty characterized by  $\sigma = 0.36$  means that the true OFL could be substantially lower. So, even if catch levels remained below the SSC's OFL estimate, overfishing could still be occurring. As the Council knows all too well, even the economic costs of overfishing have been catastrophic on local economies and west coast fishing communities. The choice of  $P^*$  should explicitly weigh, in part, the value of avoiding such catastrophic events against the short-term costs of more precautionary buffers for scientific uncertainty. Therefore, setting a  $P^*$  in the range of 0.4 to 0.5 implies a policy statement by the Council that it does not take this real risk of inadvertent overfishing seriously, nor does it concern itself with the consequences of overfishing on ecosystems or the fishing community.

In addition, because (as the SSC makes clear) the estimate “sigma” is an underestimate of scientific uncertainty, a  $P^*$  value of 0.45 will translate into an ABC with a risk of overfishing that is greater than 0.45 for many species, including potentially such overfished species as POP, lingcod, widow, canary, bocaccio, darkblotched, yelloweye

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<sup>23</sup> Probability of overfishing zero stocks =  $(1 - P^*)^n$  where  $P^*$  is the probability of overfishing each stock and  $n$  is the number of stocks to which the  $P^*$  is applied.

and petrale, and the “precautionary stock” sablefish. For all these species, the proposed ABC control rule would set ABC just 4% lower than the OFL.<sup>24</sup> For two of them, widow and canary, the Preferred Alternative in the draft harvest specifications relies on a total buffer (ABC and ACL) that results in less protection than was provided under the rebuilding plans in the Status Quo Alternative; for widow, the previous buffer between ABC/OY was 93% and proposed buffer between OFL/ACL is 88%, and for canary, the previous buffer between ABC/OY was 89% and the proposed buffer between OFL/ACL is 83%.<sup>25</sup> No scientific rationale has been offered for these reductions in buffer size.

The Preferred Alternative in the harvest specifications decreases buffers for most Category 2 and Category 3 stocks relative to the status quo, and therefore turns the clock back making the management of these species more likely to lead to overfishing. In most cases, ABCs will be set 17% below OFL for Category 2 and 31% below OFL for Category 3 (which includes the minor rockfish, other flatfish, and other fish complexes).<sup>26</sup> Nor, as discussed below, is these stocks’ previous level of protection restored with an ACL buffer. When the probability of overfishing and/or level of scientific uncertainty has not been calculated -- *e.g.*, Category 2 or 3 species in the case of Pacific groundfish -- then it is imperative that the Council use another approach to setting a scientific uncertainty buffer, such as PSA. While the SSC has rejected the inclusion of PSA into the ABC control rule for Category 1 species, that does not preclude the Council from using PSA to generate an appropriate P\*, as is being done in the South Atlantic and the Gulf of Mexico.

At a minimum, the Council must change the Preferred Alternative P\* to reflect the SSC-recommended status quo buffers for Category 2 and 3 species. For Category 1 species, the Council must adopt a significantly lower P\* that reflects a) the legal status of the OFL as a threshold and not as a target; and b) the incomplete and artificially low sigma value that will likely be higher once other sources of scientific uncertainty are quantified and incorporated.

**Including a 25-5 harvest control rule for assessed flatfish in Amendment 23 is inappropriate and not scientifically justified**

It is our understanding that the Council is also attempting to codify the new 25-5 Harvest Control Rule for assessed flatfish species through Amendment 23. We would like to reiterate our concerns which we previously raised regarding the lack of information to base such a radical change from the default B40% target reference point policy for groundfish. There is insufficient scientific basis for lowering the Fmsy, reference points, or control rule for assessed flatfish at this time. The recent estimates of Bmsy for petrale sole do not include data on actual recruitment during the time when the population was closer to its unfished levels, therefore the determination of Bmsy for this species is riddled with assumptions and uncertainty. It would be premature to change harvest

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<sup>24</sup> See attached Table 1 comparing buffers under previous framework with preliminary buffers under new framework.

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*



control rules given the high level uncertainty in the B25% proxy. Using B5% as the reference point in which the fishing rate goes to zero is much more aggressive than the 40-10 rule, and represents a level dangerously close to commercial extinction, where productivity declines rapidly. For flatfish and other groundfish, as the SSC was unable to assess the appropriate Fmsy for any species or the uncertainty in Fmsy in the sigma value due to the use of proxies. Given the uncertain and quickly changing information about flatfish, a dramatic change to the HCR is premature and unjustified.

### **Amendment 23 and the 2011-12 specifications are not consistent with SSC recommendations**

Pursuant to Section 302(h)(6) of the MSA, which was added as part of the 2006 amendments, ACLs must be set at or below the SSC's catch level recommendations.<sup>27</sup> Further, to comply with Section 302(h)(6) and given the role of ABC control rules in setting ACLs, councils must establish ABC control rules based on the scientific advice of their SSCs.<sup>28</sup>

Amendment 23 and the 2011-12 catch specifications do not comply with these requirements. For example, as discussed above, the Council did not follow the SSC's recommendation to retain status quo buffers of 25% and 50% for Category 2 and 3 species, respectively.<sup>29</sup>

### **The Council has not adequately accounted for ecosystem considerations**

The MSA requires ecosystem considerations to be explicitly accounted for in the process of setting harvest specifications. OY is prescribed as MSY "reduced by any relevant economic, social, or ecological factor."<sup>30</sup> The definition of MSY must include stock interactions,<sup>31</sup> and any relevant ecological factors that are not considered in MSY can be considered in the setting of OY and OY must reduce MSY accordingly.<sup>32</sup> The ACL must be set at a level to achieve OY on a continuing basis.<sup>33</sup> Accordingly, the development of the ACL-setting mechanism must explicitly consider food needs of predators that rely on the managed species. The FMP must quantify, analyze, and address relevant ecological factors. Currently, neither the existing FMP nor the proposed Amendment 23 specify these ecosystem considerations much less how they are incorporated into the setting of ACLs. For instance, specific procedures for setting ACLs to achieve OY for forage fish

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<sup>27</sup> 16 U.S.C. § 1852(g)(1).

<sup>28</sup> 50 C.F.R. § 600.310(f)(4); 16 U.S.C. § 1852(g)(1) (requiring ACLs to be set below SSC catch level recommendations).

<sup>29</sup> While the Council chose the SSC's recommended sigma values for Category 2 and 3 of 0.72 and 1.44, respectively, the Council did not choose the SSC's recommended corresponding P\* values that would have resulted in status quo buffers of 0.25 for Category 2 species and 0.5 for Category 3 species. Indeed, the Council chose P\* values much higher than those recommended by the SSC, which would result in buffers significantly smaller than the status quo.

<sup>30</sup> 16 U.S.C. § 1802(33)(B).

<sup>31</sup> 50 C.F.R. § 600.335(e)(1)(iv).

<sup>32</sup> 50 C.F.R. § 600.310(e)(1)(iv).

<sup>33</sup> 50 C.F.R. § 600.310(e)(3)(ii).

stocks should be developed to maintain significantly higher biomass than the conventional single-species target biomass of  $B_{MSY}$ .<sup>34</sup>

Currently, a wealth of existing data and analysis methods are available to address ecological factors relevant to the harvest strategy of groundfish species. Diet information, which indicates the existence and strength of predator-prey relationships has been published by NOAA for West Coast groundfish and other species.<sup>35</sup> In addition, food web models of the California Current have been published, including mass balance models (i.e., EcoPath with EcoSim)<sup>36</sup> and spatially-explicit dynamic models (i.e., Atlantis)<sup>37</sup>. These models provide qualitatively and quantitatively tools to describe potential impacts of target groundfish species removals on other marine species as well as ecosystem attributes such as mean trophic level, food web resilience, and biodiversity. These are precisely the “relevant ecological factors” that must be considered in any Fishery Management Plan. Claiming that such tools are unavailable or that these factors are not relevant can simply no longer be justified given the state of existing science, including the aforementioned work by NOAA.

Therefore, to comply with the MSA, Amendment 23 to the Groundfish FMP must list the relevant ecological factors, analyze how groundfish harvest control rules affect these ecological factors, and describe how these factors will reduce MSY to achieve appropriate OYs. Accordingly, the corresponding SAFE documents for groundfish must conduct appropriate analyses of the impacts of specified ABC values on ecosystem attributes, other species, and other ecological factors to inform OYs set by Council.

**Draft Amendment 23 does not include an adequate method for accounting for management uncertainty in setting ACLs or annual catch targets (ACTs)**

The lack of management uncertainty buffers in the proposed harvest specifications reflects the absence of a management uncertainty control rule. As a general matter, the proposed ACLs for the various groundfish stocks appear intended to reflect historical status quo catch limits.<sup>38</sup> In some cases, the Council adopted preliminary ACLs that are equal to the corresponding ABCs, leaving no buffer for management uncertainty and thus substantially increasing the risk of overfishing such species.<sup>39</sup> That is especially disconcerting considering that the ABC for many of those same species has been set at only a slightly lower level than the OFL. For example, the Council has preliminarily

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<sup>34</sup> 50 C.F.R. § 600.310(e)(3)(iv)(C).

<sup>35</sup> Dufault et al., November 2009. NOAA Technical Memorandum NMFS-NWFSC-103. A synthesis of diets and trophic overlap of marine species in the California Current.

<sup>36</sup> Field et al. 2006. Top-down modeling and bottom –up dynamics: linking a fisheries-based ecosystem model with climate hypotheses in the Northern California Current. Prog Oceanogr 68:238-70.

<sup>37</sup> Horne et al. January 2010. NOAA Technical Memorandum NMFS-NWFSC-104. Design and Parameterization of a Spatially Explicit Ecosystem Model of the Central California Current.

<sup>38</sup> See attached Table 1.

<sup>39</sup> The Council adopted preliminary ACLs that are equal to the corresponding ABCs for the following species (this list is not exhaustive): yellowtail (assessed stock), black rockfish (WA), California scorpionfish, English sole, Arrowtooth flounder.

adopted ABCs for yellowtail and California scorpionfish that are only 4% lower than the OFLs for these stocks, and has set the ACLs equal to these ABCs. In order to ensure that overfishing does not occur, as intended under the MSA, Amendment 23 must include a mechanism for accounting for management uncertainty. While the performance of the groundfish fishery has improved over the last several years in terms of constraining catch to the catch limit, the Council must still set ACLs or, particularly where management uncertainty is high and in-season management is not effective, ACTs, at a level sufficiently below the ABC to account for management uncertainty.

Council deliberations have indicated that the Council believes that current harvest strategies, including P\*, address management uncertainty. This is a misinformed and flawed approach that conflates separate requirements for buffering sources of uncertainty. The P\* approach was, on its own terms, intended solely to address scientific uncertainty, not the wholly separate requirement to account for management uncertainty. Management uncertainty results from uncertainty in the true catch amount (estimation error) and uncertainty in the ability of managers to constrain catch sufficiently to prevent exceeding the ACL. Estimation error results from misreporting of landed catch and uncertainty about the amount of discards and associated discard mortality; and time lag in reporting and data-availability to managers presents a major source of management uncertainty and often prevents in-season management control.

Several species in the groundfish fishery are managed with “harvest guidelines,” which are similar to the ACTs recommend in the NS1 guidelines. Amendment 23 proposes ACTs for a number of fisheries to account for management uncertainty. However, Amendment 23 does not include an ACT control rule as called for by the NS1 guidelines.<sup>40</sup> In the absence of such a control rule, it is unclear how such management uncertainty will be accounted for in the ACT. The ACT control rule should clearly articulate how management uncertainty in the amount of catch in the fishery, including bycatch, is accounted for in setting the ACT relative to the ACL.<sup>41</sup> The control rule should account for uncertainty both in the ability to constrain catch and in quantifying the true catch amount, and consider past management performance in the fishery and such factors as time lags in reported catch.

### **The Council has not complied with NEPA**

A failure to properly revise the Council’s harvest rules and specification process to comply with the Magnuson-Stevens Act will have profound and significant impacts on the environment. As such, the Amendment 23 process must be undertaken in compliance with the National Environmental Policy Act. The heart of NEPA is informed decision-making based upon robust public participation and a detailed analysis of the environmental tradeoffs between a range of alternatives.

It is unclear what level of NEPA analysis the Council and NMFS will be utilizing – as things currently stand, however, the NEPA process appears likely to amount simply to an

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<sup>40</sup> 50 CFR § 600.310(f)(6).

<sup>41</sup> *Id.*

improper post-hoc rationalization of a decision already made. We ask that NMFS ensure that the issues raised both in this letter and throughout the Council's preliminary discussions are addressed and that a draft environmental review document be made available to the public and Council for comment before the Council makes its final decision. This will allow the Council and members of the public to clarify complicated scientific and ecological issues, assess a variety of techniques for addressing these issues, and ultimately allow the Council and NFMS to make a fully informed decision that reflects a 'hard look' at the current system after an evaluation of a wide variety of alternative options.

### **Conclusion**

Thank you for this opportunity to provide this input to the Amendment 23 and 2011-2012 Specification process. We appreciate the progress the Council and the SSC have made in developing procedures to comply with the new requirements of the MSA and the NS1 Guidelines. We hope these comments are helpful in making positive changes so that the final Preferred Alternative better serves the goal of managing and conserving our important marine resources and is consistent with NMFS's and the Council's legal requirements.

Sincerely,

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Enclosure

**Table 1: Comparison of buffers under previous framework with preferred alternative buffers under new framework. (NRDC, 2010)**

<b>Stock</b>	<b>Data Category</b>	<b>2009 ABC/OY Buffer</b>	<b>2010 ABC/OY Buffer</b>	<b>2011 OFL/ABC Buffer</b>	<b>2011 ABC/ACL Buffer</b>	<b>2011 Total Buffer</b>	<b>Notes</b>
<b>Lingcod - coastwide</b>		0	0	11%	0	11%	
N. of 42°	1	0	0	4%	0	4%	
S. of 42°	2	0	0	17%	0	17%	
<b>Pacific cod</b>	3	50%	50%	31%	28%	50%	Status quo buffer
<b>Pacific whiting</b>							Set during annual harvest specs
<b>Sablefish (coastwide)</b>	1	15%	16%	4%	27%	30%	Precautionary species: ACL set through 40-10 rule
N. of 36°							
S. of 36°							
<b>Pacific ocean perch</b>	1	84%	83%	4%	82%	82%	Reduced buffer
<b>Shortbelly rockfish</b>	2	0	0				SSC waiting for MSY-based results from the assessment, not available until June
<b>Widow rockfish</b>	1	93%	93%	4%	88%	88%	Reduced buffer
<b>Canary rockfish</b>	1	89%	89%	5%	83%	83%	Reduced buffer
<b>Chilipepper rockfish</b>	1	5%	5%	4%	0	4%	Reduced buffer
<b>Bocaccio S. of 40°10'</b>	1	64%	64%	4%	63-92%	64-93%	
<b>Splitnose rockfish S. of 40°10'</b>	1	25%	25%	4%	0	4%	Significantly reduced buffer
<b>Yellowtail rockfish N. of 40°10'</b>	1	0	0	4%	0	4%	S. of 40°10' = Minor rockfish south complex (unassessed)
<b>Shortspine Thornyhead - coastwide</b>	1	17%	17%	4%		17%	Status quo buffer
<b>Longspine</b>	1	30%	30%	17%		32%	Status quo buffer

**Table 1: Comparison of buffers under previous framework with preferred alternative buffers under new framework. (NRDC, 2010)**

<b>Thornyhead - coastwide</b>							
<b>Cowcod S. of 40°10'</b>	2 (Conception)	69%	71%	17% (Conception)		69%	Status quo buffer
	3 (Monterey)			31% (Monterey)			
<b>Darkblotched</b>	1	35%	34%	5%	32%	35%	Status quo buffer
<b>Yelloweye</b>	1	Ramp-down	Ramp-down	4%	57%	58%	Status quo buffer
<b>Black rockfish (wa)</b>	1	0	0	4%	0	4%	
<b>Black rockfish (or-ca)</b>	1	32%	24%	4%	14%	18%	Significantly reduced buffer
<b>Minor rockfish north</b>	3	38%	38%	31%	9%	37%	Reduced buffer
<b>Minor rockfish south</b>	3	41%	41%	31%	33%	54%	Increased buffer
<b>California scorpionfish</b>	1	0	0	4%	0	4%	
<b>Cabazon (CA)</b>	1	35%	29%	4%	0	4%	Significantly reduced buffer
<b>Cabazon (OR)</b>				4%	0	4%	
<b>Dover sole</b>	1	44%	42%	4%	57%	60%	Increased buffer
<b>English sole</b>	1	0	0	4%	0	4%	
<b>Petrale Sole (coastwide)</b>	1	13%	13%	4%	0	4%	Significantly reduced buffer
<b>Arrowtooth flounder</b>	2	0	0	17%	0	17%	
<b>Starry flounder</b>	2	33%	32%	17%	10%	25%	Reduced buffer
<b>Other flatfish</b>	3	27%	27%	31%	31%	52%	Increased buffer
<b>Other fish</b>	3	50%	50%	31%	28%	50%	Status quo buffer
<b>Longnose skate</b>	1	61%	59%	4%	55%	57%	Reduced buffer

# Comments on Groundfish FMP Amendment 23



June 13, 2010

Whit Sheard -- Pacific Counsel and Senior Advisor  
Geoff Shester, Ph.D. -- California Program Director

# Ecological Factors in ACLs

- OY is prescribed as Maximum Sustainable Yield ‘as reduced by any relevant economic, social, or ecological factor.16 USC 1802 Sec. 3(33)(B).
- The FMP must address ecological factors in its OY specifications. (Final Rule 600.310 (e)(3)(iv))
- ACLs must achieve OYs on a continuing basis (600.310 (e)(3)(ii))



# Ecological factors to consider

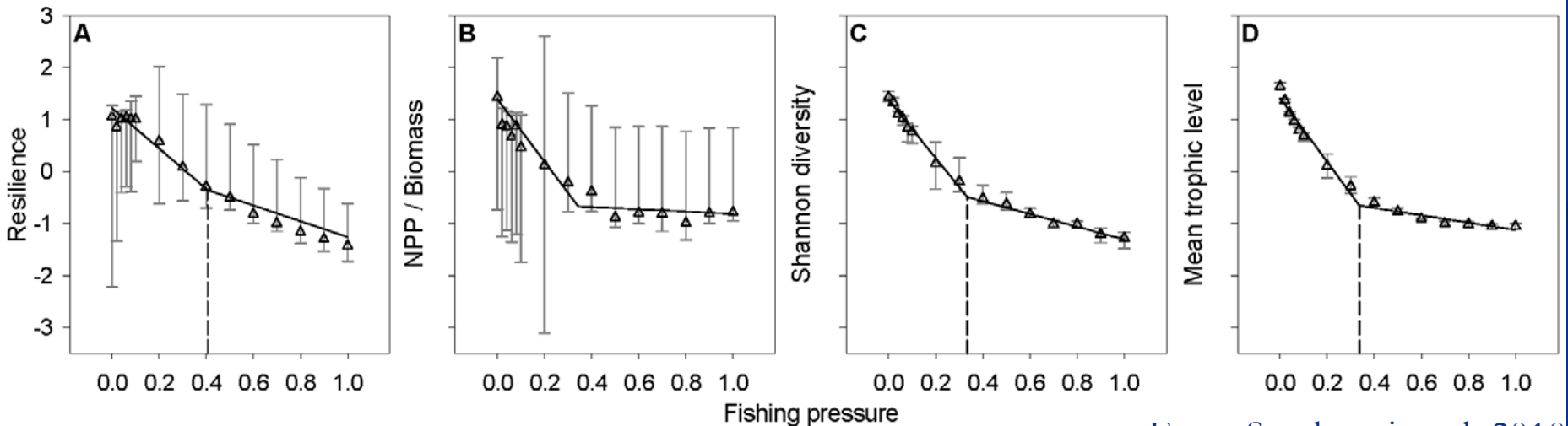
Figure 2-1 in Draft EA:

No Action Alternative Current Harvest Specification Framework		Preliminary Preferred Action Alternative Am. 23 Harvest Specification Framework	
ABC	Overfishing Limit	OFL	Overfishing Limit
OY	Buffer accommodates scientific uncertainty, management uncertainty, socioeconomic concerns, rebuilding concerns, etc.	ABC	Buffer accommodates scientific uncertainty
		ACL	Buffer accommodates management uncertainty, socioeconomic concerns, rebuilding concerns, etc.
HG	Buffer accommodates ad hoc sector allocations and other management objectives	ACT	Buffer could accommodate management uncertainty, inseason catch monitoring uncertainty, ad hoc sector allocations and other management objectives

← Add  
“Ecological  
Factors”

# Ecological Factors

- Species interactions/interaction strengths
- Forage species (keep above Bmsy)
- Climate effects
- Results of ecosystem models
- Integrated Ecosystem Assessments
  - (e.g., EcoSim, Atlantis)



# Overfishing Limits Expressed as Annual Catches are Uncertain

$$\text{OFL}_t = F_{\text{MSY}} \cdot B_t$$

- Uncertainty in estimating  $F_{\text{MSY}}$
- *Uncertainty in  $B_t$*
- Uncertainty in forecasts ( $\text{OFL}_{t+1}$ , etc.)
- Uncertainty in spatial processes
- Uncertainty in the ecosystem
  - trophic relationships
  - climate

From Ralston, Hamel, & Punt (2010)

# Probability of Overfishing ( $P^*$ )

- Equivalent to % of stocks where overfishing is expected to occur
- Critical factors to consider in setting risk preference
  - Consequences of overfishing
  - Weigh benefits of avoided overfishing vs. costs of increased buffer
  - Decision framework

# Shortbelly Rockfish (*Sebastes jordani*)

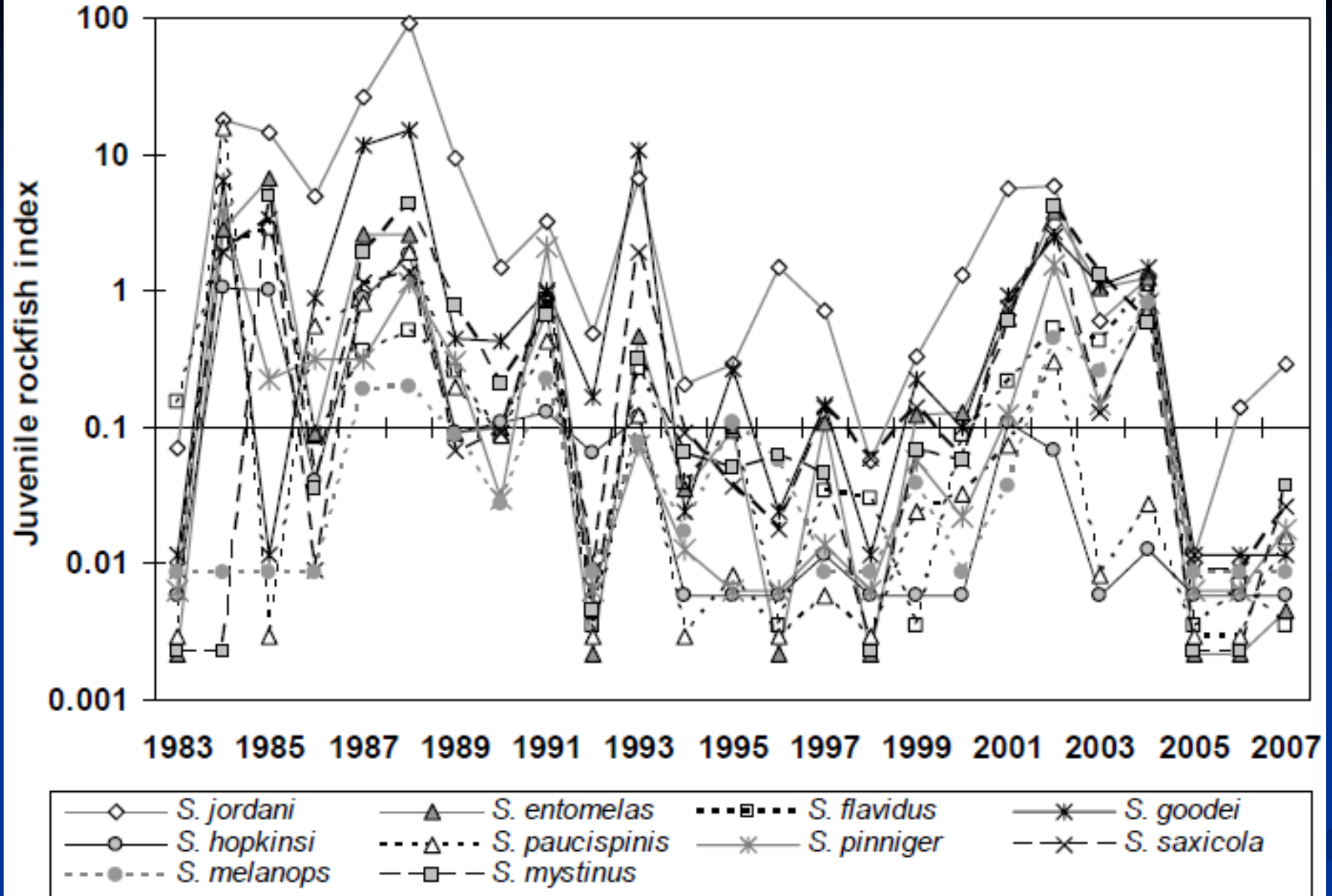


- Major forage species in CA Current
  - Chinook salmon (~60% of identified prey historically)
  - Seabirds (up to 90% diet juvenile rockfish)
  - Marine mammals
- Most abundant pelagic juvenile rockfish of Central California
- No directed fishery, though potential exists
- Minimal bycatch (1-12 mt/yr)



Juvenile shortbelly  
rockfish off Mission  
Beach, CA





Standardized relative abundance (in log scale) of the ten most frequently encountered species of juvenile rockfish (*Sebastes*) from the juvenile rockfish survey, 1983-2007. From Field et al. (2010)

# Recognizing Ecological Importance as Forage Species

- Option 1: Reclassify as “Ecosystem Component” in the Groundfish FMP and prohibit directed harvest
- Option 2: Leave “in the fishery” as Category 2d species and lower the ACL to maximum catch levels in recent years based on ecological factors



TENTATIVE ADOPTION OF HARVEST SPECIFICATIONS, REBUILDING PLAN  
REVISIONS, AND MANAGEMENT MEASURES FOR 2011-2012 FISHERIES

Under this agenda item, the Council is scheduled to take preliminary action to: 1) adopt 2011-2012 harvest specifications including overfishing limits (OFLs), acceptable biological catches (ABCs), and annual catch limits (ACLs); 2) adopt new and revised rebuilding plans for overfished groundfish stocks; and 3) adopt management measures for 2011-2012 fisheries. This tentative adoption will be followed by further review and analysis by the Groundfish Management Team (GMT) and the Groundfish Advisory Subpanel (GAP) followed by final adoption under Agenda Item B.7 on Thursday.

A key element for the 2011-2012 process has been restructuring the alternatives to better understand the implications of decisions on overfished species ACLs, which, like in past management cycles, will constrain fishing opportunity in 2011-2012. Agenda Item B.3.a Attachment 1 contains a set of integrated alternatives and preliminary analysis, including:

- an analytical scenario that explains how the alternative is structured,
- strategic combinations of overfished rockfish species ACLs,
- ranges of petrale sole ACLs,
- sector allocations of overfished species,
- management measures necessary to stay within the sector allocations or ACLs (e.g., alternative seasons, size and bag limits, specific areas closed or open to fishing, trip limits, gear restrictions, etc.), and
- management measures analyses.

The Council will also need to consider the recent Court Order related to groundfish. On April 23, 2010, the US District Court for the Northern District of California issued a ruling in response to the latest in a series of complaints filed in Natural Resources Defense Council v. Locke, challenging the rebuilding provisions in the groundfish Fishery Management Plan. The Court remanded the 2009-2010 Specifications and ordered the agency “within one year of the date of issuance of the Order on Remedy,” to establish new Specifications for the Pacific Coast Groundfish Fishery that “are based on the ‘best scientific information available’ within the meaning of Magnuson-Stevens Act (MSA) National Standard 2, 16 U.S.C. § 1851(a)(2); and establish rebuilding periods for darkblotched rockfish, cowcod, and yelloweye rockfish that are ‘as short as possible’ within the meaning of MSA Section 304(e)(4)(A)(i), 16 U.S.C. § 1854 (e)(4)(A)(i).”

In addition to the Council’s preliminary preferred alternative for overfished species ACLs, intermediate and lower options are analyzed to better demonstrate the tradeoffs between the shortest time to rebuild the overfished species and the needs of the fishing communities. The intermediate alternative was developed in consideration of the Court Order.

Attachments 2 through 4, as well as Supplemental Attachment 5, provide information and analysis that will be further developed and incorporated into a finalized draft environmental impact statement (DEIS) that must be produced as part of the overall Federal decision-making process. These attachments provide information so the Council may further understand the interconnected consequences of these decisions: biological – effects on living marine resources; physical – effects on habitats and the marine ecosystem; and socioeconomic – effects on fishermen, processors and, fishing communities. The attachments describe the 2011-2012 harvest specifications alternatives, rebuilding alternatives, and integrated alternatives (Attachment 2); illustrate baseline conditions through a series of tables and figures showing landings of groundfish and other species and associated ex-vessel revenue by fishery, season, month, and port as well as fishery participation measured by numbers of vessels making landings and vessel length (Attachment 3); and describe the baseline conditions of west coast communities (Attachment 4). Supplemental Attachment 5 will further evaluate the effects of the integrated alternatives on west coast marine species, habitat, and fishing communities.

Agenda Item B.3.b, GMT Report 1 evaluates the Council's preliminary preferred decision on harvest specifications. The Council should review the GMT recommendations and provide any modifications as necessary.

The Washington Department of Fish and Wildlife submitted a report detailing recommended management measures for the Washington recreational groundfish fisheries (Agenda Item B.3.b, WDFW Report). The Oregon Department of Fish and Wildlife summarized public comment regarding the proposed 2011-2012 commercial and recreational management measures (Agenda Item B.3.b, ODFW Report). California Department of Fish and Game provided comments on the proposed management measures as well as notice that state reports on management measures will arrive as a supplemental report (Agenda Item B.3.b, CDFG Report). Oregon and California also submitted a joint report recommending the status quo sharing of the black rockfish ACL between the states (Agenda Item B.3.b, Joint ODFW/CDFG Report).

Public comment received at the Council office by the June briefing book deadline are included in Agenda Item B.3.c, Public Comment. Since the recent Court Order also affects inseason actions under consideration by the Council at this meeting, public comment that may also be relevant to the 2011-2012 harvest specifications and management measures decision can be found under Agenda Item B.5.c, Public Comment.

The Council should consider the state and tribal proposals and preliminary DEIS analyses, as well as advice from advisory bodies and the public before adopting 2011-2012 harvest specifications, rebuilding plan revisions, and management measures. The Council may want to request additional analyses by the GMT and GAP under this agenda item. Results for any requested analyses can be provided on Thursday under Agenda Item B.7, when the Council is scheduled to take final action on harvest specifications, rebuilding plan revisions, and management measures for the 2011-2012 fisheries.

### **Council Action:**

- 1. Tentatively Adopt Overfishing Limits, Acceptable Biological Catches, and Annual Catch Limits.**
- 2. Tentatively Adopt Rebuilding Plan Revisions.**
- 3. Tentatively Adopt Management Measures for 2011-2012 Fisheries.**

### **Reference Materials:**

1. Agenda Item B.3.a, Attachment 1: Preliminary Analysis of the Integrated Alternatives and Management Measures for 2011-2012 Groundfish Fisheries.
2. Agenda Item B.3.a, Attachment 2: Description of Harvest Specifications Alternatives, Rebuilding Alternatives, and 2011-2012 Management Measures.
3. Agenda Item B.3.a, Attachment 3: Appendix F: Historical Landings and Revenue in the Groundfish Fisheries.
4. Agenda Item B.3.a, Attachment 4: Update of the 2006 Community Vulnerability Analysis.
5. Agenda Item B.3.a, Supplemental Attachment 5: Additional Impact Analysis of the Integrated Alternatives.
6. Agenda Item B.3.b, GMT Report 1: Groundfish Management Team Report on Harvest Specifications for Complexes and Sub-Complexes.
7. Agenda Item B.3.b, WDFW Report: Washington Department of Fish and Wildlife Report on Management Measure Alternatives for the 2011-2012 Washington Recreational Groundfish Fisheries.
8. Agenda Item B.3.b, ODFW Report: Oregon Department of Fish and Wildlife Report Summarizing Public Comment Received Regarding 2011-12 Commercial and Recreational Groundfish Management Measures.
9. Agenda Item B.3.b, CDFG Report: Proposed Changes to the California Commercial and Recreational Groundfish Fishery Management Measures for the 2011-2012 Season.
10. Agenda Item B.3.b, Joint ODFW/CDFG Report: Oregon and California Departments of Fish and Wildlife Joint Proposal on Management Measures for 2011-2012 Fisheries.
11. Agenda Item B.3.c, Public Comment.

### **Agenda Order:**

- a. Agenda Item Overview **Kelly Ames and John DeVore**
- b. Reports and Comments of Advisory Bodies and Management Entities
- c. Public Comment
- d. **Council Action:** Tentatively Adopt Overfishing Limits, Acceptable Biological Catches, Annual Catch Limits, Rebuilding Plan Revisions, and Management Measures for 2011-2012 Fisheries

PFMC  
05/26/10

## CHAPTER 4 PRELIMINARY ANALYSIS OF THE INTEGRATED ALTERNATIVES AND MANAGEMENT MEASURES FOR 2011-2012 GROUNDFISH FISHERIES

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### 4.1.1 Analysis of the Integrated Alternatives

#### 4.1.1.1 The No Action Alternative

##### Analytical scenario

If no action were taken by the Council, the 2010 OYs and management measures currently specified in Federal regulations would prevail for the 2011-2012 fisheries.

##### Harvest Specifications

**Table 4-1.** No Action Alternative: 2011-2012 Overfished Species Specifications and Estimated Catch.

Species	T <sub>Target</sub> FMP	ACL Alts. 2011, 2012 <sup>a</sup>	Median time to rebuild given ACL <sup>b</sup>	Estimated Catch All Sectors 2011 (mt)	Estimated Catch All Sectors 2012 (mt)
Bocaccio	2026	288 mt	2022	TBD	TBD
Canary	2021	105 mt	[2027]		
Cowcod	2072	Alt 4 (4 mt)	2071		
Darkblotched	2028	291 mt	2025		
POP	2017	200 mt	[2021]		
Petrale	TBD	1,200 mt	TBD		
Widow	2015	509 mt	2010		
Yelloweye	2084	Alt 4 (17 mt)	2074		

<sup>a</sup> Alternative numbers and values taken from the No Action column in Table 2-8.

<sup>b</sup> Brackets indicate times to rebuild that are longer than the T<sub>target</sub> specified in the FMP.

**Table 4-2. No Action Alternative 2011, 2012 Non-Overfished species.** 2010 OY listed in Federal regulation as well as estimated total harvest, given the overfished species constraints and market conditions.

*[To be completed at June Council meeting]*

Limited Entry Non-Whiting Trawl Fishery

The limited entry non-whiting trawl model was updated with the latest WCGOP bycatch rates prior to the June Council meeting. Table 4-3 provides the projections for major target and overfished species impacts for 2010. Given current planned management for the remainder of the year (Appendix 1), slight overages are projected for sablefish and petrale sole, while projected total catches of Dover sole and shortspine thornyhead are within 16% of their harvest guidelines. No rebuilding species are currently projected to exceed their harvest guidelines, however year-end total catches of Pacific ocean perch and darkblotched rockfish are projected to be within 7% and 17% of theirs, respectively.

It is anticipated that the Council will take action at its June meeting to constrain trawl catches to within the trawl harvest guidelines. At such time, the trawl model will be re-run and projected target species catch and overfished species impacts under the No Action alternative will be updated accordingly.

**Table 4-3.** Projected 2010 trawl catch (mt) of major target and rebuilding species, based on management changes adopted in April 2010, and landings for Periods 1 and 2 reported to PacFIN as of May 19, 2010.

Species	Projected Total Catch (mt)			Harvest Guideline (mt)	Proj. - HG (mt)	Proj. % of HG
	North of 40°10'	South of 40°10'	Projected Total			
Sablefish	2,600	382	2,982	2,955	27	100.9%
Shortspine	1,163	168	1,332	1,591	-259	83.7%
Longspine	1,214	302	1,515	2,175	-660	69.7%
Dover sole	12,941	1,337	14,278	16,500	-2,222	86.5%
Petracle	988	240	1,228	1,200	28	102.3%
Arrowtooth	5,725	13	5,738	10,112	-4,374	56.7%
English	515	83	598	9,745	-9,147	6.1%
Other flatfish	971	231	1,202	4,884	-3,682	24.6%
Bocaccio	1.6	6.4	8.0	16.1	-8.1	49.7%
Canary	11.1	1.6	12.7	21.3	-8.6	59.8%
Cowcod	0.0	0.3	0.3	1.5	-1.2	21.6%
Widow	7.0	8.5	15.5	21.6	-6.1	71.7%
Yelloweye	0.3	0.0	0.3	0.6	-0.3	45.1%
Darkblotched	170.9	20.4	191.4	230	-38.6	83.2%
POP	93.6	0.2	93.8	100.8	-7.0	93.0%

#### Limited Entry Trawl Whiting

The GMT utilizes a model that estimates the catch of depleted species based on a rate of depleted species catch per unit of Pacific whiting catch in each sector (i.e., catcher-processor, mothership, and shoreside). This model is used to help inform appropriate bycatch limits for the Pacific whiting fishery given a particular Pacific whiting OY or ACL. Bycatch rates in the Pacific whiting fishery model are calculated for each year and non-tribal whiting sector. The rates are estimated as the metric tons of each depleted species per metric ton of whiting. The model uses the four years immediately prior to the existing year and combines those years through the use of a weighted average formula indicated below:

$$\text{Weighted Bycatch Rate} = 0.4 * \text{BCrate Year-1} + 0.3 * \text{BCrate Year-2} + 0.2 * \text{BCrate Year-3} + 0.1 * \text{BCrate Year-4}$$

This weighted average approach assumes that the prior year is more reflective of potential bycatch patterns in the current year. This is believed to be the case in the Pacific whiting fishery because the relative abundance of species caught in the Pacific whiting fishery can vary substantially from year to year. This is particularly the case because Pacific whiting is a highly variable stock, and variations in Pacific whiting stock abundance should have an impact on the bycatch rate of non-target stocks as those stocks become more or less abundant relative to Pacific whiting. The bycatch rates, except for widow rockfish, used for estimating depleted species catch

in 2010, which also inform model runs under the integrated alternatives, are illustrated in Table 4-4.

**Table 4-4.** Bycatch rates of depleted species used to model impacts in the 2011-2012 Pacific whiting trawl fishery.

Sector	Canary	Darkblotched	POP	Yelloweye
Mothership	0.0000222	0.0000597	0.0000450	0.0000000
CP	0.0000105	0.0000309	0.0000453	0.0000001
Shoreside	0.0000400	0.0000192	0.0001105	0.0000002

One exception to the weighted average approach described above is widow rockfish. The bycatch rate of widow rockfish has been increasing year over year in all non-tribal sectors of the Pacific whiting fishery. Due to this clear trend of increasing bycatch rates, widow rockfish bycatch rates are estimated with a linear regression analysis that uses the prior four years to estimate bycatch rates in the future. This is done on a sector by sector basis. Some caution should be exercised when interpreting the bycatch projections from the model as it is based on an extension of the linear trend analysis for predicting bycatch two years into the future. This creates some substantial uncertainty, so the estimates are best treated as order of magnitude estimates. Also, this approach assumes that fleet depth distributions are similar to the past and does not account for the potentially deeper depth distributions of the at-sea fleet which may occur in 2011-2012.

Since 2009, bycatch caps have been set on a total fleet basis and then distributed among the sectors on a pro-rata basis. That is, the bycatch caps for each sector reflect their percentage allocation of the Pacific whiting OY after set asides (e.g., tribal allocation, research, and bycatch in other fisheries). Sector-specific bycatch limits were calculated based bycatch model projections using the 2010 whiting OY (140,996 mt) (Table 4-5).

**Table 4-5.** Bycatch model predictions of canary, darkblotched, and widow rockfish distributed pro-rata by sector under the 2010 whiting OY of 140,996.

Sector	Canary	Darkblotched	Widow
Mothership	0.87	1.12	42.72
CP	1.24	1.59	60.52
Shoreside	1.53	1.96	74.76
<b>Total</b>	<b>3.64</b>	<b>4.67</b>	<b>178.01</b>

In 2010, the Council considered the historical performance of the Pacific whiting fisheries relative to overfished species bycatch (Table 4-6) in order to set the 2010 bycatch limits that would also apply under the No Action alternative. For canary rockfish, the Council recommended setting a bycatch cap of 14 mt in an effort to balance an increasing canary rockfish bycatch rate in the whiting fishery and the needs of the non-whiting sectors. Similarly, the whiting fishery has seen an increasing widow rockfish bycatch rate as the widow rockfish stock rebuilds. The GMT provided a linear interpolation of widow rockfish bycatch rates from 2006-2009 that resulted in an estimate of 279 mt. The Council considered this calculation and specified a 279 mt widow rockfish bycatch limit for 2010. For darkblotched rockfish the GMT discussed the rationale for maintaining the 2009 bycatch limit (25 mt) as reflected in the 2009-2010 specifications and management measures EIS. Bycatch of shelf rockfish like canary is inversely proportional to bycatch of darkblotched. As such even though the darkblotched limit has not been fully attained in any year from 2006-2009, enough should be available to the fleet to prevent shutting down the

fishery during the season. Given the recommendation to reduce the amount of canary available to the fleet (from 18 mt in 2009 to 14 mt in 2010), the GMT recommended and the Council approved maintaining the 25 mt darkblotched limit for the 2010 fisheries. Table 4-7 displays the adopted bycatch limits for the non-tribal limited entry 2010 Pacific whiting fishery as follows, which would apply under the No Action alternative.

**Table 4-6.** History of Pacific whiting harvest and bycatch impacts 2006-2009

Species	Sector	2006		2007		2008		2009	
		Alloc/Cap	Catch	Alloc/Cap	Catch	Alloc/Cap	Catch	Alloc/Cap*	Catch
Pacific whiting	SS	97,469	97,297	87,398	73,280	58,669	50,423	40,738	40,771
	CP	78,903	78,864	70,751	73,263	115,789	108,121	35,376	34,620
	MS	55,696	55,355	49,942	47,809	58,087	57,432	24,034	24,091
	TOTAL	232,068	231,516	208,091	194,352	232,545	215,976	100,148	99,482
Canary	SS		1.64		2.01		1.66		2.31
	CP		0.10		0.35		2.43		0.23
	MS		0.85		1.62		0.74		0.60
	TOTAL	4.0 - 4.7	2.59	4.7	3.98	4.7 - 6.7	4.83	18.0	3.14
Darkblotched	SS		2.28		0.95		0.94		0.87
	CP		6.73		5.28		2.40		0.11
	MS		4.24		6.73		3.93		0.20
	TOTAL	25.0	13.25	25.0	12.96	40.0	7.27	25.0	1.18
POP	SS		0.14		23.14		0.07		4.70
	CP		0.75		2.92		12.83		0.06
	MS		1.88		0.73		2.93		1.40
	TOTAL		2.77		26.79		15.83		6.16
Widow	SS		49.38		88.97		99.09		108.64
	CP		67.00		72.77		52.37		0.96
	MS		71.80		72.99		60.75		24.94
	TOTAL	200 - 220	188.18	220 - 275	234.73	275 - 287	212.21	250.0	134.54
Yelloweye	SS		0.06		0.04		0.00		0.00
	CP		0.01		0.01		0.01		0.00
	MS		0.02		0.00		0.00		0.00
	TOTAL		0.09		0.05		0.01		0.00

\* In 2009, bycatch caps were divided among the three whiting sectors pro-rata. The totals of those sector-specific limits are given here.

**Table 4-7.** No Action: Non-tribal limited entry Pacific whiting fishery bycatch limits for 2011-2012.

Species	Total	Shoreside (42%)	Catcher- Processor (34%)	Mothership (24%)
Canary	14 mt	5.9 mt	4.8 mt	3.3 mt
Darkblotched	25 mt	10.5 mt	8.5 mt	6.0 mt
Widow	279 mt	117 mt	95 mt	67 mt

#### Limited Entry Fixed Gear

The non-nearshore bycatch model projects overfished species impacts for both the limited entry fixed gear sector and the open access daily trip limit fishery for sablefish north of 36° N. latitude, seaward of the non-trawl RCA. Inputs assume that the limited entry and open access sablefish allocations are completely harvested and if reductions to overfished species impacts are needed



they are typically accomplished by adjusting the non-trawl RCA in the areas with highest bycatch rates. In the event that non-trawl RCA adjustments do not accomplish the necessary overfished species impact reductions, then the target catch of sablefish is reduced.

The Council's preliminary preferred two year allocation of overfished species provides separate allocations for the limited entry and open access fleet. However, in the event that the non-trawl RCA needs to be adjusted to stay within the total limited entry and open access overfished species allocations, this management measure would apply to both fleets. Differential reductions to sablefish trip limits between the limited entry and open access fleet would be an available option, if reductions to overfished species impacts are needed.

Under the No Action alternative, the sablefish ACL would be equal to the 2010 sablefish OY, the limited entry fixed gear allocation would be 2,140 mt (Table 4-8), and the current RCA configuration would remain in place (Figure 4-1). Bycatch projections would therefore be equivalent to those for 2010 (Table 4-9).

**Table 4-8.** No Action Alternative: Sablefish north of 36° N. latitude limited entry fixed gear allocations.

<b>Species</b>	<b>ACL (mt)</b>	<b>Fishery</b>	<b>Allocation (mt)</b>
Sablefish N. 36° N. Lat.	6,471	LE Fixed Gear Primary	1,819
		LE Fixed Gear Daily Trip Limit	321
		<b>LE Fixed Gear Total</b>	<b>2,140</b>

Seaward RCA Boundary	36° - 40° 10'	40°10' - Col/Eur 43°	Col/Eur 43° - Cascade Head 45.064°	Cascade Head 45.064° - Pt. Chehalis 46.888°	North of Pt. Chehalis 46.888°
Shoreward boundary to 100 fm					
100 fm					
125 fm					
150 fm					
>150 fm					

**Figure 4-1.** No Action Alternative: Non-trawl RCA seaward configuration. The shoreward configuration of the RCA is driven by the nearshore model. Grey shading indicates areas closed to fishing.

**Table 4-9.** No Action Alternative: Overfished species bycatch projections (mt) for the limited entry fixed gear sector north of 36° N. latitude.

Species	Projected Impacts (mt)
Bocaccio	0.0
Canary rockfish	2.2
Darkblotched rockfish	3.9
Pacific ocean perch	0.4
Widow rockfish	0.0
Yelloweye rockfish	0.8

#### Directed Open Access

##### *Nearshore*

Under the No Action alternative, landings projections for 2011-2012 would be based on the average of 2007-2009 for Oregon and 2006-2008 for California, years that are considered representative of expected future landings. It is important to recognize that these landings were held at reduced levels by restrictive trip limits or state caps implemented to reduce impacts to overfished species. As such, the No Action does not represent full attainment of nearshore species ACLs.

The 20 fm shoreward non-trawl RCA depth restriction currently in regulation would remain in effect between 43° N. latitude and 40°10' N. latitude (Appendix 1). An April 2008 report from the WCGOP indicated that nearshore effort and yelloweye rockfish bycatch rates were low north of 43° N. latitude, compared to the area between 43° N. latitude and 40°10' N. latitude. Therefore, for 2009-2010 the Council recommended and NMFS implemented a less restrictive shoreward RCA (i.e., 30 fm) north of 43° N. latitude. It must be pointed out that observer bycatch rates were not provided to verify this assumption. Although effort is exceptionally low between 20–30 fm in this northern area and yelloweye rockfish abundance is known to be much lower relative to the area between 43° N. latitude and 40°10' N. latitude, observer bycatch rates

will be requested to verify the assumptions. If bycatch rates are not negligible north  $43^{\circ}$  N. latitude, then the shoreward RCA for the entire state of Oregon (north of  $42^{\circ}$  N. latitude) may be moved to 20 fm for all options where 30 fm is shown for north of  $43^{\circ}$  N. latitude.

Under the No Action alternative, depth restrictions south of  $40^{\circ}10'$  N. latitude would remain unchanged (30 fm between  $40^{\circ}10'$  N latitude and  $34^{\circ}27'$  N latitude; 60 fm south of  $34^{\circ}27'$  N latitude) (Appendix 1).

**Table 4-10.** No Action Alternative: Nearshore fishery target species harvest by area for 2011-2012.

<b>Area</b>	<b>2011-2012 Estimated Total Catch (mt)</b>
<b>All Areas</b>	<b>545</b>
Black rockfish	263
Blue rockfish	27
Cabazon	39
Deeper nearshore rockfish	37
Kelp Greenling	21
Lingcod	80
Other minor nearshore RF	18
Shallow nearshore rockfish	60
<b>North of 42° N. Lat.</b>	<b>237</b>
Black rockfish	139
Blue rockfish	3
Cabazon	17
Kelp Greenling	20
Lingcod	50
Other minor nearshore RF	8
<b>42° to 40°10' N. Lat.</b>	<b>163</b>
Black rockfish	120
Blue rockfish	19
Cabazon	2
Kelp Greenling	0
Lingcod	12
Other minor nearshore RF	10
<b>South of 40°10' N. Lat.</b>	<b>145</b>
Black rockfish	4
Blue rockfish	5
Cabazon	20
Deeper nearshore rockfish	37
Kelp Greenling	1
Lingcod	18
Shallow nearshore rockfish	60

Shoreward RCA Boundary	South 34°27'	34°27' - 40° 10'	40° 10' - Col/Eur 43°	North Col/Eur 43° - 46°16'	North of 46°16'
Shore					
20 fm					
30 fm					
60 fm to seaward RCA boundary					

**Figure 4-2.** No Action Alternative: Nearshore shoreward RCA configuration. Grey shading indicates areas closed to fishing.

**Table 4-11.** No Action Alternative: Overfished species bycatch projections for the nearshore fixed gear fisheries.

Species	Projected Impacts (mt)
Bocaccio	0.4
Canary	3.5
Yelloweye	1.3
Widow	0.3

*Open Access Sablefish DTL north of 36° N. latitude*

As mentioned above in the limited entry fixed gear section, the open access sablefish DTL fishery impacts are projected by the non-nearshore model, which assumes the entire sablefish allocation is harvested. The open access and limited entry fixed gear sablefish fishery is held to the same non-trawl RCA structure, which is driven by overfished species impacts. If overfished species impacts are higher than the Council's preliminary preferred overfished species allocation to the open access sablefish DTL fishery, reductions to the sablefish harvest are taken.

Under the No Action alternative, the sablefish ACL would be equal to the 2010 sablefish OY with an open access allocation of 529 mt and the current RCA configuration would remain in place (Figure 4-3). Bycatch projections would therefore be equivalent to those for 2010 (Table 4-9). As in 2009-10, these projections only cover bycatch for fishing in areas seaward of the RCA and north of 36° N. latitude.

<b>Seaward RCA Boundary</b>	<b>36°- 40° 10'</b>	<b>40°10'- Col/Eur 43°</b>	<b>Col/Eur 43°- Cascade Head 45.064°</b>	<b>Cascade Head 45.064°- Pt. Chehalis 46.888°</b>	<b>North of Pt. Chehalis 46.888°</b>
Shoreward boundary to 100 fm					
100 fm					
125 fm					
150 fm					
>150 fm					

**Figure 4-3.** No Action Alternative: Non-trawl RCA seaward configuration. The shoreward configuration of the RCA is driven by the nearshore model. Grey shading indicates areas closed to fishing.

**Table 4-12.** Overfished species impacts for the open access sablefish daily trip limit fishery north of 36° N. latitude under the No Action alternative.

<b>Species</b>	<b>Projected Impacts (mt)</b>
Bocaccio	0.00
Canary rockfish	0.4
Darkblotched rockfish	0.6
Pacific ocean perch	0.1
Widow rockfish	0.00
Yelloweye rockfish	0.1

### Tribal

West Coast treaty tribes have formal allocations or set-asides for sablefish, black rockfish, and Pacific whiting. The tribes also have harvest guidelines for Pacific cod and lingcod. Members of the four coastal treaty tribes participate in commercial, ceremonial, and subsistence fisheries for groundfish off the Washington coast. Participants in the tribal commercial fisheries use similar gear to non-tribal fishers. Groundfish caught in the tribal commercial fishery pass through the same markets as non-tribal commercial groundfish catch.

There are several groundfish species taken in tribal fisheries for which the tribes have no formal allocations and some species for which no specific allocation has been determined. Rather than try to reserve specific allocations of these species, the tribes recommend trip limits for these species to the Council, which tries to accommodate these fisheries. Tribal trip limits for groundfish species without tribal allocations are usually intended to constrain direct catch and incidental retention of overfished species in the tribal groundfish fisheries.

Thirteen western Washington tribes possess and exercise treaty fishing rights to halibut, including the four tribes that possess treaty fishing rights to groundfish. Tribal halibut allocations are divided into a tribal commercial component and the year-round ceremonial and subsistence component.

Approximately one-third of the tribal sablefish allocation is taken during an open competition fishery, in which vessels from the sablefish tribes all have access to this portion of the overall

tribal sablefish allocation. The open competition portion of the allocation tends to be taken during the same period as the major tribal commercial halibut fisheries in March and April. The remaining two-thirds of the tribal sablefish allocation is split among the tribes according to a mutually agreed-upon allocation scheme. Specific sablefish allocations are managed by the individual tribes, beginning in March and lasting into the autumn, depending on vessel participation and management measures used. Participants in the halibut and sablefish fisheries tend to use hook-and-line gear, as required by the International Pacific Halibut Commission (IPHC). By agreement the tribes also use snap gear for equity reasons in the fully competitive sablefish fishery (i.e., someone participating in a fully competitive sablefish fishery who landed no halibut would not have to meet any IPHC requirements, but would still have to use snap line gear by tribal regulation).

In 2007 and 2008 the tribes were allocated 10% of the OY north of 36° N latitude discounted by 1.9% estimated discard mortality. This resulted in a landed catch allocation of 561.4 mt for both years. In 2009 and 2010, tribal sablefish fisheries were allocated 10% of the total catch OY north of 36 degrees N latitude which was discounted by 1.6% for discard mortality for landed catch allocations of 694 mt and 637 mt respectively. For the commercial harvest of black rockfish off Washington State, the treaty tribes have a harvest guideline of: 20,000 pounds (9,072 kg) north of Cape Alava (48°09'30" N latitude), 10,000 pounds (4,536 kg) between Destruction Island (47°40'00" N latitude) and Leadbetter Point (46°38'10" N latitude), and no tribal harvest restrictions between Cape Alava and Destruction Island. The harvest guideline north of Cape Alava was increased in 2010 to 30,000 pounds to accommodate development of a live-fish fishery.

In addition to these hook-and-line fisheries, the Makah tribe annually harvests a whiting allocation using midwater trawl gear. Since 1996, a portion of the U.S. whiting OY has been allocated to the Pacific Coast treaty tribes. The tribal allocation is subtracted from the whiting OY before allocation to the non-tribal sectors. Since 1999, the tribal allocation has been based on a sliding scale related to the U.S. whiting OY. To date, only the Makah tribe has conducted a whiting fishery. In 2009 both the Makah and Quileute Tribes anticipated participating in the fishery, but only Makah prosecuted a fishery.

In 2003, the landed catch OY of 148,000 mt resulted in a tribal allocation of 25,000 mt. In 2004, the landed catch OY was 250,000 mt with a tribal allocation of 32,500 mt. In 2005 and again in 2007, the U.S. landed catch OY of 269,069 had a corresponding tribal allocation of 35,000 mt. In 2006, the U.S. OY of 242,591 mt resulted in a tribal allocation of 32,500 mt. In 2008 the U.S OY was 269,545 mt resulting in a tribal allocation of 35,000 mt. For 2009 the U.S. OY was 135,939 mt. The tribal set-aside was 50,000 mt with 42,000 mt to be managed by Makah and 8,000 mt to be managed by Quileute. Upon adoption of the 2009 U.S. OY that was significantly lower than year before (i.e., reduced by 49.6 %), the Makah Tribe announced their intention to harvest only 23,789 mt (equal to 17.5 % of the U.S. OY) and asked that 18,211 mt be reapportioned to the non-tribal sectors.

Makah non-whiting vessels fit with mid-water trawl gear have also been targeting yellowtail rockfish in recent years. Tribal regulations specify the monthly limit of yellowtail, based on the number of vessels participating, as well as limits for canary rockfish (300 pounds per trip), and minor nearshore, shelf, and slope rockfish (300 pounds per trip combined) and interactions with widow rockfish (not to exceed 10% of yellowtail landings). This fishery is managed by both time and area to stay within projected impacts on overfished rockfish, primarily widow and canary, taken incidentally with yellowtail. Short test tows are taken in areas previously identified as having low bycatch rates before that area is open to fishing. If vessels in the fishery approach the

limits established by tribal regulation, the area is closed to further fishing until it can be shown to have reduced bycatch rates. An observer program is in place to verify bycatch levels in the fishery, and assigned vessels must carry an observer to participate.

#### *Current Management Measures*

The Washington coastal tribes (Makah, Quileute, Hoh, and Quinault) conducted their groundfish fisheries in 2009-2010 with the following allocations and trip limits. The 2009-2010 sablefish allocations were 10% of the total catch OY (for the portion of the stock north of 36° N latitude) of 7,052 mt and 6,471 mt respectively. This provided allocations of 705 mt and 647 mt, which were further reduced by deducting an estimated 1.6% discard mortality, to produce landed catch allocations of 694 mt for 2009 and 637 mt for 2010. The tribal commercial harvest of black rockfish was managed with a harvest guideline of 20,000 lbs north of Cape Alava, Washington at 48°09'30" N latitude, and 10,000 lbs between Destruction Island, Washington at 47°40' N latitude and Leadbetter Point, Washington at 46°38'10" N latitude. There were no harvest restrictions on black rockfish between Cape Alava and Destruction Island. This allocation was updated based on a proposal by the Makah Tribe to increase the harvest guideline to 30,000 lbs north of Cape Alava for 2010 to accommodate a developing live-fish fishery. Tribal fleets were subject to a 250 mt harvest guideline for lingcod. Pacific cod had a 400 mt tribal harvest guideline.

Longspine and shortspine thornyheads were managed to the limited entry cumulative limits in place at the beginning of the year, but with those limits were accumulated across vessels into a cumulative fleetwide harvest target for the year. Canary rockfish were subject to a 300 lb per trip limit. Yelloweye rockfish were subject to a 100 lb trip limit. Other rockfish, including species in the minor nearshore, minor shelf, and minor slope rockfish complexes were subject to either a 300 lb trip limit per species or complex, or to the non-tribal limited entry trip limit for those species if those limits were less restrictive. Rockfish taken during the open competition tribal commercial fisheries for Pacific halibut were not subject to trip limits.

#### *Makah Trawl*

For yellowtail rockfish the entire Makah tribal fleet (the only tribal fleet that participated in a midwater fishery) was subject to a cumulative landing limit of 180,000 lbs/two months. Widow rockfish landings were limited to 10% of the weight of yellowtail rockfish landed in any two-month period in 2009. For 2010, this widow limit was updated to be no more than 10% of the cumulative weight of yellowtail rockfish for an individual vessel for the year to provide harvest flexibility without increasing estimated widow impacts. All midwater landing limits were subject to inseason adjustments to minimize the take of both canary and widow rockfish.

A petrale sole trip limit of 50,000 lbs/two months (for the entire year) was specified for the Makah bottom trawl fleet. Trip limits for English sole, rex sole, arrowtooth flounder, and other flatfish in the tribal bottom trawl fishery were the same as for non-tribal limited entry trawl fishery at the start of the season using the same Council-approved gear.

Full rockfish retention programs, where all overfished and marketable rockfishes are retained, as well as a Makah trawl observer program, were in place to provide catch accountability. The tribal plan was not to reduce these limits inseason because of the low expected catch unless catch statistics indicated that the tribes would attain more than half the harvest of these species in their usual and accustomed (U and A) fishing areas.

#### *Whiting*

The tribal allocation of Pacific whiting was 32,500 mt in 2007 and 35,000 mt in 2008 based on the sliding scale allocation formula that specified the tribal whiting OY based on the total U.S.



whiting OY. The Makah tribe was the only one of the four tribes conducting a whiting-directed fishery in 2007-2008. In 2009 the whiting allocation was originally 50,000 mt, based on the separate requests of the Quileute for up to 8,000 mt in 2009, and the Makah for up to 42,000 mt in 2009. Upon adoption of a much lower than anticipated OY for whiting, the Makah Tribe voluntarily reduced their 2009 fishery set aside from 42,000 mt to 17.5 percent of the U.S. OY (23,789 mt) resulting in a total tribal whiting set-aside of 31,789 mt.

### Washington Recreational

Under the no action alternative

- Washington recreational fishery will be open year around for groundfish except lingcod.
- Status quo sub-limits for lingcod (two per angler per day) and rockfish (10 per angler per day) would remain in place.
- Propose to implement a Cabazon sublimit of 2 per angler per day.
- Propose to reduce aggregate bottomfish limit from 15 to 12.

The following lingcod seasons and size limits would apply in 2011 and 2012

- Marine Areas 1-3 (from the Oregon/Washington border at 46°16' N. latitude north to Cape Alava at 48°10' N. latitude): open from March 19 through October 1 in 2011 and March 17 through October 13 in 2012.
- Marine Area 4 (Cape Alava to the US/Canadian border): open from April 16 to October 15 in 2011 and April 16 to October 13 in 2012.
- The lingcod minimum size limit is 22 inches in Marine Areas 1-3 and 24 inches in Marine Area 4.

#### *Bottomfish Area and Retention Restrictions*

For all areas in 2011 and 2012, continue to prohibit the retention of yelloweye and canary rockfish. Prohibit fishing for, retention or possession of bottomfish and halibut in the C-shaped yelloweye rockfish conservation area in the north coast and South Coast and Westport YRCAs in the south coast.

#### *North Coast (Marine Areas 3 and 4)*

Prohibit the retention of bottomfish seaward of a line approximating 20 fathoms from May 21-September 30, except on days that halibut fishing is open.

#### *South Coast (Marine Area 2)*

Prohibit the retention of bottomfish seaward of a line approximating 30 fathoms from March 15-June 15. Prohibit the retention of bottomfish, except sablefish and Pacific cod seaward of a line approximating 30 fathoms from May 1-June 15. Lingcod retention allowed seaward of 30 fathoms on days that the primary halibut season is open. Prohibit the retention of lingcod south of 46°58' N latitude and seaward of 30 fathoms on Fridays and Saturdays from July 1 through August 31.

#### *Columbia River (Marine Area 1)*

Prohibit the retention of bottomfish, except sablefish and Pacific cod, with halibut onboard from May 1 through September 30.

### Oregon Recreational

Oregon and Washington shared harvest guidelines for canary and yelloweye rockfish of 20.9 mt and 5.1 mt, respectively in 2009-10. This same structure would remain in 2011-2012 under the No Action alternative. Oregon's share of the canary harvest guideline was 16.0 mt and the yelloweye share was 2.4 mt. If either of these harvest guidelines were attained inseason, ODFW and WDFW would consult and decide if inseason state actions would be needed to maintain impacts within these harvest guidelines. Such state management actions included closing recreational fisheries, restricting recreational fishery seasons, and/or restricting the depths where the fishery was allowed to continue.

The following seasons, bag limits, size limits, and area restrictions also applied to 2009 and 2010 Oregon recreational groundfish fisheries and would apply under the No Action alternative.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Open all depths			Open < 40 fm						Open all depths		

**Figure 4-4.** No Action Alternative: Oregon recreational groundfish season structure for 2011-2012.

#### *Bag and Size Limits*

Under the No Action alternative, the marine fish daily bag limit of 10 fish in aggregate that was allowed in 2009-10 Oregon recreational fisheries and would carry forward for 2011-2012. The marine bag included all species other than lingcod, salmon, steelhead, Pacific halibut, flatfish, surfperch, sturgeon, striped bass, pelagic tuna and mackerel species, and bait fish such as herring, anchovy, sardine and smelt. A flatfish daily bag limit of 25, which includes all soles and flounders except Pacific halibut, was allowed in addition to the marine fish daily bag limit. Additionally a 3 fish bag limit was allowed for lingcod. Retention of canary and yelloweye rockfish was prohibited in 2009-10 and would also be prohibited under the No Action alternative.

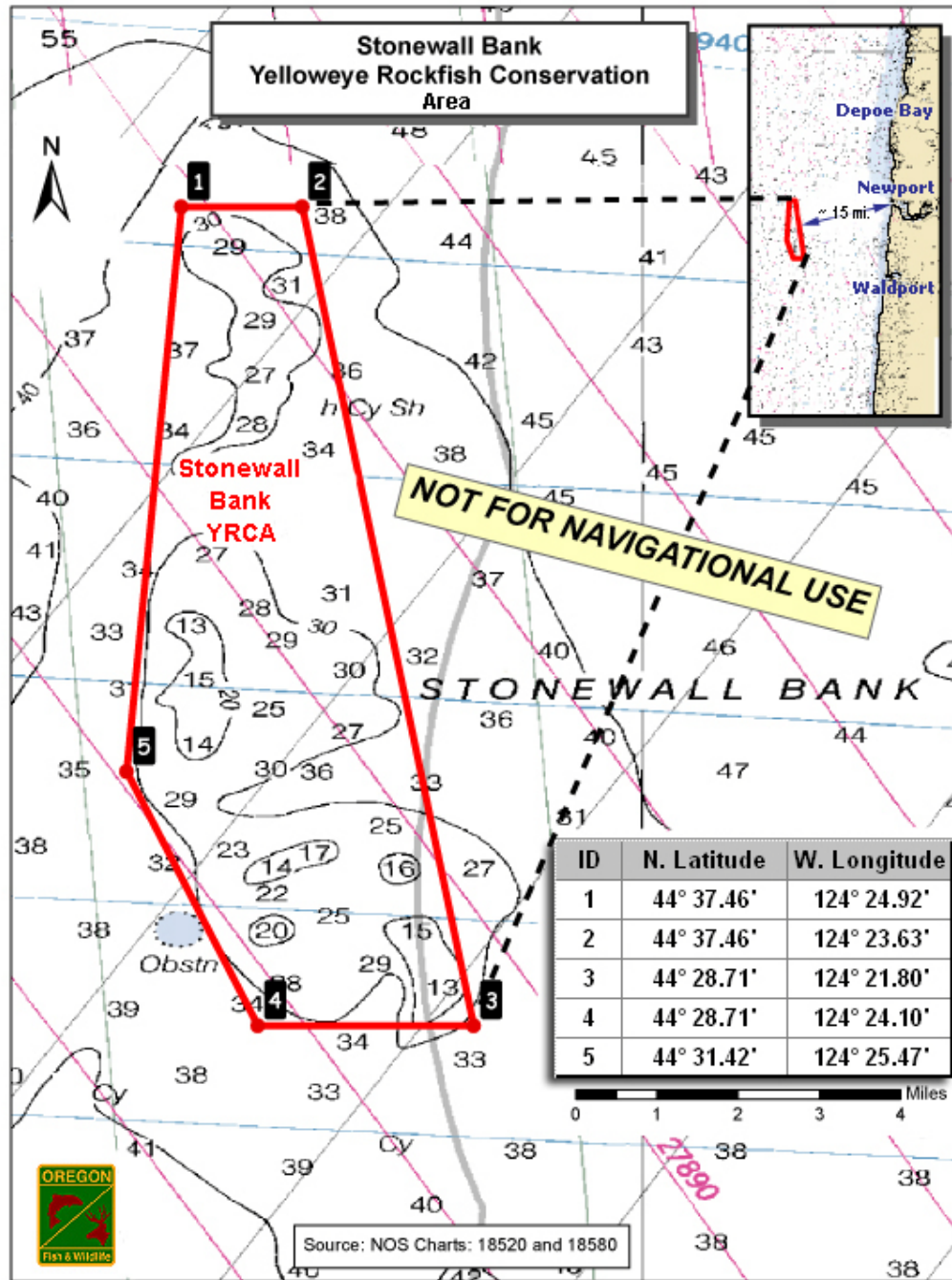
The following minimum size limits applied to 2009-10 Oregon recreational fisheries and would be carried forward under the No Action alternative:

- lingcod – 22 in.
- cabezon – 16 in.
- kelp greenling – 10 in.

#### *Area Restrictions*

A YRCA has been in place on Stonewall Bank since 2006 and would also remain under the No Action alternative (Figure 4-5). No recreational fishing for groundfish and Pacific halibut can occur within this YRCA, which is bounded by the following waypoints:

44°37.458' N lat	124°24.918' W long;
44°37.458' N lat	124°23.628' W long;
44°28.71' N lat	124°21.798' W long;
44°28.71' N lat	124°24.102' W long;
44°31.422' N lat	124°25.5' W long.



**Figure 4-5.** The Stonewall Bank Yelloweye Rockfish Conservation Area where recreational fishing for groundfish and Pacific halibut is prohibited. Under the No Action alternative, the area would remain closed.

California Recreational

*[To be completed at the June Council meeting]*

4.1.1.2 *Alternative 1 – Council’s April 2010 Preliminary Preferred Overfished Species ACL Alternatives and Non-Overfished Species ACLs*

**Analytical scenario**

The biological strategy underlying this alternative is to follow the process outlined in the Groundfish Fishery Management Plan and recommended by the Science and Statistical Subcommittee, and continue with a constant spawning biomass per recruit (SPR) harvest rate for most overfished species applied to the latest stock assessment, except for widow rockfish and yelloweye. Since widow rockfish appears to be rebuilt in 2010 under all 2011-2012 harvest removals (i.e., from 200 to 3,000 mt), the widow ACL is set at 600 mt to accommodate fisheries while still achieving rebuilding. The yelloweye ACL represents a departure from the status quo harvest rate (71.9%) which is also the ramp-down goal harvest rate. The reason for this departure is because maintaining the status quo harvest rate would not result in rebuilding by the  $T_{\text{target}}$  of 2084. As such, the ACL option is 20 mt for both 2011 and 2012 which is projected to result in rebuilding by  $T_{\text{target}}$ .

The Council stated that the bocaccio ACL is not a preliminary preferred, but an ACL for more detailed analysis. For the purposes of analysis, the bocaccio ACL was included under Alternative 1 with the remaining preliminary preferred overfished species ACLs.

**Table 4-13.** Alternative 1: 2011, 2012 Overfished species harvest specifications and estimated catch.

Species	$T_{\text{target}}$ in FMP	Median time to rebuild given ACL <sup>b</sup>	ACL Alternative 2011 <sup>a</sup>	ACL Alternative 2012 <sup>a</sup>	Estimated Catch All Sectors 2011 (mt)	Estimated Catch All Sectors 2012 (mt)
Bocaccio	2026	2022	Alt 4 (263 mt)	Alt 4 (274 mt)	TBD	TBD
Canary	2021	[2027]	Alt 4 (102 mt)	Alt 4 (107 mt)		
Cowcod	2072	2071	Alt 4 (4 mt)	Alt 4 (4 mt)		
Darkblotched	2028	2027	Alt 5 (332 mt)	Alt 5 (329 mt)		
Petrale	TBD	2016	976 mt	1,160 mt		
POP	2017	[2020]	Alt 2 (180 mt)	Alt 2 (183 mt)		
Widow	2015	2010	Alt 4 (600 mt)	Alt 4 (600 mt)		
Yelloweye	2084	2084	Alt 5 (20 mt)	Alt 5 (20 mt)		

<sup>a</sup>Values taken from Table 2-12.

<sup>b</sup> Brackets indicate times to rebuild that are longer than the  $T_{\text{target}}$  specified in the FMP.

**Table 4-14.** Alternative 1: 2011, 2012 Non-overfished species harvest specifications and estimated catch.

*[To be completed at June Council meeting]*

Limited Entry Non-Whiting Trawl

*Cumulative Trip Limit Management*

In order to analyze the integrated Alternatives 1, 2, and 3 the non-whiting trawl trip limits and RCAs were analyzed using high, medium, and low scenarios that encompass the range of impacts projected under all ACLs and allocation schemes for 2011-2012. Table 4-15 outlines the highest ACL in either 2011 or 2012 under the Council's preliminary preferred ACLs, the associated non-whiting trawl fishery harvest guideline, and the projected harvest. Under the Council's preliminary preferred ACLs for petrale sole, the 2011 ACL is 976 and the 2012 ACL is 1,160 mt. The 2012 ACL is similar to the No Action alternative ACL of 1,200 mt and as such one would assume similar cumulative limits, RCA structure, and overfished species impacts.

Table 4-16 contains the management measures, including cumulative limits and the RCA structure under Alternative 1. The overfished species impacts projected by the trawl model are included in Table 4-17, which are based on the bycatch rates from Table 4-18. The Alternative 1 management measures assume that the area north of Cape Alava (48.167° N. lat.) remains closed, as is the case under the No Action Alternative. However, if requested, a model run could be provided that would demonstrate the impacts of opening that area.

**Table 4-15.** Alternative 1: Harvest of target species in the limited entry non-whiting trawl fishery.

<b>Species</b>	<b>High ACL (MT)</b>	<b>Non-Whiting Trawl HG (MT)</b>	<b>Projected Harvest (MT)</b>
Sablefish N of 36° N. lat.	4,961	2,326	2,324
Longspine N. of 34 27' N. lat.	2,119	1,971	1,337
Shortspine N. of 34 27' N. lat.	1,573	1,450	1,418
Dover sole	17,560	15,172	13,080
Arrowtooth flounder	15,174	12,441	4,675
Petrale sole	976	833	833
English sole	19,761	18,659	443
Other flatfish	4,884	4,213	854
Minor Slope Rockfish North	1,160	872	170
Minor Slope Rockfish South	626	377	234

**Table 4-16.** Alternative 1: Cumulative limits and trawl RCA structure.

		2-month period		RCA lines (fm)		sable- fish	long- spine	short- spine	Dover sole	petrale sole	arrow- tooth	other flatfish	slope rockfish
		shallow	deep										
N. of 40°10' N lat.													
Large/small footrope limits													
		1	75	250	14,000	20,000	18,000	110,000	6,000	150,000	110,000	6,000	
		2	75	200	14,000	20,000	18,000	110,000	6,000	150,000	110,000	6,000	
		3	75	200	13,000	20,000	18,000	110,000	5,000	150,000	110,000	6,000	
		4	100	200	13,000	20,000	18,000	110,000	5,000	150,000	110,000	6,000	
		5	75	200	13,000	20,000	18,000	110,000	5,000	150,000	110,000	6,000	
		6	75	250	14,000	20,000	18,000	110,000	6,000	150,000	110,000	6,000	
Selective gear limits													
		1	75	250	7,000	5,000	5,000	65,000	5,000	90,000	60,000		
		2	75	200	7,000	5,000	5,000	65,000	5,000	90,000	60,000		
		3	75	200	8,000	5,000	5,000	65,000	5,000	90,000	60,000		
		4	100	200	8,000	5,000	5,000	65,000	5,000	90,000	60,000		
		5	75	200	7,000	5,000	5,000	65,000	5,000	90,000	60,000		
		6	75	250	7,000	5,000	5,000	65,000	5,000	90,000	60,000		
38° - 40°10' N lat.													
		1	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	15,000	
		2	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	15,000	
		3	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	15,000	
		4	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	15,000	
		5	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	15,000	
		6	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	15,000	
S. of 38° N lat.													
		1	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	55,000	
		2	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	55,000	
		3	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	55,000	
		4	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	55,000	
		5	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	55,000	
		6	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	55,000	

**Table 4-17.** Alternative 1: Limited entry non-whiting overfished species impacts relative to the ACL and trawl harvest guideline.

Species	ACL (MT)	Non- Whiting Trawl HG (MT)	Projection (MT)
Canary rockfish	107	22.5	11.1
Pacific ocean Perch	180	129	42.3
Darkblotched rockfish	332	271	109.9
Widow rockfish	600	235	8.8
Yelloweye rockfish	20	0.7	0.2
Bocaccio	263	29.6	5.2
Cowcod	4	3.4	0.3

**Table 4-18.** Bycatch rates for rebuilding species used in projection modeling for 2010-11 trawl fisheries, expressed as a percentage of target species landings, by area, depth zone and bi-monthly period, based on data collected by the West Coast Groundfish Observer Program between May 2005 and April 2009.

		2-month								
	Area	period	< 50 fm	< 60 fm	< 75 fm	< 100 fm	> 150 fm	> 180 fm	> 200 fm	> 250 fm
<b>Bocaccio</b>										
<b>S of 40°10'</b>										
		1	0.000%	0.000%	0.973%	0.906%	0.056%	0.002%	0.003%	0.000%
		2	0.000%	0.000%	0.973%	0.906%	0.168%	0.027%	0.001%	0.001%
		3	0.920%	0.514%	0.806%	1.531%	0.026%	0.024%	0.026%	0.028%
		4	0.920%	0.514%	0.806%	1.531%	0.026%	0.024%	0.026%	0.028%
		5	0.920%	0.514%	0.806%	1.531%	0.168%	0.027%	0.001%	0.001%
		6	0.000%	0.000%	0.973%	0.906%	0.056%	0.002%	0.003%	0.000%
<b>Canary rockfish</b>										
<b>N of 40°10'</b>										
		1	0.085%	0.198%	0.216%	2.613%	0.001%	0.001%	0.001%	0.001%
		2	0.085%	0.198%	0.216%	2.613%	0.005%	0.005%	0.008%	0.004%
		3	0.100%	0.120%	0.180%	0.269%	0.003%	0.002%	0.001%	0.001%
		4	0.100%	0.120%	0.180%	0.269%	0.003%	0.002%	0.001%	0.001%
		5	0.100%	0.120%	0.180%	0.269%	0.005%	0.005%	0.008%	0.004%
		6	0.085%	0.198%	0.216%	2.613%	0.001%	0.001%	0.001%	0.001%
<b>S of 40°10'</b>										
		1	0.000%	0.000%	1.384%	0.696%	0.000%	0.000%	0.000%	0.000%
		2	0.000%	0.000%	1.384%	0.696%	0.012%	0.012%	0.021%	0.023%
		3	0.140%	0.116%	0.678%	0.407%	0.011%	0.010%	0.011%	0.014%
		4	0.140%	0.116%	0.678%	0.407%	0.011%	0.010%	0.011%	0.014%
		5	0.140%	0.116%	0.678%	0.407%	0.012%	0.012%	0.021%	0.023%
		6	0.000%	0.000%	1.384%	0.696%	0.000%	0.000%	0.000%	0.000%
<b>Widow rockfish</b>										
<b>N of 40°10'</b>										
		1	0.000%	0.003%	0.111%	0.110%	0.056%	0.038%	0.014%	0.007%
		2	0.000%	0.003%	0.111%	0.110%	0.008%	0.007%	0.004%	0.004%
		3	0.005%	0.006%	0.007%	0.011%	0.084%	0.007%	0.007%	0.006%
		4	0.005%	0.006%	0.007%	0.011%	0.084%	0.007%	0.007%	0.006%
		5	0.005%	0.006%	0.007%	0.011%	0.008%	0.007%	0.004%	0.004%
		6	0.000%	0.003%	0.111%	0.110%	0.056%	0.038%	0.014%	0.007%
<b>S of 40°10'</b>										
		1	0.000%	0.154%	0.361%	0.359%	0.038%	0.000%	0.000%	0.000%
		2	0.000%	0.154%	0.361%	0.359%	0.047%	0.000%	0.000%	0.000%
		3	0.000%	0.000%	0.072%	0.071%	0.843%	0.829%	0.843%	0.391%
		4	0.000%	0.000%	0.072%	0.071%	0.843%	0.829%	0.843%	0.391%
		5	0.000%	0.000%	0.072%	0.071%	0.047%	0.000%	0.000%	0.000%
		6	0.000%	0.154%	0.361%	0.359%	0.038%	0.000%	0.000%	0.000%



Table 4-18. continued

		2-month								
Area	period		< 50 fm	< 60 fm	< 75 fm	< 100 fm	> 150 fm	> 180 fm	> 200 fm	> 250 fm
<b>Cowcod</b>										
<b>S of 40°10'</b>										
	1		0.000%	0.000%	0.000%	0.000%	0.017%	0.000%	0.000%	0.000%
	2		0.000%	0.000%	0.000%	0.000%	0.017%	0.000%	0.000%	0.000%
	3		0.002%	0.004%	0.060%	0.069%	0.000%	0.000%	0.000%	0.000%
	4		0.002%	0.004%	0.060%	0.069%	0.000%	0.000%	0.000%	0.000%
	5		0.002%	0.004%	0.060%	0.069%	0.017%	0.000%	0.000%	0.000%
	6		0.000%	0.000%	0.000%	0.000%	0.017%	0.000%	0.000%	0.000%
<b>Yelloweye rockfish</b>										
<b>N of 40°10'</b>										
	1		0.000%	0.000%	0.011%	0.006%	0.000%	0.000%	0.000%	0.000%
	2		0.000%	0.000%	0.011%	0.006%	0.000%	0.000%	0.000%	0.000%
	3		0.008%	0.005%	0.004%	0.005%	0.001%	0.000%	0.000%	0.000%
	4		0.008%	0.005%	0.004%	0.005%	0.001%	0.000%	0.000%	0.000%
	5		0.008%	0.005%	0.004%	0.005%	0.000%	0.000%	0.000%	0.000%
	6		0.000%	0.000%	0.011%	0.006%	0.000%	0.000%	0.000%	0.000%
<b>S of 40°10'</b>										
	1		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
	2		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
	3		0.000%	0.008%	0.006%	0.003%	0.000%	0.000%	0.000%	0.000%
	4		0.000%	0.008%	0.006%	0.003%	0.000%	0.000%	0.000%	0.000%
	5		0.000%	0.008%	0.006%	0.003%	0.000%	0.000%	0.000%	0.000%
	6		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
<b>Darkblotched rockfish</b>										
<b>N of 38°</b>										
	1		0.000%	0.001%	0.023%	0.044%	1.883%	1.765%	0.858%	0.497%
	2		0.000%	0.001%	0.023%	0.044%	0.753%	0.694%	0.532%	0.297%
	3		0.031%	0.026%	0.053%	0.080%	1.005%	0.907%	0.821%	0.356%
	4		0.031%	0.026%	0.053%	0.080%	1.005%	0.907%	0.821%	0.356%
	5		0.031%	0.026%	0.053%	0.080%	0.753%	0.694%	0.532%	0.297%
	6		0.000%	0.001%	0.023%	0.044%	1.883%	1.765%	0.858%	0.497%
<b>S of 38°</b>										
	1		0.000%	0.000%	0.000%	0.006%	0.400%	0.377%	0.340%	0.148%
	2		0.000%	0.000%	0.000%	0.006%	0.321%	0.283%	0.280%	0.174%
	3		0.002%	0.021%	0.015%	0.044%	1.299%	1.330%	1.299%	1.041%
	4		0.002%	0.021%	0.015%	0.044%	1.299%	1.330%	1.299%	1.041%
	5		0.002%	0.021%	0.015%	0.044%	0.321%	0.283%	0.280%	0.174%
	6		0.000%	0.000%	0.000%	0.006%	0.400%	0.377%	0.340%	0.148%

Table 4-18. Continued.

		2-month								
	Area	period	< 50 fm	< 60 fm	< 75 fm	< 100 fm	> 150 fm	> 180 fm	> 200 fm	> 250 fm
Pacific ocean perch										
N of 40°10'										
		1	0.000%	0.000%	0.001%	0.001%	0.670%	0.619%	0.341%	0.120%
		2	0.000%	0.000%	0.001%	0.001%	0.603%	0.469%	0.341%	0.164%
		3	0.001%	0.005%	0.010%	0.095%	0.804%	0.502%	0.357%	0.183%
		4	0.001%	0.005%	0.010%	0.095%	0.804%	0.502%	0.357%	0.183%
		5	0.001%	0.005%	0.010%	0.095%	0.603%	0.469%	0.341%	0.164%
		6	0.000%	0.000%	0.001%	0.001%	0.670%	0.619%	0.341%	0.120%
S of 40°10'										
		1	0.000%	0.000%	0.000%	0.000%	0.013%	0.014%	0.017%	0.000%
		2	0.000%	0.000%	0.000%	0.000%	0.001%	0.000%	0.000%	0.000%
		3	0.000%	0.000%	0.000%	0.012%	0.010%	0.010%	0.010%	0.000%
		4	0.000%	0.000%	0.000%	0.012%	0.010%	0.010%	0.010%	0.000%
		5	0.000%	0.000%	0.000%	0.012%	0.001%	0.000%	0.000%	0.000%
		6	0.000%	0.000%	0.000%	0.000%	0.013%	0.014%	0.017%	0.000%

Table 4-18. **Notes:** Northern-area rates for depths less than 100 fm reflect the status quo closure of these depths north of 48.167° N. lat. Northern-area rates for Periods 3 and 4 in the column '> 150 fm' do not include data shallower than 200 fm for the sub-area south of 45.767° N. lat.

#### *Rationalized Trawl Fishery*

*[To be provided as a Supplemental Report]*

#### Limited Entry Whiting Trawl

Pacific whiting harvest specifications are completed on an annual basis, thus the Council requested a range of potential whiting ACLs for more detailed analysis in order to understand the potential range of overfished species impacts and constraints (Table 2-8). Alternative 1 analyzes the bycatch impacts relative to a high whiting ACL that is 1.5 times higher than the No Action whiting OY. Under Alternative 1, the analysis assumes that Amendment 21: Intersector Allocation is implemented on January 1, 2011 and as such formal allocations of darkblotched, POP, and widow rockfish are made to the whiting sectors. That is, the bycatch model for projecting overfished species impacts relative to the whiting OY is no longer used for setting darkblotched, POP, and widow rockfish. The bycatch model could still be used to inform potential impacts relative to the allocations; however, as mentioned previously, some caution should be exercised when interpreting the bycatch projections from the model. For canary rockfish, Alternative 1 was analyzed using the Council's preliminary preferred 2-year allocation of canary to the whiting sectors. Table 4-19 contains the Pacific whiting and overfished species allocations under Alternative 1.

**Table 4-19.** Alternative 1: Pacific whiting and overfished species allocations by sector using Amendment 21 for darkblotched, POP, and widow and the Council’s preliminary preferred two year allocation of canary rockfish. Allocations are compared to the bycatch model predictions and historical impacts from 2006-2008, years with a similar whiting OY.

Catcher Processor

<b>Species</b>	<b>2011 ACL (mt)</b>	<b>2012 ACL (mt)</b>	<b>2011 Allocation (mt)</b>	<b>2012 Allocation (mt)</b>	<b>Bycatch model (mt)</b>	<b>Range of impacts 06-08 (mt)</b>
Whiting	211,495	211,495	71,908	71,908		
Canary	102	107	4.8	5.0	1.9	0.1 -2.4
DRK	332	329	9	9	2.5	2.4 - 6.7
POP	180	183	10	10		0.8 – 12.8
Widow	600	600	87	87	95	52.4 – 72.8

Mothership

<b>Species</b>	<b>2011 ACL (mt)</b>	<b>2012 ACL (mt)</b>	<b>2011 Allocation (mt)</b>	<b>2012 Allocation (mt)</b>	<b>Bycatch model (mt)</b>	<b>Range of impacts 06-08 (mt)</b>
Whiting	211,495	211,495	50,759	50,759		
Canary	105	107	3.4	3.6	1.4	0.7 – 1.6
DRK	332	329	6	6	1.8	3.9 – 6.7
POP	180	183	7	7		0.7 – 2.9
Widow	600	600	61	61	66.8	60.8 – 73

Shoreside

<b>Species</b>	<b>2011 ACL (mt)</b>	<b>2012 ACL (mt)</b>	<b>2011 Allocation (mt)</b>	<b>2012 Allocation (mt)</b>	<b>Bycatch model (mt)</b>	<b>Range of impacts 06-08 (mt)</b>
Whiting	211,495	211,495	88,828	88,828		
Canary	102	107	5.9	6.2	2.4	1.6 – 2.0
DRK	332	329	11	11	3.1	0.94 – 2.3
POP	180	183	13	13		0.2 – 23
Widow	600	600	107	107	117	49-99

Table 4-19 compares the results of the overfished species allocation decisions to the impacts seen in 2006-2008 (Table 4-6), years in which the whiting OY was similar to the Alternative 1 ACL (211,496 mt). While the whiting fishery is very dynamic and conditions (e.g., whiting schooling/availability, bycatch interactions, etc.) vary from year to year may vary, the comparison of overfished species impacts is still informative. For the catcher-processor sector, there was one year (2008) where the POP impacts were higher (12.8 mt) than the allocation scheme under Amendment 21 and Alternative 1 (10 mt). For the mothership sector, there was one year (2007) where the darkblotched impacts were higher (6.7 mt) than the allocation scheme under

Amendment 21 and Alternative 1 (6 mt). The difference, while small, may indicate that the sectors will need to actively avoid these species in order to harvest their whiting allocation.

For the shoreside sector, there was one year (2008) where the POP impacts were higher (23 mt) than the allocation scheme under Amendment 21 and Alternative 1 (13 mt). In 2008, the whiting fishery (all sectors) was closed on August 19, 2008 when the canary bycatch limit of 4.7 mt was reached. The season reopened later in the year with a 150 fm RCA. This management measure required the shoreside sector to operate in deeper water and consequently the fleet had increased interactions with POP. As such, if the shoreside sector has to fish deep as a result of canary restrictions in the future, they will need to be aware of the POP constraint under the Amendment 21 allocation scheme.

#### *Rationalized Whiting Trawl Fishery*

***[To be provided as a Supplemental Report]***

#### Limited Entry Fixed Gear

Under Alternative 1, the Council's preliminary preferred sablefish ACLs north of 36° N latitude and thus the limited entry allocations, are lower in 2011-12 compared to 2010 (Table 4-20). Consequently, bycatch projections for the limited entry fixed gear fishery are also lower. Projections are given for two scenarios: (option 1) with the status quo seaward non-trawl RCA boundary configuration (Figure 4-1); and, (option 2) with the seaward RCA boundary configuration prior to the 2009-2010 (Figure 4-6). Yelloweye is the stock for which the Council put the current non-trawl RCA boundaries into place. With the reduction in projected yelloweye bycatch, either RCA configuration scenario could be accommodated by the 1.5 mt of yelloweye allowed to the non-nearshore fixed gear sectors under the Council's preliminary preferred sector allocations for Alternative 1.

**Table 4-20.** Alternative 1: Harvest of sablefish N. 36° N. latitude.

Species	Fishery	2010 (mt)	2011 (mt)	2012 (mt)
Sablefish N. 36° N. Lat.	OY/ACL	6,471	4,961	4,689
	LE Fixed Gear Allocation	2,140	1,684	1,591
	----LE Fixed Gear Primary	1,819	1,431	1,352
	----LE Fixed Gear Daily Trip Limit	321	253	239

<b>Seaward RCA Boundary</b>	<b>36° - 40° 10'</b>	<b>40° 10' - Col/Eur 43°</b>	<b>Col/Eur 43° - Cascade Head 45.064°</b>	<b>Cascade Head 45.064° - Pt. Chehalis 46.888°</b>	<b>North of Pt. Chehalis 46.888°</b>
Shoreward boundary to 100 fm					
100 fm					
125 fm					
150 fm					
>150 fm					

**Figure 4-6.** Alternative 1, Option 2: Non-trawl RCA seaward configuration, which was the structure prior to 2009-2010, i.e., 100 fm north of 40°10' N. latitude. Grey shading indicates areas closed to fishing.

**Table 4-21.** Alternative 1, Option 1: Projected bycatch of overfished species (mt) for the limited entry fixed gear sectors north of 36° N. latitude with the 2009-10 RCA configuration, i.e., from Columbia/Eureka to Cascade Head at 125 fm.

<b>Species</b>	<b>2011 Impacts (mt)</b>	<b>2012 Impacts (mt)</b>
Bocaccio	0.0	0.0
Canary rockfish	1.7	1.6
Darkblotched rockfish	3.2	3.0
Pacific ocean perch	0.3	0.3
Widow rockfish	0.1	0.1
Yelloweye rockfish	0.7	0.6

**Table 4-22.** Alternative 1, Option 2: Projected bycatch of overfished species (mt) for the limited entry fixed gear sectors north of 36° N. latitude with the RCA configuration prior to 2009-2010, i.e., north of 40°10' N. latitude the non-trawl RCA is at 100 fm.

<b>Species</b>	<b>2011 Impacts (mt)</b>	<b>2012 Impacts (mt)</b>
Bocaccio	0.0	0.0
Canary rockfish	1.7	1.6
Darkblotched rockfish	3.2	3.0
Pacific ocean perch	0.3	0.3
Widow rockfish	0.1	0.1
Yelloweye rockfish	0.7	0.6

#### Directed Open Access

##### *Nearshore*

Under Alternative 1, option 1, the nearshore fishery is modeled assuming a 50:50 catch sharing of yelloweye rockfish between Oregon and California. Two sub-options (1a and 1b) are provided for the alternatives to show the tradeoffs between greater depth restrictions and higher reductions

in landed catch. Modifications to landed catch would be based on landings information under the No Action alternative.

North of 42° N latitude – under option 1a, a 20 fm depth restriction would be maintained from 42° N latitude to 43° N latitude and a 30 fm line would remain north of 43° N. latitude. Reductions to landed catch north of 42° N latitude would be as follows: 38% for black rockfish and greenling, 49% remaining species. Under option 1b, a 30 fm depth restriction would be maintained. Reductions to landed catch would be as follows: 47% for black rockfish and greenling, 58% other species.

South of 42° N latitude – under option 1a, a 20 fm depth restriction would be implemented statewide. No reductions to landed catch would be necessary. Landings for black rockfish would be increased between 42° N latitude and 40°10'N latitude. Landings for cabezon would be increased to reflect the higher ACL available as a result of the new assessment. Under option 1b, a 20 fm depth restriction would remain in effect between 42° N latitude and 40°10' N latitude only. A 25% reduction in landed catch would be necessary for some species except cabezon, which would remain at the maximum allowable amount under the higher ACL.

Under Alternative 1, option 2, the nearshore fishery is modeled assuming a 55:45 (OR:CA) catch sharing of yelloweye rockfish. The proportion is equal to the proportion of black rockfish typically shared between the two states. Two sub-options (2a and 2b) are provided for the alternatives to show the tradeoffs between more restrictive depth restrictions and higher reductions in landed catch. Modifications to landed catch would be based on landings information under the no action alternative.

North of 42° N latitude – under option 2a, a 20 fm depth restriction would be maintained from 42° N latitude to 43° N latitude. Reductions to landed catch would be as follows: 33% for black rockfish and greenling, 44% remaining species. Under option 2b, a 30 fm depth restriction would be maintained. Reductions to landed catch would be as follows: 43% for black rockfish and greenling, 54% other species.

South of 42° N lat – under option 2a, a 20 fm depth restriction would be implemented statewide. No reductions to landed catch would be necessary. Landings for black rockfish would be increased between 42° N latitude and 40°10'N latitude. Landings for cabezon would be increased to reflect the higher ACL available as a result of the new assessment. Under option 2b, a 20 fm depth restriction would remain in effect between 42° N latitude and 40°10' N latitude only. A 25% reduction in landed catch would be necessary for some species except cabezon, which would remain at the maximum allowable amount under the higher ACL.

**Table 4-23** Alternative 1: Nearshore fishery target species harvest by area and option for 2011.

Area	Option 1a	Option 1b	Option 2a	Option 2b
<b>All Areas</b>	<b>481</b>	<b>371</b>	<b>487</b>	<b>380</b>
Black rockfish	206	133	207	138
Blue rockfish	22	16	22	16
Cabazon	83	81	84	82
Deeper nearshore RF	29	22	29	22
Kelp Greenling	13	12	14	12
Lingcod	62	57	64	59
Other minor RF	15	12	16	13
Shallow nearshore RF	51	38	51	38
<b>North of 42° N. Lat.</b>	<b>126</b>	<b>106</b>	<b>137</b>	<b>115</b>
Black rockfish	68	58	74	63
Blue rockfish	2	1	2	1
Cabazon	13	11	14	12
Kelp Greenling	12	11	13	11
Lingcod	26	21	28	23
Other minor RF	5	4	6	5
<b>42° - 40°10' N. Lat.</b>	<b>180</b>	<b>113</b>	<b>175</b>	<b>113</b>
Black rockfish	73	73	130	73
Blue rockfish	13	10	13	10
Cabazon	7	7	7	7
Kelp Greenling	0	0	0	0
Lingcod	15	15	15	15
Other minor RF	10	8	10	8
<b>South of 40°10' N. Lat.</b>	<b>175</b>	<b>152</b>	<b>175</b>	<b>152</b>
Black rockfish	3	2	3	2
Blue rockfish	7	5	7	5
Cabazon	63	63	63	63
Deeper nearshore RF	29	22	29	22
Kelp Greenling	1	1	1	1
Lingcod	21	21	21	21
Shallow nearshore RF	51	38	51	38

**Table 4-24** Alternative 1: Nearshore fishery target species harvest by area and option for 2012.

<b>Area</b>	<b>Option 1a</b>	<b>Option 1b</b>	<b>Option 2a</b>	<b>Option 2b</b>
<b>All Areas</b>	<b>481</b>	<b>371</b>	<b>476</b>	<b>385</b>
Black rockfish	206	133	207	138
Blue rockfish	22	16	16	17
Cabazon	83	81	84	82
Deeper nearshore RF	29	22	29	23
Kelp Greenling	13	12	14	12
Lingcod	62	57	64	59
Other minor RF	15	12	11	13
Shallow nearshore RF	51	38	51	41
<b>North of 42° N. Lat.</b>	<b>126</b>	<b>106</b>	<b>137</b>	<b>115</b>
Black rockfish	68	58	74	63
Blue rockfish	2	1	2	1
Cabazon	13	11	14	12
Kelp Greenling	12	11	13	11
Lingcod	26	21	28	23
Other minor RF	5	4	6	5
<b>42° - 40°10' N. Lat.</b>	<b>180</b>	<b>113</b>	<b>164</b>	<b>113</b>
Black rockfish	135	73	130	73
Blue rockfish	13	10	7	10
Cabazon	7	7	7	7
Kelp Greenling	0	0	0	0
Lingcod	15	15	15	15
Other minor RF	10	8	5	8
<b>South of 40°10' N. Lat.</b>	<b>175</b>	<b>157</b>	<b>175</b>	<b>157</b>
Black rockfish	3	2	3	2
Blue rockfish	7	6	7	6
Cabazon	63	63	63	63
Deeper nearshore RF	29	23	29	23
Kelp Greenling	1	1	1	1
Lingcod	21	21	21	21
Shallow nearshore RF	51	41	51	41



Shoreward RCA Boundary	South 34°27'	34°27' - 40°10'	40°10' - 42°	42° - Col/Eur 43°	Col/Eur 43° - 46°16'	North of 46°16'
Shore						
20 fm						
30 fm						
60 fm to seaward RCA						

**Figure 4-7.** Alternative 1: Nearshore shoreward RCA configuration under option 1a and 2a, the higher landings more restrictive RCA option. Grey shading indicates areas closed to fishing.

Shoreward RCA Boundary	South 34°27'	34°27' - 40°10'	40°10' - 42°	42° - Col/Eur 43°	Col/Eur 43° - 46°16'	North of 46°16'
Shore						
20 fm						
30 fm						
60 fm to seaward RCA						

**Figure 4-8.** Alternative 1: Nearshore shoreward RCA configuration under option 1b and 2b, the lower landings less restrictive RCA option. Grey shading indicates areas closed to fishing.

**Table 4-25.** Alternative 1: Bycatch projections for the nearshore fixed gear fisheries under the option 1 and 2 RCA structures.

Species	Option	2011 Estimated Total Impacts (mt)	2012 Estimated Total Impacts (mt)
Bocaccio	1a	0	0
	1b	0.3	0.3
	2a	0	0
	2b	0.3	0.3
Canary	1a	2	2.3
	1b	2.3	2.3
	2a	2.3	2.3
	2b	2.3	2.4
Widow	1a	0.2	0.4
	1b	0.2	0.2
	2a	0.3	0.3
	2b	0.2	0.2
Yelloweye	1a	0.7	0.8
	1b	0.8	0.8
	2a	0.9	0.9
	2b	0.8	0.8

*Sablefish Open Access DTL Fishery north of 36° N. latitude*

The Council's preliminary preferred sablefish ACLs north of 36° N latitude and thus the open access allocation, are lower in 2011-12 compared to 2010 (Table 4-26). Consequently, bycatch projections for the open access fishery are also lower. Projections are given for two scenarios:

(option 1) with the status quo seaward RCA boundary configuration (Figure 4-1); and, (option 2) with the seaward RCA boundary configuration prior to 2009-2010 (Figure 4-6). The difference between the two RCA configurations is that under option 1 the non-trawl RCA is set at 125 fm from the Columbia/Eureka line to Cascade Head (45.064°) while under option 2 the RCA in that area is 100 fm.

**Table 4-26.** Open access sablefish allocation north of 36° N. latitude from 2010-2012.

Year	OY/ACL	Open Access Allocation (mt)
2010	6,471	529
2011	4,961	416
2012	4,689	393

**Table 4-27.** Alternative 1, Option 1: Projected bycatch of overfished species (mt) for the limited entry fixed gear sectors north of 36° N. latitude with the 2009-10 RCA configuration, i.e., from Columbia/Eureka to Cascade Head at 125 fm.

Species	2011 Impacts (mt)	2012 Impacts (mt)
Bocaccio	0.0	0.0
Canary rockfish	0.3	0.3
Darkblotched rockfish	0.8	0.8
Pacific ocean perch	0.0	0.0
Widow rockfish	0.0	0.0
Yelloweye rockfish	0.1	0.1

**Table 4-28.** Alternative 1, Option 2: Projected bycatch of overfished species (mt) for the limited entry fixed gear sectors north of 36° N. latitude with the RCA configuration prior to 2009-2010, i.e., north of 40°10 N. latitude the non-trawl RCA is at 100 fm.

Species	2011 Impacts (mt)	2012 Impacts (mt)
Bocaccio	0.0	0.0
Canary rockfish	0.3	0.3
Darkblotched rockfish	0.7	0.7
Pacific ocean perch	0.0	0.0
Widow rockfish	0.0	0.0
Yelloweye rockfish	0.1	0.1

### Tribal

#### *2011-2012 Tribal Management Measures*

Black Rockfish - The 2011 and 2012 tribal harvest guidelines will be set at 30,000 pounds for the management area between the US/Canada border and Cape Alava, and 10,000 pounds for the

management area located between Destruction Island and Leadbetter Point. No tribal harvest restrictions are proposed for the management area between Cape Alava and Destruction Island.

Sablefish - The 2011 and 2012 tribal set asides for sablefish will be set at 10 percent of the Monterey through Vancouver area OY minus 1.6 percent to account for estimated discard mortality. Allocations among tribes and among gear types, if any, will be determined by the tribes.

Pacific cod - The tribes will be subject to a 400 mt harvest guideline for 2011 and 2012. For all other tribal groundfish fisheries the following trip limits will apply:

Thornyheads - Tribal fisheries will be restricted to 17,000 lbs/2 months for shortspine thornyheads and 22,000 lbs/2 months for longspine thornyheads. Those limits would be accumulated across vessels into a cumulative fleetwide harvest target for the year. The limits available to individual fishermen will then be adjusted inseason to stay within the overall harvest target as well as estimated impacts to overfished species

Canary Rockfish - Tribal fisheries will be restricted to a 300 pound per trip limit.

Other Minor Nearshore, Shelf and Slope Rockfish - Tribal fisheries will be restricted to a 300 pound per trip limit for each species group, or the Limited Entry trip limits if they are less restrictive than the 300 pound per trip limit.

Yelloweye Rockfish - The tribes will continue developing depth, area, and time restrictions in their directed Pacific halibut fishery to minimize impacts on yelloweye rockfish. Tribal fisheries will be restricted to 100 pounds per trip.

Lingcod - Tribal fisheries will be subject to a 250 mt harvest guideline for 2009 and 2010.

Spiny Dogfish – Tribal fisheries for dogfish in 2011 and 2012 would be restricted to 200,000 lbs/2 months. Targeting of dogfish by treaty fishermen in 2011 and 2012 would be conducted while staying within current estimates of impacts on overfished species.

Full Retention - The tribes will require full retention of all overfished rockfish species as well as all other marketable rockfishes during treaty fisheries.

#### *Makah Trawl Fisheries for 2011 and 2012*

Midwater Trawl Fishery - Treaty midwater trawl fishermen will be restricted to a cumulative limit of yellowtail rockfish, based on the number of vessels participating, not to exceed 180,000 lbs/2 month period for the entire fleet. Their landings of widow rockfish must not exceed 10 percent of the cumulative poundage of yellowtail rockfish landed by a given vessel for the year. The tribe may adjust the cumulative limit for any two-month period to minimize the incidental catch of canary and widow rockfish, provided the average cumulative limit does not exceed 180,000 pounds for the fleet.

Bottom Trawl Fishery - Treaty fishermen using bottom trawl gear will be subject to trip limits similar to those applied to the limited entry fishery for shortspine and longspine thornyhead, Dover sole, English sole, rex sole, arrowtooth flounder, and other flatfish in 2009-2010. These are 110,000 lbs/2 months for Dover sole, English sole, and Other Flatfish; 150,000 lbs/2 months for arrowtooth flounder; 17,000 lbs/2 months for shortspine thornyhead; and 22,000 lbs/2 months for longspine thornyhead. For Dover sole, longspine thornyheads, and arrowtooth flounder, these

bi-monthly limits in place at the beginning of the season will be combined across periods and the fleet to create a cumulative harvest target. The limits available to individual fishermen will then be adjusted inseason to stay within the overall harvest target as well as estimated impacts to overfished species. For petrale sole, fishermen would be restricted to 50,000 pounds per two month period for the entire year. Because of the relatively modest expected harvest, all other trip limits for the tribal fishery will be those in place at the beginning of the season in the limited entry fishery and will not be adjusted downward, nor will time restrictions or closures be imposed, unless in-season catch statistics demonstrate that the tribe has taken ½ of the harvest in the tribal area. Fishermen will be restricted to small footrope ( $\leq 8$  inches) trawl gear. Exploration of the use of selective flatfish trawl gear may be conducted in 2010.

Observer Program - The Makah Tribe has an observer program in place to monitor and enforce the limits proposed above.

#### *Tribal Whiting Fisheries for 2011 and 2012*

Since 1996 a portion of the U.S. OY for Pacific whiting has been allocated for tribal fisheries. Beginning in 1999 the allocation was based on a sliding scale formula proposed by the Makah Tribe. To date only the Makah Tribe has prosecuted a whiting fishery; however, other coastal treaty tribes anticipate participating in the fishery in the 2011-2012 seasons. For 2011 the Makah and Quileute Tribes and the Quinault Indian Nation are all proposing to conduct whiting fisheries. The tribal whiting fisheries in 2010 received a set-aside of 39,939 mt, based on estimates of need by Makah and Quileute. Quinault has not yet estimated effort or an amount of whiting needed for a future fishery.

For the Makah fishery, estimated impacts to overfished species have been calculated based on the GMT's four-year weighted average approach applied to their request for 17.5 % of the U.S. OY. For the remainder of the set-aside (i.e. 16,000 mt) the estimated impacts derived from the weighted average of Makah's bycatch in recent years are tripled under the assumption that this portion of the tribal set-aside would primarily be used to accommodate Quileute's developing fishery. This precautionary upward adjustment of bycatch estimates was done in lieu of bycatch rates specific to Quileute fishermen. It is designed to minimize impacts to other sectors inseason should bycatch prove to be higher due to differences in bycatch rates based on vessel, gear, or skipper effects for new participants that are unquantifiable with existing data. Estimated impacts by tribe for 2010 are shown in the table below (Table 1).

**Table 4-29.** Estimated bycatch by tribe for the Pacific whiting fishery based on the 2010 U.S. OY of 262,500 mt and a tribal set-aside of 39,939 mt.

<b>Tribe</b>	<b>Canary</b>	<b>Darkblotched</b>	<b>POP</b>	<b>Widow</b>
Makah	1.78	0.02	2.99	2.06
Quileute	2.52	0.03	4.22	2.92
Total	4.30	0.05	7.21	4.99

In 2009, the PFMF has requested that NMFS convene government-to-government discussions to establish appropriate set-asides or allocations for treaty tribal fisheries for 2010 and beyond. That process is moving forward but is not in place at this time.

#### Washington Recreational

##### Under Alternative 1

- Washington recreational fishery will be open year around for groundfish except lingcod.

- Status quo sublimits for lingcod (two per angler per day) and rockfish (10 per angler per day) would remain in place.
- Propose to implement a Cabazon sublimit of 2 per angler per day
- Propose to reduce aggregate bottomfish limit from 15 to 12

The following lingcod seasons and size limits would apply in 2011 and 2012:

- Marine Areas 1-3 (from the Oregon/Washington border at 46°16' N. latitude north to Cape Alava at 48°10' N. latitude): open from March 19 through October 15 in 2011 and March 17 through October 13 in 2012.
- Marine Area 4 (Cape Alava to the US/Canadian border): open from April 16 to October 15 in 2011 and April 16 to October 13 in 2012.
- The lingcod minimum size limit during the open lingcod season is 22 inches in Marine Areas 1-3 and 24 inches in Marine Area 4.

#### *Bottomfish Area and Retention Restrictions*

For all areas in 2011 and 2012, continue to prohibit the retention of yelloweye and canary rockfish. Prohibit fishing for, retention or possession of bottomfish and halibut in the C-shaped yelloweye rockfish conservation area in the north coast and the South Coast and Westport YRCAs in the south coast.

#### *North Coast (Marine Areas 3 and 4)*

Prohibit the retention of bottomfish seaward of a line approximating 20 fathoms from June 1-September 30, except on days that halibut fishing is open.

#### *South Coast (Marine Area 2)*

Prohibit retention of bottomfish, except rockfish, seaward of 30 fms from March 15 through June 15, except sablefish and Pacific cod retention is allowed May 1 through June 15; no retention of bottomfish, except lingcod, during primary halibut season; no retention of lingcod south of 46 deg. 58' and seaward of 30 fms on Fridays and Saturdays from July 1 through August 31; and cannot fish for, retain, or possess bottomfish or halibut in South Coast YRCA and Westport Offshore YRCA.

#### *Columbia River (Marine Area 1)*

Prohibit the retention of bottomfish, except sablefish and Pacific cod, with halibut onboard from May 1 through September 30.

### Oregon Recreational

Depth management is the main tool used for controlling yelloweye rockfish catch in the Oregon recreational fishery. The alternatives range from the most restrictive (Oregon Recreational Option 1, Figure 4-9), a year round season with April through September open only shoreward of 40 fathoms to the least restrictive option (Oregon Recreational Option 4, Figure 4-9), a year round season with May through August open only shoreward of 40 fathoms. Oregon Recreational Option 1 reflects the No Action alternative and the 2009-10 Oregon recreational groundfish season. Oregon Recreational Options 2-4 reflects the possibility that the Pacific halibut catch limit may be reduced from the 2010 limit. These alternatives are based on the 2010 halibut catch limit (15% lower than the 2009 catch limit) and may allow for the retention of groundfish during the all-depth halibut days on the central Oregon coast.

Option	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Open all depths			Open < 40 fm						Open all depths		
2	Open all depths				Open < 40 fm					Open all depths		
3	Open all depths			Open < 40 fm					Open all depths			
4	Open all depths				Open < 40 fm				Open all depths			

**Figure 4-9. Alternative 1:** Oregon recreational groundfish fishery season options under Alternative 1. Option 1 reflects the season structure under the No Action alternative, which is also available under Alternative 1.

Under Alternative 1, the Oregon recreational groundfish fishery will be able to operate a year round fishery with liberalized seasonal depth restrictions (Options 2-4) relative to the No Action alternative (Option 1). Options 2 and 3 would also be possible if groundfish retention during the all-depth Pacific halibut fishery was allowed.

#### *2011-12 Bag and Size Limit Alternatives*

Status quo bag limits for marine fish, lingcod, and flatfish would remain in place under Alternative 1, except for cabezon. These daily-bag-limits provide the flexibility to make necessary adjustments through the yearly state process, reflecting the progression of the current year's fishery. The state process will likely start off each season with reduced marine and lingcod daily bag limits and may increase or further reduce inseason depending on the progression of the fishery relative to the impact on species with harvest targets/guidelines and state landing caps. A reduction in cabezon impacts will be necessary and can be accomplished with a seasonal sub-bag limit of one fish. The sub-bag limit is proposed to coincide with the months that the groundfish fishery is restricted to inside of 40 fathoms. Other than this alternative, all other bag and size limits are the same as specified in 2009-10 and described under the No Action Alternative, including no retention of yelloweye or canary rockfish at any time or depth.

The shorebased fishery would be managed for a year round season as yelloweye rockfish are not impacted. Also, fishing for, take, retention and possession of sanddabs and "other flatfishes", excluding Pacific halibut would be legal year round and open shoreward of 40 fathoms during any period the groundfish fishery has any depth restrictions. The flatfish fishery would not have any depth restrictions when the groundfish fishery has no depth restrictions (i.e., 40, 30, 25 and 20 fm lines).

#### *2011-12 Area Restriction Alternatives*

No changes to the status quo boundary of the Stonewall Bank YRCA will be necessary.

#### California Recreational

*[To be completed at the June Council meeting]*

4.1.1.3 *Alternative 2: Intermediate Overfished Species ACLs and Preliminary Preferred Non-overfished Species ACLs*

**Analytical scenario**

This alternative is designed to provide contrast in the time to rebuild for overfished species and needs of the fishing community, between the Council's preliminary preferred alternative and the low overfished species ACL alternative.

**Table 4-30.** Alternative 2: 2011, 2012 Overfished Species Specifications and Estimated Catch.

Species	T <sub>target</sub> in FMP	Median time to rebuild given ACL <sup>b</sup>	ACL Alternative 2011 <sup>a</sup>	ACL Alternative 2012 <sup>a</sup>	Estimated Catch All Sectors 2011 (mt)	Estimated Catch All Sectors 2012 (mt)
Bocaccio	2026	2020	109	115	TBD	TBD
Canary	2021	[2026]	94	99		
Cowcod	2072	2068	3	3		
Darkblotched	2028	2025	298	296		
POP	2017	[2019]	111	113		
Petrale	TBD	2015	776	1,160		
Widow	2015	2010	400	400		
Yelloweye	2084	2074	17	17		

<sup>a</sup>Values taken from the status quo column in Table 2-12.

<sup>b</sup> Brackets indicate times to rebuild that are longer than the T<sub>target</sub> specified in the FMP.

**Table 4-31.** Alternative 2: 2011, 2012 Non- Overfished Specifications and Estimated Catch.

*[To be completed at June Council meeting]*

Limited Entry Non-Whiting Trawl

Table 4-32 outlines the intermediate ACLs in either 2011 or 2012 under the Council's preliminary preferred choice of ACLs, the associated non-whiting trawl fishery harvest guideline, and the projected harvest.

**Table 4-32.** Alternative 2. Harvest of target species in the limited entry non-whiting trawl fishery.

<b>Species</b>	<b>ACL (mt)</b>	<b>Non- whiting Trawl HG (mt)</b>	<b>Projected Harvest (mt)</b>
Sablefish N of 36° N. lat.	4,961	2,326	2,324
Longspine N. of 34 27' N. lat.	2,119	1,971	1,337
Shortspine N. of 34 27' N. lat.	1,573	1,450	1,418
Dover sole	17,560	15,172	12,492
Arrowtooth flounder	15,174	12,441	4,607
Petrale sole	776	638	632
English sole	19,761	18,659	439
Other flatfish	4,884	4,213	840
Minor Slope Rockfish North	1,160	872	170
Minor Slope Rockfish South	626	377	234

Table 4-33 contains the management measures, including cumulative limits and the RCA structure under Alternative 2. The overfished species impacts projected by the trawl model are included in Table 4-34, which are based on the bycatch rates from Table 4-18. The Alternative 2 management measures assume that the area north of Cape Alava (48.167° N. lat.) remains closed, as is the case under the No Action alternative. However, if requested, a model run could be provided that would demonstrate the impacts of opening that area.



**Table 4-33.** Alternative 2: Limited entry non-whiting trawl cumulative limits and trawl RCA structure.

2-month period	RCA lines (fm)		2-month cumulative-poundage limits							
	shallow	deep	sable-fish	long-spine	short-spine	Dover sole	petrale sole	arrow-tooth	other flatfish	slope rockfish
<b>N. of 40°10' N lat.</b>										
Large/small footrope limits										
1	75	250	14,000	20,000	18,000	110,000	6,000	150,000	110,000	6,000
2	75	200	14,000	20,000	18,000	110,000	6,000	150,000	110,000	6,000
3	75	200	13,000	20,000	18,000	110,000	5,000	150,000	110,000	6,000
4	100	200	13,000	20,000	18,000	110,000	5,000	150,000	110,000	6,000
5	75	200	13,000	20,000	18,000	110,000	5,000	150,000	110,000	6,000
6	75	250	14,000	20,000	18,000	110,000	6,000	150,000	110,000	6,000
Selective gear limits										
1	75	250	7,000	5,000	5,000	50,000	3,500	50,000	40,000	
2	75	200	7,000	5,000	5,000	50,000	3,500	50,000	40,000	
3	75	200	8,000	5,000	5,000	50,000	3,500	50,000	40,000	
4	100	200	8,000	5,000	5,000	50,000	3,500	50,000	40,000	
5	75	200	7,000	5,000	5,000	50,000	3,500	50,000	40,000	
6	75	250	7,000	5,000	5,000	50,000	3,500	50,000	40,000	
<b>38° - 40°10' N lat.</b>										
1	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	15,000
2	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	15,000
3	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	15,000
4	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	15,000
5	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	15,000
6	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	15,000
<b>S. of 38° N lat.</b>										
1	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	55,000
2	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	55,000
3	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	55,000
4	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	55,000
5	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	55,000
6	100	150	12,000	20,000	18,000	110,000	5,000	10,000	110,000	55,000

**Table 4-34.** Alternative 2: Limited entry non-whiting trawl overfished species impacts relative to the ACL and trawl harvest guideline.

<b>Species</b>	<b>ACL</b>	<b>Non-Whiting Trawl HG (mt)</b>	<b>Projected Impacts (mt)</b>
Canary rockfish	94	19.3	9.7
Pacific ocean Perch	111	63.3	41.8
Darkblotched rockfish	298	241.5	108.8
Widow rockfish	400	148.1	8.7
Yelloweye rockfish	17	0.6	0.2
Bocaccio	109	11.3	5.5
Cowcod	3	1.9	0.3

*Rationalized Trawl Fishery*

*[To be provided as a Supplemental Report]*

#### Limited Entry Whiting Trawl

Pacific whiting harvest specifications are completed on an annual basis, thus the Council requested a range of potential whiting ACLs for more detailed analysis in order to understand the potential range of overfished species impacts and constraints (Table 2-8). Alternative 2 analyzes the bycatch impacts relative to the intermediate whiting ACL (140,996 mt) and the intermediate overfished species ACLs. Under Alternative 2, the analysis assumes that Amendment 21: Intersector Allocation is implemented on January 1, 2011 and as such formal allocations of darkblotched, POP, and widow rockfish are made to the whiting sectors. That is, the bycatch model for projecting overfished species impacts relative to the whiting OY is no longer used for setting darkblotched, POP, and widow rockfish. The bycatch model could still be used to inform potential impacts relative the allocations; however, as mentioned previously, some caution should be exercised when interpreting the bycatch projections from the model. For canary rockfish, Alternative 2 was analyzed using the Council's preliminary preferred 2-year allocation of canary to the whiting sectors. Table 4-35 contains the Pacific whiting and overfished species allocations under Alternative 2.

**Table 4-35.** Alternative 2: Pacific whiting and overfished species allocations by sector using Amendment 21 for darkblotched, POP, and widow and the Council’s preliminary preferred two year allocation of canary rockfish. Allocations are compared to the bycatch model predictions and historical impacts from 2009, a year with a similar whiting OY.

Catcher Processor

<b>Species</b>	<b>2011 ACL (mt)</b>	<b>2012 ACL (mt)</b>	<b>2011 Allocation (mt)</b>	<b>2012 Allocation (mt)</b>	<b>Bycatch model (mt)</b>	<b>Impacts 09 (mt)</b>
Whiting	140,996	140,996	47,939	47,939		
Canary	94	99	4.3	4.6	1.2	0.2
DRK	298	296	9	9	1.6	0.1
POP	111	113	10	10	61	0.1
Widow	400	400	55	55		1.0

Mothership

<b>Species</b>	<b>2011 ACL (mt)</b>	<b>2012 ACL (mt)</b>	<b>2011 Allocation (mt)</b>	<b>2012 Allocation (mt)</b>	<b>Bycatch model (mt)</b>	<b>Impacts 09 (mt)</b>
Whiting	140,996	140,996	33,839	33,839		
Canary	94	99	3	3.2	0.9	0.6
DRK	298	296	6	6	1.1	0.2
POP	111	113	7	7		1.4
Widow	400	400	39	39	43	25

Shoreside

<b>Species</b>	<b>2011 ACL (mt)</b>	<b>2012 ACL (mt)</b>	<b>2011 Allocation (mt)</b>	<b>2012 Allocation (mt)</b>	<b>Bycatch model (mt)</b>	<b>Impacts 09 (mt)</b>
Whiting	140,996	140,996	59,218	59,218		
Canary	94	99	5.3	5.7	1.5	2.3
DRK	298	296	11	11	2	0.9
POP	111	113	13	13		4.7
Widow	400	400	67	67	75	109

Table 4-19 also compares the results of the overfished species allocation decisions to the impacts seen in 2009 (Table 4-6), a year in which the whiting OY was similar to the Alternative 2 ACL (140,996 mt). While the whiting fishery is very dynamic and conditions (e.g., whiting schooling/availability, bycatch interactions, etc.) vary from year to year may vary, the comparison of overfished species impacts is still informative. Under all allocations, except for the shoreside widow allocation, the 2011-2012 allocations appear to be well above the impacts seen in 2009. As such, under similar conditions the whiting fisheries would be able to successfully harvest whiting under these allocations. For the shoreside sector, the widow allocation of 67 mt is well below the 109 mt seen in 2009. As such, the fishery would likely need to actively widow in order to attain their whiting allocation.

***[To be provided as a Supplemental Report]***

Limited Entry Fixed Gear

The management measure options under Alternative 2 would be identical to those under Alternative 1.

Directed Open Access

*Nearshore*

Under Alternative 2, option 1, the nearshore fishery is also modeled assuming a 50:50 catch sharing of yelloweye rockfish between Oregon and California. Two sub-options (1a and 1b) are provided for the alternatives to show the tradeoffs between more restrictive depth restrictions and higher reductions in landed catch. Modifications to landed catch would be based on landings information under the No Action alternative.

North of 42° N latitude – under option 1a, a 20 fm depth restriction would be maintained from 42° N latitude to 43° N latitude. Reductions to landed catch would be as follows: 51% for black rockfish and greenling, 62% remaining species. Under option 1b, a 30 fm depth restriction would be maintained. Reductions to landed catch would be as follows: 58% for black rockfish and greenling, 69% other species

South of 42° N latitude – under option 1a, a 20 fm depth restriction would be implemented statewide. No reductions to landed catch would be necessary. Landings for black rockfish would be increased between 42° N latitude and 40°10' N latitude. Cabezon would be increased statewide to reflect the higher ACL available as a result of the new assessment. Under option 1b, a 20 fm depth restriction would remain in effect between 42° N latitude and 40°10' N latitude only. Reductions in landed catch (42% in 2011; 35% in 2012) would be necessary for some species except cabezon, which would remain at the maximum allowable amount under the higher ACL.

Under Alternative 2, option 2, the nearshore fishery is also modeled assuming a 55:45 (OR:CA) catch sharing of yelloweye rockfish. This proportion represents the amount black rockfish typically shared between the two states. Two options are provided for the alternatives to show the tradeoffs between more restrictive depth restrictions and higher reductions in landed catch. Modifications to landed catch would be based on landings information under the no action alternative.

North of 42° N latitude – under option 2a, a 20 fm depth restriction would be maintained from 42° N latitude to 43° N latitude. Reductions to landed catch would be as follows: 47% for black rockfish and greenling, 59% remaining species. Under option 2b, a 30 fm depth restriction would be maintained. Reductions to landed catch would be as follows: 55% for black rockfish and greenling, 66% other species.

South of 42° N latitude – under option 2a, a 20 fm depth restriction would be implemented statewide. No reductions to landed catch would be necessary. Landings for black rockfish would be increased between 42° N latitude and 40°10'N latitude. Cabezon would be increased statewide to reflect the higher ACL available as a result of the new assessment. Under option 2b, a 20 fm depth restriction would remain in effect between 42° N latitude and 40°10' N latitude only. Reductions in landed catch (42% in 2011; 35% in 2012) would be necessary for some species except cabezon, which would remain at the maximum allowable amount under the higher ACL.

**Table 4-36.** Alternative 2: Nearshore fishery target species harvest by area and option for 2011.

Area	Option 1a	Option 1b	Option 2a	Option 2b
<b>All Areas</b>	<b>413</b>	<b>334</b>	<b>420</b>	<b>336</b>
Black rockfish	152	121	156	125
Blue rockfish	21	13	21	13
Cabazon	80	78	80	79
Deeper nearshore RF	29	22	29	17
Kelp Greenling	11	9	12	10
Lingcod	55	52	57	53
Other minor RF	14	9	14	9
Shallow nearshore RF	51	30	51	30
<b>North of 42° N. Lat.</b>	<b>98</b>	<b>82</b>	<b>105</b>	<b>89</b>
Black rockfish	54	46	58	50
Blue rockfish	1	1	1	1
Cabazon	10	8	10	9
Kelp Greenling	10	8	11	9
Lingcod	19	16	21	17
Other minor RF	4	3	4	3
<b>42° - 40°10' N. Lat.</b>	<b>140</b>	<b>109</b>	<b>140</b>	<b>109</b>
Black rockfish	95	73	95	73
Blue rockfish	13	8	13	8
Cabazon	7	7	7	7
Kelp Greenling	0	0	0	0
Lingcod	15	15	15	15
Other minor RF	10	6	10	6
<b>South of 40°10' N. Lat.</b>	<b>175</b>	<b>139</b>	<b>175</b>	<b>139</b>
Black rockfish	3	2	3	2
Blue rockfish	7	4	7	4
Cabazon	63	63	63	63
Deeper nearshore RF	29	17	29	17
Kelp Greenling	1	1	1	1
Lingcod	21	21	21	21
Shallow nearshore RF	51	30	51	30

**Table 4-37.** Alternative 2: Nearshore fishery target species harvest by area and option for 2012.

<b>Area</b>	<b>Option 1a</b>	<b>Option 1b</b>	<b>Option 2a</b>	<b>Option 2b</b>
<b>All Areas</b>	<b>428</b>	<b>336</b>	<b>435</b>	<b>343</b>
Black rockfish	167	121	171	125
Blue rockfish	21	14	21	14
Cabazon	80	78	80	79
Deeper nearshore RF	29	19	29	19
Kelp Greenling	11	9	12	10
Lingcod	55	52	57	53
Other minor RF	14	10	14	10
Shallow nearshore RF	51	33	51	33
<b>North of 42° N. Lat.</b>	<b>98</b>	<b>82</b>	<b>105</b>	<b>89</b>
Black rockfish	54	46	58	50
Blue rockfish	1	1	1	1
Cabazon	10	8	10	9
Kelp Greenling	10	8	11	9
Lingcod	19	16	21	17
Other minor RF	4	3	4	3
<b>42° - 40°10' N. Lat.</b>	<b>155</b>	<b>110</b>	<b>155</b>	<b>110</b>
Black rockfish	110	73	110	73
Blue rockfish	13	8	13	8
Cabazon	7	7	7	7
Kelp Greenling	0	0	0	0
Lingcod	15	15	15	15
Other minor RF	10	7	10	7
<b>South of 40°10' N. Lat.</b>	<b>175</b>	<b>144</b>	<b>175</b>	<b>144</b>
Black rockfish	3	2	3	2
Blue rockfish	7	5	7	5
Cabazon	63	63	63	63
Deeper nearshore RF	29	19	29	19
Kelp Greenling	1	1	1	1
Lingcod	21	21	21	21
Shallow nearshore RF	51	33	51	33

Shoreward RCA Boundary	South 34°27'	34°27' - 40°10'	40°10' - 42°	42° - Col/Eur 43°	Col/Eur 43° - 46°16'	North of 46°16'
Shore						
20 fm						
30 fm						
60 fm						

**Figure 4-10.** Alternative 2: Nearshore shoreward RCA configuration under option 1a and 2a, the higher landings more restrictive RCA option. Grey shading indicates areas closed to fishing.

Shoreward RCA Boundary	South 34°27'	34°27' - 40°10'	40°10' - 42°	42° - Col/Eur 43°	Col/Eur 43° - 46°16'	North of 46°16'
Shore						
20 fm						
30 fm						
60 fm						

**Figure 4-11.** Alternative 2: Nearshore shoreward RCA configuration under option 1b and 2b, the lower landings less restrictive RCA option. Grey shading indicates areas closed to fishing.

**Table 4-38.** Alternative 2: Overfished species bycatch projections for the nearshore fixed gear fisheries under the option 1 and 2 RCA structures.

Species	Option	2011 Estimated Total Impacts (mt)	2012 Estimated Total Impacts (mt)
Bocaccio	1a	0	0
	1b	0.2	0.3
	2a	0	0
	2b	0.2	0.3
Canary	1a	2.0	2.1
	1b	2.0	2.1
	2a	2.0	2.1
	2b	2.0	2.1
Widow	1a	0.3	0.3
	1b	0.2	0.2
	2a	0.3	0.3
	2b	0.2	0.2
Yelloweye	1a	0.7	0.7
	1b	0.6	0.6
	2a	0.7	0.7
	2b	0.7	0.7

*Sablefish Open Access Daily Trip Limit Fishery north of 36° N. latitude*

The management measure options under Alternative 2 would be identical to those under Alternative 1.



## Tribal

### Washington Recreational

#### Under Alternative 2

- Washington recreational fishery will be open year around for groundfish except lingcod.
- Status quo sublimits for lingcod (two per angler per day) and rockfish (10 per angler per day) would remain in place.
- Propose to implement a Cabazon sublimit of 2 per angler per day
- Propose to reduce aggregate bottomfish limit from 15 to 12

The following lingcod seasons and size limits would apply in 2011 and 2012:

- Marine Areas 1-3 (from the Oregon/Washington border at 46°16' N. latitude north to Cape Alava at 48°10' N. latitude): open from March 19 through October 15 in 2011 and March 17 through October 13 in 2012.
- Marine Area 4 (Cape Alava to the US/Canadian border): open from April 16 to October 15 in 2011 and April 16 to October 13 in 2012.
- The lingcod minimum size limit during the open lingcod season is 22 inches in Marine Areas 1-3 and 24 inches in Marine Area 4.

#### *Bottomfish Area and Retention Restrictions*

For all areas in 2011 and 2012, continue to prohibit the retention of yelloweye and canary rockfish. Prohibit fishing for, retention or possession of bottomfish and halibut in the C-shaped yelloweye rockfish conservation area in the north coast and the South Coast and Westport YRCAs in the south coast.

#### *North Coast (Marine Areas 3 and 4)*

Prohibit the retention of bottomfish seaward of a line approximating 20 fathoms from June 1-September 30, except on days that halibut fishing is open.

#### *South Coast (Marine Area 2)*

Prohibit retention of bottomfish, except rockfish, seaward of 30 fms from March 15 through June 15, except sablefish and Pacific cod retention is allowed May 1 through June 15; no retention of bottomfish, except lingcod, during primary halibut season; no retention of lingcod south of 46 deg. 58' and seaward of 30 fms on Fridays and Saturdays from July 1 through August 31; and cannot fish for, retain, or possess bottomfish or halibut in South Coast YRCA and Westport Offshore YRCA.

#### *Columbia River (Marine Area 1)*

Prohibit the retention of bottomfish, except sablefish and Pacific cod, with halibut onboard from May 1 through September 30.

### Oregon Recreational

Depth management is the main tool used for controlling yelloweye rockfish catch in the Oregon recreational fishery. The options range from the most restrictive (Oregon Recreational Option 1, Figure 4-12), a year round season with April through September open only shoreward of 25

fathoms to the least restrictive option (Oregon Recreational Option 3, Figure 4-12), a year round season with April through September open only shoreward of 40 fathoms. Oregon Recreational Option 3 reflects the No Action 2009-10 Oregon recreational groundfish season.

Option	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Open all depths			Open < 25 fm						Open all depths		
2	Open all depths			Open < 30 fm						Open all depths		
3	Open all depths			Open < 40 fm						Open all depths		

**Figure 4-12.** Options for Oregon recreational groundfish season in 2011-12 under Alternative 2.

Under Alternative 2, the Oregon recreational groundfish fishery will be able to operate a year round fishery with April through September being under some depth restrictions (25, 30, or 40 fathoms). Under this alternative, groundfish retention in the all-depth Pacific halibut fishery would not be allowed under any of the options in Figure 4-12.

#### *2011-12 Bag and Size Limit Alternatives*

Under Alternative 2, the No Action alternative bag limits for marine fish, lingcod, and flatfish would remain in place, except for cabezon. These daily-bag-limits provide the flexibility to make necessary adjustments through the yearly state process, reflecting the progression of the current year's fishery. The state process will likely start off each season with reduced marine and lingcod daily bag limits and may increase or further reduced them inseason depending on the progression of the fishery relative to the impact on species with harvest targets/guidelines and state landing caps. A reduction in cabezon impacts will be necessary and can be accomplished with a seasonal sub-bag limit of one fish. The sub-bag limit is proposed to coincide with the months that the groundfish fishery is restricted to inside of 40 fathoms. Other than this alternative, all other bag and size limits are the same as specified in 2009-10 and described under the No Action Alternative, including no retention of yelloweye or canary rockfish at any time or depth.

The shorebased fishery would be managed for a year round season as yelloweye rockfish are not impacted. Also, fishing for, take, retention and possession of sanddabs and "other flatfishes", excluding Pacific halibut would be legal year round and open shoreward of 40 fathoms during any period the groundfish fishery has any depth restrictions. The flatfish fishery would not have any depth restrictions when the groundfish fishery has no depth restrictions (i.e. 40, 30, 25 and 20 fm lines).

#### *2011-12 Area Restriction Alternatives*

No changes to the current boundary of the Stonewall Bank YRCA will be necessary.

#### California Recreational

*[To be provided at the June Council meeting]*

4.1.1.4 *Alternative 3- Low Overfished Species ACLs and Preliminary Preferred Non-Overfished Species ACLs*

**Analytical scenario**

This alternative is designed to provide contrast in the time to rebuild for overfished species and needs of the community, relative to the high and intermediate ACL alternatives.

**Table 4-39.** Alternative 3: 2011, 2012 Overfished Species Specifications and Estimated Catch.

Species	T <sub>target</sub> in FMP	Median time to rebuild given ACL <sup>b</sup>	ACL Alternative 2011 <sup>a</sup>	ACL Alternative 2012 <sup>a</sup>	Estimated Catch All Sectors 2011 (mt)	Estimated Catch All Sectors 2012 (mt)
Bocaccio	2026	2019	53	56	TBD	TBD
Canary	2021	[2025]	49	51		
Cowcod	2072	2064	2	2		
Darkblotched	2028	2018	130	131		
POP	2017	2019	80	80		
Petrale	TBD	2014	459	624		
Widow	2015	2010	200	200		
Yelloweye	2084	2065	13	13		

<sup>a</sup>Values taken from Table 2-12.

<sup>b</sup> Brackets indicate times to rebuild that are longer than the T<sub>target</sub> specified in the FMP.

**Table 4-40.** Alternative 3: 2011, 2012 Non- Overfished Specifications and Estimated Catch.

*[To be completed at June Council meeting]*

Limited Entry Non-Whiting Trawl

Table 4-41 outlines the low ACLs in either 2011 or 2012 under the Council's preliminary preferred choice of ACLs, the associated non-whiting trawl fishery harvest guideline, and the projected harvest under Alternative 3.

**Table 4-41.** Alternative 3. Harvest of target species in the limited entry non-whiting trawl fishery.

<b>Species</b>	<b>ACL</b>	<b>HG</b>	<b>Proj.</b>
Sablefish N of 36° N. lat.	4,689	2,197	2,161
Longspine N. of 34 27' N. lat.	2,119	1,971	1,326
Shortspine N. of 34 27' N. lat.	1,573	1,450	1,283
Dover sole	17,560	15,172	10,575
Arrowtooth flounder	15,174	12,441	3,447
Petrale sole	776	638	341
English sole	19,761	18,659	424
Other flatfish	4,884	4,213	797
Minor Slope Rockfish North	1,160	872	106
Minor Slope Rockfish South	626	377	234

Table 4-42 contains the management measures, including cumulative limits and the RCA structure under Alternative 3. The overfished species impacts projected by the trawl model are included in Table 4-43 which are based on the bycatch rates from Table 4-18. The Alternative 3 management measures assume that the area north of Cape Alava (48.167° N. lat.) remains closed, as is the case under the No Action Alternative. However, if requested, a model run could be provided that would demonstrate the impacts of opening that area.

**Table 4-42.** Alternative 3: Limited entry non-whiting trawl cumulative limits and trawl RCA structure.

			2-month cumulative-poundage limits								
2-month period		RCA lines (fm)		sable-fish	long-spine	short-spine	Dover sole	petrale sole	arrow-tooth	other flatfish	slope rockfish
		shallow	deep								
N. of 40°10' N lat.											
Large/small footrope limits											
	1	75	250	14,000	20,000	18,000	110,000	2,000	150,000	110,000	6,000
	2	75	250	14,000	20,000	18,000	110,000	1,500	150,000	110,000	6,000
	3	75	250	12,000	20,000	18,000	110,000	1,000	150,000	110,000	6,000
	4	100	250	12,000	20,000	18,000	110,000	1,000	150,000	110,000	6,000
	5	75	250	12,000	20,000	18,000	110,000	1,000	150,000	110,000	6,000
	6	75	250	14,000	20,000	18,000	110,000	2,000	150,000	110,000	6,000
Selective gear limits											
	1	75	250	7,000	5,000	5,000	30,000	1,000	30,000	30,000	
	2	75	250	7,000	5,000	5,000	25,000	1,500	25,000	25,000	
	3	75	250	7,000	5,000	5,000	25,000	1,500	25,000	25,000	
	4	100	250	7,000	5,000	5,000	25,000	2,000	25,000	25,000	
	5	75	250	7,000	5,000	5,000	25,000	1,500	25,000	25,000	
	6	75	250	7,000	5,000	5,000	30,000	1,000	30,000	30,000	
38° - 40°10' N lat.											
	1	100	150	13,000	20,000	18,000	110,000	1,500	10,000	110,000	15,000
	2	100	150	13,000	20,000	18,000	110,000	1,500	10,000	110,000	15,000
	3	100	150	13,000	20,000	18,000	110,000	1,500	10,000	110,000	15,000
	4	100	150	13,000	20,000	18,000	110,000	1,500	10,000	110,000	15,000
	5	100	150	13,000	20,000	18,000	110,000	1,500	10,000	110,000	15,000
	6	100	150	13,000	20,000	18,000	110,000	1,500	10,000	110,000	15,000
S. of 38° N lat.											
	1	100	150	13,000	20,000	18,000	110,000	1,500	10,000	110,000	55,000
	2	100	150	13,000	20,000	18,000	110,000	1,500	10,000	110,000	55,000
	3	100	150	13,000	20,000	18,000	110,000	1,500	10,000	110,000	55,000
	4	100	150	13,000	20,000	18,000	110,000	1,500	10,000	110,000	55,000
	5	100	150	13,000	20,000	18,000	110,000	1,500	10,000	110,000	55,000
	6	100	150	13,000	20,000	18,000	110,000	1,500	10,000	110,000	55,000

**Table 4-43.** Limited entry non-whiting trawl overfished species impacts relative to the ACL and trawl harvest guideline.

Species	ACL (mt)	Non-whiting Trawl HG (mt)	Projected impacts (mt)
Canary rockfish	49	8.0	7.3
Pacific ocean Perch	80	33.8	20.3
Darkblotched rockfish	222	175.8	68.4
Widow rockfish	200	60.8	8.4
Yelloweye rockfish	13	0.4	0.1
Bocaccio	53	4.7	4.5
Cowcod	2	0.9	0.2

***[To be provided in a supplemental report]***

Limited Entry Whiting Trawl

Pacific whiting harvest specifications are completed on an annual basis, thus the Council requested a range of potential whiting ACLs for more detailed analysis in order to understand the potential range of overfished species impacts and constraints (Table 2-8). Alternative 3 analyzes the bycatch impacts relative to the low whiting ACL (70,498 mt) and the low overfished species ACLs. Under Alternative 3, the analysis assumes that Amendment 21: Intersector Allocation is implemented on January 1, 2011 and as such formal allocations of darkblotched, POP, and widow rockfish are made to the whiting sectors. That is, the bycatch model for projecting overfished species impacts relative to the whiting OY is no longer used for setting darkblotched, POP, and widow rockfish. The bycatch model could still be used to inform potential impacts relative to the allocations; however, as mentioned previously, some caution should be exercised when interpreting the bycatch projections from the model. For canary rockfish, Alternative 3 was analyzed using the Council's preliminary preferred 2-year allocation of canary to the whiting sectors. Table 4-44 contains the Pacific whiting and overfished species allocations under Alternative 3.

**Table 4-44.** Alternative 3: Pacific whiting and overfished species allocations by sector using Amendment 21 for darkblotched, POP, and widow and the Council's preliminary preferred two year allocation of canary rockfish. Allocations are compared to the bycatch model predictions.

Catcher Processor

<b>Species</b>	<b>2011 ACL (mt)</b>	<b>2012 ACL (mt)</b>	<b>2011 Allocation (mt)</b>	<b>2012 Allocation (mt)</b>	<b>Bycatch model (mt)</b>
Whiting	70,498	70,498	23,969	23,969	
Canary	49	51	1.8	1.9	0.5
DRK	222	222	9	9	0.7
POP	80	80	10	10	
Widow	200	200	22	22	26.5

Mothership

<b>Species</b>	<b>2011 ACL (mt)</b>	<b>2012 ACL (mt)</b>	<b>2011 Allocation (mt)</b>	<b>2012 Allocation (mt)</b>	<b>Bycatch model (mt)</b>
Whiting	70,498	70,498	16,920	16,920	
Canary	49	51	1.3	1.3	0.4
DRK	222	222	6	6	0.5
POP	80	80	7	7	
Widow	200	200	16	16	18.7

Shoreside

<b>Species</b>	<b>2011 ACL (mt)</b>	<b>2012 ACL (mt)</b>	<b>2011 Allocation (mt)</b>	<b>2012 Allocation (mt)</b>	<b>Bycatch model (mt)</b>
Whiting	70,498	70,498	26,609	26,609	
Canary	49	51	2.4	2.4	0.7
DRK	222	222	11	11	0.9
POP	80	80	13	13	
Widow	200	200	28	28	32.6

Under all allocations, except for the widow allocation, the 2011-2012 allocations appear to be well above the impacts projected from the whiting bycatch model. Relative to widow rockfish, for all sectors the allocations are below the bycatch model predictions. As such, all sectors would likely need to actively widow in order to attain their whiting allocations. This avoidance may cause an increase in other overfished species impacts, which may mean the bycatch rates generated by the bycatch model would not be representative. Further, if the whiting are not aggregated, the fleet may struggle to avoid bycatch.

### Limited Entry Fixed Gear

Under Alternative 3, yelloweye rockfish ceases to be the most constraining species and canary bycatch becomes the focus for management measures. Non-trawl RCA changes or a reduction in the allowable harvest of sablefish would be needed to reduce canary bycatch down to the 0.9 mt in 2011 and 1.0 mt in 2012.

With the No Action non-trawl RCA configuration (i.e., 125 line from the Columbia/Eureka Line to Cascade Head) to in place, the limited entry fixed gear sectors would be expected to take 2.0 mt of canary in 2011 and 1.8 mt in 2012. Even with the seaward boundary in all areas at 150 fm—the minimum canary bycatch scenario in the model—the expected canary impacts still reaches 1.4 mt.

The highest bycatch of canary rockfish occurs in the area north of Point Chehalis (46.888° N. lat.) (Table 4-45). Pushing the RCA seaward to 150 fm in this area does not lower the expected encounter rate as it does in other areas. This is a large area where the Juan de Fuca canyon and steep bathymetry in the north complicate the RCA boundaries and the WCGOP observer data, which is based on the average depth of a set. In addition, bycatch in the trawl fisheries and scientific surveys suggest that canary is relatively abundant off northern Washington. The 150 fm line is what the Council has used in the whiting fishery to minimize risk of canary bycatch, yet as we saw in recent years, the catcher processors had difficulty avoiding canary in the Juan de Fuca canyon area. A seaward boundary deeper than 150 fm would likely lower the canary bycatch rate to the degree seen in the other management areas, yet the data for these RCAs boundaries or depths is not built into the model.

**Table 4-45.** The 2002-2008 canary rockfish bycatch ratios (total catch lbs /retained sablefish lbs) in the non-nearshore fixed gear sectors, by management area and depth.

<b>Depth</b>	<b>40°10' – Col/Eur 43°</b>	<b>Col/Eur 43° - 45.064°</b>	<b>Cascade Head 45.064° - Point Chehalis 46.888°</b>	<b>North of Point Chehalis 46.888°</b>
100 fm	0.0001	0.0002	0.0022	0.0029
125 fm	0.0000	0.0001	0.0001	0.0026
150 fm	0.0000	0.0001	0.0000	0.0027

To further reduce canary bycatch projected impacts, the Council would have two major options. Option 1 would seek to maintain full harvest of the fixed gear sablefish allocations and would require closing the area north of Point Chehalis completely to the non-nearshore sectors, or alternatively, pushing the RCA boundaries to 180 fm, 200 fm, or 250 fm (Figure 4-13). The latter would involve some uncertainty because, as mentioned above, we do not have the appropriate bycatch rates to model the impact of these RCA boundaries.



Seaward RCA Boundary	36°- 40° 10'	40°10'- Col/Eur 43°	Col/Eur 43°- Cascade Head 45.064°	Cascade Head 45.064°- Pt. Chehalis 46.888°	North of Pt. Chehalis 46.888°
Shoreward boundary to 100 fm					
100 fm					
125 fm					
150 fm					
>150 fm					

**Figure 4-13.** Alternative 3, Option 1: Non-trawl RCA seaward configuration. The seaward area north of Point Chehalis would either be closed completely or have a 180 fm, 200 fm, or 250 fm boundary. Grey shading indicates areas closed to fishing.

To model the complete closure, we assumed that catch would distribute to the open areas in the same proportion we estimate catch to occur in now such that all sablefish is harvested. The resulting bycatch impacts are shown in Table 4-46. With canary bycatch at zero north of Point Chehalis, the bycatch projection model shows that the seaward RCA boundary configuration prior to 2009-2010 (i.e., 100 fm from 40°10' to 43°, instead of 125 from Col/Eur to Cascade Head) could be accommodated in the open areas. The area north of Point Chehalis encompasses some of the most important sablefish fishing grounds on the coast and is the area where most of the catch has occurred. We estimate that the non-nearshore fleets have taken an average of 44 percent, and as much as 55 percent, of the overall annual fixed gear allocations for the northern sablefish stock in this area during the 2002-2008 period we use to model bycatch. A complete closure would thus represent a substantial change to these fisheries. In addition, with such a large portion of the catch coming from this area, it may be unrealistic to assume that the non-nearshore fleets could harvest their full allocations with the area closed.

To model a RCA boundary deeper than 150 fm off Point Chehalis, we assume that a lower bycatch rate for canary could be achieved. Specifically, we assume that the deeper RCA would lower the canary bycatch rate to the next highest bycatch rate at 150 fm, which is seen in the area between 43°–45.064° N. latitude (Table 4-45). We also assume that the more restrictive RCA would shift more effort to the areas where the RCA is less restrictive. Specifically, we assume that the percentage of catch that occurs north of Point Chehalis would be equivalent to the lowest observed in the 2002-2008 timeframe, which is 24 percent. We do not have a quantitative basis for this redistribution of catch, yet employ it as a precautionary assumption to account for more catch where canary rates could be higher. Again, without observations stratified at these depths, the bycatch projections north of Point Chehalis would be uncertain. In addition, we do not know how accessible sablefish would be to the fleets at these depths.

**Table 4-46.** Alternative 3, Option 1: Limited entry fixed gear bycatch impacts under the non-trawl RCA structure represented in Figure 4-13, i.e., the area north of Point Chehalis is either closed to the non-nearshore fixed gear sectors or set at 180 fm, 200 fm, or 250 fm.

Species	2011 Impacts (mt)	2012 Impacts (mt)
Bocaccio	0.0	0.0
Canary rockfish	0.6	0.6
Darkblotched rockfish	4.0	3.7
Pacific ocean perch	0.2	0.2
Widow rockfish	0.1	0.1
Yelloweye rockfish	0.5	0.5

Option 2 for lowering the expected canary bycatch would involve a reduction to the available harvest of sablefish. The Council has the option of differentially reducing the sablefish harvest between the limited entry and open access fleets north of 36° N. latitude. However, for the purposes of the analysis the GMT reduced both sectors equally. Should the Council desire one sector to have greater access to sablefish, given the canary rockfish constraints, those model runs could be requested and provided at the June Council meeting.

Reducing the three fixed gear sablefish north of 36° north latitude allocations by 35 percent in combination with the more restrictive RCA boundaries shown in Figure 4-14 would lower the canary bycatch to the 0.9 mt allowed for 2011 by the preliminary preferred sector sharing scenarios. This allowable amount would increase to 1.0 mt in 2012. With the lower sablefish ACL in 2012 and the same RCA configuration in place, the additional 0.1 mt of canary bycatch would mean that the Council would need to decrease the sector allocations by a smaller percentage, 23 percent. Table 4-47 identifies these reductions in metric tons.

Seaward RCA Boundary	36° - 40° 10'	40° 10' - Col/Eur 43°	Col/Eur 43° - Cascade Head 45.064°	Cascade Head 45.064° - Pt. Chehalis 46.888°	North of Pt. Chehalis 46.888°
Shoreward boundary to 100 fm					
100 fm					
125 fm					
150 fm					
>150 fm					

**Figure 4-14.** Alternative 3, Option 2: Seaward RCA boundary configurations required to achieve canary rockfish bycatch reductions.

**Table 4-47.** Alternative 3, Option 2: The 2011-12 preliminary preferred alternative north of 36° N. latitude allocations (metric tons) and minimum allocation reductions necessary to achieve the canary rockfish allocation.

	<b>LE FG Share</b>	<b>Limited Entry Primary</b>	<b>Limited Entry DTL</b>
2011 Full Allocation	1,684	1,431	253
w/ 35% reduction		930	164
2012 Full Allocation	1,591	1,352	239
w/ 23% reduction		1,041	184

As with Option 1, the measures intended to lower canary bycatch would affect bycatch of the other rebuilding rockfish (Table 4-48).

**Table 4-48.** Alternative 3, Option 2: Limited entry fixed gear bycatch projections for 2011 and 2012. Under Option 2, the sablefish allocation to the limited entry fixed gear fleet is reduced by 35 percent in 2011 and 23 percent in 2012.

<b>Species</b>	<b>2011 Impacts (mt)</b>	<b>2012 Impacts (mt)</b>
Bocaccio	0.0	0.0
Canary rockfish	0.8	0.9
Darkblotched rockfish	2.3	2.6
Pacific ocean perch	0.2	0.2
Widow rockfish	0.0	0.0
Yelloweye rockfish	0.3	0.3

#### Directed Open Access

##### *Nearshore*

Under Alternative 3, option 1, the nearshore fishery is also modeled assuming a 50:50 catch sharing of yelloweye rockfish. Modifications to landed catch would be based on landings information under the no action alternative.

North of 42° N. latitude – this option includes a 20 fm depth restriction from 42° N. latitude to 43° N latitude and reductions to landed catch as follows: 69% for black rockfish and greenling, 79% remaining species.

South of 42° N. latitude – this option includes a statewide 20 fm depth restriction and reduced landings for many species except cabezon.

Under Alternative 3, option 2, the nearshore fishery is also modeled assuming a 55:45 (OR:CA) catch sharing of yelloweye rockfish. Modifications to landed catch would be based on landings information under the no action alternative.

North of 42° N. latitude – the only available option includes a 20 fm depth restriction from 42° N. latitude to 43° N latitude and reductions to landed catch as follows: 66% for black rockfish and greenling, 77% remaining species.

South of 42° N. latitude – the only available option includes a statewide 20 fm depth restriction and reduced landings for many species except cabezon.

**Table 4-49.** Alternative 3: Nearshore fishery target species harvest by area and option.

Area	Estimated Total Catch (mt) 2011/12 (option 1)	Estimated Total Catch (mt) 2011/12 (option 2)
<b>Grand Total</b>	<b>226</b>	<b>231</b>
Black rockfish	107	110
Blue rockfish	14	13
Cabezon	75	76
Deeper nearshore RF	0	0
Kelp Greenling	7	8
Lingcod	11	12
Other minor RF	12	12
Shallow nearshore RF	0	0
<b>North of 42° N. Lat.</b>	<b>59</b>	<b>65</b>
Black rockfish	34	37
Blue rockfish	1	1
Cabezon	5	6
Kelp Greenling	6	7
Lingcod	11	12
Other minor RF	2	2
<b>42° - 40°10' N. Lat.</b>	<b>103</b>	<b>103</b>
Black rockfish	73	73
Blue rockfish	13	13
Cabezon	7	7
Kelp Greenling	0	0
Lingcod	0	0
Other minor RF	10	10
<b>South of 40°10' N. Lat.</b>	<b>64</b>	<b>64</b>
Black rockfish	0	0
Blue rockfish	0	0
Cabezon	63	63
Deeper nearshore RF	0	0
Kelp Greenling	1	1
Lingcod	0	0
Shallow nearshore RF	0	0

Shoreward RCA Boundary	South 34°27'	34°27' - 40°10'	40°10' - 42°	42° - Col/Eur 43°	Col/Eur 43° - 46°16'	North of 46°16'
Shore						
20 fm						
30 fm						
60 fm						

**Figure 4-15.** Alternative 3 Nearshore shoreward RCA configuration under option 1 and 2. Grey shading indicates areas closed to fishing.

**Table 4-50.** Alternative 3: Overfished species bycatch projections for the nearshore fixed gear fisheries under the option 1 and 2 RCA structures.

Species	Option	2011 Estimated Total Impacts (mt)	2012 Estimated Total Impacts (mt)
Bocaccio	1	0	0
	2	0.2	0
Canary	1	0.9	0.6
	2	1.6	1.6
Widow	1	0.2	0.2
	2	0.4	0.4
Yelloweye	1	0.4	0.4
	2	0.4	0.4

#### *Open Access Sablefish Daily Trip Limit Fishery North of 36° N. latitude*

As mentioned under the limited entry fixed gear north of 36° N. latitude section, yelloweye rockfish ceases to be the most constraining species and canary bycatch becomes the focus for management measures under Alternative 3. To further reduce canary bycatch projected impacts, the Council would have two major options. Option 1 would seek to maintain full harvest of the fixed gear sablefish allocations and would require closing the area north of Point Chehalis completely to the non-nearshore sectors, or alternatively, pushing the RCA boundaries to 180 fm, 200 fm, or 250 fm (Figure 4-16). Option 2 for lowering the expected canary bycatch would involve a reduction to the available harvest of sablefish (Table 4-47). The Council has the option of differentially reducing the sablefish harvest between the limited entry and open access fleets north of 36° N. latitude. However, for the purposes of the analysis the GMT reduced both sectors equally. Should the Council desire one sector to have greater access to sablefish, given the canary rockfish constraints, those model runs could be requested and provided at the June Council meeting.

<b>Seaward RCA Boundary</b>	<b>36° - 40° 10'</b>	<b>40° 10' - Col/Eur 43°</b>	<b>Col/Eur 43° - Cascade Head 45.064°</b>	<b>Cascade Head 45.064° - Pt. Chehalis 46.888°</b>	<b>North of Pt. Chehalis 46.888°</b>
Shoreward boundary to 100 fm					
100 fm					
125 fm					
150 fm					
>150 fm					

**Figure 4-16.** Alternative 3, Option 1: Non-trawl RCA seaward configuration. The seaward area north of Point Chehalis would either be closed completely or have a 180 fm, 200 fm, or 250 fm boundary. Grey shading indicates areas closed to fishing.

**Table 4-51.** Alternative 3, Option 1: Open access DTL fishery bycatch impacts under the non-trawl RCA structure represented in Figure 4-16, i.e., the area north of Point Chehalis is either closed to the non-nearshore fixed gear sectors or set at 180 fm, 200 fm, or 250 fm.

<b>Species</b>	<b>2011 Impacts (mt)</b>	<b>2012 Impacts (mt)</b>
Bocaccio	0.0	0.0
Canary rockfish	0.1	0.1
Darkblotched rockfish	0.8	0.8
Pacific ocean perch	0.0	0.0
Widow rockfish	0.0	0.0
Yelloweye rockfish	0.1	0.1

**Table 4-52.** Alternative 3, Option 2: The 2011-12 preliminary preferred alternative north of 36° N. latitude allocations (metric tons) and minimum reductions necessary to achieve the canary allocations.

	<b>Open Access (mt)</b>
2011 Full Allocation	416
w/ 35% reduction	270
2012 Full Allocation	393
w/ 23% reduction	303

**Table 4-53.** Alternative 3, Option 2: Overfished species projected impacts for the open access daily trip limit fishery north of 36° N. latitude. Under Option 2, the sablefish allocation to the open access fleet is reduced by 35 percent in 2011 and 23 percent in 2012.

Species	2011 Impacts (mt)	2012 Impacts (mt)
Bocaccio	0.0	0.0
Canary rockfish	0.1	0.2
Darkblotched rockfish	0.5	0.6
Pacific ocean perch	0.0	0.2
Widow rockfish	0.0	0.0
Yelloweye rockfish	0.0	0.1

### Tribal

#### Washington Recreational

##### Under Alternative 3

- Washington recreational fishery will be open year around for groundfish except lingcod.
- Status quo sublimits for lingcod (two per angler per day) and rockfish (10 per angler per day) would remain in place.
- Propose to implement a Cabazon sublimit of 2 per angler per day
- Propose to reduce aggregate bottomfish limit from 15 to 12

The following lingcod seasons and size limits would apply in 2011 and 2012:

- Marine Areas 1-3 (from the Oregon/Washington border at 46°16' N. latitude north to Cape Alava at 48°10' N. latitude): open from March 19 through October 15 in 2011 and March 17 through October 13 in 2012.
- Marine Area 4 (Cape Alava to the US/Canadian border): open from April 16 to October 15 in 2011 and April 16 to October 13 in 2012.
- The lingcod minimum size limit during the open lingcod season is 22 inches in Marine Areas 1-3 and 24 inches in Marine Area 4.

##### *Bottomfish Area and Retention Restrictions*

For all areas in 2011 and 2012, continue to prohibit the retention of yelloweye and canary rockfish. Prohibit fishing for, retention or possession of bottomfish and halibut in the C-shaped yelloweye rockfish conservation area in the north coast and the South Coast and Westport YRCAs in the south coast.

##### *North Coast (Marine Areas 3 and 4)*

Prohibit the retention of bottomfish seaward of a line approximating 20 fathoms from May 21-September 30, except on days that halibut fishing is open.

##### *South Coast (Marine Area 2)*

Prohibit the retention of bottomfish seaward of a line approximating 30 fathoms from March 15-June 15. Prohibit the retention of bottomfish, except sablefish and Pacific cod seaward of a line

approximating 30 fathoms from May 1-June 15. Prohibit the retention of lingcod south of 46°58 N latitude and seaward of 30 fathoms on Fridays and Saturdays from July 1 through August 31.

*Columbia River (Marine Area 1)*

Prohibit the retention of bottomfish, except sablefish and Pacific cod, with halibut onboard from May 1 through September 30.

Oregon Recreational

Depth management is the main tool used for controlling yelloweye rockfish catch in the Oregon recreational fishery. The options range from the least restrictive (Oregon Recreational Option 1, Figure 4-17), a year round season with April through September open only shoreward of 20 fathoms to the most restrictive option (Oregon Recreational Option 5, Figure 4-17), a year round season open only shoreward of 20 fathoms. All options are more restrictive than the 2009-10 Oregon recreational groundfish season under the No Action alternative.

Option	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Open all depths			Open < 20 fm						Open all depths		
2	Open < 40 fm			Open < 20 fm						Open < 40 fm		
3	Open < 30 fm			Open < 20 fm						Open < 30 fm		
4	Open < 25 fm			Open < 20 fm						Open < 25 fm		
5	Open < 20 fm											

**Figure 4-17.** Options for Oregon recreational groundfish season in 2011-12 under Alternative 3.

Under Alternative 3, the Oregon recreational groundfish fishery will be able to operate a year round fishery with depth restrictions (25, 30, or 40 fathoms). Under this alternative, groundfish retention in the all-depth Pacific halibut fishery would not be allowed under any of the options in Figure 4-17.

*2011-12 Bag and Size Limit Alternatives*

Bag limits for marine fish, lingcod, and flatfish under the No Action alternative would remain in place under Alternative 3, except for cabezon. These daily-bag-limits provide the flexibility to make necessary adjustments through the yearly state process, reflecting the progression of the current year's fishery. The state process will likely start off each season with reduced marine and lingcod daily bag limits and may increase or further reduced them inseason depending on the progression of the fishery relative to the impact on species with harvest targets/guidelines and state landing caps. A reduction in cabezon impacts will be necessary and can be accomplished with a seasonal sub-bag limit of one fish. The sub-bag limit is proposed to coincide with the months that the groundfish fishery is restricted to inside of 20, 30, or 40 fathoms. Other than this alternative, all other bag and size limits are the same as specified in 2009-10 and described under the No Action Alternative, including no retention of yelloweye or canary rockfish at any time or depth.

The shorebased fishery would be managed for a year round season as yelloweye rockfish are not impacted. Also, fishing for, take, retention and possession of sanddabs and "other flatfishes",



excluding Pacific halibut would be legal year round and open shoreward of 40 fathoms during any period the groundfish fishery has any depth restrictions. The flatfish fishery would not have any depth restrictions when the groundfish fishery has no depth restrictions (i.e. 40, 30, 25 and 20 fm lines).

#### *2011-12 Area Restriction Alternatives*

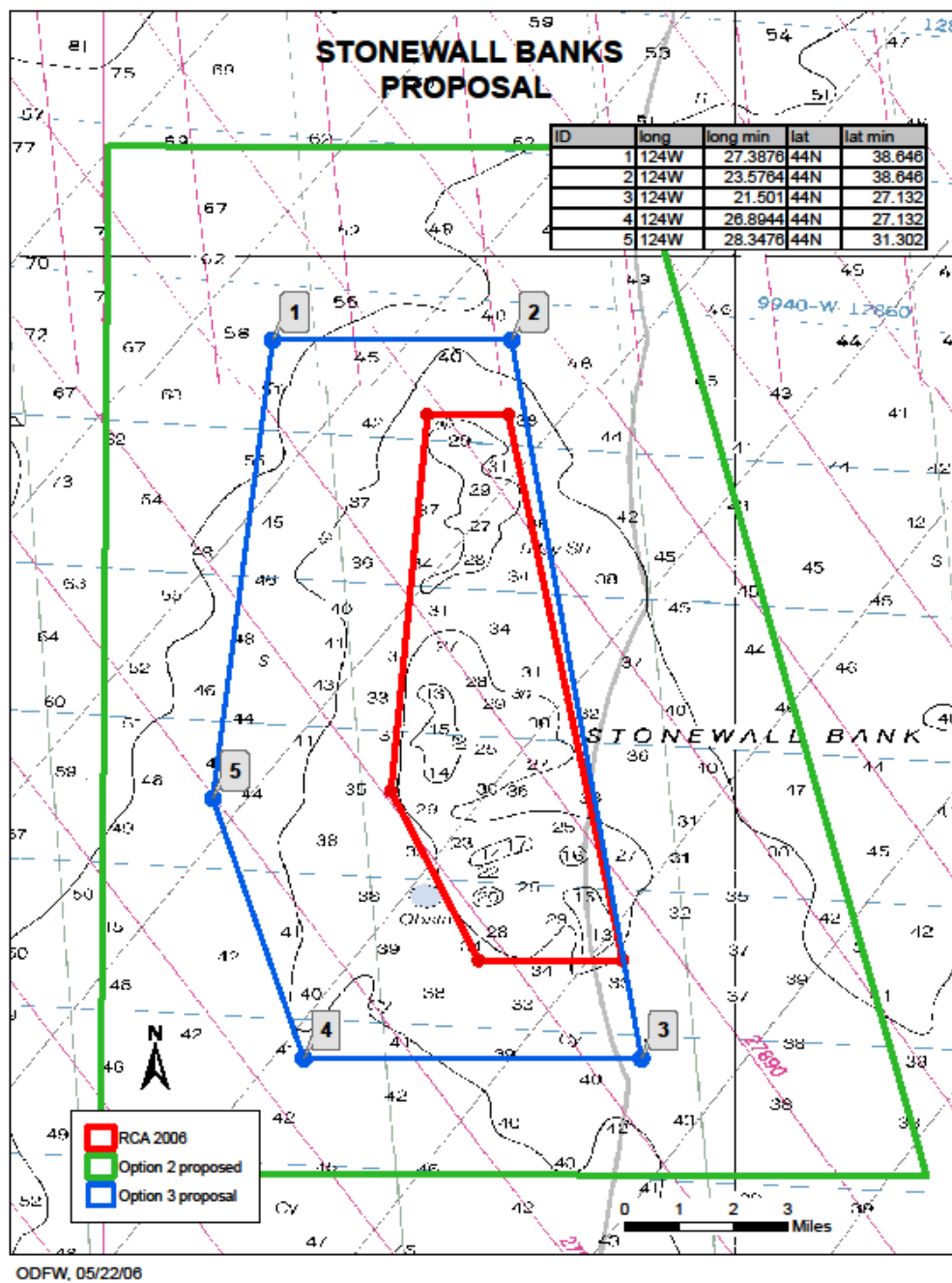
Two options for extending the status quo Stonewall Bank YRCA for 2011-12 recreational fisheries under Alternative 3 are shown in Figure 4-18 and are defined by the following coordinates:

##### Stonewall Bank Option 2 (largest area):

44°41.7594' N lat.	124°30.018' W long.
44°41.7348' N lat.	124°21.603' W long.
44°25.2456' N lat.	124°16.944' W long.
44°25.2942' N lat.	124°30.1404' W long.
44°41.7594' N lat.	124°30.018' W long.

##### Stonewall Bank Option 3 (medium area):

44°38.544' N lat.	124°27.4122' W long.
44°38.544' N lat.	124°23.8554' W long.
44°27.132' N lat.	124°21.501' W long.
44°27.132' N lat.	124°26.8944' W long.
44°31.302' N lat.	124°28.3476' W long.



**Figure 4-18.** The Stonewall Bank Yelloweye Rockfish Conservation Area where recreational fishing for groundfish and Pacific halibut is prohibited. Under Alternative 3, the expanded area (option 2 or 3) would be necessary to reduce yelloweye rockfish impacts.

#### California Recreational

*[To be provided at the June Council meeting]*

#### *4.1.1.5 Description of 2011-2012 Management Measures Affecting Multiple Fisheries*

##### **Overarching**

###### Federal landings requirement for commercial fisheries

The Washington Department of Fish and Wildlife (WDFW) requested that the Council consider changes to the federal groundfish regulations that would require groundfish caught in the west coast Exclusive Economic Zone to be landed in one of the three west coast states unless specifically exempted. Rules on landing groundfish are currently a matter of state regulation. Nothing in Washington state law would prohibit the landing of U.S. groundfish into Canada or the at-sea processing of most groundfish species. In recent years, the states and NMFS have received interest in at-sea processing of species like grenadier and dogfish. This presents some risk to our ability to track landings and enforce trip limits; however, information is currently unavailable to determine whether major concerns exist under the current regulations.

*[Results of the analysis to be provided at the June Council meeting]*

###### Define sablefish dressed weight in the groundfish regulations

This item was raised by NMFS Northwest Region and involves modifying current groundfish regulations to include a definition of dressed weight for sablefish.

*[Results of the analysis to be provided at the June Council meeting]*

###### Review definition regarding ice and slime

This item was raised during the 2009-2010 cycle. The IPHC regulations establish deductions for ice and slime for recording landed halibut weights. There were differential payments occurring by buyer because of the way ice and slime deductions were treated for many other species.

*[Results of the analysis to be provided at the June Council meeting]*

###### Vessel Monitoring Systems

At its April meeting, the Council recommended that the following issues be analyzed for 2011-2012 fisheries 1) evaluate gear stowage requirements for fixed gear vessels transiting the RCA and 2) evaluate VMS technologies to allow for drifting by limited entry and open access vessels. With regard to the later item, at the April 2010 Council meeting, the EC voiced concern over any blanket change allowing drifting in the RCA, which could have the potential to degrade the enforceability of the RCA landscape and negatively affect vessel safety. Instead, the EC recommended that industry design an exempted fishing permit (EFP) as a mechanism to evaluate any proposals related to drifting allowances.

*[Results of the analysis to be provided at the June Council meeting]*

Revise coordinates for rockfish conservation areas as necessary for trawl and non-trawl gears

The GMT reviewed selected RCA coordinates in order to propose changes that more closely approximate the RCA with depth contours, which should result in better estimates of overfished species bycatch and provide improved and more efficient access to target species while protecting overfished species.

**OREGON**

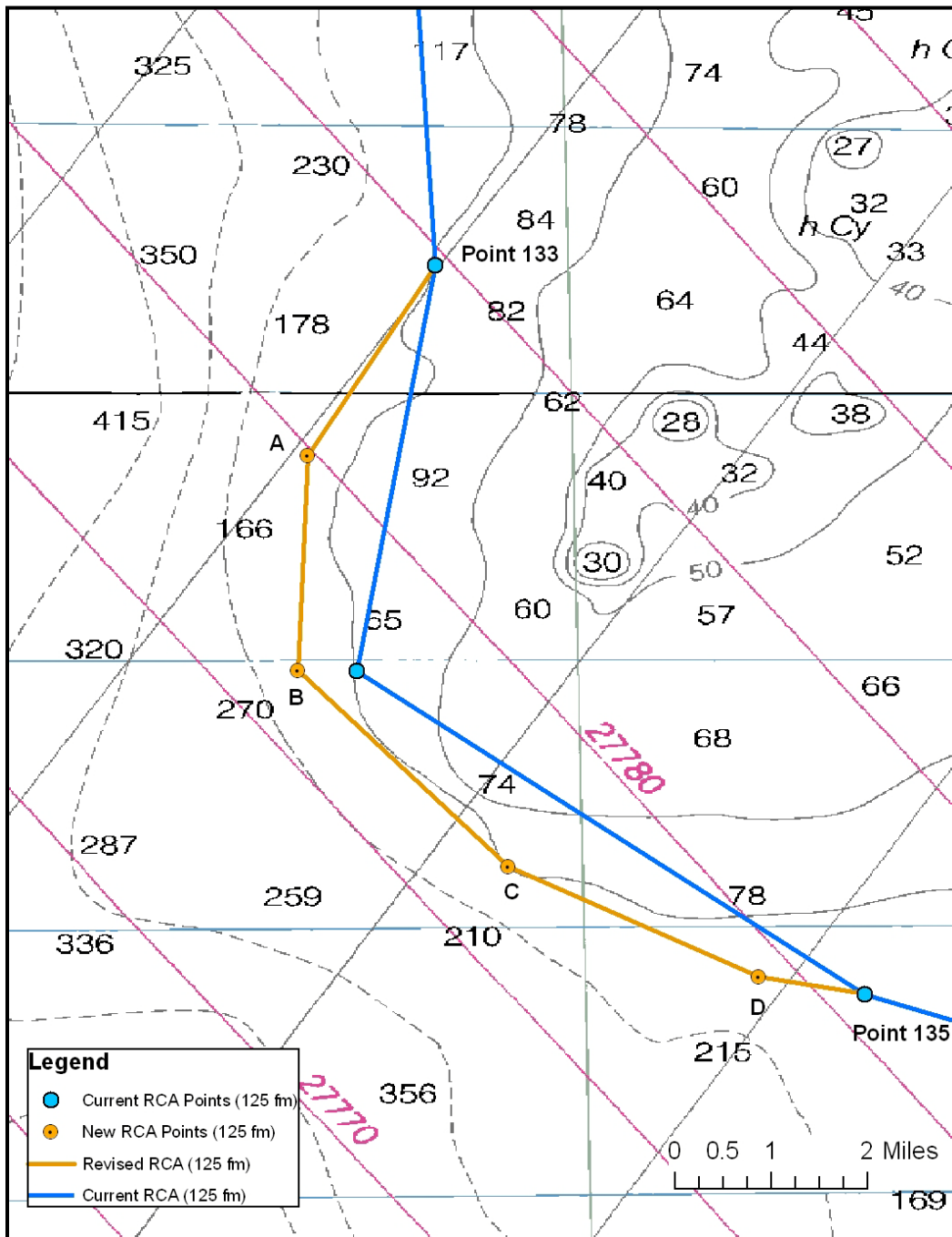
**Modification of the 125 fm RCA at the southwest corner of Heceta Banks**

Oregon proposes a modification of the 125 fm RCA near the southwest corner of Heceta Banks (Figure 4-19). This adjustment will primarily impacts Oregon fixed gear fishermen (limited entry and open access) who fish the seaward side of the 125 fm RCA. This proposed change will enable this RCA to better approximate the 125 fm contour. In addition, even though the projected impacts to yelloweye rockfish were not quantified, commercial fishermen have reported catches of yelloweye rockfish seaward of the current “125 fm RCA” in this area where depths may be as shallow as 70 fm (Figure 4-19). This modification may reduce harvest opportunities for target species but may also offer additional protection for yelloweye rockfish off Oregon.

**Table 4-54.** ODFW-proposed changes to 125 fm RCA lines off the southwest corner of Heceta Banks.

Fathom Line	Proposed Coordinates							Original Coordinates Published in the Federal Register			
	Point	Lat		Long		Action	Long Change	Lat		Long	
		Deg	Min	Deg	Min			Deg	Min	Deg	Min
125-fm	133	44	1.14	124	56.07	Retain	None	44	1.14	124	56.07
125-fm	134					Delete		43	57.49	124	56.78
125-fm	A	43	59.431	124	57.217	Add	Seaward				
125-fm	B	43	57.491	124	57.313	Add	Seaward				
125-fm	C	43	55.728	124	55.407	Add	Seaward				
125-fm	D	43	54.74	124	53.145	Add	Seaward	43	57.49	124	56.78
125 fm	135	43	55.74	124	55.34	Retain		43	55.74	124	55.34

**Figure 4-19.** ODFW-proposed changes to 125-fm RCA line off the southwest corner of Heceta Banks. Blue line = original 125-fm RCA; Gold line = proposed 125-fm RCA and points; Gray line = 100-fm depth contour. Units are in fathoms.



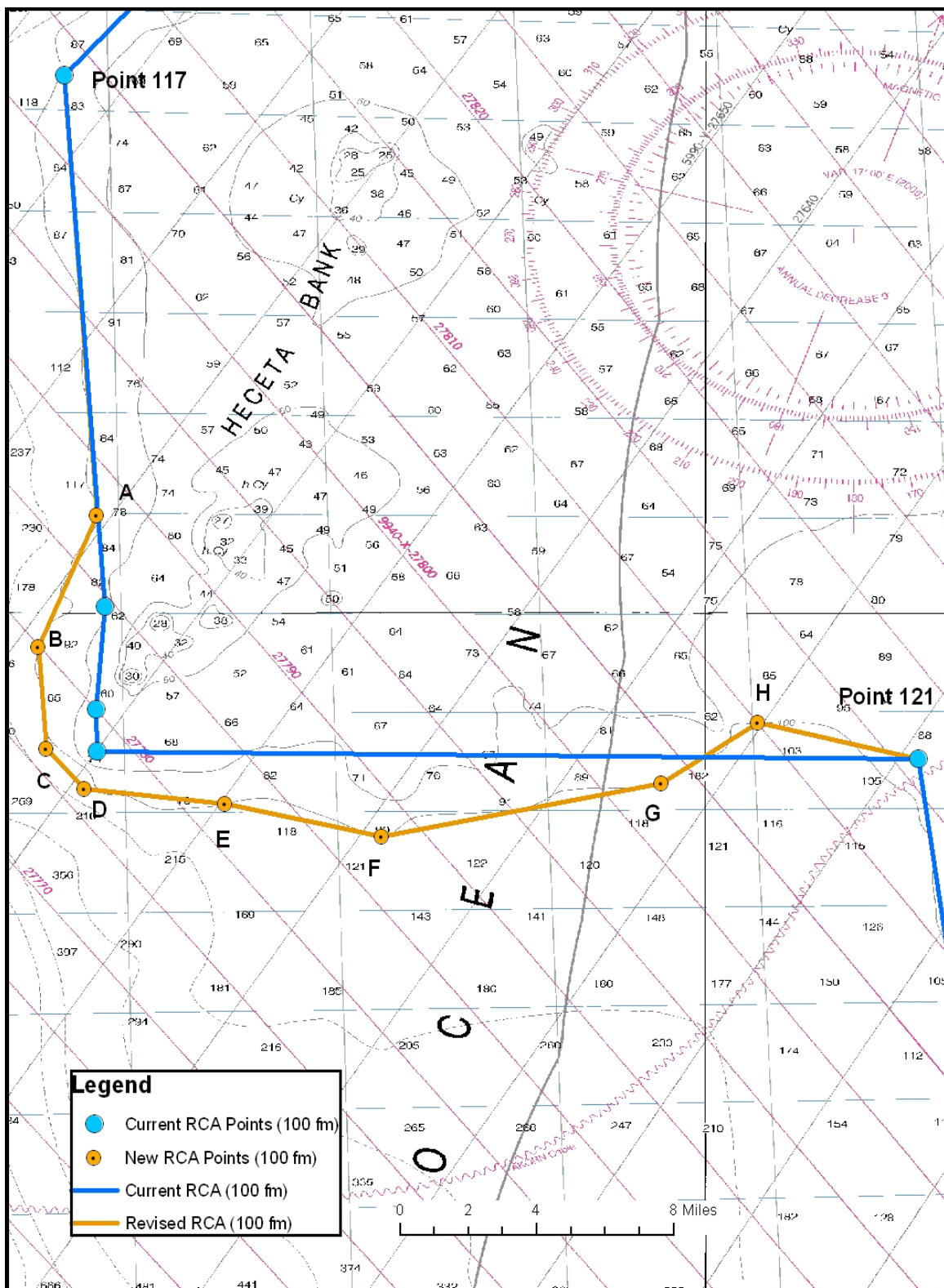
### Modification of the 100 fm RCA at the southwest corner of Heceta Banks

Oregon proposes a modification of the 100 fm RCA near the southwest corner of Heceta Banks (Table 4-55 and Figure 4-20). This adjustment will primarily impact Oregon fixed gear fishermen (limited entry and open access) who fish the seaward side of the 100 fm RCA. This proposed change will enable this RCA to better approximate the 100 fm contour. Although the seaward RCA is currently 125-fm in this area, the “100-fm RCA” should be modified now in the event this RCA is reactivated. Note that the current “100-fm RCA” in this area is shallower than 70 fm (Figure 4-20). The southwest corner of Heceta Banks is known for yelloweye rockfish concentrations. In the event that a 100-fm RCA is utilized in this area, this modification may offer additional protection for yelloweye rockfish relative to the current “100-fm RCA”.

**Table 4-55.** ODFW-proposed changes to 100 fm RCA line off the southwest corner of Heceta Banks.

Fathom Line	Proposed Coordinates					Action	Long Change	Original Coordinates Published in the Federal Register			
	Point	Lat		Long				Lat		Long	
		Deg	Min	Deg	Min			Deg	Min	Deg	Min
100-fm	117	44	12.92	124	56.28	Retain	None	44	12.92	124	56.28
100-fm	118					Delete		44	0.14	124	55.25
100-fm	119					Delete		43	57.68	124	55.48
100-fm	120					Delete		43	56.66	124	55.45
100-fm	A	44	2.340	124	55.455	Add	Seaward				
100-fm	B	43	59.175	124	56.944	Add	Seaward				
100-fm	C	43	56.738	124	56.738	Add	Seaward				
100-fm	D	43	55.764	124	55.764	Add	Seaward				
100-fm	E	43	55.406	124	52.205	Add	Seaward				
100-fm	F	43	54.622	124	48.229	Add	Seaward				
100-fm	G	43	55.901	124	41.112	Add	Seaward				
100-fm	H	43	57.359	124	38.681	Add	Seaward				
100-fm	121	43	56.47	124	34.61	Retain	None	43	56.47	124	34.61

**Figure 4-20.** ODFW-proposed changes to 100-fm RCA line off the southwest corner of Heceta Banks. Blue line = original 100-fm RCA; Gold line = proposed 100-fm RCA and points; Gray line = 100-fm depth contour. Units are in fathoms.



## CALIFORNIA

Adjustments to RCA latitude and longitude lines in California are being proposed by industry and CDFG. Industry requests were made to better approximate depth contours or better align the RCAs to Essential Fish Habitat (EFH) and Marine Protected Area (MPA) boundaries, allowing access to valuable fishing grounds that otherwise would not be available under status quo. All proposed changes have been reviewed by CDFG Enforcement and verified that they do not conflict with EFH or MPA. Adjustments are necessary because discrepancies exist between current and proposed depth contours, resulting in lost fishing ground, lost revenue, and differences in actual versus predicted bycatch.

### Changes to RCAs in the Cape Mendocino Area

**Changes to the 100 fm line:** Revisions to the 100 fm line are required to eliminate cross-overs caused by industry proposed changes to the 200 fm line.

**Changes to the 125 fm line:** Revisions to the 125 fm line are required to eliminate cross-overs caused by industry proposed changes to the 200 fm line.

**Changes to the 150 fm line:** Revisions to the 150 fm line are required to eliminate cross-overs caused by industry proposed changes to the 200 fm line.

**Changes to the 180 fm line:** Revisions to the 180 fm line are required to eliminate cross-overs caused by industry proposed changes to the 200 fm line.

**Changes to the 200 fm line:** Revision to the 200 fm line are proposed by industry and modified by CDFG to better approximate depth contours resulting in more accurate estimates of actual bycatch and to better align with EFH boundaries.

Fathom Line	Proposed Coordinates					Action	Long Change	Original Coordinates Published in the Federal Register			
	Point	Lat		Long				Lat		Long	
		Deg	Min	Deg	Min			Deg	Min	Deg	Min
100	156	40	30.37	124	37.30	crossover	shoreward	40	30.00	124	38.13
100		40	28.48	124	36.95	add					
125	180	40	30.35	124	37.52	crossover	shoreward	40	29.88	124	38.09
125		40	28.39	124	37.16	add					
150	157					delete		40	30.00	124	38.50
150	158	40	30.30	124	37.63	crossover	shoreward	40	29.76	124	38.13
180	159	40	30.22	124	37.80	crossover	shoreward	40	30.00	124	38.50
180		40	27.29	124	37.10	add					
200	133	40	30.16	124	37.91	revision		40	30.00	124	38.15
200	136	40	22.34	124	31.22	revision		40	22.22	124	31.85
200		40	14.40	124	35.82	add					



### Changes to the RCAs in the Big Sur Area

**Changes to the 40 fm line:** Changes to the 40 fm line in the Big Sur area are proposed to better approximate depth contours resulting in more accurate estimates of actual bycatch.

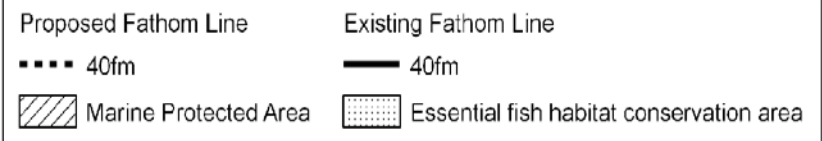
**Changes to the 50 fm line:** Revisions to the 50 fm line are required to eliminate cross-overs caused by proposed changes to the 40 fm line.

**Changes to the 60 fm line:** Revisions to the 60 fm line are required to eliminate cross-overs caused by proposed changes to the 40 fm line.

**Changes to the 75 fm line:** Revisions to the 75 fm line are required to eliminate cross-overs caused by proposed changes to the 40 fm line.

Fathom Line	Proposed Coordinates					Action	Long Change	Original Coordinates Published in the Federal Register			
	Point	Lat		Long				Lat		Long	
		Deg	Min	Deg	Min			Deg	Min	Deg	Min
40	149	36	18.40	121	57.93	revision	seaward	36	17.52	121	57.33
40		36	16.80	121	59.97	add					
40	150	36	15.67	121	55.96	revision	seaward	36	15.90	121	57.00
40		36	15.67	121	54.41	add					
50		36	18.40	121	58.97	add					
50		36	18.40	122	0.35	add					
50	121	36	16.02	122	0.35	crossover	seaward	36	17.10	122	0.53
50		36	15.67	121	58.53	add					
50		36	15.67	121	56.53	add					
50		36	14.79	121	54.41	add					
60	140	36	16.80	122	1.76	crossover	seaward	36	17.3	122	1.55
60		36	14.33	121	57.80	add					
60		36	14.67	121	54.41	add					
75	181	36	17.49	122	3.08	crossover	seaward	36	18.23	36	18.23
75	182	36	14.21	121	57.80	crossover	seaward	36	14.21	36	14.21
75	183	36	14.53	121	54.99	crossover	seaward	36	14.68	36	14.68

**- Big Sur Area -**



### **Modify the non-trawl RCA line at Catalina Island from 60 fm to 100 fm**

The original request for analysis was for fixed gear fishing within 100 fm of Catalina Island to provide fishing opportunities after establishment of Marine Protected Areas (MPAs). Since November 2009, industry amended the proposal to modify the RCA line at the west end of Catalina Island only. Liberalizing the RCA boundary will provide increased access for the commercial sector (specifically for chilipepper) that would otherwise be lost due to MPAs.

This proposal is predicated on adoption of the Bird Rock State Marine Conservation Area/Blue Cavern State Marine Area and the Farnsworth Onshore and Offshore State Marine Conservation into state regulations since area between the western boundaries of these MPAs is the area to be liberated under this proposal

CDFG staff consulted with Enforcement to verify whether or not this request is enforceable, verify the proposed modification does not conflict with Essential Fish Habitat Areas, and verify the proposed implementation date of the MPAs into state regulation. At the April 2010 Council meeting, the Enforcement Consultants did not support any change to the current 60 fathom closure due to the location of an expanded area near proposed marine protected areas (Agenda Item I.4.b Supplemental EC report). The increased regulatory complexity potential associated with small fishing opportunity in this area did not seem to justify the change and investment in resources to evaluate it. As a result, a further in-depth analysis of this management measure was discontinued.

### **Commercial**

#### Modification of commercial lingcod spawning closure in all three states

Current commercial lingcod regulations for the limited entry and open access fixed gear fisheries north and south of 40°10' N latitude include a spawning closure for the months of December through April. (Note: lingcod may be retained year round by the bottom trawl fishery north and south of 40°10' N latitude) The limited entry and open access fixed gear seasonal closures were implemented to protect lingcod when it was declared overfished in 1999. The 2009 assessment showed that the northern stock has rebounded to an average depletion of 61.9% and the southern stock, 74%. Based on this information the GMT considered whether it was appropriate to reduce or eliminate the lingcod spawning closure for the limited entry and open access fixed gear fisheries north and south of 40-10 because the need for the restrictive management measure (i.e., rebuild depleted groundfish stocks) has been satisfied.

Although the lingcod ACLs in the south will be increasing based on the optimistic stock assessments, the amount available to harvest will be limited by available overfished species. Overfished species impacts attributed to lingcod (taken in 60 fm or less) are estimated from the nearshore model. The nearshore model only accounts for total landings and does not differentiate between limited entry and open access sectors. Many species taken in the nearshore fishery are covered under state specific permits, except for lingcod. Lingcod is one of the few species available in shallow water not covered under a state specific permit (only a general state commercial license is required to land lingcod); therefore, the number of participants can fluctuate within and among years.

The take of lingcod is currently limited by two month cumulative landing limits in the limited entry fixed gear sector and by monthly limits in the open access sector. Although the overall amount of fish available under each trip limit is the same (800 lb per 2 months) the monthly limit of 400 lb for the open access sector was implemented to help control effort in this fishery.

The amount of lingcod available to both sectors will be limited by available yelloweye due to the high interactions between the two species. If the spawning closure is removed, it is expected that the amount of lingcod would increase under status quo trip limits. Since the overall take of lingcod cannot increase without exceeding yelloweye impacts, removal of the spawning closure could effectively result in lower trip limits with year round availability.

Since lingcod will have state specific ACLs, the GMT examined modifying the spawning closures separately for each state and for each fishery (limited entry and open access).

#### *OREGON*

The amount of lingcod available to the nearshore fishery is dependent on the final preferred yelloweye rockfish ACL and catch sharing options adopted by the Council. The nearshore fishery north of 42° N latitude is severely constrained by yelloweye rockfish impacts under the current ACL (17 mt) and catch sharing method. Yelloweye rockfish constraints could become more severe for the Oregon nearshore fishery as a result of the recent judgment in the case of Natural Resources Defense Council, et al. (Plaintiffs) v. Gary Locke, et al. (Defendants).

Following numerous runs of the nearshore model, which is used by the GMT to predict yelloweye rockfish impacts by the nearshore fishery, it is possible that extending the lingcod season into the winter and early spring spawning months (November – March) off Oregon may increase yelloweye rockfish impacts, even if trip limits were reduced throughout the year to compensate for the extended season. Lingcod spawn in shallow waters, and are therefore more accessible by small boats during the spawning season. This easier access may lead to increased effort (number of boats) by the open access fishery. Hence, removing the spawning closure could create an opportunity for a directed lingcod fishery (regardless of trip limit) by both open access and permitted vessels in the nearshore off Oregon, and therefore increase impacts to yelloweye rockfish. Under the current and possibly tighter yelloweye rockfish constraints, the GMT recommends that it is not prudent to extend the lingcod-retention season off Oregon due to the risk of increased bycatch of yelloweye rockfish. A further, in-depth analysis of this potential management measure for Oregon was discontinued upon this discovery.

#### *CALIFORNIA*

Prior to the overfished declaration of lingcod, approximately 12% of the catch (on average) was taken during December through February during 1994-1999 (data source PacFIN). Due to significant changes in the fishery since 2000, the GMT does not anticipate a similar increase in lingcod landings by removing the spawning closure.

Using PacFIN data, CDFG staff modeled trip limit scenarios with several different time series and proxy data to estimate the expected take of lingcod during December through February if the spawning closure was removed. Two time series, 2003-2009 and 2007-2009, were analyzed to reflect long-term participation versus the most recent participation. Similarly, historical landings data versus recent landings were used as proxies to estimate take during December through February. It was determined that the more recent time series and landings data (2007-2009) was the most appropriate for modeling purposes because the month of November was opened for more opportunity starting in 2007. This additional fishing opportunity is more informative of recent participation. The model runs were separated by limited entry and open access sectors to take into account different trip limit allowances and dissimilar variation in participation. Trip limits models assumed a 50:50 allocation between limited entry and open access with 7% discard mortality and 20% buffer applied to both sectors.

The amount of lingcod available to the nearshore fishery will ultimately be a direct result of the final preferred yelloweye ACL, catch sharing options adopted by the Council, and state specific input. The GMT notes that the current federal trip limits may also be subject to change based on available yelloweye, independent of the spawning closure removal. Table 4-56 shows a preliminary range of lingcod trip limits for both high and low ACL targets for status quo and removal of the spawning closure.

**Table 4-56.** Comparison of lingcod trip limits under status quo and with removal of spawning closure

	Status Quo (Dec-April closure)	Removal of Spawning Closure
Limited Entry	800 lbs/2 months	800-1,500 lbs/2 months
Open Access	400 lbs/month	150-400 lbs/month

Biological implications of status quo management (maintain spawning closure)

Current management will continue to result in discarding of lingcod from December through April while targeting other species. Unlike many other nearshore rockfish, lingcod have high survivorship (low mortality) and do not readily suffer from barotrauma due to the lack of a swim bladder. Under current management, the GMT does not expect any additional increase in mortality as a result of discarding.

Implications of removing the spawning closure

Since male lingcod are nest guards, removing the spawning closure could result in a disproportional removal of males from the population. Since the 2009 southern lingcod stock assessment did not take into account differential male removals prior to the implementation of the spawning closure, the GMT was unable to quantify the effects on the overall population by opening up a winter fishery. The GMT does note that future stock trends are modeled based on full attainment of removals each year and this will not likely be realized due to the yelloweye constraints.

In California, most of the lingcod is taken incidental to other fisheries (nearshore, shelf, etc). Removing the spawning closure could create an opportunity for a directed lingcod fishery (regardless of the trip limit) and it is possible that many participants in this fishery will not have a nearshore permit. Since a nearshore permit is required to land nearshore species, many of the species caught incidentally with lingcod will have to be discarded.

Unlike lingcod, many rockfish species that inhabit the nearshore waters have low rates of survivorship (depending on the depths caught) and can suffer from barotrauma, leading to increased mortality as a result of discarding. Since little is known about the life history or stocks status of many of these species, the GMT was unable to quantify effects on the overall population as a result of discarding.

Remove gear restriction for ‘Other Flatfish’ in the California commercial fishery

In 2003, the limited entry and open access fixed gear fisheries south of 40°10’ N. latitude were constrained by management measures to protect bocaccio. The current commercial gear restriction is “*no more than 12 #2 hooks, up to 2-1lb weights, not subject to the RCA*”. During the 2009-2010 management cycle, the recreational fishery removed their flatfish gear restriction because it was not effective in restricting the bycatch of overfished rockfish species. The commercial fishery is interested in pursuing a similar removal to have conforming regulations. CDFG staff consulted Enforcement and determined there are no additional enforcement issues

resulting from removal of this gear requirement. CDFG does not anticipate that removing the gear restriction will increase impacts to overfished rockfish species because this fishery operates over sandy bottom habitats where overfished species are less likely to occur. However, due to a potential risk of petrale sole bycatch, which has been declared overfished, a further in-depth analysis of this management measure was discontinued.

#### Non-whiting cumulative limits for the primary whiting season under trip limit management

In the event that Amendment 20: Trawl Rationalization is not implemented on January 1, 2011, the Council requested that the GMT design cumulative limits for the primary shore-based whiting fishery.

#### *Background*

In 2007, cumulative monthly limits were specified in the shoreside whiting Exempted Fishing Permit (EFP) for lingcod, minor slope rockfish (including darkblotched), minor shelf, shortbelly, widow, and yellowtail rockfish, Pacific Ocean perch, Pacific cod, and sablefish. The 2008 and 2009 EFP structure did not provide landing allowances for species other than whiting. Since those allowances were not made in the EFP, Federal regulations applied and only allowed fishermen to get paid for monthly landing allowances for yellowtail and widow rockfish (species for which there is a midwater gear trip limit specified in Federal regulation). In November 2009, the Council tasked the GMT and the Northwest Region with analyzing mid-water trawl trip limits for the shoreside whiting EFP for 2010. This analysis is included in the 2011-2012 Harvest Specifications and Management Measures EIS so that the limits can be species in federal regulation, in the event Amendment 20 is not implemented January 1, 2011. Further, these trip limits would then be considered a routine management measure and, should data reflect the need, the limits could be adjusted inseason.

The GMT analyzed the 2007 trip limit structure specified in the EFP and compared it to landings in 2008 and 2009, years when overages were forfeited to the state, to determine whether these limits could be appropriate for the 2010 EFP. From 2007-2009, the whiting fishery operated north of 40°10' N latitude and as such the analysis and recommendations are limited to north of 40°10' N latitude. Overall, the limits specified in the 2007 EFP appear to be appropriate, although many boats would be expected to exceed the sablefish and slope rockfish limits. The GMT did not recommend increasing these limits to accommodate the higher landings because the whiting season is very short (~4-6 weeks) and there is limited opportunity to decrease limits inseason should it become necessary. These cumulative limits are not expected to change the species composition of the landings or the magnitude of landings; they are only to allow the fishermen to get paid for their incidental catch, instead of forfeiting those landings to the state.

The following limits were recommended for 2010 the shoreside non-treaty whiting fisheries operating north of 40°10' N latitude and would also be appropriate for the 2011-2012 fishery:

- Lingcod: 600 lb per calendar month
- Minor slope rockfish, including darkblotched rockfish: 1,000 lb per calendar month
- Pacific ocean perch: 600 lb per calendar month
- Pacific cod: 600 lb per calendar month
- Sablefish: 1,000 lb per calendar month

These limits would be in addition to the current midwater trawl limits specified in Federal regulations (i.e., trip limit table 3) for widow rockfish and yellowtail rockfish north of 40°10' N latitude. Midwater trawl limits south of 40°10' N latitude remain unaffected by this recommendation.

## Recreational

### Analyze groundfish retention in the Oregon recreational all-depth Pacific halibut fishery

This action is consistent with the Purpose and Need because it takes into account the rebuilding of yelloweye rockfish while potentially allowing for increased harvest opportunity for an underutilized species. Anglers have expressed a desire to retain incidentally caught groundfish, specifically lingcod, while participating in the Central Oregon coast all-depth Pacific halibut fishery. Currently, retention of groundfish is prohibited when Pacific halibut are onboard recreational vessels, except for Pacific cod and sablefish, during all-depth Pacific halibut days. The Pacific halibut quota in Area 2A (Washington and Oregon) has decreased from 1.22 million pounds in 2008 to 0.95 million pounds in 2009 and 0.81 million pounds in 2010, drastically decreasing the number of days open to the all-depth fishery (Table 4-57). It is anticipated that the Pacific halibut quota will continue to decrease, along with the number of open days, as the fishery transitions to more of a derby-style fishery. The current bag limit in Oregon for Pacific halibut is 1 fish per angler per day with an annual limit of 6 fish and for lingcod is 2 fish per angler per day.

**Table 4-57.** Area 2A Pacific Halibut Quota in millions of pounds and days open to the Central Oregon all-depth Pacific halibut fishery, 2005-2010.

<b>Year</b>	<b>2A Halibut Quota (million</b>	<b>Central Oregon All- Depth Open Days</b>
2005	1.33	60
2006	1.38	36
2007	1.34	45
2008	1.22	44
2009	0.95	15
2010	0.81	11-16*

\* projected number of days open in 2010

During the 2010 Pacific halibut Catch Sharing Plan (CSP) process, a regulation was added allowing the retention of lingcod in one halibut management area in Washington. The first season under that regulation will not be completed prior to the final adoption of management measures for 2011 and 2012; therefore, those data will not be available for this analysis. ODFW staff has completed some preliminary analysis on the impacts to yelloweye and canary rockfish from allowing retention of groundfish during all-depth Pacific halibut days. This option is included under the analysis of the integrated alternatives. Yelloweye and canary rockfish impacts, during years when groundfish retention was allowed, was compared to recent years when groundfish retention has been prohibited. The analysis projects the yelloweye rockfish impacts of allowing groundfish retention during all-depth halibut days to be 1.5 times those without groundfish retention. For canary rockfish the projection is 2.3 times what it would be if groundfish retention were not allowed. The Council's choice of a yelloweye rockfish ACL will determine how ODFW staff will proceed with implementation of this management measure.

### Analysis of 30 and 40 fm Recreational Depth Restrictions within the California Cowcod Conservation Area

The Cowcod Conservation Area (CCA) was established in 2001 to reduce the impacts on cowcod from the recreational and commercial fishery and hasten the rebuilding of this overfished stock. The western CCA (also known as CCA 1) encompasses 4,200 square miles of area and includes the waters shallower than 20 fathoms (fm) surrounding Santa Barbara and San Nicholas Islands and Tanner and Cortez Banks, currently open to fishing for some species of groundfish.

While the CCA has successfully reduced cowcod impacts in the recreational fishery, additional fishing opportunity can be made available by increasing the maximum depth restriction within the CCA. The Department of Fish and Game (CDFG) has proposed increasing the depth restriction within the cowcod Conservation Area to 30 fm (or 180 ft.) or 40 fm (or 240 ft.) in some of the areas currently open to fishing under the 20 fm depth restriction. This action would greatly increase fishing opportunity on within the western CCA. Depth restrictions will be codified as waypoints connected to form RCA boundaries around the open areas within the CCA found in Table 4-63. This analysis evaluates potential benefits to the fishery and impacts to cowcod that may result from such an action.

#### ***Cowcod Depth Distribution Relative to Proposed Depth Restrictions***

Within the proposed fishable areas, juvenile cowcod are distributed over a wide range of habitat types, at depths between 28 and 180 fathoms (Love and Yoklavich, 2008). The proposed depth restriction of 30 fathoms would extend fishable area to the edge of juvenile cowcod habitat, and the proposed 40 fathom limit would allow fishing in known cowcod habitat. The current 20 fathom depth restriction provides a 10 fathom buffer between the fishable area and known cowcod habitat. Adult and juvenile cowcod are unlikely to be encountered in waters shallower than 30 fathoms. Juvenile cowcod typically avoid soft sediment substrate, favoring hard substrate such as cobble and boulder fields or rock ridges (Love and Yoklavich, 2008).

Submersible surveys at the northern end of the Southern California Bight, indicate that juvenile cowcod were most common from 49 fm to 82 fm and adults were most common at depths of 66 fm to 115 fm (Butler et al. 1999). These trends in the depth distribution are repeated in the proportion catch by depth from the trawl fishery in the Southern California Bight where cowcod were predominantly encountered in depths deeper than 65 fm (Butler et al. 1999). Depth distribution data from the commercial fishery and submersible surveys indicate that adult cowcod are less frequently encountered while targeting groundfish in waters shallower than the proposed 40 fm depth restriction. There is more than a 10 fm buffer between the proposed 40 fm depth restriction and the primary depth distribution of cowcod.

Cowcod catch by depth data from Marine Recreational Fishery Statistical Survey (MRFSS) during an unregulated period of the recreational fishery from 1999 and 2000 reflects the proportion of catch by depth inside and outside of the CCA south of Point Conception (Table 1). The proportion of catch by depth for this period indicates that cowcod are nearly absent from the catch from waters within 40 fathoms with only 5.9 % of catch taken in shallower depths. Though the catch of cowcod still occurs in depths less than 60 fm, they are relatively uncommon in these depths and abundance increases with increasing depth as indicated by the catch per unit effort by 10 fm depth bins in Table 3.

The stock of cowcod in the Southern California Bight is currently at 4.5% of unfished biomass, and was at less than 2.5% of unfished biomass in 1999-2000 (Dick et al., 2009). Depth-specific catch estimates from 1999-2000 may not be reliable indicators of potential habitat or the potential

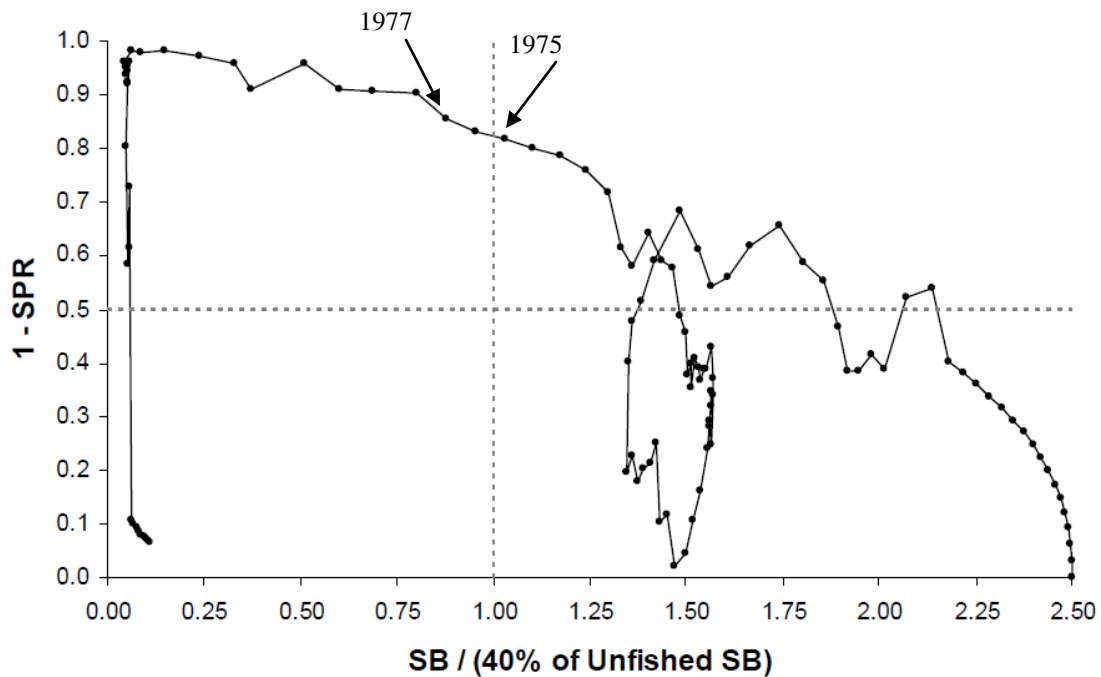


distribution of the stock as a result. Given the recently characterized distribution of juvenile cowcod (Love and Yoklavich, 2008), one would expect that recreational fisheries will encounter greater densities in the shallower habitats (>30fm) as the stock rebuilds. Focusing effort in these depths within the CCAs would concentrate effort on confirmed juvenile habitat.

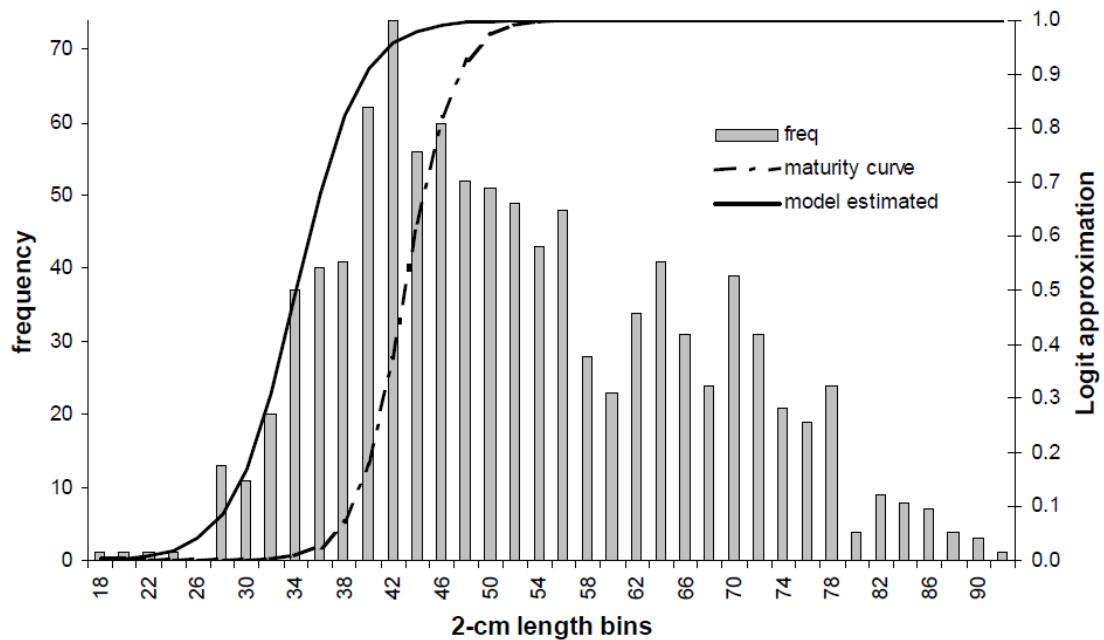
Examining catch rates from years in which the stock was severely depleted is less informative than considering the known depth and habitat preferences of cowcod in the context of vulnerability to the fishery at target biomass levels. Length composition data are available from 1975-1977 (Dick et al., 2007). During this time period, the stock was at target biomass but experiencing overfishing (Figure 4-21, Dick et al., 2009). Onboard observer data from the recreational fishery during this time period show that juvenile cowcod were vulnerable to the gear (Figure 4-22).

Recent California Recreational Fishery Survey (CRFS) depth of capture data from private and CPFV vessels from 2004 to 2009 when the depth restriction was 60 fm again reflects the rarity of cowcod in depths less than 40 fm with only 6.8 % of the catch reported as being taken in less than 40 fm (Table 4-59). The fact that all reported catch of cowcod were taken in depths shallower than the current 60 fm depth restriction indicates that bottomfish anglers aware of or abiding by the existing depth restriction, which bodes well for awareness of any proposed depth restrictions in the CCA.

The recreational and commercial data sources for the unregulated period as well as data from submersible surveys conducted by Butler et. al. (1999) indicate that the predominant depth distribution of cowcod is in depths greater than the current 60 fm depth restriction providing a buffer between the proposed 40 fm depth restriction and the primary depth distribution of cowcod. However, direct observations by submersibles indicate that cowcod do occur in depths within the proposed depth restrictions. Given that the catch of cowcod increases significantly in depths greater than 40 fm, implementation of the 30 fm depth restriction would reduce impacts by provide more than a 10 fm buffer between depth restriction and the predominant depths distribution of cowcod.



**Figure 4-21.** Exploitation history for cowcod (Dick et al., 2009). The stock in the Southern California Bight was near target biomass, but experiencing overfishing, from 1975-1977.



**Figure 4-22.** Length composition data (1975-77) used to fit selectivity curves in the 2007 and 2009 cowcod assessments (Dick et al. 2007, Dick et al. 2009). The model-estimated selectivity is to the left of the maturity curve, showing that juvenile cowcod were vulnerable to the recreational fishery during this time period. Length at 50% selection is 34 cm.

**Table 4-58.** Number of cowcod encountered by Commercial Passenger Fishing Vessels (CPFV) and Private/Rental Boats by Depth of Capture from 1999 to 2001 from the Marine Recreational Fishery Statistical Survey (MRFSS), Recreational Fisheries Information Network (RecFIN). All the cowcod catch data from Point Conception (34° 27') to the U.S./Mexico border (32° 32') is included. All encounters with cowcod on CPFV (on-board and dock-side interviews) that include the depth at which they were caught and spatial location were analyzed.

<b>Depth Bins (fm)</b>	<b>Number of Fish</b>	<b>Percent of Catch</b>
<b>0-10</b>	0	0.0%
<b>11-20</b>	0	0.0%
<b>21-30</b>	1	5.9%
<b>31-40</b>	0	0.0%
<b>41-50</b>	4	23.5%
<b>51-60</b>	2	11.8%
<b>61-70</b>	3	17.6%
<b>71-80</b>	1	5.9%
<b>81-90</b>	4	23.5%
<b>91-100</b>	0	0.0%
<b>&gt;101</b>	2	11.8%

**Table 4-59.** Number of cowcod encountered by 60 ft depth bins on Commercial Passenger Fishing Vessel (CPFV) and Private/Rental Boats from 2004 to 2009 from CRFS, Recreational Fisheries Information Network (RecFIN). The data represents all the cowcod catch data from Point Conception (34° 27') to the U.S./Mexico border (32° 32'). All encounters with cowcod on CPFV on-board and dock-side interviews that include the depth at which they were caught and were analyzed.

<b>Depth Bins (fm)</b>	<b>Number of Fish</b>	<b>Percent of Catch</b>
<b>0-10</b>	0	0.0%
<b>11-20</b>	1	3.4%
<b>21-30</b>	0	0.0%
<b>31-40</b>	1	3.4%
<b>41-50</b>	8	27.6%
<b>51-60</b>	19	65.5%
<b>61-70</b>	0	0.0%
<b>71-80</b>	0	0.0%
<b>81-90</b>	0	0.0%
<b>91-100</b>	0	0.0%
<b>&gt;101</b>	0	0.0%

**Table 4-60.** CPUE of cowcod encountered by 60 fm depth bins on Commercial Passenger Fishing Vessel (CPFV) from 1999 to 2000 from CRFS, Recreational Fisheries Information Network (RecFIN). The data represents all the cowcod catch data from Point Conception (34° 27') to the U.S./Mexico border (32° 32').

Depth Bins (fm)	Number of Fish	Angler hours	CPUE
0-10	0	0	<u>0</u>
11-20	0	0	<u>0</u>
21-30	0	0	<u>0</u>
31-40	0	0	<u>0</u>
41-50	4	76.92	0.05
51-60	2	53.08	0.04
61-70	1	3.75	0.27
71-80	3	22.17	0.14
81-90	1	25.02	0.04
91-100	1	11.08	0.09
>101	1	10.5	0.10

#### **Effects of 30 fm or 40 fm Depth Restrictions on Fishable Area**

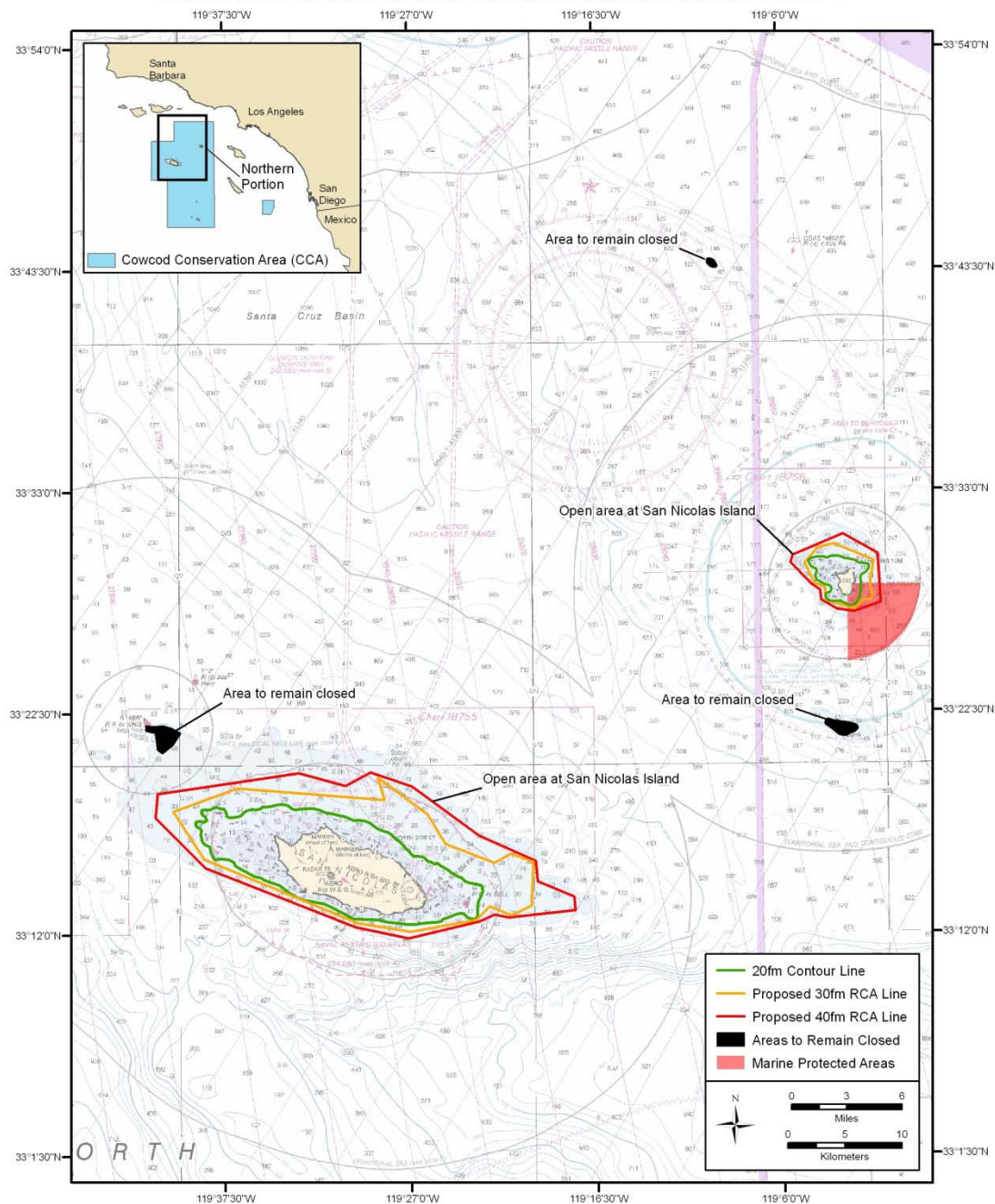
Depictions of the proposed RCA waypoints delineating the areas open to fishing at each depth restriction are provided in Figure 4-23, Figure 4-24, Figure 4-25, and Figure 4-26. These areas represent large continuous areas in waters shallower than the common depth distribution of cowcod. The increase in fishable area made available by 30 and 40fm depth restrictions are provided in Table 4-61.

Overall, the 30 fm depth restriction would increase the fishable area within the CCA by 57.3 square miles, representing an increase of 120%, more than doubling the current fishable area under the current 20 fm depth restriction. With a 40 fm depth restriction the fishable area would increase by 214%, more than tripling the fishable area in the CCA. Under the 30 and 40 fm depth restrictions, the percentage of the total area within the CCA open to fishing would only equal 2.5% and 3.9% of the total 4200 sq mile CCA respectively.

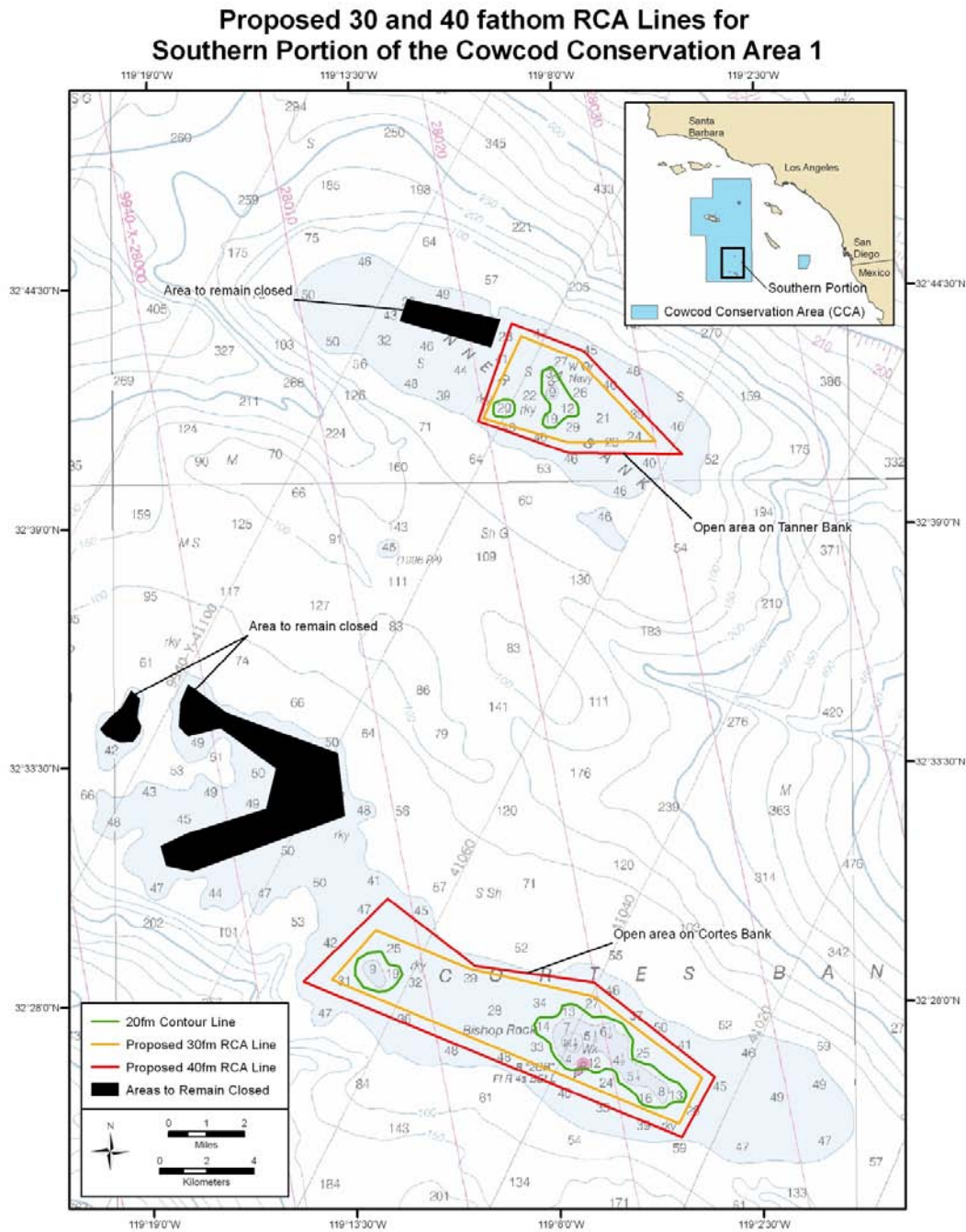
Using the depth distribution of cowcod in 120 ft to 1600 ft (Love 2003) and GIS layers of the bathymetry within the CCA, the area within these depths in the was estimated to be 1637 square miles. Given the estimated area within the proposed 40 fm depth restriction, 147.7 square miles or 9.1% of the cowcod habitat in the CCA would be open to fishing, while 105 square miles or 6.4% of the cowcod habitat within the CCA would be open to fishing under the 30 fm depth restriction. Thus the proposed depth restrictions would appreciably increase the area open to fishing for groundfish within the CCA, but the total area open to fishing would still remain less than less than 5% of the total CCA and less than 10% of the cowcod habitat in the CCA, protecting the cowcod biomass in their predominant depth distribution.

While the areas delineated in the charts would be open to take of specified groundfish, there are smaller areas that rise to a depth less than 30 or 40 fm would remain closed. In these areas, depths drop off too rapidly and over too short a distance to allow them to be fished due to concern for the ability of angler to comply with the depth restriction. These smaller areas would remain closed and are identified in black in Figure 4-23, Figure 4-24, Figure 4-25, and Figure 4-26. Only areas currently open under the 20 fm depth restriction are being opened to greater depths, with the exception of Osborne Bank, which will be closed to fishing since depths change too abruptly in this area.

# **Proposed 30 and 40 fathom RCA Lines for Northern Portion of the Cowcod Conservation Area 1**



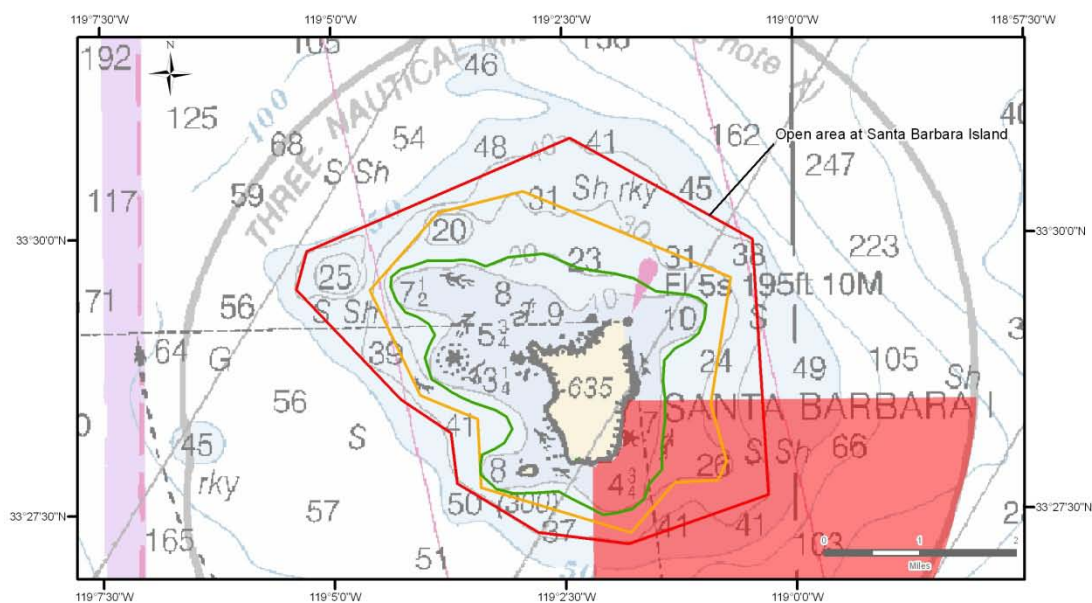
**Figure 4-23.** Overview chart of proposed 30 and 40 fathom RCA lines for the northern portion of the western CCA.



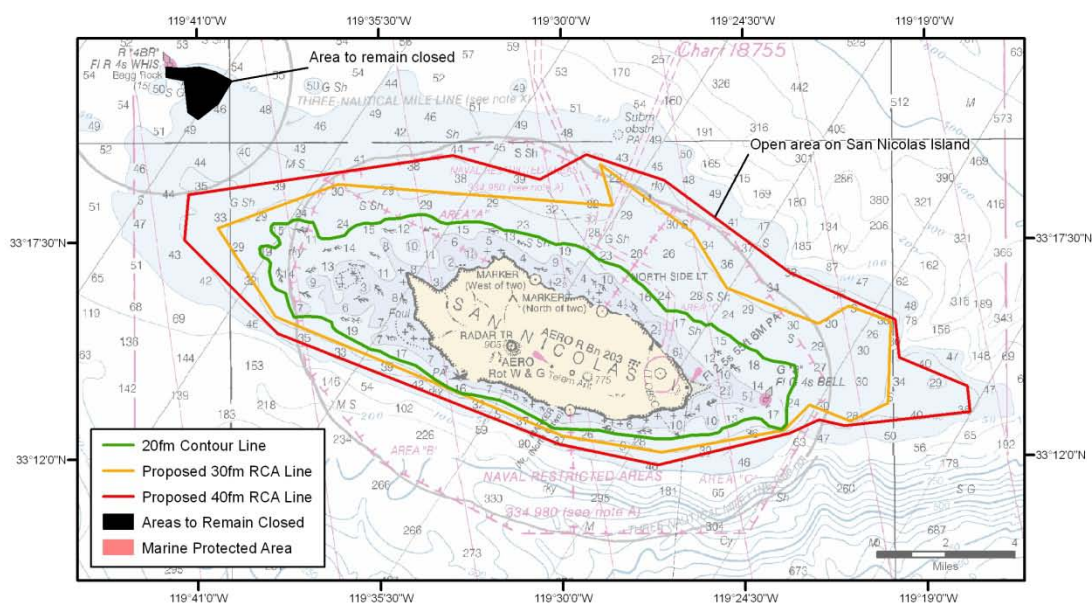
**Figure 4-24:** Overview chart of proposed 30 and 40 fathom RCA lines for the southern portion of the western CCA.



# **Proposed 30 and 40 fathom RCA Lines for Northern Portion of the Cowcod Conservation Area 1**



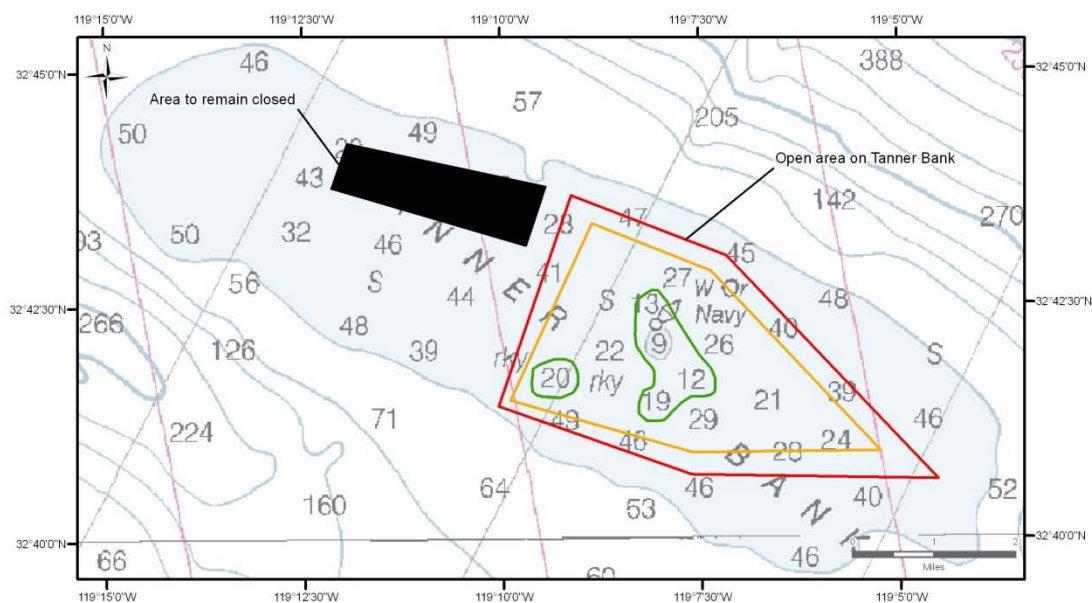
Santa Barbara Island



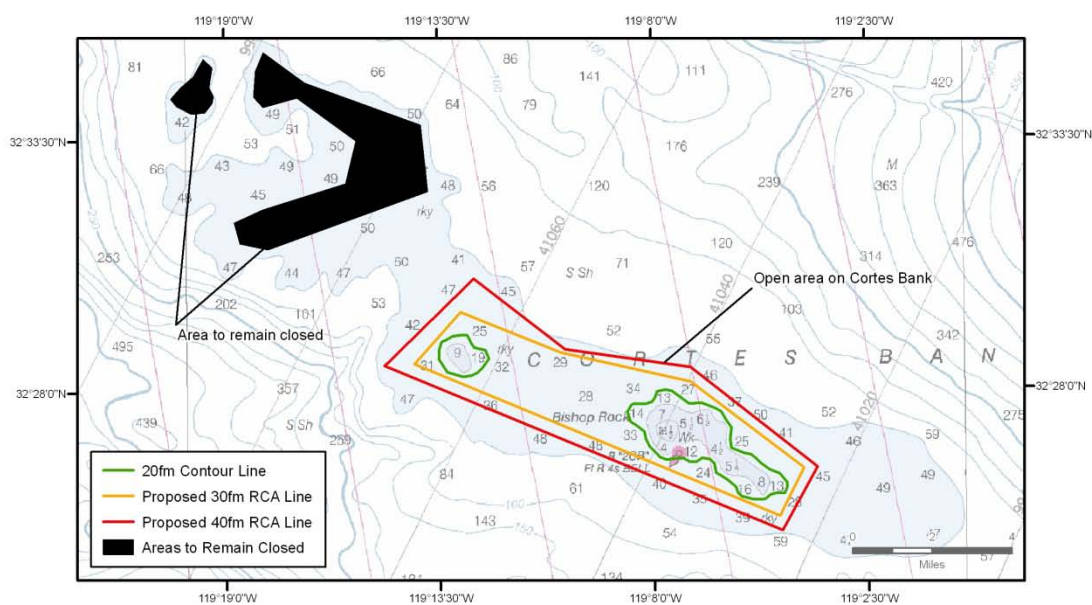
San Nicolas Island

**Figure 4-25.** Detailed charts of the proposed 30 and 40 fathom RCA lines for the northern portion of the western CCA.

### Proposed 30 and 40 fathom RCA Lines for Southern Portion of the Cowcod Conservation Area 1



Tanner Bank



Cortes Bank

**Figure 4-26.** Detailed charts of the proposed 30 and 40 fathom RCA lines for the southern portion of the western CCA.



**Table 4-61.** Estimated increase in area open to fishing under the proposed increase in depth restrictions to 30 or 40 fm from status quo 20 fm depth restriction.

	Status Quo 20 fm Depth Restriction	Option 1			Option 2		
		30 fm Depth Restriction			40 fm Depth Restriction		
Open Area within CCA	Area Under 20 fm (sq. miles)	Area Increase 20 to 30 fm (sq. miles)	Total Area to 30 fm (sq. miles)	Percent Increase sq. miles 20 to 30 fm	Area Increase 20 to 40 fm (sq. miles)	Total Area to 40 fm (sq. miles)	Percent Increase sq. miles 20 to 40 fm
<b>Santa Barbara Island</b>	4.6	3.4	8	74%	8.3	12.9	180%
<b>San Nicolas Island</b>	36.5	36	72.5	99%	64.8	101.3	178%
<b>Cortes Bank</b>	5.5	12.1	17.6	220%	19.9	25.4	362%
<b>Tanner Bank</b>	1.1	5.8	6.9	527%	9	10.1	818%
<b>CCA Total</b>	47.7	57.3	105	120%	102	149.7	214%

***Cowcod, Bocaccio and Bronzespotted Rockfish Bycatch and the California Recreational Harvest Target/Guideline***

The 0.3 mt Harvest Target (HT) for the Cowcod in the California recreational fishery was established in the 2007-2008 management cycle based on projected impacts with a 60 fm depth restriction. The 0.3 mt HT for cowcod in the recreational fishery is not a hard allocation and represents less than 7.5% of the current 4 mt cowcod OY. This is disproportionately lower than the average of 51% of catch in the recreational fishery from 1990 to 2007 (Table 4-62). Selection of the 2008 Total Mortality Report sharing is more representative of the historical proportion of catch from the recreational fishery in that it apportions 48% of the cowcod Annual Catch Limit to the recreational fishery.

The preliminary preferred Annual Catch Limit (ACL) of 4 mt and catch sharing based on the March 2008 Total Mortality Report would result in a harvest guideline of 1.9 mt for the California recreational. This more closely approximates the historical average percentage of cowcod catch from the recreational fishery than the current .3 mt HT. Department of Fish and Game projected impacts, with the proposed depth restrictions are not projected to result in the current .3 mt HT being exceeded.

A significant buffer is expected between the projected cowcod impact of 0.17 mt and the 1.9 mt harvest guideline with the 2008 Total Mortality Report under consideration by the Council. The 1.9 mt HG under the 2008 Total Mortality report catch sharing is anticipated to provide a large residual of 1.73 mt to

accommodate any incidental increase in cowcod catch due to increased encounters or inter-annual variability in catch estimates. No additional cowcod impacts are predicted at either depth restriction in the RecFISH model as they are currently accounted for in the projections. Use of descending devices has been a component of outreach efforts with copies of “bring that rockfish down” brochures to minimize mortality on discarded cowcod. Though encounters are anticipated to increase within the CCA, the current recreational bocaccio HG is not anticipated to be exceeded as a result of the increased depth restrictions

**Table 4-62.** Percentage of total cowcod catch from the recreational fishery from 1990 to 2007 in metric tons (mt).

Year	Recreational Catch (mt)	Commercial Catch (mt)	Total Catch (mt)	Percent Recreational
1990	21.6	10.4	32.0	67%
1991	20.9	7.1	28.0	75%
1992	20.7	17.2	37.9	55%
1993	9.7	14.9	24.5	39%
1994	26.0	13.6	39.6	66%
1995	1.8	23.3	25.1	7%
1996	5.4	24.6	29.9	18%
1997	1.9	7.3	9.2	20%
1998	2.8	1.2	4.0	70%
1999	3.8	3.5	7.2	52%
2000	4.5	0.5	4.9	91%
2001	0.3	0.3	0.6	50%
2002	0.3	0.3	0.6	50%
2003	0.3	0.3	0.6	50%
2004	0.3	0.3	0.6	50%
2005	0.3	0.3	0.6	50%
2006	0.3	0.3	0.6	50%
2007	0.3	0.3	0.6	50%

**Average % Recreational Catch : 51%**

Table 4-63 contains the proposed latitude and longitude points delineating for the proposed 30 and 40 fathom RCA lines in the CCA.

**Table 4-63.** Proposed CCA RCA coordinates.

## Santa Barbara Proposed 30fm RCA Points

Fathom Line	Proposed Coordinates						Action
		Lat			Long		
	Point	Deg	Min	Dir	Deg	Min	
30-fm	1	119	2.93	W	33	30.41	Add
30-fm	2	119	3.84	W	33	30.22	Add
30-fm	3	119	4.60	W	33	29.53	Add
30-fm	4	119	4.06	W	33	28.57	Add
30-fm	5	119	3.44	W	33	28.35	Add
30-fm	6	119	3.41	W	33	27.73	Add
30-fm	7	119	1.80	W	33	27.31	Add
30-fm	8	119	1.31	W	33	27.76	Add
30-fm	9	119	0.85	W	33	27.78	Add
30-fm	10	119	0.75	W	33	27.95	Add
30-fm	11	119	0.92	W	33	28.47	Add
30-fm	12	119	0.69	W	33	29.61	Add
30-fm	13	119	2.93	W	33	30.41	Add

## Santa Barbara Proposed 40fm RCA Points

Fathom Line	Proposed Coordinates						Action
		Lat			Long		
	Point	Deg	Min	Dir	Deg	Min	
40-fm	1	119	2.42	W	33	30.89	add
40-fm	2	119	5.27	W	33	29.89	add
40-fm	3	119	5.39	W	33	29.54	add
40-fm	4	119	4.27	W	33	28.53	add
40-fm	5	119	3.73	W	33	28.23	add
40-fm	6	119	3.67	W	33	27.77	add
40-fm	7	119	2.80	W	33	27.32	add
40-fm	8	119	1.82	W	33	27.20	add
40-fm	9	119	0.31	W	33	27.64	add
40-fm	10	119	0.45	W	33	29.96	add
40-fm	11	119	2.42	W	33	30.89	add

## San Nicolas Proposed 30fm RCA Points

Fathom Line	Proposed Coordinates						Action
		Lat			Long		
	Point	Deg	Min	Dir	Deg	Min	
30-fm	1	119	28.81	W	33	19.44	add
30-fm	2	119	28.46	W	33	18.39	add
30-fm	3	119	36.74	W	33	18.97	add
30-fm	4	119	40.38	W	33	17.87	add
30-fm	5	119	38.65	W	33	15.61	add
30-fm	6	119	29.99	W	33	12.56	add
30-fm	7	119	27.01	W	33	12.13	add
30-fm	8	119	23.30	W	33	12.68	add
30-fm	9	119	22.54	W	33	13.31	add
30-fm	10	119	21.32	W	33	12.89	add
30-fm	11	119	20.18	W	33	13.34	add
30-fm	12	119	20.07	W	33	15.42	add
30-fm	13	119	21.33	W	33	15.81	add

30-fm	14	119	22.26	W	33	15.37	add
30-fm	15	119	25.02	W	33	16.30	add
30-fm	16	119	26.02	W	33	17.70	add
30-fm	17	119	28.81	W	33	19.44	add

San Nicolas Proposed 40fm RCA Points

Fathom Line	Proposed Coordinates						Action
		Lat			Long		
	Point	Deg	Min	Dir	Deg	Min	
40-fm	1	119	29.23	W	33	19.69	add
40-fm	2	119	30.64	W	33	19.07	add
40-fm	3	119	33.27	W	33	19.69	add
40-fm	4	119	41.27	W	33	18.72	add
40-fm	5	119	41.38	W	33	17.56	add
40-fm	6	119	38.59	W	33	15.19	add
40-fm	7	119	31.46	W	33	12.90	add
40-fm	8	119	30.11	W	33	12.35	add
40-fm	9	119	27.13	W	33	11.81	add
40-fm	10	119	23.15	W	33	12.60	add
40-fm	11	119	22.26	W	33	12.93	add
40-fm	12	119	21.48	W	33	12.78	add
40-fm	13	119	17.70	W	33	13.11	add
40-fm	14	119	17.77	W	33	13.77	add
40-fm	15	119	19.82	W	33	14.50	add
40-fm	16	119	19.93	W	33	15.47	add
40-fm	17	119	23.12	W	33	16.67	add
40-fm	18	119	26.89	W	33	19.03	add
40-fm	19	119	29.23	W	33	19.69	add

Tanner Bank 30fm RCA Points

Fathom Line	Proposed Coordinates						Action
		Lat			Long		
	Point	Deg	Min	Dir	Deg	Min	
30-fm	1	119	8.86	W	32	43.37	add
30-fm	2	119	7.36	W	32	42.86	add
30-fm	3	119	5.25	W	32	40.93	add
30-fm	4	119	7.61	W	32	40.92	add
30-fm	5	119	9.90	W	32	41.49	add
30-fm	6	119	8.86	W	32	43.37	add

Tanner Bank 40fm RCA Points

Fathom Line	Proposed Coordinates						Action
		Lat			Long		
	Point	Deg	Min	Dir	Deg	Min	
40-fm	1	119	9.11	W	32	43.67	add
40-fm	2	119	7.17	W	32	43.02	add
40-fm	3	119	4.52	W	32	40.62	add
40-fm	4	119	7.63	W	32	40.69	add
40-fm	5	119	10.05	W	32	41.43	add
40-fm	6	119	9.11	W	32	43.67	add

#### Cortes Bank 30fm RCA Points

Fathom Line	Proposed Coordinates						Action
		Lat			Long		
	Point	Deg	Min	Dir	Deg	Min	
30-fm	1	119	12.95	W	32	29.73	add
30-fm	2	119	10.38	W	32	28.83	add
30-fm	3	119	7.04	W	32	28.17	add
30-fm	4	119	4.14	W	32	26.27	add
30-fm	5	119	4.77	W	32	25.22	add
30-fm	6	119	14.15	W	32	28.60	add
30-fm	7	119	12.95	W	32	29.73	add

#### Cortes Bank 40fm RCA Points

Fathom Line	Proposed Coordinates						Action
		Lat			Long		
	Point	Deg	Min	Dir	Deg	Min	
40-fm	1	119	12.61	W	32	30.45	add
40-fm	2	119	10.26	W	32	28.90	add
40-fm	3	119	7.04	W	32	28.49	add
40-fm	4	119	3.80	W	32	26.29	add
40-fm	5	119	4.70	W	32	24.91	add
40-fm	6	119	14.91	W	32	28.57	add
40-fm	7	119	12.61	W	32	30.45	add

#### Species Retention in the California Recreational CCA

Currently, only nearshore rockfish and a few associated groundfish species may be retained in the open depths within the CCA. This action would eliminate the prohibition on the retention and possession of shelf and slope rockfish while fishing at open depths within the CCA. This would provide additional opportunity to compensate for fishing grounds closed by implementation of MPAs under the Marine Life Protection Act (MLPA) and reduce regulatory discarding of shelf and slope rockfish within the CCA.

***[Results of the analysis to be provided at the June Council meeting]***

#### Modify the recreational RCA line at Catalina Island from 60 fm to 100 fm

The original request for analysis was to allow recreational fishing within 100 fm of Catalina Island to provide fishing opportunities after establishment of MPAs. Since November, industry amended the proposal to modify the RCA line at the west end of Catalina Island only. Liberalizing the RCA boundary will provide increased access for the recreational sector (specifically for chilepepper) that would otherwise be lost due to MPAs.

This proposal is predicated on adoption of the Bird Rock State Marine Conservation Area/Blue Cavern State Marine Area and the Farnsworth Onshore and Offshore State Marine Conservation into state regulations since area between the western boundaries of these MPAs is the area to be liberated under this proposal

CDFG staff will consult with Enforcement to verify whether or not this request is enforceable, verify the proposed modification does not conflict with Essential Fish Habitat Areas, and verify the proposed

implementation date of the MPAs into state regulation. Staff will also conduct an analysis to determine effect on bocaccio and cowcod in the areas around Catalina Island left open to fishing. Staff will also conduct an analysis to determine effect on bocaccio and cowcod in the areas around Catalina Island left open to fishing. The GMT notes that the level of complexity for this RCA could create significant enforcement and monitoring concerns as well as our ability to project impacts.

*[Results of the analysis to be provided at the June Council meeting]*

Elimination of the 10 fm depth closure around the Farallon Islands and Noon Day Rock

*[Results of the analysis to be provided at the June Council meeting]*

Reduce the California recreational lingcod size limit from 24 inches to 22 inches

The lingcod size limit can be decreased to allow additional catch since the southern lingcod stock has been rebuilt. This action would reduce the size limit from the status quo of 24 inches to 22 inches as in Washington and Oregon. This may also necessitate a reduced fillet length restriction. The recreational lingcod catch has been close to half of the recreational harvest guideline (HG) in 2004–2009 (except in 2006) and this would help achieve the HG.

*[Results of the analysis to be provided at the June Council meeting]*

Modification of recreational lingcod spawning closure in the southern management area in California

This action would decrease the lingcod spawning closure from four months (December - March) to two months (January-February). The spawning closure currently affects the Southern Management Area and Cowcod Conservation Area as other management areas are closed during these months due to other constraints. Eliminating the December - March spawning closure will make the lingcod season consistent with the groundfish season in the Southern Management Area (March 1-December 31). This would simplify regulations and provide improved fishing opportunity. Given the recovery of the southern stock and implementation of no take state marine protected areas MPAs in the preferred spawning habitat and depth of lingcod, concern regarding the potential for increased predation on nests due to removal of guarding males is greatly reduced.

*[Results of the analysis to be provided at the June Council meeting]*

# APPENDIX 1

## NO ACTION TRIP LIMITS



*National Marine Fisheries Service, Northwest Region*  
7600 Sand Point Way NE, Seattle, WA 98115  
[www.nwr.noaa.gov](http://www.nwr.noaa.gov)



## PUBLIC NOTICE

For Information Contact:  
The Groundfish Management Team (206) 526-6140

NMFS-SEA-10-05  
FOR IMMEDIATE RELEASE  
April 30, 2010

### **PACIFIC COAST GROUND FISH FISHERY** **Changes to commercial fishery management measures**

The National Marine Fisheries Service (NMFS) announces changes to commercial management measures for the Pacific Coast groundfish fishery off Washington, Oregon, and northern California, **effective at 0001 hours (local time) May 1, 2010.**

The Pacific Fishery Management Council (Pacific Council) recommended changes to management measures at their March and April meetings. Changes to management measures are being implemented in a *Federal Register* notice that will publish on May 4, 2010, and are described in this public notice.

#### **Commercial Fishery**

For complete regulations governing the commercial groundfish fishery, please see Title 50 CFR Part 660, Subpart G. Current trip limit tables, Tables 3-5 (North and South), are included at the end of this public notice.

#### ***Limited Entry Non-Whiting Trawl Fishery***

For more detailed regulations applying to the limited entry trawl fishery, see § 660.381 of the Pacific Coast groundfish regulations.

#### ***Changes to Cumulative Limits***

The Council considered modifications to the “minor slope rockfish and darkblotched rockfish” cumulative limit North of 40°10' N. lat., due to higher than expected catch of darkblotched rockfish in this fishery and area. This action was necessary

to keep the total projected catch of darkblotched rockfish below the 2010 Optimum Yield.

Trip limits changes are as follows:

- **North of 40°10' N. lat.,** the minor slope rockfish and darkblotched rockfish trip limit is reduced from “6,000 lb per 2 months” to **“2,000 lb per two months”** beginning on May 1, 2010 through the end of the year.

#### ***Limited Entry Fixed Gear Primary Sablefish Fishery (Tier Fishery)***

For more detailed regulations applying to the limited entry trawl fishery, see § 660.372 of the Pacific Coast groundfish regulations.

#### ***Prohibition of Pacific halibut retention***

NMFS published the 2010 halibut final rule and catch sharing plan on March 18, 2010 (75 FR 13024). The final Area 2A halibut TAC for 2010 was adopted by the IPHC at their January 26 through

Visit the NMFS Northwest Region website for current groundfish management regulations, VMS information, and RCA boundary coordinates.

<http://www.nwr.noaa.gov/Groundfish-Halibut/index.cfm>

#### **Groundfish E-mail Group**

Subscribe to “**wcgroundfish**” by visiting the following website: [http://listserver.afsc.noaa.gov/read/all\\_forums/subscribe?name=wcgroundfish](http://listserver.afsc.noaa.gov/read/all_forums/subscribe?name=wcgroundfish)



January 29, 2010 meeting, and is below 900,000-lbs (408-mt). Therefore, according to the Council's Catch Sharing Plan, no halibut quota will be assigned to the limited entry fixed gear sablefish primary fishery. Since there is no halibut available

for this fishery in 2010, **no retention of halibut is allowed in the limited entry fixed gear sablefish primary fishery north of Point Chehalis, Washington (46° 53.30' N. lat.).**

**Trip limit tables, effective May 1, 2010,  
are included at the end of this public notice.**

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For more information contact: NMFS Northwest Region at 206-526-6140 or visit our website at <http://www.nwr.noaa.gov>, click on "Groundfish & Halibut;"; Washington Department of Fish and Wildlife at 360-249-4628; Oregon Department of Fish and Wildlife at 541-867-4741; or the California Department of Fish and Game at 707-441-5797 (Eureka), 510-581-7358 (Belmont), 562-342-7184 (Los Alamitos), 858-546-7167 (La Jolla).

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Any discrepancies between this public notice and the *Federal Register* will be resolved in favor of the *Federal Register*.

**Table 3 (North) to Part 660, Subpart G -- 2010 Trip Limits for Limited Entry Trawl Gear North of 40°10' N. Lat.**

**Other Limits and Requirements Apply -- Read § 660.301 - § 660.399 before using this table**

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**TABLE 3 (North)**

	JAN-FEB	MAR-APR	MAY-JUN	JUL-AUG	SEP-OCT	NOV-DEC
<b>Rockfish Conservation Area (RCA)<sup>6/</sup>:</b>						
1 North of 48°10' N. lat.	shore - modified <sup>7/</sup> 200 fm line <sup>6/</sup>	shore - 200 fm line <sup>6/</sup>	shore - 150 fm line <sup>6/</sup>		shore - 200 fm line <sup>6/</sup>	shore - modified <sup>7/</sup> 200 fm line <sup>6/</sup>
2 48°10' N. lat. - 45°46' N. lat.	75 fm line <sup>6/</sup> - modified <sup>7/</sup> 200 fm line <sup>6/</sup>	75 fm line <sup>6/</sup> - 200 fm line <sup>6/</sup>	75 fm line <sup>6/</sup> - 150 fm line <sup>6/</sup>	100 fm line <sup>6/</sup> - 150 fm line <sup>6/</sup>	75 fm line <sup>6/</sup> - 200 fm line <sup>6/</sup>	75 fm line <sup>6/</sup> - modified <sup>7/</sup> 200 fm line <sup>6/</sup>
3 45°46' N. lat. - 40°10' N. lat.			75 fm line <sup>6/</sup> - 200 fm line <sup>6/</sup>	100 fm line <sup>6/</sup> - 200 fm line <sup>6/</sup>		

Selective flatfish trawl gear is required shoreward of the RCA; all trawl gear (large footrope, selective flatfish trawl, and small footrope trawl gear) is permitted seaward of the RCA. Large footrope and small footrope trawl gears (except for selective flatfish trawl gear) are prohibited shoreward of the RCA. Midwater trawl gear is permitted only for vessels participating in the primary whiting season.

**See § 660.370 and § 660.381 for Additional Gear, Trip Limit, and Conservation Area Requirements and Restrictions. See §§ 660.390-660.394 and §§ 660.396-660.399 for Conservation Area Descriptions and Coordinates (including RCAs, YRCA, CCAs, Farallon Islands, Cordell Banks, and EFHCAs).**

State trip limits and seasons may be more restrictive than federal trip limits, particularly in waters off Oregon and California.

4	Minor slope rockfish <sup>2/</sup> & Darkblotched rockfish	6,000 lb/ 2 months	2,000 lb/ 2 months	
5	Pacific ocean perch	1,500 lb/ 2 months		
6	DTS complex			
7	Sablefish			
8	large & small footrope gear	20,000 lb/ 2 months	24,000 lb/ 2 months	20,000 lb/ 2 months
9	selective flatfish trawl gear	9,000 lb/ 2 months		
10	multiple bottom trawl gear <sup>8/</sup>	9,000 lb/ 2 months		
11	Longspine thornyhead			
12	large & small footrope gear	24,000 lb/ 2 months		
13	selective flatfish trawl gear	5,000 lb/ 2 months		
14	multiple bottom trawl gear <sup>8/</sup>	5,000 lb/ 2 months		
15	Shortspine thornyhead			
16	large & small footrope gear	18,000 lb/2 months		
17	selective flatfish trawl gear	5,000 lb/ 2 months		
18	multiple bottom trawl gear <sup>8/</sup>	5,000 lb/ 2 months		
19	Dover sole			
20	large & small footrope gear	110,000 lb/ 2 months		
21	selective flatfish trawl gear	65,000 lb/ 2 months		
22	multiple bottom trawl gear <sup>8/</sup>	65,000 lb/ 2 months		

Effective May 1, 2010

Table 3 (North). Continued

		JAN-FEB	MAR-APR	MAY-JUN	JUL-AUG	SEP-OCT	NOV-DEC
23	<b>Whiting</b>						
	midwater trawl	Before the primary whiting season: CLOSED. -- During the primary season: mid-water trawl permitted in the RCA. See §660.373 for season and trip limit details. -- After the primary whiting season: CLOSED.					
24							
25	large & small footrope gear	Before the primary whiting season: 20,000 lb/trip. -- During the primary season: 10,000 lb/trip. -- After the primary whiting season: 10,000 lb/trip.					
26	<b>Flatfish (except Dover sole)</b>						
27	Arrowtooth flounder						
28	large & small footrope gear	150,000 lb/ 2 months					
29	selective flatfish trawl gear	90,000 lb/ 2 months					
30	multiple bottom trawl gear <sup>8/</sup>	90,000 lb/ 2 months					
31	Other flatfish <sup>3/</sup> , English sole, starry flounder, & Petrale sole						
	large & small footrope gear for Other flatfish <sup>3/</sup> , English sole, & starry flounder	110,000 lb/ 2 months	110,000 lb/ 2 months, no more than 9,500 lb/ 2 months of which may be petrale sole.				110,000 lb/ 2 months
32	large & small footrope gear for Petrale sole	9,500 lb/ 2 months					9,500 lb/ 2 months
33	selective flatfish trawl gear for Other flatfish <sup>3/</sup> English sole, & starry flounder	90,000 lb/ 2 months, no more than 9,500 lb/ 2 months of which may be petrale sole.	60,000 lb/ 2 months, no more than 9,500 lb/ 2 months of which may be petrale sole.				
34	selective flatfish trawl gear for Petrale sole						
35	multiple bottom trawl gear <sup>8/</sup>	90,000 lb/ 2 months, no more than 9,500 lb/ 2 months of which may be petrale sole.	60,000 lb/ 2 months, no more than 9,500 lb/ 2 months of which may be petrale sole.				
36							
	<b>Minor shelf rockfish<sup>1/</sup>, Shortbelly, Widow &amp; Yelloweye rockfish</b>						
37							
	midwater trawl for Widow rockfish	Before the primary whiting season: CLOSED. -- During primary whiting season: In trips of at least 10,000 lb of whiting, combined widow and yellowtail limit of 500 lb/ trip, cumulative widow limit of 1,500 lb/ month. Mid-water trawl permitted in the RCA. See §660.373 for primary whiting season and trip limit details. -- After the primary whiting season: CLOSED.					
38							
39	large & small footrope gear	300 lb/ 2 months					
	selective flatfish trawl gear	300 lb/ month	1,000 lb/ month, no more than 200 lb/ month of which may be yelloweye rockfish				300 lb/ month
40							
	multiple bottom trawl gear <sup>8/</sup>	300 lb/ month	300 lb/ 2 months, no more than 200 lb/ month of which may be yelloweye rockfish				300 lb/ month
41							

TABLE 3 (North) cont

Effective May 1, 2010

Table 3 (North). Continued

		JAN-FEB	MAR-APR	MAY-JUN	JUL-AUG	SEP-OCT	NOV-DEC	TABLE 3 (North) cont
42	Canary rockfish							
43	large & small footrope gear	CLOSED						
44	selective flatfish trawl gear	100 lb/ month		300 lb/ month		100 lb/ month		
45	multiple bottom trawl gear <sup>8/</sup>	CLOSED						
46	Yellowtail							
	midwater trawl	Before the primary whiting season: CLOSED. -- During primary whiting season: In trips of at least 10,000 lb of whiting: combined widow and yellowtail limit of 500 lb/ trip, cumulative yellowtail limit of 2,000 lb/ month. Mid-water trawl permitted in the RCA. See §660.373 for primary whiting season and trip limit details. -- After the primary whiting season: CLOSED.						
47								
48	large & small footrope gear	300 lb/ 2 months						
49	selective flatfish trawl gear	2,000 lb/ 2 months						
50	multiple bottom trawl gear <sup>8/</sup>	300 lb/ 2 months						
	Minor nearshore rockfish & Black rockfish							
51								
52	large & small footrope gear	CLOSED						
53	selective flatfish trawl gear	300 lb/ month						
54	multiple bottom trawl gear <sup>8/</sup>	CLOSED						
55	Lingcod <sup>4/</sup>							
56	large & small footrope gear	1,200 lb/ 2 months		4,000 lb/ 2 months				
57	selective flatfish trawl gear			1,200 lb/2 months				
58	multiple bottom trawl gear <sup>8/</sup>							
	Pacific cod	30,000 lb/ 2 months		70,000 lb/ 2 months			30,000 lb/ 2 months	
59								
60	Spiny dogfish	200,000 lb/ 2 months		150,000 lb/ 2 months	100,000 lb/ 2 months			
61	Other Fish <sup>5/</sup>	Not limited						

1/ Bocaccio, chilipepper and cowcod are included in the trip limits for minor shelf rockfish.

2/ Splitnose rockfish is included in the trip limits for minor slope rockfish.

3/ "Other flatfish" are defined at § 660.302 and include butter sole, curfin sole, flathead sole, Pacific sanddab, rex sole, rock sole, and sand sole.

4/ The minimum size limit for lingcod is 22 inches (56 cm) total length North of 42° N. lat. and 24 inches (61 cm) total length South of 42° N. lat.

5/ "Other fish" are defined at § 660.302 and include sharks, skates (including longnose skate), ratfish, morids, grenadiers, and kelp greenling.

Cabezon is included in the trip limits for "other fish."

6/ The Rockfish Conservation Area is an area closed to fishing by particular gear types, bounded by lines specifically defined by latitude and longitude coordinates set out at §§ 660.391-660.394. This RCA is not defined by depth contours, and the boundary lines that define the RCA may close areas that are deeper or shallower than the depth contour. Vessels that are subject to the RCA restrictions may not fish in the RCA, or operate in the RCA for any purpose other than transiting.

7/ The "modified" fathom lines are modified to exclude certain petrale sole areas from the RCA.

8/ If a vessel has both selective flatfish gear and large or small footrope gear on board during a cumulative limit period (either simultaneously or successively), the most restrictive cumulative limit for any gear on board during the cumulative limit period applies for the entire cumulative limit period.

To convert pounds to kilograms, divide by 2.20462, the number of pounds in one kilogram.

Effective May 1, 2010

**Table 3 (South) to Part 660, Subpart G -- 2010 Trip Limits for Limited Entry Trawl Gear South of 40°10' N. Lat.**

**Other Limits and Requirements Apply -- Read § 660.301 - § 660.399 before using this table**

120909

		JAN-FEB	MAR-APR	MAY-JUN	JUL-AUG	SEP-OCT	NOV-DEC
<b>Rockfish Conservation Area (RCA)<sup>6/</sup>:</b>							
1	South of 40°10' N. lat.	100 fm line <sup>6/</sup> - 150 fm line <sup>6/ 7/</sup>					
All trawl gear (large footrope, selective flatfish trawl, midwater trawl, and small footrope trawl gear) is permitted seaward of the RCA. Large footrope trawl gear and midwater trawl gear are prohibited shoreward of the RCA.							
<b>See § 660.370 and § 660.381 for Additional Gear, Trip Limit, and Conservation Area Requirements and Restrictions. See §§ 660.390-660.394 and §§ 660.396-660.399 for Conservation Area Descriptions and Coordinates (including RCAs, YRCA, CCAs, Farallon Islands, Cordell Banks, and EFHCAs).</b>							
State trip limits and seasons may be more restrictive than federal trip limits, particularly in waters off Oregon and California.							
2	<b>Minor slope rockfish<sup>2/</sup> &amp; Darkblotched rockfish</b>						
3	40°10' - 38° N. lat.	15,000 lb/ 2 months					
4	South of 38° N. lat.	55,000 lb/ 2 months					
5	<b>Splitnose</b>						
6	40°10' - 38° N. lat.	15,000 lb/ 2 months					
7	South of 38° N. lat.	55,000 lb/ 2 months					
8	<b>DTS complex</b>						
9	Sablefish	22,000 lb/ 2 months					
10	Longspine thornyhead	24,000 lb/ 2 months					
11	Shortspine thornyhead	18,000 lb/ 2 months					
12	Dover sole	110,000 lb/ 2 months					
13	<b>Flatfish (except Dover sole)</b>						
14	Other flatfish <sup>3/</sup> , English sole, & starry flounder	110,000 lb/ 2 months	110,000 lb/ 2 months, no more than 9,500 lb/ 2 months of which may be petrale sole.				110,000 lb/ 2 months
15	Petrale sole	9,500 lb/ 2 months					9,500 lb/ 2 months
16	Arrowtooth flounder	10,000 lb/ 2 months					
17	<b>Whiting</b>						
18	midwater trawl	Before the primary whiting season: CLOSED. -- During the primary season: mid-water trawl permitted in the RCA. See §660.373 for season and trip limit details. -- After the primary whiting season: CLOSED.					
19	large & small footrope gear	Before the primary whiting season: 20,000 lb/trip. -- During the primary season: 10,000 lb/trip. -- After the primary whiting season: 10,000 lb/trip.					

TABLE 3 (South)

**TABLE 3 (South)**

Effective May 1, 2010

Table 3 (South). Continued

		JAN-FEB	MAR-APR	MAY-JUN	JUL-AUG	SEP-OCT	NOV-DEC	TABLE 3 (South) cont
20	Minor shelf rockfish <sup>1/</sup> , Chilipepper, Shortbelly, Widow, & Yelloweye rockfish							
21	large footrope or midwater trawl for Minor shelf rockfish & Shortbelly	300 lb/ month						
22	large footrope or midwater trawl for Chilipepper	12,000 lb/ 2 months						
23	large footrope or midwater trawl for Widow & Yelloweye	CLOSED						
24	small footrope trawl for Minor Shelf, Shortbelly, Widow & Yelloweye	300 lb/ month						
25	small footrope trawl for Chilipepper	12,000 lb/ 2 months						
26	Bocaccio							
27	large footrope or midwater trawl	300 lb/ 2 months						
28	small footrope trawl	CLOSED						
29	Canary rockfish							
30	large footrope or midwater trawl	CLOSED						
31	small footrope trawl	100 lb/ month		300 lb/ month		100 lb/ month		
32	Cowcod	CLOSED						
33	Bronzespotted rockfish	CLOSED						
34	Minor nearshore rockfish & Black rockfish							
35	large footrope or midwater trawl	CLOSED						
36	small footrope trawl	300 lb/ month						
37	Lingcod <sup>4/</sup>							
38	large footrope or midwater trawl	1,200 lb/ 2 months		4,000 lb/ 2 months				
39	small footrope trawl			1,200 lb/ 2 months				
40	Pacific cod	30,000 lb/ 2 months		70,000 lb/ 2 months			30,000 lb/ 2 months	
41	Spiny dogfish	200,000 lb/ 2 months		150,000 lb/ 2 months	100,000 lb/ 2 months			
42	Other Fish <sup>5/</sup> & Cabezon	Not limited						

1/ Yellowtail is included in the trip limits for minor shelf rockfish. Bronzespotted rockfish have a species specific trip limit.

2/ POP is included in the trip limits for minor slope rockfish

3/ "Other flatfish" are defined at § 660.302 and include butter sole, curlfin sole, flathead sole, Pacific sanddab, rex sole, rock sole, and sand sole.

4/ The minimum size limit for lingcod is 24 inches (61 cm) total length South of 42° N. lat.

5/ Other fish are defined at § 660.302 and include sharks, skates (including longnose skate), ratfish, morids, grenadiers, and kelp greenling.

6/ The Rockfish Conservation Area is an area closed to fishing by particular gear types, bounded by lines specifically defined by latitude and longitude coordinates set out at §§ 660.391-660.394. This RCA is not defined by depth contours, and the boundary lines that define the RCA may close areas that are deeper or shallower than the depth contour. Vessels that are subject to the RCA restrictions may not fish in the RCA, or operate in the RCA for any purpose other than transiting.

Effective May 1, 2010

Table 4 (North) to Part 660, Subpart G -- 2009-2010 Trip Limits for Limited Entry Fixed Gear North of 40°10' N. Lat.

Other Limits and Requirements Apply -- Read § 660.301 - § 660.399 before using this table

120909

		JAN-FEB	MAR-APR	MAY-JUN	JUL-AUG	SEP-OCT	NOV-DEC
<b>Rockfish Conservation Area (RCA)<sup>6/</sup>:</b>							
1	North of 46°16' N. lat.	shoreline - 100 fm line <sup>6/</sup>					
2	46°16' N. lat. - 45°03.83' N. lat.	30 fm line <sup>6/</sup> - 100 fm line <sup>6/</sup>					
3	45°03.83' N. lat. - 43°00' N. lat.	30 fm line <sup>6/</sup> - 125 fm line <sup>6/ 7/</sup>					
4	43°00' N. lat. - 42°00' N. lat.	20 fm line <sup>6/</sup> - 100 fm line <sup>6/</sup>					
5	42°00' N. lat. - 40°10' N. lat.	20 fm depth contour - 100 fm line <sup>6/</sup>					
See § 660.370 and § 660.382 for Additional Gear, Trip Limit, and Conservation Area Requirements and Restrictions. See §§ 660.390-660.394 and §§ 660.396-660.399 for Conservation Area Descriptions and Coordinates (including RCAs, YRCA, CCAs, Farallon Islands, Cordell Banks, and EFHCAs).							
State trip limits and seasons may be more restrictive than federal trip limits, particularly in waters off Oregon and California.							
6	Minor slope rockfish <sup>2/</sup> & Darkblotched rockfish	4,000 lb/ 2 months					
7	Pacific ocean perch	1,800 lb/ 2 months					
8	Sablefish	1,750 lb per week, not to exceed 7,000 lb/ 2 months					
9	Longspine thornyhead	10,000 lb/ 2 months					
10	Shortspine thornyhead	2,000 lb/ 2 months					
11	Dover sole	South of 42° N. lat., when fishing for "other flatfish," vessels using hook-and-line gear with no more than 12 hooks per line, using hooks no larger than "Number 2" hooks, which measure 11 mm (0.44 inches) point to shank, and up to two 1 lb (0.45 kg) weights per line are not subject to the RCAs.					
12	Arrowtooth flounder						
13	Petrale sole						
14	English sole						
15	Starry flounder						
16	Other flatfish <sup>1/</sup>	5,000 lb/ month					
17	Whiting	10,000 lb/ trip					
18	Minor shelf rockfish <sup>2/</sup> , Shortbelly, Widow, & Yellowtail rockfish	200 lb/ month					
19	Canary rockfish	CLOSED					
20	Yelloweye rockfish	CLOSED					
21	Minor nearshore rockfish & Black rockfish						
22	North of 42° N. lat.	5,000 lb/ 2 months, no more than 1,200 lb of which may be species other than black or blue rockfish <sup>3/</sup>					
23	42° - 40°10' N. lat.	6,000 lb/ 2 months, no more than 1,200 lb of which may be species other than black or blue rockfish <sup>3/</sup>	7,000 lb/ 2 months, no more than 1,200 lb of which may be species other than black rockfish <sup>3/</sup>				
24	Lingcod <sup>4/</sup>	CLOSED		800 lb/ 2 months		400 lb/ month	CLOSED
25	Pacific cod	1,000 lb/ 2 months					
26	Spiny dogfish	200,000 lb/ 2 months		150,000 lb/ 2 months	100,000 lb/ 2 months		
27	Other fish <sup>5/</sup>	Not limited					

TABLE 4 (North)

Effective May 1, 2010

- 1/ "Other flatfish" are defined at § 660.302 and include butter sole, curlfin sole, flathead sole, Pacific sanddab, rex sole, rock sole, and sand sole.
- 2/ Bocaccio, chilipepper and cowcod are included in the trip limits for minor shelf rockfish and splitnose rockfish is included in the trip limits for minor slope rockfish.
- 3/ For black rockfish north of Cape Alava (48°09.50' N. lat.), and between Destruction Is. (47°40' N. lat.) and Leadbetter Pnt. (46°38.17' N. lat.), there is an additional limit of 100 lb or 30 percent by weight of all fish on board, whichever is greater, per vessel, per fishing trip.
- 4/ The minimum size limit for lingcod is 22 inches (56 cm) total length North of 42° N. lat. and 24 inches (61 cm) total length South of 42° N. lat.
- 5/ "Other fish" are defined at § 660.302 and include sharks, skates (including longnose skates), ratfish, morids, grenadiers, and kelp greenling. Cabezon is included in the trip limits for "other fish."
- 6/ The Rockfish Conservation Area is an area closed to fishing by particular gear types, bounded by lines specifically defined by latitude and longitude coordinates set out at §§ 660.391-660.394. This RCA is not defined by depth contours (with the exception of the 20-fm depth contour boundary south of 42° N. lat.), and the boundary lines that define the RCA may close areas that are deeper or shallower than the depth contour. Vessels that are subject to RCA restrictions may not fish in the RCA, or operate in the RCA for any purpose other than transiting.
- 7/ The 125 fm line restriction is in place all year, except on days when the directed halibut fishery is open. On those days the 100 fm line restriction is in effect.

**To convert pounds to kilograms, divide by 2.20462, the number of pounds in one kilogram.**

Effective May 1, 2010



**Table 4 (South) to Part 660, Subpart G -- 2009-2010 Trip Limits for Limited Entry Fixed Gear South of 40°10' N. Lat.**

**Other Limits and Requirements Apply -- Read § 660.301 - § 660.399 before using this table**

120909

Other Limits and Requirements Apply – Read §§ 660.361 – § 660.399 Before using this table		JAN-FEB		MAR-APR		MAY-JUN		JUL-AUG		SEP-OCT		NOV-DEC	
Rockfish Conservation Area (RCA) <sup>5/</sup> :													
1	40°10' - 34°27' N. lat.	30 fm line <sup>5/</sup> - 150 fm line <sup>5/</sup>											
2	South of 34°27' N. lat.	60 fm line <sup>5/</sup> - 150 fm line <sup>5/</sup> (also applies around islands)											
See § 660.370 and § 660.382 for Additional Gear, Trip Limit, and Conservation Area Requirements and Restrictions. See §§ 660.390-660.394 and §§ 660.396-660.399 for Conservation Area Descriptions and Coordinates (including RCAs, YRCA, CCAs, Farallon Islands, Cordell Banks, and EFHCAs).													
State trip limits and seasons may be more restrictive than federal trip limits, particularly in waters off Oregon and California.													
3	Minor slope rockfish <sup>2/</sup> & Darkblotched rockfish	40,000 lb/ 2 months											
4	Splitnose	40,000 lb/ 2 months											
5	Sablefish												
6	40°10' - 36° N. lat.	1,750 lb per week, not to exceed 7,000 lb/ 2 months											
7	South of 36° N. lat.	400 lb/ day, or 1 landing per week of up to 1,500 lb								3,000 lb per week			
8	Longspine thornyhead	10,000 lb / 2 months											
9	Shortspine thornyhead												
10	40°10' - 34°27' N. lat.	2,000 lb/ 2 months											
11	South of 34°27' N. lat.	3,000 lb/ 2 months											
12	Dover sole	5,000 lb/ month  South of 42° N. lat., when fishing for "other flatfish," vessels using hook-and-line gear with no more than 12 hooks per line, using hooks no larger than "Number 2" hooks, which measure 11 mm (0.44 inches) point to shank, and up to two 1 lb (0.45 kg) weights per line are not subject to the RCAs.											
13	Arrowtooth flounder												
14	Petrale sole												
15	English sole												
16	Starry flounder												
17	Other flatfish <sup>1/</sup>												
18	Whiting	10,000 lb/ trip											
19	Minor shelf rockfish <sup>2/</sup> , Shortbelly, Widow rockfish, and Bocaccio (including Chilipepper between 40°10' - 34°27' N. lat.)												
20	40°10' - 34°27' N. lat.	Minor shelf rockfish, shortbelly, widow rockfish, bocaccio & chilipepper: 2,500 lb/ 2 months, of which no more than 500 lb/ 2 months may be any species other than chilipepper.											
21	South of 34°27' N. lat.	3,000 lb/ 2 months	CLOSED	3,000 lb/ 2 months									
22	Chilipepper rockfish												
23	40°10' - 34°27' N. lat.	Chilipepper included under minor shelf rockfish, shortbelly, widow and bocaccio limits -- See above											
24	South of 34°27' N. lat.	2,000 lb/ 2 months, this opportunity only available seaward of the nontrawl RCA											
25	Canary rockfish	CLOSED											
26	Yelloweye rockfish	CLOSED											
27	Cowcod	CLOSED											
28	Bronzespotted rockfish	CLOSED											
29	Bocaccio												
30	40°10' - 34°27' N. lat.	Bocaccio included under Minor shelf rockfish, shortbelly, widow & chilipepper limits -- See above											
31	South of 34°27' N. lat.	300 lb/ 2 months	CLOSED	300 lb/ 2 months									

TABLE 4 (South)

**TABLE 4 (South)**

Effective May 1, 2010

Table 4 (South). Continued

		JAN-FEB	MAR-APR	MAY-JUN	JUL-AUG	SEP-OCT	NOV-DEC	TABLE 4 (South)	
32	Minor nearshore rockfish & Black rockfish								
33	Shallow nearshore	600 lb/ 2 months	CLOSED	800 lb/ 2 months	900 lb/ 2 months	800 lb/ 2 months	600 lb/ 2 months		
34	Deeper nearshore								
35	40°10' - 34°27' N. lat.	700 lb/ 2 months	CLOSED	700 lb/ 2 months		800 lb/ 2 months			
36	South of 34°27' N. lat.	500 lb/ 2 months		600 lb/ 2 months					
37	California scorpionfish	600 lb/ 2 months	CLOSED	600 lb/ 2 months	1,200 lb/ 2 months				
38	Lingcod <sup>3/</sup>	CLOSED		800 lb/ 2 months			400 lb/ month		CLOSED
39	Pacific cod	1,000 lb/ 2 months							
40	Spiny dogfish	200,000 lb/ 2 months		150,000 lb/ 2 months	100,000 lb/ 2 months				
41	Other fish <sup>4/</sup> & Cabezon	Not limited							

1/ "Other flatfish" are defined at § 660.302 and include butter sole, curlfin sole, flathead sole, Pacific sanddab, rex sole, rock sole, and sand sole.

2/ POP is included in the trip limits for minor slope rockfish. Yellowtail is included in the trip limits for minor shelf rockfish. Bronzespotted rockfish have a species specific trip limit.

3/ The minimum size limit for lingcod is 24 inches (61 cm) total length South of 42° N. lat.

4/ "Other fish" are defined at § 660.302 and include sharks, skates (including longnose skates), rattfish, morids, grenadiers, and kelp greenling.

5/ The Rockfish Conservation Area is an area closed to fishing by particular gear types, bounded by lines specifically defined by latitude and longitude coordinates set out at §§ 660.391-660.394. This RCA is not defined by depth contours (with the exception of the 20-fm depth contour boundary south of 42° N. lat.), and the boundary lines that define the RCA may close areas that are deeper or shallower than the depth contour. Vessels that are subject to RCA restrictions may not fish in the RCA, or operate in the RCA for any purpose other than transiting.

To convert pounds to kilograms, divide by 2.20462, the number of pounds in one kilogram.

Effective May 1, 2010

Table 5 (North) to Part 660, Subpart G -- 2009-2010 Trip Limits for Open Access Gears North of 40°10' N. Lat.

Other Limits and Requirements Apply -- Read § 660.301 - § 660.399 before using this table

120909

		JAN-FEB	MAR-APR	MAY-JUN	JUL-AUG	SEP-OCT	NOV-DEC
<b>Rockfish Conservation Area (RCA)<sup>6/</sup> :</b>							
1	North of 46°16' N. lat.	shoreline - 100 fm line <sup>6/</sup>					
2	46°16' N. lat. - 45°03.83' N. lat.	30 fm line <sup>6/</sup> - 100 fm line <sup>6/</sup>					
3	45°03.83' N. lat. - 43°00' N. lat.	30 fm line <sup>6/</sup> - 125 fm line <sup>6/ 7/</sup>					
4	43°00' N. lat. - 42°00' N. lat.	20 fm line <sup>6/</sup> - 100 fm line <sup>6/</sup>					
5	42°00' N. lat. - 40°10' N. lat.	20 fm depth contour - 100 fm line <sup>6/</sup>					
See § 660.370 and § 660.383 for Additional Gear, Trip Limit, and Conservation Area Requirements and Restrictions. See §§ 660.390-660.394 and §§ 660.396-660.399 for Conservation Area Descriptions and Coordinates (including RCAs, YRCA, CCAs, Farallon Islands, Cordell Banks, and EFHCAs).							
State trip limits and seasons may be more restrictive than federal trip limits, particularly in waters off Oregon and California.							
6	Minor slope rockfish <sup>1/</sup> & Darkblotched rockfish	Per trip, no more than 25% of weight of the sablefish landed					
7	Pacific ocean perch	100 lb/ month					
8	Sablefish	300 lb/ day, or 1 landing per week of up to 800 lb, not to exceed 2,400 lb/ 2 months			300 lb/ day, or 1 landing per week of up to 950 lb, not to exceed 2,750 lb/ 2 months		
9	Thornyheads	CLOSED					
10	Dover sole	3,000 lb/month, no more than 300 lb of which may be species other than Pacific sanddabs. South of 42° N. lat., when fishing for "other flatfish," vessels using hook-and-line gear with no more than 12 hooks per line, using hooks no larger than "Number 2" hooks, which measure 11 mm (0.44 inches) point to shank, and up to two 1 lb (0.45 kg) weights per line are not subject to the RCAs.					
11	Arrowtooth flounder						
12	Petrale sole						
13	English sole						
14	Starry flounder						
15	Other flatfish <sup>2/</sup>						
16	Whiting	300 lb/ month					
17	Minor shelf rockfish <sup>1/</sup> , Shortbelly, Widow, & Yellowtail rockfish	200 lb/ month					
18	Canary rockfish	CLOSED					
19	Yelloweye rockfish	CLOSED					
20	Minor nearshore rockfish & Black rockfish						
21	North of 42° N. lat.	5,000 lb/ 2 months, no more than 1,200 lb of which may be species other than black or blue rockfish <sup>3/</sup>					
22	42° - 40°10' N. lat.	6,000 lb/ 2 months, no more than 1,200 lb of which may be species other than black or blue rockfish <sup>3/</sup>	7,000 lb/ 2 months, no more than 1,200 lb of which may be species other than black rockfish <sup>3/</sup>				
23	Lingcod <sup>4/</sup>	CLOSED			400 lb/ month		CLOSE D
24	Pacific cod	1,000 lb/ 2 months					
25	Spiny dogfish	200,000 lb/ 2 months		150,000 lb/ 2 months	100,000 lb/ 2 months		
26	Other Fish <sup>5/</sup>	Not limited					

TABLES (North)

TABLE 5 (North)

Effective May 1, 2010

Table 5 (North). Continued

		JAN-FEB	MAR-APR	MAY-JUN	JUL-AUG	SEP-OCT	NOV-DEC	TABLE 5 (North) cont
27	PINK SHRIMP NON-GROUNDFISH TRAWL (not subject to RCAs)							
28	North	Effective April 1 - October 31: Groundfish: 500 lb/day, multiplied by the number of days of the trip, not to exceed 1,500 lb/trip. The following sublimits also apply and are counted toward the overall 500 lb/day and 1,500 lb/trip groundfish limits: lingcod 300 lb/month (minimum 24 inch size limit); sablefish 2,000 lb/month; canary, thornyheads and yelloweye rockfish are PROHIBITED. All other groundfish species taken are managed under the overall 500 lb/day and 1,500 lb/trip groundfish limits. Landings of these species count toward the per day and per trip groundfish limits and do not have species-specific limits. The amount of groundfish landed may not exceed the amount of pink shrimp landed.						
29	SALMON TROLL							
30	North	Salmon trollers may retain and land up to 1 lb of yellowtail rockfish for every 2 lbs of salmon landed, with a cumulative limit of 200 lb/month, both within and outside of the RCA. This limit is within the 200 lb per month combined limit for minor shelf rockfish, widow rockfish and yellowtail rockfish, and not in addition to that limit. Salmon trollers may retain and land up to 1 lingcod per 15 Chinook, plus 1 lingcod up to a trip limit of 10 lingcod, both within and outside of the RCA. This limit is within the 400 lb per month limit for lingcod, and not in addition to that limit. All groundfish species are subject to the open access limits, seasons, size limits and RCA restrictions listed in the table above.						

1/ Bocaccio, chilipepper and cowcod rockfishes are included in the trip limits for minor shelf rockfish.

Splitnose rockfish is included in the trip limits for minor slope rockfish.

2/ "Other flatfish" are defined at § 660.302 and include butter sole, curlfin sole, flathead sole, Pacific sanddab, rex sole, rock sole, and sand sole.

3/ For black rockfish north of Cape Alava (48°09.50' N. lat.), and between Destruction Is. (47°40' N. lat.) and Leadbetter Pnt. (46°38.17' N. lat.), there is an additional limit of 100 lbs or 30 percent by weight of all fish on board, whichever is greater, per vessel, per fishing trip.

4/ The minimum size limit for lingcod is 22 inches (56 cm) total length North of 42° N. lat. and 24 inches (61 cm) total length South of 42° N. lat.

5/ "Other fish" are defined at § 660.302 and include sharks, skates (including longnose skates), ratfish, morids, grenadiers, and kelp greenling. Cabezon is included in the trip limits for "other fish."

6/ The Rockfish Conservation Area is an area closed to fishing by particular gear types, bounded by lines specifically defined by latitude and longitude coordinates set out at §§ 660.391-660.394. This RCA is not defined by depth contours (with the exception of the 20-fm depth contour boundary south of 42° N. lat.), and the boundary lines that define the RCA may close areas that are deeper or shallower than the depth contour. Vessels that are subject to RCA restrictions may not fish in the RCA, or operate in the RCA for any purpose other than transiting.

7/ The 125 fm line restriction is in place all year, except on days when the directed halibut fishery is open. On those days the 100 fm line restriction is in effect.

To convert pounds to kilograms, divide by 2.20462, the number of pounds in one kilogram.

Effective May 1, 2010

Table 5 (South) to Part 660, Subpart G -- 2009-2010 Trip Limits for Open Access Gears South of 40°10' N. Lat.

Other Limits and Requirements Apply -- Read § 660.301 - § 660.399 before using this table

100709

		JAN-FEB	MAR-APR	MAY-JUN	JUL-AUG	SEP-OCT	NOV-DEC
<b>Rockfish Conservation Area (RCA)<sup>5/</sup>:</b>							
1	40°10' - 34°27' N. lat.	30 fm line <sup>5/</sup> - 150 fm line <sup>5/</sup>					
2	South of 34°27' N. lat.	60 fm line <sup>5/</sup> - 150 fm line <sup>5/</sup> (also applies around islands)					
<b>See § 660.370 and § 660.383 for Additional Gear, Trip Limit, and Conservation Area Requirements and Restrictions.</b>							
<b>See §§ 660.390-660.394 and §§ 660.396-660.399 for Conservation Area Descriptions and Coordinates (including RCAs, YRCA, CCAs, Farallon Islands, Cordell Banks, and EFHCAs).</b>							
State trip limits and seasons may be more restrictive than federal trip limits, particularly in waters off Oregon and California.							
3	<b>Minor slope rockfish<sup>1/</sup> &amp; Darkblotched rockfish</b>						
4	40°10' - 38° N. lat.	Per trip, no more than 25% of weight of the sablefish landed					
5	South of 38° N. lat.	10,000 lb/ 2 months					
6	<b>Splitnose</b>	200 lb/ month					
7	<b>Sablefish</b>						
8	40°10' - 36° N. lat.	300 lb/ day, or 1 landing per week of up to 800 lb, not to exceed 2,400 lb/ 2 months			300 lb/ day, or 1 landing per week of up to 950 lb, not to exceed 2,750 lb/ 2 months		
9	South of 36° N. lat.	400 lb/ day, or 1 landing per week of up to 1,500 lb, not to exceed 8,000 lb/ 2 months				400 lb/ day, or 1 landing per week of up to 2,500 lb	
10	<b>Thornyheads</b>						
11	40°10' - 34°27' N. lat.	CLOSED					
12	South of 34°27' N. lat.	50 lb/ day, no more than 1,000 lb/ 2 months					
13	<b>Dover sole</b>	3,000 lb/month, no more than 300 lb of which may be species other than Pacific sanddabs. South of 42° N. lat., when fishing for "other flatfish," vessels using hook-and-line gear with no more than 12 hooks per line, using hooks no larger than "Number 2" hooks, which measure 11 mm (0.44 inches) point to shank, and up to two 1 lb (0.45 kg) weights per line are not subject to the RCAs.					
14	<b>Arrowtooth flounder</b>						
15	<b>Petrale sole</b>						
16	<b>English sole</b>						
17	<b>Starry flounder</b>						
18	<b>Other flatfish<sup>2/</sup></b>						
19	<b>Whiting</b>	300 lb/ month					
20	<b>Minor shelf rockfish<sup>1/</sup>, Shortbelly, Widow &amp; Chilipepper rockfish</b>						
21	40°10' - 34°27' N. lat.	300 lb/ 2 months	CLOSED	200 lb/ 2 months		300 lb/ 2 months	
22	South of 34°27' N. lat.	750 lb/ 2 months		750 lb/ 2 months			
23	<b>Canary rockfish</b>	CLOSED					
24	<b>Yelloweye rockfish</b>	CLOSED					
25	<b>Cowcod</b>	CLOSED					
26	<b>Bronzespotted rockfish</b>	CLOSED					
27	<b>Bocaccio</b>						
28	40°10' - 34°27' N. lat.	200 lb/ 2 months	CLOSED	100 lb/ 2 months		200 lb/ 2 months	
29	South of 34°27' N. lat.	100 lb/ 2 months		100 lb/ 2 months			

TABLE 5 (South)

TABLE 5 (South)

Effective May 1, 2010

Table 5 (South). Continued

		JAN-FEB	MAR-APR	MAY-JUN	JUL-AUG	SEP-OCT	NOV-DEC
30	Minor nearshore rockfish & Black rockfish						
31	Shallow nearshore	600 lb/ 2 months	CLOSED	800 lb/ 2 months	900 lb/ 2 months	800 lb/ 2 months	600 lb/ 2 months
32	Deeper nearshore						
33	40°10' - 34°27' N. lat.	700 lb/ 2 months	CLOSED	700 lb/ 2 months		800 lb/ 2 months	
34	South of 34°27' N. lat.	500 lb/ 2 months		600 lb/ 2 months			
35	California scorpionfish	600 lb/ 2 months	CLOSED	600 lb/ 2 months	1,200 lb/ 2 months		
36	Lingcod <sup>3/</sup>	CLOSED		400 lb/ month			CLOSED
37	Pacific cod	1,000 lb/ 2 months					
38	Spiny dogfish	200,000 lb/ 2 months		150,000 lb/ 2 months	100,000 lb/ 2 months		
39	Other Fish <sup>4/</sup> & Cabezon	Not limited					
40	RIDGEBACK PRAWN AND, SOUTH OF 38°57.50' N. LAT., CA HALIBUT AND SEA CUCUMBER NON-GROUNDFISH TRAWL						
41	NON-GROUNDFISH TRAWL Rockfish Conservation Area (RCA) for CA Halibut, Sea Cucumber & Ridgeback Prawn:						
42	40°10' - 38° N. lat.	100 fm - modified 200 fm <sup>6/</sup>	100 fm - 150 fm			100 fm - modified 200 fm <sup>6/</sup>	
43	38° - 34°27' N. lat.	100 fm - 150 fm					
44	South of 34°27' N. lat.	100 fm - 150 fm along the mainland coast; shoreline - 150 fm around islands					
45		Groundfish: 300 lb/trip. Trip limits in this table also apply and are counted toward the 300 lb groundfish per trip limit. The amount of groundfish landed may not exceed the amount of the target species landed, except that the amount of spiny dogfish landed may exceed the amount of target species landed. Spiny dogfish are limited by the 300 lb/trip overall groundfish limit. The daily trip limits for sablefish coastwide and thornyheads south of Pt. Conception and the overall groundfish "per trip" limit may not be multiplied by the number of days of the trip. Vessels participating in the California halibut fishery south of 38°57.50' N. lat. are allowed to (1) land up to 100 lb/day of groundfish without the ratio requirement, provided that at least one California halibut is landed and (2) land up to 3,000 lb/month of flatfish, no more than 300 lb of which may be species other than Pacific sanddabs, sand sole, starry flounder, rock sole, curlfin sole, or California scorpionfish (California scorpionfish is also subject to the trip limits and closures in line 31).					
46	PINK SHRIMP NON-GROUNDFISH TRAWL GEAR (not subject to RCAs)						
47	South	Effective April 1 - October 31: Groundfish: 500 lb/day, multiplied by the number of days of the trip, not to exceed 1,500 lb/trip. The following sublimits also apply and are counted toward the overall 500 lb/day and 1,500 lb/trip groundfish limits: lingcod 300 lb/ month (minimum 24 inch size limit); sablefish 2,000 lb/ month; canary, thornyheads and yelloweye rockfish are PROHIBITED. All other groundfish species taken are managed under the overall 500 lb/day and 1,500 lb/trip groundfish limits. Landings of these species count toward the per day and per trip groundfish limits and do not have species-specific limits. The amount of groundfish landed may not exceed the amount of pink shrimp landed.					

TABLE 5 (South) cont

1/ Yellowtail rockfish is included in the trip limits for minor shelf rockfish. POP is included in the trip limits for minor slope rockfish. Bronzespotted rockfish have a species specific trip limit.

2/ "Other flatfish" are defined at § 660.302 and include butter sole, curlfin sole, flathead sole, Pacific sanddab, rex sole, rock sole, and sand sole.

3/ The size limit for lingcod is 24 inches (61 cm) total length South of 42° N. lat.

4/ "Other fish" are defined at § 660.302 and include sharks, skates (including longnose skates), ratfish, morids, grenadiers, and kelp greenling.

5/ The Rockfish Conservation Area is an area closed to fishing by particular gear types, bounded by lines specifically defined by latitude and longitude coordinates set out at §§ 660.391-660.394. This RCA is not defined by depth contours (with the exception of the 20-fm depth contour boundary south of 42° N. lat.), and the boundary lines that define the RCA may close areas that are deeper or shallower than the depth contour. Vessels that are subject to RCA restrictions may not fish in the RCA, or operate in the RCA for any purpose other than transiting.

6/ The "modified 200 fm" line is modified to exclude certain petrale sole areas from the RCA.

To convert pounds to kilograms, divide by 2.20462, the number of pounds in one kilogram.

Effective May 1, 2010

## CHAPTER 2 ALTERNATIVES

### 2.1 Harvest Specifications

Harvest specifications considered for the 2011-2012 biennial fishing period are analyzed under a new proposed harvest specification framework proposed under FMP Amendment 23 {PFMC 2010}. Amendment 23 is an amendment of the harvest specifications framework in the FMP to better meet new mandates in the Magnuson-Stevens Reauthorization Act (MSRA) of 2006 to prevent overfishing. The MSRA and amended National Standard 1 (NS1) guidelines introduce new fishery management concepts including overfishing limits (OFLs), an acceptable biological catch (ABC) to incorporate a scientific uncertainty buffer in specifications, annual catch limits (ACLs), annual catch targets (ACTs), and accountability measures (AMs) that are designed to better account for scientific and management uncertainty and to prevent overfishing. The proposed Amendment 23 action (under the Council's preliminary preferred alternative) is to adopt the harvest specification framework recommended in the new NS1 guidelines. Amendment 23 is scheduled for implementation in 2011, which is why the 2011-2012 harvest specifications analyzed assume the new framework.

The No Action alternative harvest specifications are the 2010 ABCs and total catch optimum yields (OYs) under the old harvest specification framework. The preliminary preferred alternative harvest specifications are the 2011 and 2012 OFLs, ABCs, and ACLs under the proposed Amendment 23 harvest specification framework. Table 2-1 depicts the 2010 No Action and the preliminary preferred 2011 and 2012 harvest specification alternatives. A more detailed description of alternative harvest specifications follows.

**Table 2-1. Specified 2010 ABCs and OYs (mt) under the No Action alternative and preliminary preferred 2011 and 2012 OFLs, ABCs, and ACLs (mt) (overfished stocks in CAPS; stocks with new assessments in bold).**

Stock	No Action Alternatives		Preliminary Preferred Alternatives					
	2010 ABC	2010 OY	2011 OFL	2012 OFL	2011 ABC	2012 ABC	2011 ACL	2012 ACL
<b>OVERFISHED STOCKS</b>								
<b>BOCACCIO S. of 40°10' N lat.</b>	793	288	737	732	704	700	53-263	56-274
<b>CANARY</b>	940	105	614	622	586	594	102	107
<b>COWCOD S. of 40°10' N lat.</b>	14	4	13	13	10	10	4	4
<b>DARKBLOTCHED</b>	440	291	508	497	485	475	332	329
<b>PACIFIC OCEAN PERCH</b>	1,173	200	1,026	1,007	981	962	180	183
<b>WIDOW</b>	6,937	509	5,097	4,923	4,872	4,705	600	600
<b>YELLOW EYE</b>	32	17	48	48	46	46	20	20
<b>PETRALE SOLE</b>	2,751	1,200	1,021	1,279	976	1,222	976	1,160

Stock	No Action Alternatives		Preliminary Preferred Alternatives					
	2010 ABC	2010 OY	2011 OFL	2012 OFL	2011 ABC	2012 ABC	2011 ACL	2012 ACL
<b>NON-OVERFISHED STOCKS</b>								
Lingcod – coastwide	4,829	4,829	NA	NA	NA	NA	NA	NA
Lingcod N. of 42° N lat. (OR & WA)	NA	NA	2,438	2,251	2,330	2,151	2,330	2,151
Lingcod S. of 42° N lat. (CA)	NA	NA	2,523	2,597	2,102	2,164	2,102	2,164
Pacific Cod	3,200	1,600	3,200	3,200	2,222	2,222	1,600	1,600
Sablefish (coastwide)	9,217	NA	8,808	8,623	8,418	8,242	NA	NA
Sablefish N. of 36° N lat.	NA	6,471	NA	NA	NA	NA	4,961	4,689
Sablefish S. of 36° N lat.	NA	1,258	NA	NA	NA	NA	1,167	1,103
Shortbelly	6,950	6,950	TBD	TBD	TBD	TBD		
Chilipepper	2,576	2,447	2,229	2,013	2,130	1,924	2,130	1,924
Splitnose S. of 40°10' N lat.	615	461	1,529	1,610	1,461	1,538	1,461	1,538
Yellowtail N. of 40°10' N lat.	4,562	4,562	4,566	4,573	4,364	4,371	4,364	4,371
Shortspine Thornyhead (coastwide)	2,411	NA	2,384	2,358	2,279	2,254	NA	NA
Shortspine Thornyhead - N. of 34°27' N lat.	NA	1,591	NA	NA	NA	NA	1,573	1,556
Shortspine Thornyhead - S. of 34°27' N lat.	NA	410	NA	NA	NA	NA	405	401
Longspine Thornyhead (coastwide)	3,671	NA	3,577	3,483	2,981	2,902	NA	NA
Longspine Thornyhead - N. of 34°27' N lat.	NA	2,175	NA	NA	NA	NA	2,119	2,064
Longspine Thornyhead - S. of 34°27' N lat.	NA	385	NA	NA	NA	NA	376	366
Black Rockfish (WA)	464	464	445	435	426	415	426	415
Black Rockfish (OR-CA)	1,317	1,000	1,217	1,169	1,163	1,117	1,000	1,000
California scorpionfish	155	155	141	132	135	126	135	126
Cabazon (CA)	111	79	187	176	179	168	179	168
Cabazon (OR)	NA	NA	52	50	50	48	50	48
Dover Sole	28,582	16,500	44,400	44,826	42,436	42,843	17,560	17,560
English Sole	9,745	9,745	20,675	10,620	19,761	10,150	19,761	10,150
Arrowtooth Flounder	10,112	10,112	18,211	14,460	15,174	12,049	15,174	12,049
Starry Flounder	1,578	1,077	1,802	1,813	1,502	1,511	1,352	1,360
Longnose skate	3,269	1,349	3,128	3,006	2,990	2,873	1,349	1,349
<b>STOCK COMPLEXES</b>								
Minor Rockfish North	3,678	2,283	3,611	3,680	2,507	2,555	2,283	2,283
Minor Nearshore RF North	NA	155	NA	NA	NA	NA	155	155
Minor Shelf RF North	NA	968	NA	NA	NA	NA	968	968
Minor Slope RF North	NA	1,160	NA	NA	NA	NA	1,160	1,160
Minor Rockfish South	3,382	1,990	4,302	4,291	2,987	2,979	1,990	1,990
Minor Nearshore RF South	NA	650	NA	NA	NA	NA	650	650
Minor Shelf RF South	NA	714	NA	NA	NA	NA	714	714
Minor Slope RF South	NA	626	NA	NA	NA	NA	626	626
Other Flatfish	6,731	4,884	10,146	10,146	7,044	7,044	4,884	4,884
Other Fish	11,200	5,600	11,150	11,150	7,742	7,742	5,575	5,575



### **2.1.1 *Overfishing Limits***

The OFL under the proposed Amendment 23 framework is equal to the ABC under the existing framework. Both specifications are the estimated or proxy maximum sustainable yield (MSY) harvest levels, which are the harvest thresholds above which overfishing is occurring.

The No Action 2010 ABCs and the 2011 and 2012 OFLs under all the action alternatives in this EIS are those recommended by the Council's Scientific and Statistical Committee (SSC) and adopted by the Council for all the stocks and stock complexes actively managed in the FMP.

Table 2-2 depicts the 2010 ABCs under the No Action alternative and the SSC-recommended and Council-adopted 2011 and 2012 OFLs under the proposed action for those stocks managed with stock-specific harvest specifications determined using results of quantitative assessments. These ABCs and OFLs were determined by applying proxy MSY harvest rates ( $F_{MSY}$ ) to the exploitable biomass of each stock as estimated in the most recently adopted stock assessments. The proposed 2011-2012 proxy  $F_{MSY}$  harvest rates recommended by the SSC and adopted by the Council are specific to the different taxa in the FMP as follows:  $F_{30\%}$  for assessed flatfish,  $F_{40\%}$  for Pacific whiting,  $F_{50\%}$  for rockfish (including thornyheads), and  $F_{45\%}$  for all species such as sablefish and lingcod. These are the same proxy  $F_{MSY}$  harvest rates used to determine 2010 ABCs except for assessed flatfish where the proxy  $F_{MSY}$  harvest rate was  $F_{40\%}$ . The 2010 ABCs in

Table 2-2 were projected from assessments done in 2007 or earlier (except the 2010 Pacific whiting ABC was estimated from 2010 assessments). The 2011 and 2012 OFLs were projected from assessments done in 2009 or earlier (except Pacific whiting harvest specifications are determined annually from new assessments). While the OFL contributions for the cowcod stock south of 40°10' N lat. from the Conception and Monterey areas are displayed in

Table 2-2, only the OFL for the entire stock south of 40°10' N lat. is specified in regulations. The area-specific OFL contributions for cowcod are shown since they were derived using different methodologies. The Conception area OFLs were projected from the 2009 assessment {Dick et al. 2009} and the Monterey area OFLs were derived using a depletion-based stock reduction analysis. Methodologies for determining the 2011 and 2012 OFLs are described in Chapter 4.

Table 2-3 depicts the No Action 2010 ABCs and the SSC-recommended and Council-adopted 2011 and 2012 OFLs under the proposed action for the actively managed stock complexes. The 2010 ABC and 2011 and 2012 OFL contributions of each of the stocks that comprise each complex are shown in italics in Table 2-3. The OFLs determined for the individual stocks that comprise a complex are not specified in regulations, but are shown in Table 2-3 to illustrate the fact that the OFL contributions of component stocks in a complex sum up to the complex OFL which is the specification codified in regulations. For both the 2010 ABCs and the 2011 and 2012 OFLs, the OFL in regulations are the summed contribution of all component stocks aggregated to the Minor Rockfish North and South complex levels. That is, the 2010 ABCs and proposed OFLs under the preliminary preferred alternative are not specified in regulations for the northern and southern Minor Nearshore, Shelf, and Slope subcomplexes.

Some notable differences between the 2010 ABCs and the proposed 2011 and 2012 OFLs include:

- A coastwide ABC was decided for lingcod in 2010 while two area-specific OFLs are proposed for 2011 and 2012 based on new lingcod area-specific assessments;
- A much more systematic and scientifically-defensible approach was used to determine 2011 and 2012 OFLs, especially for the stocks comprising the complexes, whereas only the major stocks contributing to the complexes were used to calculate the 2010 ABCs (see Chapter 4). Most of the complex ABCs (all except Other Flatfish) were set higher than the summed ABC contribution of component stocks and the historic record of how those ABCs were determined is incomplete. The proposed 2011 and 2012 complex OFLs have a complete and transparent approach for determining those values for all complexes than the Other Fish complex, which still has an incomplete contribution of component species;
- The 2010 ABC for chilipepper rockfish was inappropriately specified for the area south of 40°10' N lat. when it should have been specified as a coastwide ABC. The proposed 2011 and 2012 OFLs correct that error;
- A new assessment for the cabezon stock off Oregon was done in 2009. The Council proposes to remove this stock from the Other Fish complex and manage it in 2011 and 2012 with stock-specific harvest specifications; and
- 2010 ABCs for assessed flatfish stocks (i.e., petrale sole, Dover sole, English sole, arrowtooth flounder, and starry flounder) used a proxy  $F_{MSY}$  harvest rate of  $F_{40\%}$  while an  $F_{30\%}$  proxy was used to determine the proposed 2011 and 2012 OFLs.

**Table 2-2. Specified 2010 ABCs (mt) and proposed 2011 and 2012 OFLs (mt) for stocks managed with stock-specific harvest specifications (overfish stocks in CAPS and stocks with new assessments in bold).**

Stock	No Action Alternative	Preliminary Preferred Alternatives	
	2010 ABC	2011 OFL	2012 OFL
<b>OVERFISHED STOCKS</b>			
<b>BOCACCIO S. of 40°10' N latitude</b>	793	737	732
<b>CANARY</b>	940	614	622
<b>COWCOD S. of 40°10' N latitude</b>	14	13	13
<i>COWCOD (Conception)</i>	NA	6	6
<i>COWCOD (Monterey)</i>		7	7
<b>DARKBLOTCHED</b>	440	508	497
<b>PACIFIC OCEAN PERCH</b>	1,173	1,026	1,007
<b>WIDOW</b>	6,937	5,097	4,923
<b>YELLOWEYE</b>	32	48	48
<b>PETRALE SOLE</b>	2,751	1,021	1,279
<b>NON-OVERFISHED STOCKS</b>			
<b>Lingcod – coastwide</b>	4,829	NA	NA
<b>Lingcod N. of 42° N latitude (OR &amp; WA)</b>	NA	2,438	2,251
<b>Lingcod S. of 42° N latitude (CA)</b>	NA	2,523	2,597
Pacific Cod	3,200	3,200	3,200
<b>Pacific Whiting (U.S. + Canada)</b>	455,550	TBD in 2011	TBD in 2012
Sablefish (coastwide)	9,217	8,808	8,623
Shortbelly	6,950	TBD	TBD
Chilipepper (coastwide)	NA	2,229	2,013
<b>Splitnose S. of 40°10' N latitude</b>	615	1,529	1,610
Yellowtail N. of 40°10' N latitude	4,562	4,566	4,573
Shortspine Thornyhead (coastwide)	2,411	2,384	2,358
Longspine Thornyhead (coastwide)	3,671	3,577	3,483
Black Rockfish (WA)	464	445	435
Black Rockfish (OR-CA)	1,317	1,217	1,169
California scorpionfish	155	141	132
<b>Cabazon (CA)</b>	111	187	176
<b>Cabazon (OR)</b>	NA	52	50
Dover Sole	28,582	44,400	44,826
English Sole	9,745	20,675	10,620
Arrowtooth Flounder	10,112	18,211	14,460
Starry Flounder	1,578	1,802	1,813
Longnose skate	3,269	3,128	3,006

**Table 2-3. Specified 2010 ABCs (mt) and proposed 2011 and 2012 OFLs (mt) for stock complexes (species contributions to a stock complex specification in *italics*, stocks with new assessments in **bold**).**

Stock	No Action Alternative	Preliminary Preferred Alternatives	
	2010 ABC	2011 OFL	2012 OFL
<b>STOCK COMPLEXES</b>			
Minor Rockfish North	3,678	3,611	3,680
Minor Nearshore Rockfish North	NA	NA	NA
<i>Black and yellow</i>		0.0	0.0
<i>Blue (CA)</i>	28.0	27.7	27.5
<i>Blue (OR &amp; WA)</i>		33.1	33.1
<i>Brown</i>		5.3	5.3
<i>Calico</i>		0.0	0.0
<i>China</i>		11.7	11.7
<i>Copper</i>		28.6	28.6
<i>Gopher</i>	0.0	0.0	0.0
<i>Grass</i>		0.6	0.6
<i>Kelp</i>		0.0	0.0
<i>Olive</i>		0.3	0.3
<i>Quillback</i>		8.7	8.7
<i>Treefish</i>		0.2	0.2
Minor Shelf Rockfish North	NA	NA	NA
<i>Bronzespotted</i>		0.0	0.0
<i>Bocaccio</i>	318.0	268.2	268.2
<i>Chameleon</i>		0.0	0.0
<i>Cowcod</i>		0.0	0.0
<i>Flag</i>		0.1	0.1
<i>Freckled</i>		0.0	0.0
<i>Greenblotched</i>		1.4	1.4
<i>Greenspotted</i>		20.9	20.9
<b><i>Greenstriped</i></b>		1,208.0	1,232.0
<i>Halfbanded</i>		0.0	0.0
<i>Harlequin</i>		0.0	0.0
<i>Honeycomb</i>		0.0	0.0
<i>Mexican</i>		0.0	0.0
<i>Pink</i>		0.0	0.0
<i>Pinkrose</i>		0.0	0.0
<i>Puget Sound</i>		0.0	0.0
<i>Pygmy</i>		0.0	0.0
<i>Redstripe</i>	576.0	288.3	288.3
<i>Rosethorn</i>		15.2	15.2
<i>Rosy</i>		2.5	2.5
<i>Silvergray</i>	38.0	180.0	180.0
<i>Speckled</i>		0.2	0.2
<i>Squarespot</i>		0.1	0.1
<i>Starry</i>		0.0	0.0
<i>Stripetail</i>		35.3	35.3
<i>Swordspine</i>		0.0	0.0

Stock	No Action Alternative	Preliminary Preferred Alternatives	
	2010 ABC	2011 OFL	2012 OFL
<i>Tiger</i>		1.1	1.1
<i>Vermilion</i>		11.1	11.1
Minor Slope Rockfish North	NA	NA	NA
<i>Aurora</i>		17.3	17.3
<i>Bank</i>		19.7	19.7
<i>Blackgill</i>	0.0	4.7	4.7
<i>Redbanded</i>		51.7	51.7
<i>Rougheye</i>		78.3	78.3
<i>Sharpchin</i>	307.0	231.9	231.9
<i>Shortraker</i>		21.8	21.8
<b><i>Spltnose</i></b>	242.0	852.2	897.3
<i>Yellowmouth</i>	99.0	184.7	184.7
Minor Rockfish South	3,382	4,302	4,291
Minor Nearshore Rockfish South	NA	NA	NA
<i>Shallow Nearshore Species</i>	NA	NA	NA
<i>Black and yellow</i>		26.8	26.8
<i>China</i>		19.8	19.8
<i>Gopher (N of Pt. Conception)</i>	193.0	175.0	165.0
<i>Gopher (S of Pt. Conception)</i>		26.0	26.0
<i>Grass</i>		55.6	55.6
<i>Kelp</i>		25.9	25.9
<i>Deeper Nearshore Species</i>	NA	NA	NA
<i>Blue (assessed area)</i>	211.0	191.3	189.5
<i>Blue (S of 34°27' N latitude)</i>		74.0	74.0
<i>Brown</i>		197.4	197.4
<i>Calico</i>		0.0	0.0
<i>Copper</i>		156.0	156.0
<i>Olive</i>		189.5	189.5
<i>Quillback</i>		6.3	6.3
<i>Treefish</i>		12.9	12.9
Minor Shelf Rockfish South	NA	NA	NA
<i>Bronzespotted</i>		6.7	6.7
<i>Chameleon</i>		0.0	0.0
<i>Flag</i>		26.6	26.6
<i>Freckled</i>		0.0	0.0
<i>Greenblotched</i>		24.6	24.6
<i>Greenspotted</i>		195.3	195.3
<b><i>Greenstriped</i></b>		221.0	226.0
<i>Halfbanded</i>		0.0	0.0
<i>Harlequin</i>		0.0	0.0
<i>Honeycomb</i>		7.8	7.8
<i>Mexican</i>		2.8	2.8
<i>Pink</i>		2.8	2.8
<i>Pinkrose</i>		0.0	0.0
<i>Pygmy</i>		0.0	0.0
<i>Redstripe</i>		0.5	0.5
<i>Rosethorn</i>		2.5	2.5
<i>Rosy</i>		36.9	36.9
<i>Silvergray</i>		0.6	0.6

Stock	No Action Alternative	Preliminary Preferred Alternatives	
	2010 ABC	2011 OFL	2012 OFL
<i>Speckled</i>		42.9	42.9
<i>Squarespot</i>		5.8	5.8
<i>Starry</i>		70.5	70.5
<i>Stripetail</i>		20.6	20.6
<i>Swordspine</i>		12.9	12.9
<i>Tiger</i>		0.0	0.0
<i>Vermilion</i>		308.4	308.4
<i>Yellowtail</i>	116.0	1,248.9	1,248.9
Minor Slope Rockfish South	NA	NA	NA
<i>Aurora</i>		29.4	29.4
<i>Bank</i>	350.0	574.8	574.8
<i>Blackgill</i>	282.0	279.0	275.0
<i>Pacific ocean perch</i>		0.0	0.0
<i>Redbanded</i>		11.9	11.9
<i>Rougheye</i>		0.5	0.5
<i>Sharpchin</i>	45.0	10.6	10.6
<i>Shortraker</i>		0.1	0.1
<i>Yellowmouth</i>		0.8	0.8
Other Flatfish	6,731	10,146	10,146
<i>Butter sole</i>	5	5	5
<i>Curlfin sole</i>	8	8	8
<i>Flathead sole</i>	123	35	35
<i>Pacific sanddab</i>	3,172	4,943	4,943
<i>Rex sole</i>	2,902	4,309	4,309
<i>Rock sole</i>	46	66	66
<i>Sand sole</i>	376	781	781
Other Fish	11,200	11,150	11,150
<i>Big skate</i>	No Species-Specific Basis or Contribution to the Stock Complex Harvest Specifications	Unknown	Unknown
<i>California skate</i>		Unknown	Unknown
<i>Leopard shark</i>		164	164
<i>Soupfin shark</i>		62	62
<i>Spiny dogfish</i>		2,200	2,200
<i>Finescale codling</i>			
<i>Pacific rattail</i>		1,178	1,178
<i>Ratfish</i>		Unknown	Unknown
<b><i>Cabazon (OR in 2009-10)</i></b>		NA	NA
<i>Cabazon (WA)</i>		Unknown	Unknown
<i>Kelp greenling (CA)</i>		111	111
<i>Kelp greenling (OR &amp; WA)</i>		Unknown	Unknown



### **2.1.2    *Acceptable Biological Catches***

The new ABC specification proposed under Amendment 23 provides a buffer below the OFL to accommodate the scientific uncertainty in estimating the OFL. The ABC is decided by the Council based on its preferred level of overfishing (i.e., exceeding a specified OFL) risk aversion. Under the No Action harvest specification framework, scientific uncertainty, as well as management uncertainty, socioeconomic considerations, rebuilding considerations, etc. were used in deciding a buffer between the old ABC specification (i.e., overfishing level) and the total catch optimum yield (OY) which was the specification limiting annual fishing mortality. Under the proposed Amendment 23 framework, the new ABC specification is decided in consideration of the scientific uncertainty in estimating the OFL explicitly and the other considerations for deciding the OY are now used in determining the new ACL, which is analogous to the old total catch OY. Since scientific uncertainty was not considered explicitly under the old framework, this section will only discuss the new ABCs proposed for 2011 and 2012 under the Council's preliminary preferred alternative.

All actively managed stocks in the FMP are categorized according to the available data and relative uncertainty in estimating the OFL. Category 1 stocks are the most data-rich with quantitative assessments informing OFLs and other status determination criteria (SDC). Category 2 stocks are data-moderate with OFLs and other SDC based on less quantitative and more uncertain assessments. Category 3 stocks are relatively data-poor with OFLs based on even less quantitative or qualitative data, most often using an average catch approach. The scientific uncertainty buffers defining the ABC are therefore generally greater for category 2 stocks than for category 1 stocks, and even greater for category 3 stocks in recognition of the progressively greater scientific uncertainty for category 2 and 3 stocks. The SSC evaluated the information informing the 2011 and 2012 OFLs for all stocks and categorized each stock using the criteria in

Table 2-4.

Different approaches were recommended by the SSC for deciding scientific uncertainty buffers that define proposed ABCs depending on stock category. The SSC recommended an approach for deciding ABCs for category 1 stocks that incorporates an estimated probability of overfishing ( $P^*$ ) based on the uncertainty of the “true” OFL. Under the  $P^*$  approach, scientific uncertainty associated with estimating an OFL ( $\sigma$ ) is quantified by the SSC and the percentage reduction that defines the scientific uncertainty buffer and the ABC can be determined by translating the estimated  $\sigma$  to a range of  $P^*$  values. Each  $P^*$  value is then mapped to its corresponding buffer fraction<sup>1</sup>. The Council then determines the preferred level of risk aversion by selecting an appropriate  $P^*$  value, accordingly. In cases where the  $P^*$  approach is used, the upper limit of  $P^*$  values considered will be 0.45 under the Council’s proposed Amendment 23 action.

The SSC recommended that the extent of scientific uncertainty for each category 1 stock be quantified using a value for  $\sigma$  which is the greater of 0.36 (the result of a meta-analysis – see Chapter 4) and the coefficient of variation of the most recent estimate of abundance. The SSC noted that this approach divides the scientific aspects related to setting the ABC (specifying the extent of scientific uncertainty ( $\sigma$ )) from the policy decision (specifying the value of  $P^*$ ). The SSC also noted that  $\sigma = 0.36$  is the current best estimate of scientific uncertainty, but that it likely underestimates the true extent of uncertainty by an unknown amount. The SSC will continue to refine this estimate in future management cycles.

The SSC agreed that ideally the approach recommended for setting ABCs for category 1 stocks should also be applied to category 2 and 3 stocks. However, there is at present no analysis available for determining the appropriate value of  $\sigma$  to represent scientific uncertainty for stocks in these categories, unlike the situation for category 1 stocks. In the absence of an analysis for category 2 and 3 stocks, the SSC suggested two interim approaches for computing ABCs from OFLs:

- Either use a 25% and 50% reduction from the OFL for deciding the ABC for category 2 and 3 stocks, respectively; or
- Use a  $P^*$  approach using the  $\sigma$  values for category 2 and 3 stocks recommended by the SSC. The SSC noted that this approach allows the Council to express their views on overfishing risk aversion.

If a  $P^*$  approach is used for deciding the ABC for category 2 and 3 stocks, the SSC recommended setting the value of  $\sigma$  for category 2 and 3 stocks to 0.72 and 1.44 respectively (i.e., two and four times the  $\sigma$  for category 1 stocks). The difference between 0.72 and 1.44 corresponds fairly closely to the difference between the current buffers for category 2 and 3 stocks (25% versus 50%) when  $P^*$  is in the range 0.3 ~ 0.35. Table 2-5 shows the relationship between the proposed values for  $\sigma$  and the buffer for a range of values for  $P^*$ . Exploration of the results from decision tables for some of the stocks in category 2d also indicates values for  $\sigma$  of approximately 0.72. However, the specific values of 0.72 and 1.44 are not based on a formal analysis of assessment outcomes and could change substantially when the SSC reviews additional analyses in future management cycles.

The Council decided to use the  $P^*$  approach for deciding the 2011 and 2012 ABCs for all categories of stocks under their preliminary preferred alternative. They adopted the SSC-recommended  $\sigma$  values for each stock category and adopted a  $P^*$  of 0.45 for category 1 stocks and a  $P^*$  of 0.4 for category 2 and 3 stocks. The buffer amounts or percentage reductions from the OFL corresponding to these  $\sigma$  and  $P^*$  values are 4.4%, 16.7%, and 30.6% for category 1, 2, and 3 stocks, respectively (Table 2-5).

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<sup>1</sup> Since estimated OFLs are median estimates, there is a 50% probability that the OFL is overestimated. Therefore, a  $P^*$  of 0.5 equates to no scientific uncertainty or, in other words, the ABC is set equal to the OFL.

Table 2-6 shows the SSC stock categorizations and preliminary preferred ABCs for those stocks managed with stock-specific harvest specifications. These ABCs are consistent with the preferred  $\sigma$  and  $P^*$  values cited above. Table 2-7 shows the SSC stock categorizations and preliminary preferred ABCs for those stocks managed in stock complexes. The preliminary preferred ABCs in Table 2-7 assumed that all stocks managed in a stock complex were category 3 stocks despite the SSC categorizations. The resulting ABCs were also computed using the SSC-recommended  $\sigma$  of 1.44 for category 3 stocks. As in the case of proposed OFLs, the ABC contributions of the stocks comprising the complexes are shown in Table 2-7 in italics and are not specified in regulations. These component ABCs are calculated using the buffers shown in the  $P^* - \sigma$  relationship (Table 2-5) using the SSC stock categorizations and the preferred  $P^*$  values by category. However, the ABCs proposed to be specified in regulation under the preliminary preferred alternative are at the aggregate complex level (i.e., Minor Rockfish North, Minor Rockfish South, Other Flatfish, and Other Fish) assuming all stocks are category 3 (Table 2-7).

**Table 2-4. Criteria used by the SSC to categorize stocks based on the quantity and quality of data informing the estimate of OFL. Stock categories are used in deciding 2011 and 2012 ABCs that accommodate the uncertainty in estimating OFLs.**

Category	Sub-category	Criteria
Category 1 - Data rich stocks. OFL based on $F_{MSY}$ or $F_{MSY}$ proxy from model output. ABC based on $P^*$ buffer.		
1	c	Age/size structured assessment model with reliable estimation of the stock-recruit relationship.
1	b	As in 3a, but trend information also available from surveys. Age/size structured assessment model.
1	a	Reliable compositional (age and/or size) data sufficient to resolve year-class strength and growth characteristics. Only fishery-dependent trend information available. Age/size structured assessment model.
Category 2 - Data moderate. OFL derived from model output (or natural mortality).		
2	d	Full age-structured assessment, but results are substantially more uncertain than assessments used in the calculation of the $P^*$ buffer. The SSC will provide a rationale for each stock placed in this category. Reasons could include that assessment results are very sensitive to model and data assumptions, or that the assessment has not been updated for many years.
2	c	Historical catches, survey trend information, or at least one absolute abundance estimate. An aggregate population model is fit to the available information.
2	b	Historical catches, fishery-dependent trend information only. An aggregate population model is fit to the available information.
2	a	$M^*$ survey biomass assessment (as in Rogers 1996).
Category 3 - Data poor. OFL derived from historical catch.		
3	d	Reliable annual historical catches and approximate values for natural mortality and age at 50% maturity. Default analytical approach DB-SRA.
3	c	Reliable aggregate catches during period of fishery development and approximate values for natural mortality. Default analytical approach DCAC.
3	b	Reliable catch estimates only for recent years. OFL is average catch during a period when stock is considered to be stable and close to $B_{MSY}$ equilibrium on the basis of expert judgment.
3	a	No reliable catch history. No basis for establishing OFL.

**Table 2-5. Relationship between P\* and the percent reduction of the OFL for deciding the 2011 and 2012 ABCs for category 1, 2, and 3 stocks based on  $\sigma$  values of 0.36, 0.72, and 1.44, respectively (values in bold font and outlined in bold borders are the preferred P\* buffers).**

P*	Assessment Uncertainty ( $\sigma$ )		
	Cat. 1	Cat. 2	Cat. 3
	0.36	0.72	1.44
0.45	<b>4.4%</b>	8.7%	16.6%
0.44	5.3%	10.3%	19.5%
0.43	6.2%	11.9%	22.4%
0.42	7.0%	13.5%	25.2%
0.41	7.9%	15.1%	27.9%
0.4	8.7%	<b>16.7%</b>	<b>30.6%</b>
0.39	9.6%	18.2%	33.1%
0.38	10.4%	19.7%	35.6%
0.37	11.3%	21.3%	38.0%
0.36	12.1%	22.7%	40.3%
0.35	13.0%	24.2%	42.6%
0.34	13.8%	25.7%	44.8%
0.33	14.6%	27.1%	46.9%
0.32	15.5%	28.6%	49.0%
0.31	16.3%	30.0%	51.0%
0.3	17.2%	31.4%	53.0%
0.29	18.1%	32.9%	54.9%
0.28	18.9%	34.3%	56.8%
0.27	19.8%	35.7%	58.6%
0.26	20.7%	37.1%	60.4%
0.25	21.6%	38.5%	62.1%
0.24	22.5%	39.9%	63.8%
0.23	23.4%	41.3%	65.5%
0.22	24.3%	42.6%	67.1%
0.21	25.2%	44.0%	68.7%
0.2	26.1%	45.4%	70.2%
0.19	27.1%	46.9%	71.8%
0.18	28.1%	48.3%	73.2%
0.17	29.1%	49.7%	74.7%
0.16	30.1%	51.1%	76.1%
0.15	31.1%	52.6%	77.5%
0.14	32.2%	54.1%	78.9%
0.13	33.3%	55.6%	80.2%
0.12	34.5%	57.1%	81.6%
0.11	35.7%	58.7%	82.9%
0.1	37.0%	60.3%	84.2%
0.09	38.3%	61.9%	85.5%
0.08	39.7%	63.6%	86.8%
0.07	41.2%	65.4%	88.1%
0.06	42.9%	67.4%	89.3%
0.05	44.7%	69.4%	90.6%

**Table 2-6. Species categories and proposed 2011 and 2012 ABCs (mt) for stocks managed with stock-specific harvest specifications (overfish stocks in CAPS and stocks with new assessments in bold).**

Stock	Species Category a/		Preliminary Preferred Alternatives	
	Category	Sub-category	2011 ABC	2012 ABC
<b>OVERFISHED STOCKS</b>				
<b>BOCACCIO S. of 40°10' N latitude</b>	1		704	700
<b>CANARY</b>	1		586	594
<b>COWCOD S. of 40°10' N latitude</b>			10	10
<i>COWCOD (Conception)</i>	2	c	5	5
<i>COWCOD (Monterey)</i>	3	d	5	5
<b>DARKBLOTCHED</b>	1		485	475
<b>PACIFIC OCEAN PERCH</b>	1		981	962
<b>WIDOW</b>	1		4,872	4,705
<b>YELLOWEYE</b>	1		46	46
<b>PETRALE SOLE</b>	1		976	1,222
<b>NON-OVERFISHED STOCKS</b>				
<b>Lingcod – coastwide</b>	NA	NA	NA	NA
<b>Lingcod N. of 42° N latitude (OR &amp; WA)</b>	1		2,330	2,151
<b>Lingcod S. of 42° N latitude (CA)</b>	2	d	2,102	2,164
Pacific Cod	3	b	2,222	2,222
<b>Pacific Whiting (U.S. + Canada)</b>	1		TBD in 2011	TBD in 2012
Sablefish (coastwide)	1		8,418	8,242
Shortbelly	2	d	TBD	TBD
Chilipepper (coastwide)	1		2,130	1,924
<b>Splitnose S. of 40°10' N latitude</b>	1		1,461	1,538
Yellowtail N. of 40°10' N latitude	1		4,364	4,371
Shortspine Thornyhead (coastwide)	1		2,279	2,254
Longspine Thornyhead (coastwide)	2	d	2,981	2,902
Black Rockfish (WA)	1		426	415
Black Rockfish (OR-CA)	1		1,163	1,117
California scorpionfish	1		135	126
<b>Cabazon (CA)</b>	1		179	168
<b>Cabazon (OR)</b>	1		50	48
Dover Sole	1		42,436	42,843
English Sole	1		19,761	10,150
Arrowtooth Flounder	2	d	15,174	12,049
Starry Flounder	2	d	1,502	1,511
Longnose skate	1		2,990	2,873

**Table 2-7. Species categories and proposed 2011 and 2012 ABCs (mt) for stocks managed in stock complexes (species contributions to a stock complex specification in *italics*, stocks with new assessments in **bold**).**

Stock	Species Category		Preliminary Preferred Alternatives	
	Category	Sub-category	2011 ABC	2012 ABC
<b>STOCK COMPLEXES</b>				
Minor Rockfish North			2,507	2,555
Minor Nearshore Rockfish North			NA	NA
<i>Black and yellow</i>	3	d	0.0	0.0
<i>Blue (CA)</i>	2	d	19.3	19.1
<i>Blue (OR &amp; WA)</i>	3	d	23.0	23.0
<i>Brown</i>	3	d	3.7	3.7
<i>Calico</i>	3	a	0.0	0.0
<i>China</i>	3	d	8.1	8.1
<i>Copper</i>	3	d	19.9	19.9
<i>Gopher</i>	3	a	0.0	0.0
<i>Grass</i>	3	d	0.4	0.4
<i>Kelp</i>	3	d	0.0	0.0
<i>Olive</i>	3	d	0.2	0.2
<i>Quillback</i>	3	d	6.0	6.0
<i>Treefish</i>	3	d	0.1	0.1
Minor Shelf Rockfish North			NA	NA
<i>Bronzespotted</i>	3	d	0.0	0.0
<i>Bocaccio</i>	3	d	186.2	186.2
<i>Chameleon</i>	3	a	0.0	0.0
<i>Cowcod</i>	3	a	0.0	0.0
<i>Flag</i>	3	d	0.1	0.1
<i>Freckled</i>	3	a	0.0	0.0
<i>Greenblotched</i>	3	c	0.9	0.9
<i>Greenspotted</i>	3	d	14.5	14.5
<b><i>Greenstriped</i></b>	2	d	838.7	855.4
<i>Halfbanded</i>	3	b	0.0	0.0
<i>Harlequin</i>	3	a	0.0	0.0
<i>Honeycomb</i>	3	c	0.0	0.0
<i>Mexican</i>	3	c	0.0	0.0
<i>Pink</i>	3	d	0.0	0.0
<i>Pinkrose</i>	3	b	0.0	0.0
<i>Puget Sound</i>	3	a	0.0	0.0
<i>Pygmy</i>	3	a	0.0	0.0
<i>Redstripe</i>	3	d	200.2	200.2
<i>Rosethorn</i>	3	d	10.6	10.6
<i>Rosy</i>	3	d	1.7	1.7
<i>Silvergray</i>	3	d	125.0	125.0
<i>Speckled</i>	3	d	0.1	0.1
<i>Squarespot</i>	3	c	0.1	0.1
<i>Starry</i>	3	d	0.0	0.0
<i>Stripetail</i>	3	d	24.5	24.5
<i>Swordspine</i>	3	d	0.0	0.0

Stock	Species Category		Preliminary Preferred Alternatives	
	Category	Sub-	2011 ABC	2012 ABC
<i>Tiger</i>	3	d	0.8	0.8
<i>Vermilion</i>	3	c	7.7	7.7
Minor Slope Rockfish North			NA	NA
<i>Aurora</i>	3	d	12.0	12.0
<i>Bank</i>	3	d	13.7	13.7
<i>Blackgill</i>	3	c	3.3	3.3
<i>Redbanded</i>	3	d	35.9	35.9
<i>Rougheye</i>	3	d	54.3	54.3
<i>Sharpchin</i>	3	d	161.0	161.0
<i>Shortraker</i>	3	d	15.2	15.2
<b><i>Splitnose</i></b>	1		591.7	623.0
<i>Yellowmouth</i>	3	d	128.2	128.2
Minor Rockfish South			2,987	2,979
Minor Nearshore Rockfish South			NA	NA
<i>Shallow Nearshore Species</i>	NA	NA	NA	NA
<i>Black and yellow</i>	3	c	18.6	18.6
<i>China</i>	3	c	13.7	13.7
<i>Gopher (N of Pt. Conception)</i>	1		121.5	114.6
<i>Gopher (S of Pt. Conception)</i>	3	c	18.1	18.1
<i>Grass</i>	3	d	38.6	38.6
<i>Kelp</i>	3	d	18.0	18.0
<i>Deeper Nearshore Species</i>	NA	NA	NA	NA
<i>Blue (assessed area)</i>	2	d	132.8	131.6
<i>Blue (S of 34°27' N latitude)</i>	3	c	51.4	51.4
<i>Brown</i>	3	d	137.0	137.0
<i>Calico</i>	3	b	0.0	0.0
<i>Copper</i>	3	d	108.3	108.3
<i>Olive</i>	3	d	131.6	131.6
<i>Quillback</i>	3	d	4.4	4.4
<i>Treefish</i>	3	d	9.0	9.0
Minor Shelf Rockfish South			NA	NA
<i>Bronzespotted</i>	3	c	4.6	4.6
<i>Chameleon</i>	3	a	0.0	0.0
<i>Flag</i>	3	c	18.5	18.5
<i>Freckled</i>	3	a	0.0	0.0
<i>Greenblotched</i>	3	d	17.1	17.1
<i>Greenspotted</i>	3	d	135.6	135.6
<b><i>Greenstriped</i></b>	2	d	153.4	156.9
<i>Halfbanded</i>	3	b	0.0	0.0
<i>Harlequin</i>	3	a	0.0	0.0
<i>Honeycomb</i>	3	c	5.4	5.4
<i>Mexican</i>	3	c	2.0	2.0
<i>Pink</i>	3	d	2.0	2.0
<i>Pinkrose</i>	3	a	0.0	0.0
<i>Pygmy</i>	3	a	0.0	0.0
<i>Redstripe</i>	3	d	0.4	0.4
<i>Rosethorn</i>	3	d	1.7	1.7
<i>Rosy</i>	3	d	25.7	25.7



Stock	Species Category		Preliminary Preferred Alternatives	
	Category	Sub-	2011 ABC	2012 ABC
<i>Silvergray</i>	3	d	0.4	0.4
<i>Speckled</i>	3	d	29.8	29.8
<i>Squarespot</i>	3	c	4.0	4.0
<i>Starry</i>	3	d	49.0	49.0
<i>Stripetail</i>	3	d	14.3	14.3
<i>Swordspine</i>	3	d	9.0	9.0
<i>Tiger</i>	3	d	0.0	0.0
<i>Vermilion</i>	3	d	214.1	214.1
<i>Yellowtail</i>	3	d	867.1	867.1
Minor Slope Rockfish South			NA	NA
<i>Aurora</i>	3	c	20.4	20.4
<i>Bank</i>	2	a	399.1	399.1
<i>Blackgill</i>	1		193.7	190.9
<i>Pacific ocean perch</i>	3	a	0.0	0.0
<i>Redbanded</i>	3	d	8.2	8.2
<i>Rougheye</i>	3	d	0.3	0.3
<i>Sharpchin</i>	3	d	7.4	7.4
<i>Shortraker</i>	3	d	0.1	0.1
<i>Yellowmouth</i>	3	d	0.6	0.6
Other Flatfish			7,044	7,044
<i>Butter sole</i>	3	b	3	3
<i>Curlfin sole</i>	3	b	6	6
<i>Flathead sole</i>	3	b	24	24
<i>Pacific sanddab</i>	3	d	3,432	3,432
<i>Rex sole</i>	3	d	2,992	2,992
<i>Rock sole</i>	3	c	46	46
<i>Sand sole</i>	3	c	542	542
Other Fish	3		7,742	7,742
<i>Big skate</i>	3		0	0
<i>California skate</i>	3		0	0
<i>Leopard shark</i>	3	d	164	164
<i>Souppin shark</i>	3	c	62	62
<i>Spiny dogfish</i>	3	d	2,200	2,200
<i>Finescale codling</i>	3		Unknown	Unknown
<i>Pacific rattail</i>	3	c	1,178	1,178
<i>Ratfish</i>	3		Unknown	Unknown
<b>Cabazon (OR in 2009-10)</b>	1		NA	NA
<i>Cabazon (WA)</i>	3		Unknown	Unknown
<i>Kelp greenling (CA)</i>	3	d	111	111
<i>Kelp greenling (OR &amp; WA)</i>	3		Unknown	Unknown

### **2.1.3 Annual Catch Limits**

Annual catch limits under the proposed Amendment 23 harvest specification framework are specified for each actively managed stock and stock complex. The ACL counts all sources of fishing-related mortality including landed catch, discard mortalities, research catches, and yield set-asides for exempted fishing permits (EFPs). In this regard, the ACL is analogous to the total catch OY specified in past years (and under the No Action alternative). Therefore, in this section, ACL alternatives analyzed for 2011 and 2012 are compared to 2010 OYs under the No Action alternative.

The ACL can be set equal to the ABC or below the ABC to create a buffer that accommodates management uncertainty, socioeconomic considerations, rebuilding considerations, or to meet any other management objectives. The new ABC control rules contemplated under Amendment 23 (e.g., the P\* approach) were still being developed by the SSC in November 2009 when the initial range of ACL alternatives were adopted for analysis. It was acknowledged then that some of the ACL alternatives were likely to be higher than ABCs that were to be adopted as part of the preliminary preferred alternative in April 2010. There was also a wider range of ACL alternatives for the overfished species adopted for analysis in November 2009 than the range the Council adopted for more detailed analysis in April 2010. The ACL alternatives adopted for more detailed analysis, including the No Action and preliminary preferred alternatives, are shown in Table 2-8 for 2011 fisheries and Table 2-9 for 2012 fisheries.

The 2011 and 2012 ACL alternatives for sablefish vary by method for apportioning the estimated coastwide biomass, the two options for translating the 40-10 ACL harvest control rule under the new Amendment 23 framework (since the sablefish stock is in the precautionary zone), and whether an additional 50% reduction is applied south of 36° N lat. to account for greater scientific and management uncertainty (Table 2-10). The Council's preliminary preferred 2011 and 2012 sablefish ACL alternatives include a 68:32 north:south apportionment based on the 2003-2008 average swept area biomass by area estimated from the NMFS trawl survey, the option 2 40-10 rule (also the preliminary preferred Amendment 23 alternative), and application of an additional 50% uncertainty adjustment for the south.

**Table 2-8. Range of 2011 annual catch limit (ACL) alternatives (mt) adopted for detailed analysis (overfished stocks in CAPS; stocks with new assessments in bold).**

Stock	No Action Alternative	Status Quo Alternative a/	2011 Action Alternatives			
	2010 OY	2011 ACL	Prelim. Pref. ACL	Alt 1 ACL	Alt 2 ACL	Alt 3 ACL
<b>OVERFISHED SPECIES</b>						
<b>BOCACCIO S. of 40°10' N lat.</b>	288	263	TBD	53	109	263
<b>CANARY</b>	105	102	102	49	94	102
<b>COWCOD S. of 40°10' N lat.</b>	4	4	4	2	3	4
<b>DARKBLOTCHED</b>	291	332	332	222	298	332
<b>PACIFIC OCEAN PERCH</b>	200	180	180	80	111	180
<b>WIDOW</b>	509	352	600	200	400	600
<b>YELLOWEYE</b>	17	20	20	13	17	20
<b>PETRALE SOLE</b>	1,200	NA	976	459	776	976
<b>NON-OVERFISHED SPECIES</b>						
<b>Lingcod – coastwide</b>	4,829	NA	NA	NA	NA	NA
<b>Lingcod N. of 42° N lat. (OR &amp; WA)</b>	NA	NA	2,330	1,219	2,172	2,330
<b>Lingcod S. of 42° N lat. (CA)</b>	NA	NA	2,102	1,262	1,421	2,102
Pacific Cod	1,600	NA	1,600	1,600		
<b>Pacific Whiting (U.S.)</b>	193,935	NA	NA	67,970	135,939	404,318
Sablefish N. of 36° N lat.	6,471	NA	4,961	See Table 2-10		
Sablefish S. of 36° N lat.	1,258	NA	1,167			
Shortbelly	6,950	NA	TBD	6,950		
Chilipepper b/	2,447	NA	2,130	2,130		
Yellowtail N. of 40°10' N lat.	4,562	NA	4,364	4,364		
Shortspine Thornyhead - N. of 34°27' N lat.	1,591	NA	1,573	1,573	1,573	
Shortspine Thornyhead - S. of 34°27' N lat.	410	NA	405	405	811	
Longspine Thornyhead - N. of 34°27' N lat.	2,175	NA	2,119	2,119	2,825	
Longspine Thornyhead - S. of 34°27' N lat.	385	NA	375	375	751	
Black Rockfish (WA)	464	NA	426	426		
Black Rockfish (OR-CA)	1,000	NA	1,000	1,000		
California scorpionfish	155	NA	135	133	135	
<b>Cabazon (CA)</b>	79	NA	179	102	160	179
<b>Cabazon (OR)</b>	NA	NA	50	29	50	-
Dover Sole	16,500	NA	17,560	16,500	17,560	42,436
English Sole	9,745	NA	19,761	7,158	19,761	
Arrowtooth Flounder	10,112	NA	15,174	9,109	15,174	
Starry Flounder	1,077	NA	1,352	1,130	1,352	1,502
Longnose skate	1,349	NA	1,349	1,349		
<b>STOCK COMPLEXES</b>						
Minor Rockfish North	2,283	NA	2,283			
Minor Nearshore Rockfish North	155	NA	155			
Minor Shelf Rockfish North	968	NA	968			
Minor Slope Rockfish North	1,160	NA	1,160			
Minor Rockfish South	1,990	NA	1,990			
Minor Nearshore Rockfish South	650	NA	650			
Minor Shelf Rockfish South	714	NA	714			
Minor Slope Rockfish South	626	NA	626			
Other Flatfish	4,884	NA	4,884			
Other Fish	5,600	NA	5,575			

a/ The status quo alternative are the ACLs under the current SPR harvest rates prescribed in rebuilding plans as applied to the estimated biomass for the stock. This alternative applies only to the overfished species with adopted rebuilding plans and differs from the No Action alternative, which is based on the 2010 OYs in regulation.

b/ Chilipepper rockfish specifications are projected from the 2007 assessment based on the population occurring in waters off CA and OR. They were specified for south of 40°10' N lat. in 2009-10, but should have been applied for the waters off CA and OR.

**Table 2-9. Range of 2012 annual catch limit (ACL) alternatives (mt) adopted for detailed analysis (overfished stocks in CAPS; stocks with new assessments in bold).**

Stock	No Action Alternative	Status Quo Alternative a/	2012 Action Alternatives			
	2010 OY	2011 ACL	Prelim. Pref. ACL	Alt 1 ACL	Alt 2 ACL	Alt 3 ACL
<b>OVERFISHED SPECIES</b>						
<b>BOCACCIO S. of 40°10' N latitude</b>	288	274	TBD	56	115	274
<b>CANARY</b>	105	107	107	51	99	107
<b>COWCOD S. of 40°10' N lat.</b>	4	4	4	2	3	4
<b>DARKBLOTCHED</b>	291	329	329	131	222	329
<b>PACIFIC OCEAN PERCH</b>	200	183	183	80	113	183
<b>WIDOW</b>	509	339	600	200	400	600
<b>YELLOWEYE</b>	17	21	20	13	17	20
<b>PETRALE SOLE</b>	1,200	NA	1,160	624	1,160	1,160
<b>NON-OVERFISHED SPECIES</b>						
<b>Lingcod – coastwide</b>	4,829	NA	NA	NA	NA	NA
<b>Lingcod N. of 42° N latitude (OR &amp; WA)</b>	NA	NA	2,151	1,126	2,020	2,151
<b>Lingcod S. of 42° N latitude (CA)</b>	NA	NA	2,164	1,299	1,531	2,164
Pacific Cod	1,600	NA	1,600	1,600		
<b>Pacific Whiting (U.S.)</b>	193,935	NA	NA	67,970	135,939	404,318
Sablefish N. of 36° N latitude	6,471	NA	4,961	See Table 2-10		
Sablefish S. of 36° N latitude	1,258	NA	1,167			
Shortbelly	6,950	NA	TBD	6,950		
Chilipepper b/	2,447	NA	1,924	1,924		
Yellowtail N. of 40°10' N latitude	4,562	NA	4,371	4,371		
Shortspine Thornyhead - N. of 34°27' N latitude	1,591	NA	1,556	1,556	1,556	
Shortspine Thornyhead - S. of 34°27' N latitude	410	NA	401	401	802	
Longspine Thornyhead - N. of 34°27' N latitude	2,175	NA	2,064	2,064	2,751	
Longspine Thornyhead - S. of 34°27' N latitude	385	NA	366	366	731	
Black Rockfish (WA)	464	NA	415	415		
Black Rockfish (OR-CA)	1,000	NA	1,000	1,000		
California scorpionfish	155	NA	126	124	126	
<b>Cabazon (CA)</b>	79	NA	168	105	156	168
<b>Cabazon (OR)</b>		NA	48	29	48	
Dover Sole	16,500	NA	17,560	16,500	17,560	42,843
English Sole	9,745	NA	10,150	5,790	10,150	
Arrowtooth Flounder	10,112	NA	12,049	8,241	12,049	
Starry Flounder	1,077	NA	1,360	1,166	1,360	1,511
Longnose skate	1,349	NA	1,349	1,349		
<b>STOCK COMPLEXES</b>						
Minor Rockfish North	2,283	NA	2,283			
Minor Nearshore Rockfish North	155	NA	155			
Minor Shelf Rockfish North	968	NA	968			
Minor Slope Rockfish North	1,160	NA	1,160			
Minor Rockfish South	1,990	NA	1,990			
Minor Nearshore Rockfish South	650	NA	650			
Minor Shelf Rockfish South	714	NA	714			
Minor Slope Rockfish South	626	NA	626			
Other Flatfish	4,884	NA	4,884			
Other Fish	5,600	NA	5,575			

a/ The status quo alternative are the ACLs under the current SPR harvest rates prescribed in rebuilding plans as applied to the estimated biomass for the stock. This alternative applies only to the overfished species with adopted rebuilding plans and differs from the No Action alternative, which is based on the 2010 OYs in regulation.

b/ Chilipepper rockfish are projected from the 2007 assessment based on the population occurring in waters off CA and OR. They were specified for south of 40°10' N lat. in 2009-10, but should have been applied for the waters off CA and OR.

**Table 2-10. Alternative 2011 and 2012 sablefish ACLs that vary by methods for apportioning the estimated coastwide biomass, two options for the 40-10 ACL harvest control rule, and whether a 50% uncertainty adjustment is applied in the south (N and S = north and south of 36° N lat.).**

2011 ABC = 8,418							
Apportionment Method		40-10 (Opt. 1)			40-10 (Opt. 2)		
North/South Proportions	Basis	8,485			7,296		
		N ACL	S ACL	S ACL *.5	N ACL	S ACL	S ACL *.5
72/28	2003-06 survey	6,061	2,357	1,179	5,253	2,043	1,021
68/32	2003-08 survey	5,724	2,694	1,347	4,961	2,335	1,167
64/36	2003-08 survey (variance weighted)	5,388	3,030	1,515	4,669	2,627	1,313
2012 ABC = 8,242							
Apportionment Method		40-10 (Opt. 1)			40-10 (Opt. 2)		
North/South Proportions	Basis	8,227			6,896		
		N ACL	S ACL	S ACL *.5	N ACL	S ACL	S ACL *.5
72/28	2003-06 survey	5,923	2,304	1,152	4,965	1,931	965
68/32	2003-08 survey	5,594	2,633	1,316	4,689	2,207	1,103
64/36	2003-08 survey (variance weighted)	5,265	2,962	1,481	4,413	2,483	1,241

#### **2.1.4 Harvest Specifications for Overfished Species and Rebuilding Concerns**

Overfished groundfish species are those with spawning biomasses that have dropped below the Council's minimum stock size threshold (MSST) (i.e., 25 percent of initial spawning biomass or  $B_{25\%}$  for all groundfish species other than flatfish where the proposed MSST is  $B_{12.5\%}$ ). The FMP mandates these stocks need to be rebuilt through harvest restrictions and other conservation measures to a target biomass that supports maximum sustainable yield (i.e.,  $B_{MSY} - B_{40\%}$  for all groundfish species other than flatfish where the proposed target is  $B_{25\%}$ ). Furthermore, the MSA mandates these rebuilding periods need to be the shortest time possible while taking into account the status and biology of the overfished stock, the needs of fishing communities, and the interaction of the overfished stock within the marine ecosystem. This mandate was underscored in an August 2005 ruling by the Ninth Circuit Court of Appeals in a challenge to the Council's darkblotched rockfish rebuilding plan. In accordance with that ruling, the Council decided to reconsider all adopted rebuilding plans under FMP Amendment 16-4 to ensure they comply with the MSA as interpreted by the courts. Amendment 16-4 was adopted in 2006. Modifications to some of the Amendment 16-4 rebuilding plans were made in 2008 as part of the 2009-2010 biennial specifications process. These modifications were largely due to changes in our understanding of stock status and/or productivity from assessments and rebuilding analyses done in 2007.

New full and updated assessments and rebuilding analyses done in 2009 inform the 2011 and 2012 harvest specifications for overfished species. Seven rockfish species (bocaccio south of 40°10' N lat., canary, cowcod south of 40°10' N lat., darkblotched, Pacific ocean perch (POP), widow, and yelloweye rockfish) are currently managed under rebuilding plans adopted under Amendment 16-4 as amended in regulations decided for the 2009-2010 biennial management cycle. An eighth species, petrale sole, was declared overfished based on the results of the new full assessment done in 2009 {Haltuch and Hicks 2009a}.

Progress towards rebuilding for the seven overfished rockfish species was reviewed in relation to the current year to rebuild ( $T_{TARGET}$ ) and the SPR harvest rate specified in the respective rebuilding plans

(Table 2-11). Rebuilding is occurring for all species based on relative depletion (i.e., spawning biomass relative to estimated unfished spawning biomass) trends (Figure 2-1).

Two stocks (i.e., canary rockfish and POP) are behind schedule and are very unlikely to rebuild by the current  $T_{TARGET}$  as specified in their respective rebuilding plans. Canary rockfish is six years behind schedule, with a 26 percent probability of rebuilding by the current  $T_{TARGET}$  (2021) under the adopted harvest rate. Pacific ocean perch is only three years behind schedule (Table 2-11). However, the new  $T_{F=0}$  (i.e., time to recover if harvest ceased in 2011) is 2018 and is greater than the adopted  $T_{TARGET}$  (2017). For canary rockfish this deviation from  $T_{TARGET}$  is due primarily to changes in our understanding of stock productivity and depletion due to re-estimation of the time-series of historical catches. In the case of POP, the change is due primarily to revised estimates of stock productivity and depletion arising from two Northwest Fisheries Science Center (NWFSC) survey indices that were low in 2007 and 2008. These changes represent fundamental revisions to our understanding of the status of these species, which in turn warrant revisions to  $T_{TARGET}$ . Therefore, the proposed action includes modification of the canary rockfish and POP rebuilding plans by revising the  $T_{TARGET}$ . A slight lowering of the harvest rate specified in the yelloweye rebuilding plan is also proposed to maintain the  $T_{TARGET}$  of 2084.

**Table 2-11. Projected median year to rebuild each of the seven overfished rockfish species based on new 2009 rebuilding analyses at current SPR harvest rates specified in rebuilding plans.**

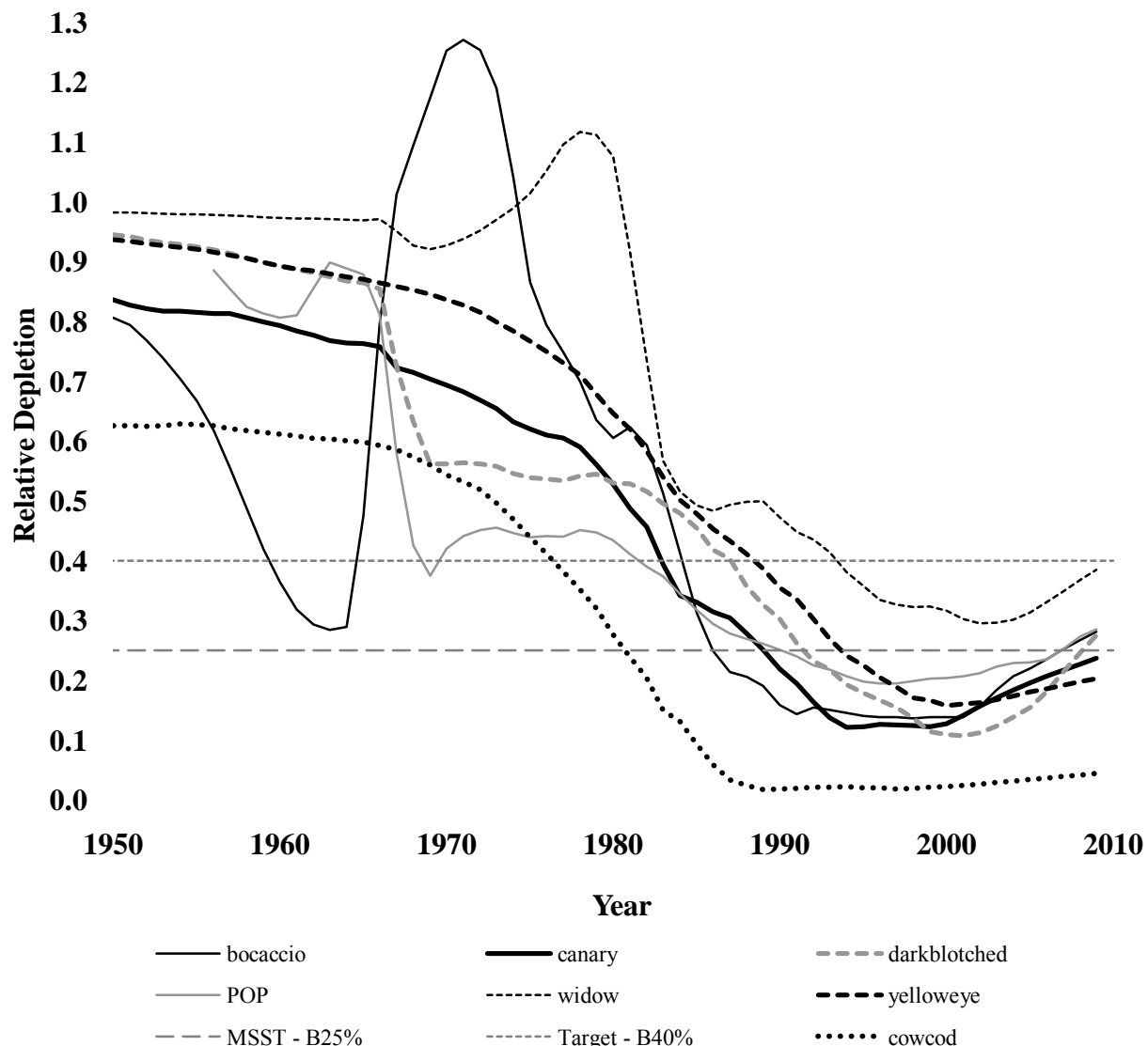
Species	Total Catch / Total Cumulative OY During Rebuilding a/	Current SPR HR Adopted in Rebuilding Plan	Current $T_{TARGET}$	New $T_{F=0}$ b/	Median Year to Rebuild Under Adopted SPR HR	Difference in Years Between Current $T_{TARGET}$ and New Median Year to Rebuild c/	New $T_{MAX}$ d/
Bocaccio	50% (2000-2008)	77.7%	2026	2018	2022	4	2031
Canary	114% (2000-2007)	88.7%	2021	2024	2027	<b>-6</b>	2046
Cowcod	44% (2002-2007)	79.0%	2072	2060	2071	1	2097
Darkblotched	97% (2001-2007)	62.1%	2028	2016	2027	1	2037
POP	47% (2000-2008)	86.4%	2017	2018	2020	<b>-3</b>	2045
Widow	45% (2002-2007)	95.0%	2015	2010	2010	5	2025
Yelloweye	63% (2002-2007)	71.9%	2084	2047	2087	-3	2089

a/ The years considered are the years with reliable catch data since the stock was designated overfished and has been under rebuilding.

b/ New  $T_{F=0}$  is the shortest time to rebuild and assumes all fishing-related mortality is eliminated beginning in 2011.

c/ Positive values reflect rebuilding being ahead of schedule, while negative values reflect delays. Values which are bolded indicate a substantial difference indicating a low probability of rebuilding by  $T_{TARGET}$  (<40%).

d/ New  $T_{MAX}$  is the new legal maximum time to rebuild based on the new stock assessment and rebuilding analysis.



**Figure 2-1. Relative depletion trends from 1950 to present for the seven overfished west coast rockfish species in relation to the MSST of  $B_{25\%}$  and the  $B_{MSY}$  target of  $B_{40\%}$ .**

A new assessment for petrale sole was done in 2009 {Haltuch and Hicks 2009a} that indicated the stock was overfished. This compelled the development of a petrale sole rebuilding analysis {Haltuch and Hicks 2009b}, which was used to develop the ACL alternatives for 2011 (Table 2-8) and 2012 (Table 2-9). The proposed action includes the adoption of a rebuilding plan for the petrale sole stock using information from the new assessment and rebuilding analysis.

Table 2-12 depicts the estimated median time to rebuild, current  $T_{TARGET}$ , and SPR harvest rate relative to alternative 2011-2012 ACLs for overfished west coast groundfish stocks. The discussion that follows details the basis of the ACL alternatives adopted for overfished species for detailed analysis. Alternatives for the seven overfished rockfish managed under adopted rebuilding plans are compared against the status quo alternative, which assumes the SPR harvest rates specified in rebuilding plans; and against  $T_{F=0}$ , the shortest time to rebuild the stock at this point by eliminating all harvest beginning in 2011 (i.e., an F100% SPR harvest rate is specified).

**Table 2-12. Estimated time to rebuild, current target year to rebuild ( $T_{TARGET}$ ), and SPR harvest rate relative to alternative 2011-2012 ACLs for overfished west coast groundfish stocks.**

Stock	Current $T_{TARGET}$	ACL Alt.	Median Time to Rebuild	ACLs (mt)		SPR HR
				2011	2012	
Bocaccio S of 40°10' N lat.	2026		2019	0	0	F100%
		1	2019	53	56	F95%
		2	2020	109	115	F90%
		3	2022	263	274	F77.7%
			2024	373	384	F70%
			2028	539	545	F60%
			2031	605	609	F56%
Canary	2021		2024	0	0	F100%
		1	2025	49	51	F94.4%
			2026	69	72	F92.2%
		2	2026	94	99	F89.5%
		3; PPA	2027	102	107	F88.7%
			2027	129	135	F86%
			2028	155	162	F83.4%
			2031	253	263	F74.4%
			2035	308	318	F70%
			2043	396	408	F63.4%
			2046	415	426	F62.1%
Cowcod	2072		2060	0	0	F100%
		1	2064	2	2	F90%
		2	2068	3	3	F82.7%
		3; PPA	2071	4	4	F79%
			2074	5	5	F74.2%
			2097	9	9	F59.7%



Stock	Current T <sub>TARGET</sub>	ACL Alt.	Median Time to Rebuild	ACLs (mt)		SPR HR
				2011	2012	
Darkblotched	2028		2016	0	0	F100%
		1	2018	130	131	F81.8%
		2	2022	222	222	F71.9%
			2025	298	296	F64.9%
		3; PPA	2027	332	329	F62.1%
			2028	364	360	F59.6%
			2037	461	453	F52.8%
POP	2017		2018	0	0	F100%
		1	2019	80	80	F93.6%
		2	2019	111	113	F91.2%
		3; PPA	2020	180	183	F86.4%
			2021	204	208	F84.8%
			2021	265	269	F81.1%
			2024	404	408	F73.6%
			2031	635	635	F63.6%
			2038	751	747	F59.5%
			2045	836	829	F56.8%
Widow	2015		2010	0	0	
		1	2010	200	200	
		2	2010	400	400	
		3; PPA	2010	600	600	
			2010	1,000	1,000	
			2010	3,000	3,000	

Stock	Current T <sub>TARGET</sub>	ACL Alt.	Median Time to Rebuild	ACLs (mt)		SPR HR
				2011	2012	
Yelloweye	2084		2047	0	0	F100%
			2058	9	9	F86%
		1	2065	13	13	F80.7%
		2	2074	17	17	F76%
		3; PPA	2084	20	20	F72.8%
			2087	20	21	F71.9%
			2092	21	22	F70.9%
Petrale	NA		2014	0	0	F100%
		1	2014	459	624	F50%
		2	2015	776	1,160	25:5 rule
		3; PPA	2016	976	1,160	ABC in 2011; 25:5 rule thereafter
			2017	1,021	1,279	F30%

#### 2.1.4.1 Bocaccio South of 40°10' N lat.

##### **Bocaccio Stock Status**

A new bocaccio assessment was conducted in 2009 {Field et al. 2009}. The last full assessment of bocaccio was conducted in 2003 (MacCall 2006b), and it was subsequently updated in 2005 and 2007 {MacCall, 2008 1428 /id}. The 2009 assessment used the SS3 modeling framework instead of SS1, extended the northern boundary from Cape Mendocino to Cape Blanco, and extended the period modeled from one beginning in 1951 to one beginning in 1892. There is evidence of two demographic clusters off the west coast centered off southern/central California and British Columbia. Although the bocaccio range extends considerably further north of Cape Blanco, abundance is low between Cape Mendocino and the Columbia River. Evidence also exists for a diffusion of young bocaccio from southern California (Conception area) northward as they age.

Major data changes for the 2009 assessment compared to previous assessments included a revised catch history and modeling of the trawl fishery as northern and southern components rather than as a single fishery. The 2009 assessment incorporated the NWFSC shelf-slope trawl survey for the first time, and also revised triennial trawl survey estimates. The 2009 assessment also used the NWFSC Southern California Bight hook and line survey and revised juvenile indices from the recreational pier index and juvenile trawl survey index.

The best estimate of current stock depletion in the 2009 assessment is 28 percent. The results of the 2009 assessment are consistent with those of the 2007 update, except for a smaller estimated starting biomass.

The change in the estimated starting biomass resulted primarily from extension of the assessment period back to 1892 when spawning output was estimated to be close to unfished levels.

### **Alternative Bocaccio Harvest Specifications**

The 2011 and 2012 OFLs were projected from the 2009 bocaccio assessment by applying the proxy harvest rate of  $F_{50\%}$  recommended by the SSC to the estimated exploitable biomass. The new bocaccio assessment extended the stock assessment north of 40°10' N latitude to Cape Blanco, Oregon at approximately 43° N lat. The Council decided, as a preliminary-preferred alternative, not to extend the bocaccio rebuilding plan north of 40°10' N latitude to Cape Blanco based on SSC and GMT advice that extending the rebuilding plan further north would not aid stock recovery and would only complicate current management. The STAT determined that six percent of the assessed biomass occurs north of 40°10' N lat. and the projected OFLs from the assessment were adjusted accordingly. The preferred OFLs for bocaccio are 737 and 732 mt for 2011 and 2012 fisheries, respectively.

The SSC categorized bocaccio as a category 1 stock and recommended the assessment uncertainty ( $\sigma$ ) value of 0.36 be used to determine ABCs following a  $P^*$  approach. The Council decided the overfishing probability ( $P^*$ ) of 0.45 for determining preferred 2011 and 2012 ABCs of 704 and 700 mt, respectively.

There are three bocaccio ACL alternatives that were adopted for detailed analysis. These ACL alternatives were derived from the 2009 rebuilding analysis {Field and He 2009}, which used results from the new assessment. Alternative 1, 53 and 56 mt for 2011 and 2012, respectively, applies an  $F_{95\%}$  SPR harvest rate and has a predicted median time to rebuild of 2019, which equals  $T_{F=0}$  (i.e., the shortest time to rebuild the stock at this point) (Table 2-12). Alternative 2 would apply an  $F_{90\%}$  SPR harvest rate to determine 2011 and 2012 ACLs of 109 and 115 mt, respectively, with a predicted median time to rebuild the stock of 2020 or one year longer than  $T_{F=0}$ . Alternative 3 is the status quo alternative by applying the  $F_{77.7\%}$  SPR harvest rate specified in the rebuilding plan to determine 2011 and 2012 ACLs of 263 and 274 mt, respectively. This alternative has a predicted median time to rebuild of 2022 or three years longer than  $T_{F=0}$ . The three ACL alternatives are predicted to rebuild the stock 7, 6, and 4 years, respectively before the current  $T_{TARGET}$  specified in the rebuilding plan (Table 2-12). The SSC did not recommend a change to the current rebuilding plan.

#### **2.1.4.2 *Canary Rockfish***

##### **Stock Status**

Canary rockfish is a North American transboundary rockfish species distributed from central California to Alaska. The species is patchily distributed and difficult to sample well using bottom trawl gear. From the mid-1940s until it was declared overfished (1999), the average annual harvest was 2,500 mt. Since 1999, harvest has been greatly reduced with annual catches only in the range 172-287 mt.

An update of the last full assessment for canary rockfish in 2007 {Stewart, 2008 1424 /id} was provided in 2009 {Stewart 2009}. In 2007, the relative stock depletion was estimated to be 32.4 percent and the estimates of spawning stock biomass were indicating an upward trend. The 2009 assessment update updated fishery and survey data to include the years since the last assessment, as well as data for earlier years. Most of these data updates were minor with the exception of the use of a revised historical California catch time series for the years 1916-1980.

The update assessment results indicate that the current depletion percentage is 23.7 percent and stock projections show a slight increase in 2010 (24.5 percent). There is a high degree of uncertainty in the parameter estimates, especially steepness. Under the range of alternatives examined by the STAT, recent-

year depletion percentage is highly dependent on steepness. The management implications of the updated assessment are not qualitatively different from those of the 2007 assessment. The principal difference lies in the estimate of unfished spawning biomass ( $B_0$ ). While the overall spawning biomass trends (over the past 50 years) are not greatly different, the updated assessment estimated a smaller spawning biomass with concomitantly lower depletion percentage in recent years. The overall result of the 2009 update is that our perception of the relative status and productivity of the canary rockfish stock has changed. The stock cannot rebuild by the current  $T_{\text{TARGET}}$  (2021) specified in the rebuilding plan given that the new median estimate of  $T_{F=0}$  is 2024 or three years longer. Therefore, a modification of the current canary rockfish rebuilding plan is recommended under the proposed action.

### **Alternative Harvest Specifications**

The 2011 and 2012 OFLs under the preferred alternative were determined from the 2009 update assessment by applying the  $F_{\text{MSY}}$  proxy harvest rate of  $F_{50\%}$  recommended by the SSC to the estimated exploitable biomass. The recommended 2011 and 2012 OFLs are 614 and 622 mt, respectively.

The SSC categorized canary rockfish as a category 1 stock and recommended the assessment uncertainty ( $\sigma$ ) value of 0.36 be used to determine ABCs following a  $P^*$  approach. The Council decided the overfishing probability ( $P^*$ ) of 0.45 for determining preferred 2011 and 2012 ABCs of 586 and 594 mt, respectively.

There are three canary ACL alternatives that were adopted for detailed analysis. These ACL alternatives were derived from the 2009 rebuilding analysis {Stewart 2009}, which used results from the new assessment. Our current understanding of canary rockfish stock status and productivity leads to the result that  $T_{F=0}$  is longer than the current  $T_{\text{TARGET}}$ . Therefore, all ACL alternatives contemplate a change in the median time to rebuild the stock greater than the current  $T_{\text{TARGET}}$ . Alternative 1, 49 and 51 mt for 2011 and 2012, respectively, applies an  $F_{94.4\%}$  SPR harvest rate and has a predicted median time to rebuild of 2025, which is one year longer than  $T_{F=0}$  (Table 2-12). Alternative 2 would apply an  $F_{89.5\%}$  SPR harvest rate to determine 2011 and 2012 ACLs of 94 and 99 mt, respectively, with a predicted median time to rebuild the stock of 2026 or two years longer than  $T_{F=0}$ . Alternative 3 is the preliminary preferred alternative and is the status quo alternative by applying the  $F_{88.7\%}$  SPR harvest rate specified in the rebuilding plan to determine 2011 and 2012 ACLs of 102 and 107 mt, respectively. This alternative has a predicted median time to rebuild of 2027 or three years longer than  $T_{F=0}$ . The three ACL alternatives are predicted to rebuild the stock 4, 5, and 6 years longer, respectively than the current  $T_{\text{TARGET}}$  specified in the rebuilding plan (Table 2-12). The SSC did recommend modifying the rebuilding plan out of the necessity to extend the current  $T_{\text{TARGET}}$  based on our changed understanding of stock status and productivity.

#### **2.1.4.3 Cowcod South of 40°10' N lat.**

### **Stock Status**

The cowcod is a long-lived, large, heavily overfished species with a large conservation zone in the Southern California Bight (SCB). The species extends to the north, but is concentrated in SCB. In 1999, the first assessment of cowcod (Butler, *et al.* 1999b) indicated that the stock was overfished.

The 2009 update assessment {Dick *et al.* 2009} estimated the depletion percentage at 4.5 percent for the base model bounded by 3.8 percent (low state of nature) and 21.0 percent (high state of nature). The stock continues to display a slow upward trend but given that no new data are available, this result is little more than a stock projection. Cowcod remain on a multi-decadal rebuilding timeline. The 2009 assessment was an update to the full assessment done in 2007 {Dick, 2008 1433 /id}, which estimated the

depletion percentage at 3.8 percent. The trend in spawning biomass was increasing slowly mainly due to assumed low catch.

No new data sources were available for the update assessment. Catch reconstructions were done for both the commercial (1900-1968) and recreational fleets (1928-1980). However, the commercial reconstructions while slightly larger than those used in the assessment, were also for a larger area than the SCB, and therefore not directly comparable. The reconstructed recreational catches were lower than those used in the 2007 assessment and were adopted for the current update.

There is little change in the view of stock status as a result of the 2009 update assessment. However, the change in historical recreational catches did lower the estimate of  $B_0$  and partly gave rise to the increase in the 2009 estimate of depletion percentage. The SSC did not recommend any changes to the current cowcod rebuilding plan.

### **Alternative Harvest Specifications**

The 2011 and 2012 OFLs under the preferred alternative were determined from the 2009 assessment by applying the  $F_{MSY}$  proxy harvest rate of  $F_{50\%}$  recommended by the SSC to the estimated exploitable biomass for the assessed portion of the stock in the Conception area. The OFLs for the Monterey area portion of the stock were determined using a DB-SRA approach. The OFLs for the Conception and the Monterey areas were summed to determine an OFL specification of 13 mt for 2011 and 2012 for the entire stock south of  $40^{\circ}10'$  N lat.

The SSC categorized the assessed portion of the stock (Conception area) as category 2 and recommended the assessment uncertainty ( $\sigma$ ) value of 0.72 be used to determine the ABC following a  $P^*$  approach. The Council used the overfishing probability ( $P^*$ ) of 0.4 for determining the Conception area contribution to the ABC. The Monterey portion of the stock was categorized as a category 3 stock since a catch-based approach was used to determine the ABC contribution. These ABC contributions were summed to determine an ABC of 10 mt for cowcod south of  $40^{\circ}10'$  N lat.

There are three cowcod ACL alternatives that were adopted for detailed analysis. These ACL alternatives were derived from the 2009 rebuilding analysis for the Conception area contribution {Dick and Ralston 2009}, which used results from the 2009 updated assessment. The GMT-recommended convention of doubling the assessed area ACLs to incorporate an appropriate harvest contribution for the unassessed Monterey area was done to develop alternative ACLs. Alternative 1, 2 mt for 2011 and 2012, applies an  $F_{90\%}$  SPR harvest rate and has a predicted median time to rebuild of 2064, which is four years longer than  $T_{F=0}$  (Table 2-12). Alternative 2 would apply an  $F_{82.7\%}$  SPR harvest rate to determine a 2011 and 2012 ACL of 3 mt, with a predicted median time to rebuild the stock of 2068 or eight years longer than  $T_{F=0}$ . Alternative 3 is the preliminary preferred alternative and is the status quo alternative by applying the  $F_{79\%}$  SPR harvest rate specified in the rebuilding plan to determine a 2011 and 2012 ACL of 4 mt. This alternative has a predicted median time to rebuild of 2071 or eleven years longer than  $T_{F=0}$ . The three ACL alternatives are predicted to rebuild the stock 8, 4, and 1 year(s), respectively prior to the current  $T_{TARGET}$  (2072) specified in the rebuilding plan (Table 2-12). The SSC did not recommend a change to the current rebuilding plan.

#### **2.1.4.4 Darkblotched Rockfish**

##### **Stock Status**

Darkblotched rockfish is a long-lived (60-105 years) member of the slope rockfish assemblage. There were large removals by foreign fisheries during 1966-68, followed by moderate landings of 200-1000 mt

per year thereafter. The species was first fully assessed in 2000 (Rogers, *et al.* 2000) and declared overfished as a result of that assessment.

An update of the last full darkblotched assessment done in 2007 {Hamel, 2008 1434 /id} was done in 2009 {Wallace and Hamel 2009}. The update assessment estimated the depletion percentage of the spawning output at the start of 2009 was 27 percent. In the previous stock assessment in 2007, darkblotched rockfish was estimated to be gradually rebuilding from a low of 10 percent of unfished stock size in 2000. The stock was estimated at 22 percent of unfished stock in 2007. Fishery and survey data were updated in the 2009 assessment to include the years since the last assessment and minor updates for earlier years. The 2009 assessment result indicated fishing mortality rate on darkblotched rockfish has been greatly reduced, and darkblotched rockfish appear to be rebuilding gradually at close to previous rebuilding projections. In this update assessment, stock status in 2007 was estimated to be 21 percent of the unfished stock size, which is consistent with the previous assessment estimate of 22 percent. The estimate for the depletion percentage of the spawning output at the start of 2009 was 27 percent, indicating that the stock has increased by a factor of 2.7 since 2000. However, recent survey trends are noisy and relatively flat. The estimated increase in stock size is driven primarily by the assumption that darkblotched productivity is analogous to that of other similar species, and not on survey and fishery data indicating an upward trend.

### **Alternative Harvest Specifications**

The 2011 and 2012 OFLs under the preferred alternative were determined from the 2009 updated assessment by applying the  $F_{MSY}$  proxy harvest rate of  $F_{50\%}$  recommended by the SSC to the estimated exploitable biomass. The recommended 2011 and 2012 OFLs are 508 and 497 mt, respectively.

The SSC categorized darkblotched rockfish as a category 1 stock and recommended the assessment uncertainty ( $\sigma$ ) value of 0.36 be used to determine ABCs following a  $P^*$  approach. The Council decided the overfishing probability ( $P^*$ ) of 0.45 for determining preferred 2011 and 2012 ABCs of 485 and 475 mt, respectively.

There are three darkblotched ACL alternatives that were adopted for detailed analysis. These ACL alternatives were derived from the 2009 rebuilding analysis {Wallace 2009}, which used results from the new updated assessment. Alternative 1, 130 and 131 mt for 2011 and 2012, respectively, applies an F81.8% SPR harvest rate and has a predicted median time to rebuild of 2018, which is two years longer than  $T_{F=0}$  (Table 2-12). Alternative 2 would apply an F71.9% SPR harvest rate to determine a 2011 and 2012 ACL of 222 mt, with a predicted median time to rebuild the stock of 2022 or six years longer than  $T_{F=0}$ . Alternative 3 is the preliminary preferred alternative and is the status quo alternative by applying the F62.1% SPR harvest rate specified in the rebuilding plan to determine 2011 and 2012 ACLs of 332 and 329 mt, respectively. This alternative has a predicted median time to rebuild of 2027 or eleven years longer than  $T_{F=0}$ . The three ACL alternatives are predicted to rebuild the stock 10, 6, and 1 year(s), respectively before the current  $T_{TARGET}$  specified in the rebuilding plan (Table 2-12). The SSC did not recommend any changes to the current darkblotched rockfish rebuilding plan.

#### **2.1.4.5 Pacific Ocean Perch**

### **Stock Status**

Pacific Ocean perch (POP) were harvested almost entirely by U.S. and Canadian vessels in the Columbia and Vancouver INPFC areas prior to 1965. Large factory trawlers from the Soviet Union and Japan began fishing for POP in the Vancouver area and in the Columbia area in 1965 and 1966, respectively. Intense fishing pressure by these foreign fleets occurred from 1966 to 1975. Catches from all fleets

peaked in 1966-67. Passage of the MSA in 1976 ended foreign fishing within 200 miles of the U.S. coast. NMFS formally declared POP overfished in March 1999 on the basis of the Ianelli and Zimmerman (1998) assessment.

The last full assessment was conducted in 2003 (Hamel, *et al.* 2003). Assessments in 2005 (Hamel 2006), 2007 {Hamel, 2008 1429 /id}, and the 2009 assessment {Hamel 2009} were updates using the same forward projection, age-structured model as used in 2003. In the previous stock assessment in 2007, POP was estimated to be gradually rebuilding. The estimate of depletion percentage in 2007 was 27.5 percent. Fishery, survey, and observer data were updated in 2009 to include the years since the last assessment and some minor updates to the data from earlier years.

Results of the 2009 updated POP assessment indicate that the stock continues to rebuild albeit slowly. The updated estimates of the depletion percentage are 25.2 percent, 27.4 percent, and 28.6 percent in 2007, 2008, and 2009, respectively. Exploitation rates remain at a low level. However, the new  $T_{F=0}$  is 2018 and is greater than the adopted  $T_{TARGET}$  (2017). This change in the predicted rebuilding duration is due primarily to revised estimates of stock productivity and depletion arising from two NWFSC survey indices that were low in 2007 and 2008. These changes represent fundamental revisions to our understanding of the status of POP, which in turn warrants revision to  $T_{TARGET}$ .

### **Alternative Harvest Specifications**

The 2011 and 2012 OFLs for POP under the preferred alternative were determined from the 2009 updated assessment by applying the  $F_{MSY}$  proxy harvest rate of  $F_{50\%}$  recommended by the SSC to the estimated exploitable biomass. The recommended 2011 and 2012 OFLs are 1,026 and 1,007 mt, respectively.

The SSC categorized POP as a category 1 stock and recommended the assessment uncertainty ( $\sigma$ ) value of 0.36 be used to determine ABCs following a  $P^*$  approach. The Council decided the overfishing probability ( $P^*$ ) of 0.45 for determining preferred 2011 and 2012 ABCs of 981 and 962 mt, respectively.

There are three POP ACL alternatives that were adopted for detailed analysis. These ACL alternatives were derived from the 2009 rebuilding analysis {Hamel 2009}, which used results from the new updated assessment. Our current understanding of POP stock status and productivity leads to the result that  $T_{F=0}$  is longer than the current  $T_{TARGET}$ . Therefore, all ACL alternatives contemplate a change in the median time to rebuild the stock greater than the current  $T_{TARGET}$ . Alternative 1 is 80 mt for 2011 and 2012 and is determined by applying an F93.6% SPR harvest rate and has a predicted median time to rebuild of 2019, which is one year longer than  $T_{F=0}$  (Table 2-12). Alternative 2 would apply an F91.2% SPR harvest rate to determine 2011 and 2012 ACLs of 111 and 113 mt, respectively with a predicted median time to rebuild the stock of 2019 or one year longer than  $T_{F=0}$ . Alternative 3 is the preliminary preferred alternative and is the status quo alternative by applying the F86.4% SPR harvest rate specified in the rebuilding plan to determine 2011 and 2012 ACLs of 180 and 183 mt, respectively. This alternative has a predicted median time to rebuild of 2020 or two years longer than  $T_{F=0}$ . The three ACL alternatives are predicted to rebuild the stock 2-3 years longer than the current  $T_{TARGET}$  specified in the rebuilding plan (Table 2-12). The SSC did recommend modifying the rebuilding plan out of the necessity to extend the current  $T_{TARGET}$  based on our changed understanding of stock status and productivity.

#### **2.1.4.6 Widow Rockfish**

### **Stock Status**

The new widow rockfish assessment {He et al. 2009a} indicates the stock is at 38.5 percent of unfished biomass, just short of the  $B_{40\%}$  target. The previous assessment done in 2007 {He, 2008 1437 /id} had

projected the stock would be rebuilt to target levels by 2009. However, the new assessment indicated the 2002 year class was not as strong as previously estimated, resulting in the estimated current biomass falling short of the target level called for in the rebuilding plan. The 2009 rebuilding analysis {He et al. 2009b} projects the stock will be rebuilt by 2010. The SSC recommended another full assessment will be required to confirm that result.

The last full assessment of widow rockfish was conducted in 2005 (He, *et al.* 2006), with an update in 2007. The 2009 assessment differed from the previous assessment in several respects: a) the assessment used Stock Synthesis 3 (SS3) rather than a custom-designed model, b) the catch history was revised and extended back to 1916, c) catch, age, and survey data were updated with data from 2007 and 2008, and d) data from the NWFSC trawl survey were included in the assessment. Widow rockfish were modeled as a single stock with two areas and four fisheries. Additional work regarding how to model this species remains a priority given the sparseness of recent fishery data and the need to further explore spatial stock structure.

The STAR Panel {Dorn et al. 2009} and SSC considered the 2009 assessment to be the best available scientific information and recommended its use in management. Much attention was given during the STAR Panel to refining the new data sets so that the base model is reasonably well developed and less time was available to explore alternative model configurations and tuning. The SSC recommended that the next assessment should be a full assessment because several key problems remain unresolved. The SSC did not recommend any changes to the current widow rockfish rebuilding plan pending a new full assessment result confirming the stock is rebuilt.

### **Alternative Harvest Specifications**

The 2011 and 2012 OFLs for widow rockfish under the preferred alternative were determined from the 2009 assessment by applying the  $F_{MSY}$  proxy harvest rate of  $F_{50\%}$  recommended by the SSC to the estimated exploitable biomass. The recommended 2011 and 2012 OFLs are 5,097 and 4,923 mt, respectively.

The SSC categorized widow rockfish as a category 1 stock and recommended the assessment uncertainty ( $\sigma$ ) value of 0.36 be used to determine ABCs following a  $P^*$  approach. The Council decided the overfishing probability ( $P^*$ ) of 0.45 for determining preferred 2011 and 2012 ABCs of 4,872 and 4,705 mt, respectively.

There are three widow rockfish ACL alternatives that were adopted for detailed analysis. These ACL alternatives were derived from the 2009 rebuilding analysis {He et al. 2009b} recommended by the SSC, which used results from the new assessment. All ACL alternatives are based on constant catch scenarios that are well below the estimated MSY in the assessment and the ABCs preferred by the Council. All the ACL alternatives assume the stock is rebuilt in 2010 as projected in the assessment and rebuilding analysis; therefore, no median time to rebuild estimates are provided. Alternative 1, 2, and 3 are constant catch scenarios of 200, 400, and 600 mt for 2011 and 2012, respectively. Applying the status quo harvest rate specified in the current rebuilding plan would result in 2011 and 2012 ACLs of 352 and 339 mt, respectively. This level of harvest is lower than the preliminary preferred ACL of 600 mt and slightly lower than the 400 mt Alternative 2 ACLs. However, successful rebuilding is predicted by 2010 and all alternatives are predicted to accommodate a sustainable harvest of widow given the estimated MSY of about 3,000 mt.



#### 2.1.4.7 Yelloweye Rockfish

##### Stock Status

A new full coastwide yelloweye assessment was conducted in 2009 {Stewart et al. 2009}, which estimated the stock depletion at 20.3 percent. The last full assessment of yelloweye rockfish was conducted in 2006 (Wallace, *et al.* 2006) with an assessment update in 2007 {Wallace, 2008 1431 /id}. The 2009 assessment differed from previous assessments in terms of assumed population structure and the data used to fit the model. The 2009 assessment was based on three regions (California, Oregon and Washington) under the assumptions that adults are sedentary, density-dependence is a function of coastwide egg production, and the proportion of recruits settling in each area is constant over time. This spatial structure is consistent with our understanding of the behavior of yelloweye rockfish, and reflects a compromise between a coastwide assessment and separate assessments for each state. This compromise allows for some regional differences to be captured within the model without requiring large numbers of additional parameters.

Even with a large number of changes to data inputs, the results from the 2009 yelloweye rockfish assessment were consistent with those from the 2006 and 2007 assessments. All of these assessments suggest that yelloweye rockfish experienced a substantial decline in abundance between 1980 and 2000, with a best estimate of stock depletion in 2009 from the current assessment of 20.3 percent.

The 2009 assessment estimated trends in abundance by region. The SSC cautioned against making use of these trends as the sole basis for the spatial allocation of harvest guidelines because the trend in abundance at the coastwide level is much more robust than those at the regional level. Reasons for this include that the time-series of historical catches by region are more uncertain than the coastwide totals and that the catch reconstructions for Washington are still somewhat incomplete. Given that the trends in abundance by region are driven to a considerable extent by the time-series of historical catches, uncertainty in the split of total catches to region will be reflected more in uncertainty in regional depletion than in total depletion.

The SSC endorsed the use of the 2009 yelloweye rockfish assessment for status determination and management in the Council process. The SSC also endorsed the approach used to quantify uncertainty, which formed the basis for the 2009 rebuilding analysis {Stewart 2009}.

##### Alternative Harvest Specifications

The 2011 and 2012 OFL for yelloweye rockfish under the preferred alternative was determined from the 2009 assessment by applying the  $F_{MSY}$  proxy harvest rate of  $F_{50\%}$  recommended by the SSC to the estimated exploitable biomass. The resulting OFL is 48 mt for 2011 and 2012.

The SSC categorized yelloweye rockfish sole as a category 1 stock and recommended the assessment uncertainty ( $\sigma$ ) value of 0.36 be used to determine ABCs following a  $P^*$  approach. The Council decided the overfishing probability ( $P^*$ ) of 0.45 for determining a preferred 2011 and 2012 ABC of 46 mt.

There are three yelloweye ACL alternatives that were adopted for detailed analysis. These ACL alternatives were derived from the 2009 rebuilding analysis {Stewart 2009}, which used results from the new assessment. Alternative 1 is 13 mt for 2011 and 2012 and is determined by applying an  $F_{80.7\%}$  SPR harvest rate and has a predicted median time to rebuild of 2065, which is 19 years before the current  $T_{TARGET}$  and 18 years longer than  $T_{F=0}$  (Table 2-12). Alternative 2 would apply an  $F_{76\%}$  SPR harvest rate to determine an ACL of 17 mt for 2011 and 2012 and a predicted median time to rebuild the stock of 2074 or 10 years before the current  $T_{TARGET}$  and 27 years longer than  $T_{F=0}$ . Alternative 3 is the

preliminary preferred alternative and would apply an F72.8% SPR harvest rate to determine an ACL of 20 mt for 2011 and 2012 and a predicted median time to rebuild the stock of 2084, the current  $T_{TARGET}$  and 37 years longer than  $T_{F=0}$ . The status quo alternative is determined by applying the F71.9% SPR harvest rate specified in the rebuilding plan to determine 2011 and 2012 ACLs of 20 and 21 mt, respectively. This alternative has a predicted median time to rebuild of 2087 or three longer than the current  $T_{TARGET}$  and 40 years longer than  $T_{F=0}$ , which is why the Council is recommending a lower harvest rate (SPR = F72.8%) than is currently specified in the rebuilding plan.

A recent U.S. district court ruling in the Northern District of California, in a case challenging, among other things, the adopted modification to the yelloweye rebuilding plan in 2010 decided in 2008 {PFMC 2008} (NRDC et al. v Locke et al. - case C 01-0421 JL) was made in a summary judgment on April 22, 2010. The District court ordered NMFS:

“to apply the yelloweye harvest levels the Agency set for 2009 and 2010 in the original “ramp-down” plan it approved for yelloweye in the 2007-2008 Specifications. This sets 2009 yelloweye harvests at 17 metric tons, and 2010 yelloweye harvests at 14 metric tons (rather than the 17 metric tons the Agency has allowed for 2010 under the 2009-2010 Specifications)”.

Consequently, new yelloweye rebuilding analysis results assuming a 14 mt 2010 harvest rather than a 17 mt harvest were requested of Dr. Ian Stewart, NMFS NWFSC, the lead author of the 2009 assessment and rebuilding analysis. The additional rebuilding analysis results showed there was no difference in estimates of median year to rebuild the stock across all the alternatives considered, including the zero-harvest strategy used to predict  $T_{F=0}$  (Table 2-13). Table 2-13 also shows no significant difference in SPR harvest rates or associated 2011 and 2012 ACLs from lowering the 2010 OY to 14 mt. The Council and NMFS have yet to decide whether to change the 2010 OY and/or appeal the ruling.

**Table 2-13. Estimated time to rebuild and SPR harvest rate relative to alternative 2011-2012 ACLs for yelloweye rockfish that vary the 2010 OY by 3 mt.**

ACL Alt.	Median Time to Rebuild	ACLs (mt)		SPR HR
		2011	2012	
Assuming a 17 mt OY in 2010				
	2047	0	0	F100%
	2058	9.0	9.0	F86%
1	2065	12.8	13.1	F80.7%
2	2074	16.7	17.0	F76%
3; PPA	2084	19.6	19.9	F72.8%
	2087	20.4	20.7	F71.9%
Assuming a 14 mt OY in 2010				
	2047	0	0	F100%
	2058	8.8	9.0	F86%
1	2065	12.8	13.1	F80.7%
2	2074	16.7	17.0	F76%
3; PPA	2084	19.6	19.9	F72.8%
	2087	20.4	20.8	F71.9%

#### 2.1.4.8 *Petrale Sole*

##### **Petrale Sole Stock Status**

A new petrale sole assessment was done in 2009 {Haltuch and Hicks 2009a}, which indicated that the coastwide stock had declined to an overfished status at 11.6% of unfished biomass. Past assessments completed by {Demory 1984, Turnock et al. 1993, and Sampson and Lee 1999} considered petrale sole in the Columbia and U.S. Vancouver INPFC areas a single stock. Sampson and Lee (1999) assumed that petrale sole in the Eureka and Monterey INPFC areas represented two additional distinct stocks. The most recent 2005 petrale sole assessment {Lai et al. 2006} assumed two stocks, northern (U.S. Vancouver and Columbia INPFC areas) and southern (Eureka, Monterey and Conception INPFC areas), to maintain continuity with previous assessments. Lai et al. (2006) estimated the relative depletion of the northern and southern stocks to be  $B_{34\%}$  and  $B_{29\%}$ , respectively. The 2005 assessment introduced a significant amount of reconstructed historical catch extending the catch history back to 1876, which increased the estimate of unfished biomass and lowered the relative depletion of the stock.

The most significant change in the 2009 assessment was that a single coast-wide model was used, rather than independent assessments of northern and southern components of the stock. Other changes included incorporation of discard data in the model, addressing problems with petrale sole age data and ageing error information, and estimation of different natural mortality rates for the females and the males. Despite these changes, the new assessment estimates of stock size and trend are highly consistent with the previous assessment. The most notable exception is that the previous assessment showed a strong increase in stock size in the last years of the assessment. The current assessment now shows a recent decline in stock size that is driven by four consecutive years of decline in the Northwest Fisheries Science Center (NWFSC) trawl survey index since 2005.

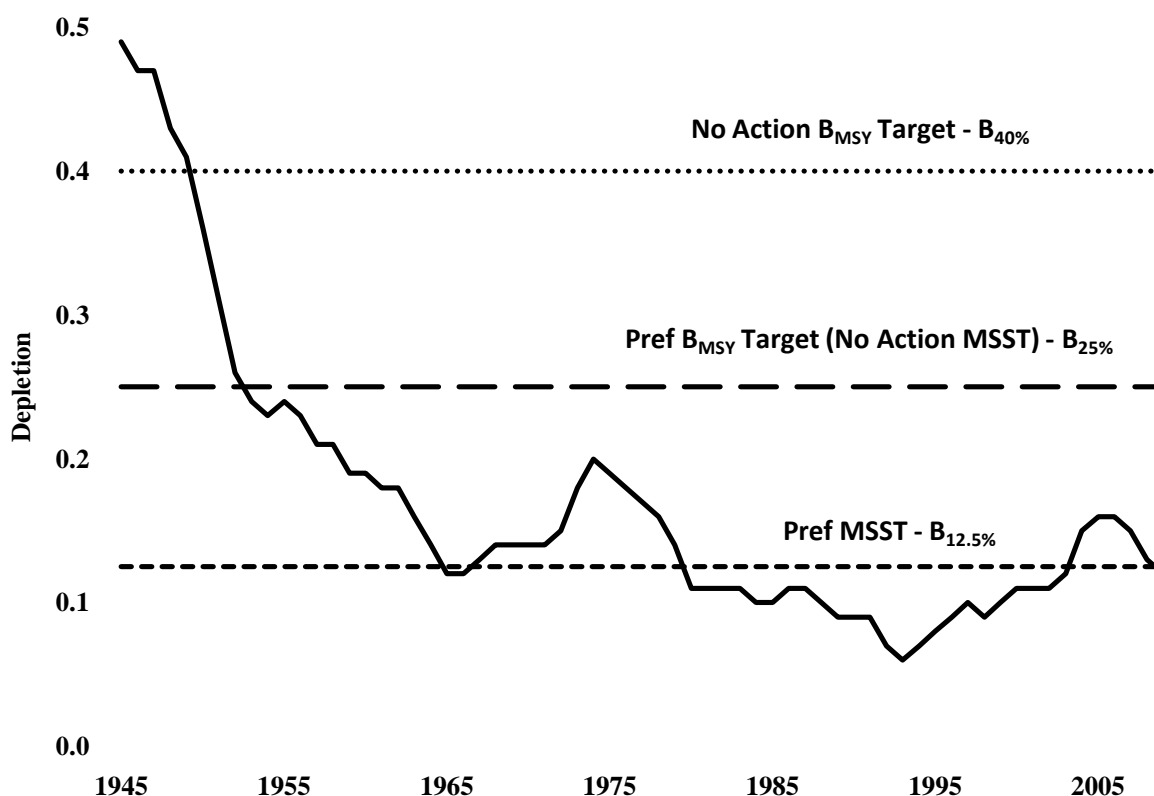
The 2009 assessment indicates that, according to the No Action proxy reference points, fishing mortality on petrale sole has continually exceeded the target of  $F_{40\%}$  since the 1940s, and that the stock has been below the  $B_{25\%}$  overfished threshold since 1953 (Figure 2-2). These results are to a large degree driven by two basic pieces of information: 1) the high landings of petrale sole during the 1940s and 1950s, and 2) age and size composition data that are consistent with a high exploitation rate (e.g., the recent age composition data show that very few old fish are present in the population).

The SSC was concerned that certain assessment results were so extreme that the overall plausibility of the assessment was called into question. Attention focused primarily on the estimated catchability of the NWFSC survey, the estimate of stock-recruit steepness (0.95), and confounding of estimated model parameters. The assessment used two indices of abundance, the Alaska Fisheries Science Center (AFSC) triennial survey from 1980 to 2004, and NWFSC survey from 2003 to 2008. The estimated catchability of the AFSC survey was 0.52 and 0.72 for early and late periods, while the estimated catchability of the NWFSC survey was 3.07. A catchability of 1.0 would imply that the survey net captured all the fish in front of the net and that fish density is the same in trawlable and untrawlable areas. A catchability greater than 1.0 could be a result of two general processes: herding of fish into the net and lower densities of fish in untrawlable areas. Although it is reasonable to expect that these factors may be important for petrale sole, it is difficult to reconcile a catchability of 3.07 with likely magnitude of these factors inferred from studies of flatfish herding by research trawls in other areas, and initial estimates of trawlable and untrawlable areas off the west coast.

##### **Alternative Status Determination Criteria for Petrale Sole and Other Flatfish Species**

Status determination criteria (SDC) are the proxy or deterministic biomass and harvest rate reference points used to manage a stock. The current No Action reference points for petrale sole and other flatfish

species are a proxy  $F_{MSY}$  harvest rate of  $F_{40\%}$  (i.e., maximum fishing mortality threshold or MFMT), beyond which overfishing is occurring; a  $B_{MSY}$  target of  $B_{40\%}$ , and a minimum stock size threshold (MSST) of  $B_{25\%}$ , below which the stock is considered overfished. Based on a meta-analysis of the relative productivity of assessed west coast flatfish species and other assessed Pleuronectid species internationally, the SSC recommends a change in these reference points used to manage west coast flatfish species. The preferred reference points for flatfish are an  $F_{MSY}$  proxy of  $F_{40\%}$ , a  $B_{MSY}$  target of  $B_{25\%}$ , and an MSST of  $B_{12.5\%}$ . Figure 2-2 depicts the depletion of petrale sole from 1945 to present relative to the No Action and Preferred reference points recommended by the SSC. The level of depletion estimated at the beginning of 2009 for the coastwide petrale sole stock is 11.6% of its unfished biomass, which is below the MSST under the SDC currently used to manage flatfish ( $B_{25\%}$ ), as well as the new proposed MSST of  $B_{12.5\%}$  for flatfish. Therefore, a new rebuilding plan for petrale sole (with 2011-2012 ACLs consistent with a new proposed rebuilding plan) is contemplated under Amendment 16-5 and analyzed in this EIS.



**Figure 2-2. Petrale sole depletion time series, 1945 - present, relative to No Action and Preferred reference points proposed for petrale sole and other assessed flatfish species.**

### Alternative Petrale Sole Harvest Specifications

The 2011 and 2012 OFLs for petrale sole under the preferred alternative were determined from the 2009 assessment by applying the  $F_{MSY}$  proxy harvest rate of  $F_{30\%}$  recommended by the SSC to the estimated exploitable biomass. The recommended 2011 and 2012 OFLs are 1,021 and 1,279 mt, respectively.

The SSC categorized petrale sole as a category 1 stock and recommended the assessment uncertainty ( $\sigma$ ) value of 0.36 be used to determine ABCs following a  $P^*$  approach. The Council decided the overfishing

probability ( $P^*$ ) of 0.45 for determining preferred 2011 and 2012 ABCs of 976 and 1,222 mt, respectively.

All the petrale sole ACL alternatives adopted for detailed analysis are predicted to rebuild the stock to the  $B_{25\%}$  target well in advance of  $T_{MAX}$  (2021), which is the legal maximum rebuilding period of ten years. The shortest time to rebuild is  $T_{MIN}$  (2014), which is the estimated rebuilding period if all sources of fishing-related mortality were eliminated beginning in 2011. Table 2-12 shows that the petrale stock is predicted to successfully rebuild by  $T_{MIN}$  with some allowable harvest. The alternative 1 ACL is 459 and 624 mt in 2011 and 2012, respectively and is determined using an F50% SPR harvest rate. The median year estimated to rebuild the stock under alternative 1 is 2014, which is  $T_{MIN}$ . Alternative 2 would immediately apply the 25-5 precautionary harvest control rule in 2011 and results in ACLs of 776 and 1,160 mt in 2011 and 2012, respectively. Alternative 2 is estimated to rebuild the stock by 2015 or 1 year longer than  $T_{MIN}$ . The alternative 3 ACLs are the Council's preliminary preferred alternative. Alternative 3 would specify the ABC of 976 mt in 2011 and apply the 25-5 precautionary adjustment beginning in 2012, resulting in a 1,160 mt ACL in 2012. Alternative 3 is estimated to rebuild the stock by 2016 or two years longer than  $T_{MIN}$ .

### **Considerations for the Rebuilding Plan for Petrale Sole**

At this meeting, the Council will make its final recommendation on the petrale sole rebuilding plan. To best inform that recommendation, this analysis contrasts the Council's preliminary preferred rebuilding alternative against the other rebuilding alternatives under consideration using the key legal criteria and questions identified in section 4.5.3 of the Council's FMP, the section identifying the Council's general policies on rebuilding overfished stocks. Analysis of the specific management measures necessary to maintain catch within the ACLs from these rebuilding alternatives is provided in a separate section of this document.

The analysis in this section was authored by a subgroup of the GMT for advanced publication in the June Briefing Book. The full team will review the analysis and will provide additional information and comments to the Council at the meeting.

The Council identified its preliminary preferred rebuilding alternative (PPA) rebuilding plan at the April meeting. Roughly two weeks later, the U.S. District Court for the Northern District of California issued an order pertaining to the Council's existing rebuilding plans and found some fault with certain aspects of the Council's approach.<sup>2</sup> The court's order involved interpretation of the 2005 decision from the Court of Appeals for the Ninth Circuit, which primarily took issue with the 2002 version of the Council's darkblotched rockfish rebuilding plan.<sup>3</sup>

At the time of writing, NMFS has not given the GMT an official interpretation of what the recent court order may or may not mean for the petrale rebuilding plan. The petrale rebuilding plan is new and so the court's order did not address it specifically. In addition, given petrale's productivity and the fact that it is caught almost exclusively by a single fishery sector, the tradeoffs presented to the Council by this rebuilding plan are more straightforward than those involved with the long-lived rockfish. Nonetheless, the Council's PPA does involve a delay from the shortest time to rebuild and a delay from the alternative that would allow some minimal, and most likely incidental only, harvest during rebuilding. The court was highly scrutinizing of such delays with the existing rebuilding plans. We are somewhat confused by the recent court decision and do not see clear guidance from the court on how the Council should weigh the Magnuson-Stevens Act's rebuilding factors. Here, we do our best to address the aspects of the court's

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<sup>2</sup> *NRDC v. Locke*, No. C 01-0421 JL (N.D.Ca April 23, 2010).

<sup>3</sup> *NRDC v. NMFS*, 421 F.3d 872 (2005).

order that may apply to the Council's final recommendation on the plan to rebuild the petrale sole stock. The more detailed comments on aspects of the court's decision are placed in footnotes.

## Goals and Objectives of Rebuilding

The Council's goals and objectives for rebuilding plans are identified stated in section 4.5.3.1 of the FMP:

The overall goals of rebuilding programs are to (1) achieve the population size and structure that will support the maximum sustainable yield within a specified time period that is as short as possible, taking into account the status and biology of the stock, the needs of fishing communities, and the interaction of the stock of fish within the marine ecosystem; (2) minimize, to the extent practicable, the adverse social and economic impacts associated with rebuilding, including adverse impacts on fishing communities; (3) fairly and equitably distribute both the conservation burdens (overfishing restrictions) and recovery benefits among commercial, recreational, and charter fishing sectors; (4) protect the quantity and quality of habitat necessary to support the stock at healthy levels in the future; and (5) promote widespread public awareness, understanding and support for the rebuilding program.

These overall goals are derived from and consistent with the requirements of the Magnuson-Stevens Act (MSA). The first goal embodies MSA national standard 1 (NS1) and the requirements for rebuilding overfished stocks found at MSA section 304(e)(4)(A). The third goal is required by MSA section 304(e)(4)(B). The fourth and fifth goals represent additional policy preferences of the Council that recognize the importance of habitat protection to the rebuilding of some fish stocks and the desire for public outreach and education on the complexities—biological, economic, and social issue—involved with rebuilding overfished stocks.

The second goal appears to have caused some confusion in the recent court decision.<sup>4</sup> The goal to minimize adverse impacts to fishing communities is required by MSA national standard 8 (NS8).<sup>5</sup> The

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<sup>4</sup> *NRDC v. Locke*, at page 26:

The Council began its analysis by considering the impacts on overfished species that would result from rebuilding in the shortest possible time period ( $F=0$ ). NMFS argues that the MSA does not require the Agency to set optimal yields (OYs) at zero to expedite rebuilding; rather, that the Agency “must” consider the economic impact on fishing communities. 16 U.S.C. § 1851(a)(8). This is a significant mis-citation of the [Ninth Circuit’s darkblotched] decision, which was that the Agency “may” consider the needs of fishing communities. (*all citations omitted except the citation to NS8*).

To characterize NMFS assertion as a “significant mis-citation” of the Ninth Circuit case law seems unfair. The court’s purpose in making the point is also a bit perplexing. The Ninth Circuit’s decision referred to the legal obligation as a “command”:

We are not prepared to accept NRDC's argument that once the 10-year cap is lifted because the biology of the fish dictates it, the Act in turn dictates that the Agency can no longer consider the short-term economic needs of fishing communities at all. Such an argument, although plausible, does not appear to give due consideration to the continuing operation of subsection (i)'s *command* to take the needs of fishing communities into account.

(NRDC vs. NMFS, 421 F. 3d at 881; *emphasis added*).

And as elaborated on below in footnote (FN) [5], the court also—on the very next page after the “significant mis-citation” passage— states that NMFS must consider economic impacts to communities and properly did so for Amendment 16-4. If the Council set a rebuilding plan without considering the needs of the fishing communities, it would seem an obvious violation of the statute. And, the Council could set rebuilding plan at zero catches if that was the strategy the Council believed was in the best long-term interests of fishing communities. Yet where such a strategy would be clearly against the short- and long- term interests of the community, as is the case with the rebuilding rockfish and petrale sole, it would seem contrary to the MSA for the Council to make such a recommendation.

confusion seems to arise from the relationship between NS8 and the MSA sec. 304(e)(4)(A)(i) provision on taking into account the “needs of fishing communities” when establishing a time to rebuild.

We attempt to clarify briefly how social and economic considerations factor into the Council’s decision on rebuilding. First, we note that NS8 does not provide justification for delaying rebuilding or for emphasizing short-term economic needs over long-term benefits. We do not believe that the Council has intended to use NS8 as a justification for such purposes yet this seems to be an impression that the courts may perhaps hold. As we understand it, the Council has sought to promote the sustained participation of fishing communities and to minimize the social and economic impacts of the specific conservation and management measures while also achieving the objective of rebuilding, consistent with NS8.<sup>6</sup> Like for NS1, NMFS has created advisory guidelines to assist the regional fishery management councils with interpretation of NS8.<sup>7</sup> These guidelines and case law characterize NS8 as being relevant alternatives under consideration that are expected to “achieve similar conservation measures.”<sup>8</sup> When such is the case, NS8 would argue for “the alternative that provides the greater potential for sustained participation of such communities and minimizes the adverse economic impacts on such communities.”<sup>9</sup>

We further discuss the importance of economic and social factors to rebuilding plans in the section on taking into account the needs of fishing communities.

### **Time to Rebuild – General Considerations**

The MSA and the FMP require the Council to consider the shortest time possible to rebuild and rebuilding alternatives to that shortest time. The length of time a stock may take to rebuild is a question of science. The methods and procedures for calculating estimates of the biological rebuilding parameters are detailed in section 4.5.2 of the FMP. In brief, the petrale stock assessment captures the best scientific understanding of the current status and biology of petrale.<sup>10</sup> The rebuilding analysis then takes parameters from the stock assessment and projects the future status of the stock based on the rebuilding

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<sup>5</sup> The court cites NS8 on the page immediately after the passage quoted in FN[4]:

Consistent with the U.S. Court of Appeals for the Ninth Circuit’s opinion – and with National Standard Eight, 16 U.S.C. § 1851(a)(8), which requires the Agency to consider the importance of fishery resources to fishing communities – the Agency evaluated whether Amendment 16-4 would result in disastrous short-term consequences for fishing communities.

*NRDC v. Locke*, at p. 27.

<sup>6</sup> This is the view recommended by NMFS. See NMFS’ *Response to Comment 87* in the Supplementary Information section of the Federal Register notice announcing the final revisions NS1 guidelines:

The objectives in NS8 for sustained participation of fishing communities and minimization of adverse economic impacts do not provide a basis for continuing overfishing or failing to rebuild stocks. The text of NS8 explicitly provides that conservation and management measures must prevent overfishing and rebuild overfished stocks. MSA does provide, however, for flexibility in the specific conservation and management measures used to achieve its conservation goals, and NMFS took this into consideration in developing the revised NS1 guidelines.

74 Fed. Reg. 3178, 3201 (January 16, 2009). Available through [www.regulations.gov](http://www.regulations.gov), docket ID: NOAA-NMFS-2008-0096.

<sup>7</sup> The NS8 guidelines can be found at 50 C.F.R. § 600.345. As with the NS1 guidelines, sec. 301(b) of the MSA states that the NS8 guidelines “shall not have the force and effect of law.” The Council is free to make its own reasonable interpretation of NS8.

<sup>8</sup> Quotations are from *Natural Resources Defense Council v. Daley*, 209 F. 3d 747 (D.C. Cir. 2000).

<sup>9</sup> 50 C.F.R. § 600.345(b).

<sup>10</sup> Available at PPMC, September 2008 Briefing Book, Agenda Item E.2.a, Attachment 1: Draft Status of the U.S. Petrale Sole Resource in 2008 ([http://www.pcouncil.org/bb/2009/0909/E2a\\_ATT1\\_0909.pdf](http://www.pcouncil.org/bb/2009/0909/E2a_ATT1_0909.pdf)).

alternatives being considered by the Council using Monte Carlo simulation techniques.<sup>11</sup> There is considerable scientific uncertainty involved with these projections, which the rebuilding analysis expresses as the probability of the stock being rebuilt in any given year.

There are a few rebuilding reference points or benchmarks that we use to compare rebuilding alternatives. We summarize those here, but they are, again, more fully explained in sec. 4.2 of the FMP. First, the estimated shortest time to rebuild is referred to as  $T_{MIN}$ . The rebuilding analysis estimates  $T_{MIN}$  using a “no fishing” scenario where it is assumed that all fishing caused mortality of petrale is ceased at the start of the rebuilding.  $T_{MIN}$  is defined as the year in which this no fishing scenario estimated to have reached target biomass with a 50 percent probability. For petrale, the estimate of  $T_{MIN}$  is 2014.

The longest possible rebuilding period is defined using  $T_{MAX}$ . Given that petrale sole would be expected to rebuild within 10 years in the absences of fishing mortality, the law requires the rebuilding period to “not exceed 10 years.” MSA sec. 304(e)(4)(A)(ii).<sup>12</sup>  $T_{MAX}$  for petrale has thus been set at 2021.

The Council’s policy for rebuilding is established with a  $T_{TARGET}$ .  $T_{TARGET}$  is the year in which the Council expects the stock to rebuild with at least a 50 percent probability under the chosen rebuilding strategy. A particular  $T_{TARGET}$  is determined by the productivity of the stock, its current status (a.k.a, “status and biology”), and the allowable harvest associated with a particular rebuilding strategy. As discussed more below, the  $T_{TARGET}$  and the stream of catches or harvest control rule that achieves it is meant to rebuild the stock back to the rebuilding target while achieving the goals and objectives identified at section 4.5.3.1 of the FMP.

Lastly, the target abundance for rebuilding is the biomass level that produces maximum sustainable yield ( $B_{MSY}$ ). For petrale, the best available scientific estimate of that level is 25 percent of the estimate of unfished biomass ( $B_{25\%}$ ).<sup>13</sup>

### **Times to Rebuild – Estimates of Petrale Rebuilding Times**

The petrale rebuilding analysis estimates are summarized again in Table 2-14. Estimates are given for both the year-round and winter-only scenarios. The Council’s preliminary preferred rebuilding alternative was for year-round fishing opportunity. Again, the shortest time possible to rebuild under the year-round fishery scenario is 2014.

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<sup>11</sup> Available at PFMC, November 2009 Briefing Book, Agenda Item G.2.a, Attachment 8:2009 Petrale Sole Rebuilding Analysis ([www.pcouncil.org/wp-content/uploads/bb\\_2009\\_11\\_G2a\\_ATT8\\_1109.pdf](http://www.pcouncil.org/wp-content/uploads/bb_2009_11_G2a_ATT8_1109.pdf)).

<sup>12</sup> Also see the National Standard 1 (NS1) guidelines at 50 C.F.R. (j)(3)(i)(C) :

If  $T_{MIN}$  for the stock or stock complex is 10 years or less, then the maximum time allowable for rebuilding ( $T_{MAX}$ ) that stock to its  $B_{MSY}$  is 10 years.

<sup>13</sup> See sec. 4.3 of the FMP for explanation; sec. 4.4 in the proposed Amendment 23 language. The  $B_{25\%MSY}$  proxy is newly developed as part of Amendment 23 and the 2011-12 harvest specifications process.



**Table 2-14. The 2011-12 ACLs for each rebuilding alternative and estimated ACLs and probabilities that the petrale stock will have rebuilt to  $B_{25\%}$  from the rebuilding analysis for the years 2013 to 2021 ( $T_{MAX}$ ) as estimated by the rebuilding analysis. The  $T_{TARGET}$  for each rebuilding alternative is shaded. We assume the stock reaches MSY in the year after rebuilding, which we approximate with an ACL of 2,100 mt.**

**"Year-Round" Fishery**

<b>No Fishing Strategy</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
ACL	0	0	0	0	2,100	2,100	2,100	2,100	2,100	2,100	2,100	14,700
P(rebuilt)	0%	0%	25%	75%	100%	100%	100%	100%	100%	100%	100%	--
<b>Alternative 1</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
ACL	459	624	791	945	2,100	2,100	2,100	2,100	2,100	2,100	2,100	17,519
P(rebuilt)	0%	0%	25%	75%	76%	100%	100%	100%	100%	100%	100%	--
<b>Alternative 2</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
ACL	776	1,160	1,481	1,720	1,883	2,100	2,100	2,100	2,100	2,100	2,100	19,620
P(rebuilt)	0%	0%	0%	25%	25%	56%	67%	74%	79%	84%	87%	--
<b>Alternative 3 - PPA</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
ACL	976	1,160	1,432	1,680	1,853	1,963	2,100	2,100	2,100	2,100	2,100	19,564
P(rebuilt)	0%	0%	25%	25%	25%	50%	63%	70%	76%	82%	86%	--
<b>OFL/Fmsy Proxy</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
ACL	1,021	1,279	1,507	1,690	1,824	1,919	1,984	2,100	2,100	2,100	2,100	19,624
P(rebuilt)	0%	0%	0%	25%	25%	38%	56%	65%	73%	79%	84%	--

**"No Winter" Fishery**

<b>Alternative 1</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
ACL	586	732	866	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	18,983
P(rebuilt)	0%	0%	25%	75%	75%	100%	100%	100%	100%	100%	100%	--
<b>Alternative 2</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
ACL	900	1,232	1,482	1,662	1,784	1,869	2,100	2,100	2,100	2,100	2,100	19,429
P(rebuilt)	0%	0%	0%	0%	25%	37%	55%	66%	74%	80%	85%	--
<b>Alternative 3 - PPA</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
ACL	976	1,160	1,480	1,661	1,784	1,868	1,923	2,100	2,100	2,100	2,100	19,252
P(rebuilt)	0%	0%	25%	25%	25%	37%	54%	64%	72%	78%	84%	--
<b>OFL/Fmsy Proxy</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
ACL	1,170	1,369	1,528	1,653	1,744	1,816	1,868	2,100	2,100	2,100	2,100	19,547
P(rebuilt)	0%	0%	0%	0%	25%	26%	41%	55%	64%	71%	77%	--

**Explanation of the Petrale Rebuilding Alternatives – Rebuilding strategies and their relation to standard control rules**

The Council's preliminary preferred rebuilding alternative is a hybrid of the alternatives considered in April.

The first point of reference to consider was referred to as Alternative 4 in April. This alternative was based on the new standard,  $F_{MSY}$  harvest control rule for flatfish that the Council is implementing through this biennial harvest specifications process and Amendment 23 to the FMP. This  $F_{MSY}$  proxy control rule is the best scientific estimate of "the constant  $F$  control rule that is assumed to produce the maximum average yield over time while protecting the spawning potential of the stock."<sup>14</sup> In other words, this control rule is expected to increase or decrease stock abundance to  $B_{25\%}$  depending on whether the stock is above or below that target biomass reference point and to keep the stock, on average, at that target biomass level. Importantly, this control rule also marks the overfishing level (OFL) and the highest level

<sup>14</sup> Sec. 4.2 of the FMP; sec. 4.3 in the proposed Amendment 23 version.

thus the upper legal limit of where the Council can set the ACL. In past cycles, we referred to this catch level as the ABC. With the changes being made through Amendment 23 and implemented in 2011-12 harvest specifications, the Council is now setting the ABC in consideration of scientific uncertainty in estimates of stock biomass and the risk of overfishing presented by that uncertainty using the P\* approach. The estimates from this alternative do not include the P\* adjustment and so should be characterized as the OFL rebuilding strategy. As mentioned above, the rebuilding analysis does account for uncertainty in rebuilding projections. These projections predict the stock has an 84 percent probability of rebuilding within 10 years if fished at the OFL. Whether the uncertainty considered by the rebuilding analysis is complementary or redundant to the P\* adjustment is a question the SSC has not yet provided guidance to the Council.

Alternative 3 from April was based on the 25-5 control rule. The 25-5 control rule is the new flatfish-specific version of the Council's longstanding 40-10 control rule and is designed to increase stocks that are below  $B_{MSY}$  back to  $B_{MSY}$  more quickly than the standard harvest control rule. It is also the Council's default rebuilding strategy.<sup>15</sup> The Council is considering two options for applying the 40-10 and 25-5 control rules together with P\*. The second option, which is the Council preliminary preferred option, would take the adjustment from the P\* adjusted ABC. However, because the OFL alternative does not have a P\* adjustment, this alternative was calculated using option 1, which takes the adjustment directly from the OFL. This alternative is before the Council in June as ACL alternative 2.

Alternative 2 from April was based on a constant harvest rate of 0.50.<sup>16</sup> For comparison, the standard  $F_{MSY}$  control rule for petrale equates to an SPR constant harvest rate of 0.30. The 25-5 control rule is based on a variable harvest rate that begins with a SPR of 0.35 in 2011 and then moves toward 0.30 as the biomass increases. With long-lived, less productive species like the rebuilding rockfish, the standard harvest and 40-10 control rules are not able to rebuild stocks back to  $B_{MSY}$  within the time period required by law. For this reason, the Council has pursued rebuilding strategies based on even more precautionary constant harvest rate policies. This alternative is now before the Council as ACL alternative 1.

The Council's PPA—ACL alternative 3—would set the ACL equal to the ABC with a P\* adjustment of 0.45. This P\* adjustment is consistent with the Council's preliminary preferred ABC control rule for category 1 stocks. The Council's April motion specifically identified the 2012 ACL as 1,160 mt, which is the ACL from Alternative 3 at the April meeting. The Council did not have an analysis of this alternative in April, yet chose it as the PPA on the rationale that it would be intermediary to the OFL rebuilding strategy and the 25-5 control rule. The actual 25-5 derived ACL in 2012 would differ from that specific amount because of the different ACL in 2011 (i.e., the rebuilding alternative 3 2012 ACL is based on a 2011 ACL of 776 mt, not the 976 mt from the Council's PPA). Here we assume that the 1,160 mt ACL is what represents the Council's PPA for 2012. The Council's April motion stated that its preliminary preferred rebuilding plan would continue with the 25-5 control rule in 2013 through the rebuilding period. This is the strategy analyzed in ACL alternative 3.<sup>17</sup>

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<sup>15</sup> Sec. 4.5.1 of the FMP; sec. 4.6.1 in the proposed Amendment 23 version.

<sup>16</sup> *For more explanation, see the operational definitions in sec. 3.2 of the FMP ; sec. 2.2 of the Amendment 23 version. The SPR constant harvest rate expressed as 'x percentage' (or  $F_{X\%}$ ) is the "rate of fishing mortality that will reduce female spawning biomass per recruit to x percent of its unfished level. F100% is zero fishing mortality."*

<sup>17</sup> We should note, however, that rebuilding alternative 5 is based on the "option 1" 25-5 control rule where the adjustment is based off of the OFL and not the ABC. The Council's intent may have been to use the "option 2" method instead consistent with its preliminary preferred alternative for the 40-10 control rule. Option 2 presents some technical difficulties for the rebuilding analysis because the scientific uncertainty estimate of sigma used to calculate the ABC control rule will be updated each biennial cycle. In addition, the Council may choose a different P-star value. This presents some difficulty for incorporating P-star into rebuilding projections.

## **Taking into Account the Needs of Fishing Communities – General Considerations**

The other important legal requirement imposed by the MSA and the FMP is the command to take into account the needs of fishing communities when establishing rebuilding plans. Congress included this requirement in the criteria for setting rebuilding time periods as a means of providing the regional fishery management councils flexibility to tailor rebuilding plans to the particular circumstances of each fishery and each overfished species. The implied purpose of including this provision in the MSA was for Councils to consider delaying rebuilding from the shortest time possible if and when the needs of fishing communities might justify such delay. However, other than the 10-year cap for species biologically capable of rebuilding within 10 years, there is not much guidance on how much delay may be justifiable or on how to gauge the degree of delay that is most proper. This flexibility and the appropriate boundaries on its use have been the primary focus of litigation over the FMP of late.

Section 4.5.3.2 of the FMP provides the following general guidance on the needs of the fishing communities:

Fishing communities need a sustainable fishery that: is safe, well-managed, and profitable; provides jobs and incomes; contributes to the local social fabric, culture, and image of the community; and helps market the community and its services and products.

The Council does not have the same level of objective, model-derived criteria to use in contrasting rebuilding alternatives against this general vision as it does in gauging rebuilding alternatives against estimated times to rebuild. Given the complexity of the groundfish fisheries and the limited economic and social science data and methodologies available, such objectivity has not really possible with the rebuilding rockfish stocks.

There are many reasons why the rockfish rebuilding plans have been challenging. Rockfish indirectly affect fishing opportunity by constraining the harvest of target stocks; they affect multiple commercial and recreational fishery sectors; it is difficult to lessen fishing impacts on one rockfish species without affecting another; some rockfish populations are so slow growing that even small increases in harvest can delay rebuilding for a number of years, and so on. The Council has approached this challenging situation using what we have characterized as a holistic approach to analyzing rebuilding alternatives and impacts to fishing communities. The court found that reliance on this holistic was within the scope of the Council's discretion.<sup>18</sup> Yet, it has been very difficult to judge what one rebuilding alternative means to fishing communities with any kind of precise quantification. It has been equally difficult to weigh these uncertain, qualitative benefits against the corresponding delay in rebuilding and to do so in a manner that achieves the FMP's fifth rebuilding goal of promoting "widespread public awareness, understanding and support for the rebuilding program." Indeed, although approving of the holistic approach, the court found that three of the rebuilding plans established as part of the holistic analysis approach to be illegal. As explained below, we believe the situation with petrale can be greatly simplified.<sup>19</sup>

## **Taking into Account the Needs of Fishing Communities – The Recent Court Decision**

The recent court decision found fault with the Council's rebuilding plans for darkblotched, yelloweye, and cowcod. In the opinion of the authors, the court's rationale for finding fault with those three rebuilding plans has not leant much additional clarity on the appropriate way of taking into account the

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<sup>18</sup> NRDC v. Locke, at p. 28.

<sup>19</sup> Petrale sole is also an important piece of the holistic approach. As discussed below, it is one of the most important sources of revenue to the non-whiting trawl fleet and thus a species prioritized for harvest within the constraints imposed by the restrictive rebuilding rockfish harvest levels.

needs of fishing communities. The court's specific reasoning for disapproving some rebuilding plans and approving of others is not easily discernible and does not seem well-grounded in the concepts of fisheries science or management that the MSA is based upon, nor appropriately appreciative of the level of uncertainty involved with estimating current stock status and projecting future rebuilding and how changes in our understanding can change from stock assessment to stock assessment. It seems that the complexity of our past analyses, the often difficult to understand science of fisheries stock assessment, and some possible misperceptions about the status of rockfish populations have lead to some confusing legal standards.

The best we can tell is that the courts are expecting the Council to use "measured proportionality" (also phrased as "proportionate weight") when using short-term considerations as a basis for delaying rebuilding from the shortest time possible to rebuild.<sup>20</sup> Stated in the negative, the courts have said that the Council cannot place disproportionate or improper emphasis on short-term economic benefits over conservation.<sup>21</sup> The problem, at least for the authors of this analysis, is that we have not seen a clear articulation of the line between what is acceptable and unacceptable emphasis. That boundary between acceptable and unacceptable is unclear.

### **Taking into Account the Needs of Fishing Communities – Short-term vs. Long-term Generally**

The tradeoff between harvest in the short-term and harvest in the long-term is a central question of fisheries management.<sup>22</sup> In essence, this tradeoff involves a cost arising from harvesting too much in the short-term; namely, the yield that is lost by not fishing at a rate that produces maximum sustainable yield over the long-term ("forgone yield"). The recent court order recognizes this tradeoff to some degree:

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<sup>20</sup> NRDC v. NMFS, 421 F. 3d at 881:

It is also reasonable to conclude that the needs of fishing communities may still be taken into account even when the biology of the fish dictates exceeding the 10-year cap—so long as the weight given is proportionate to the weight the Agency might give to such needs in rebuilding periods under 10 years. This interpretation would allow the Agency's rebuilding periods to account for short-term concerns such as bycatch in the same manner whether the rebuilding period exceeds 10 years or not.

The 2002 darkblotched rockfish quota is patently unreasonable, however, and reflects no such measured proportionality.

<sup>21</sup> For example, here is the court's summation of why the darkblotched rebuilding plan was improper:

In the Agency's analysis, the "status and biology of the stocks" in this context relate to conservation, the "needs of fishing communities" relate to short-term economic interests, and the "interaction of the overfished stock within the marine environment" also relates to short-term economic interests. Even though the third factor sounds environmental, it isn't. It is shorthand for the fact that overfished species are often found at the same depth and geographic location as some of the most commercially valuable fish, and for that reason the Agency is willing to postpone their rebuilding for the sake of the revenue from those more commercially valuable fish. Two out of three factors the Agency considered in setting the darkblotched harvest levels were economic. Thus the Agency gives priority to short-term economic interest over conservation, a violation of the MSA."

NRDC v. Locke, at p. 34. This characterization of the MSA's rebuilding criteria, and the calculus of "two of the three" criteria being economic criteria and two being more than one, so the "environmental" (a.k.a, conservation) loses to the "economic" is also perplexing. We may be, again, taking the court's statement too literally, yet the logic presented by the court's phrasing is an oversimplification of those three factors. We are unsure on how the court expects them to be applied. All three of the factors mentioned are relevant to the determination of how a particular rebuilding alternative balances the needs of fishing communities against the long-term conservation mandates of the MSA. Neither of the three is purely "environmental" or "economic" in nature.

<sup>22</sup> E.g., "Easily the single most difficult and pervasive trade-off issue in fisheries management is between catching fish now versus leaving them in the water to produce surplus for harvesting in the future." Walters, Carl J. and Steven J. D. Martell. *Fisheries Ecology and Management* (2004).

Part of the reason Congress elevated conservation over economic interests is that conserving fish populations yields the double benefit of both improving the environment and providing long-term economic return.

The guidance of the court of appeals to this Court in reference to this same fishery is that the purpose of the Magnuson-Stevens Act is clearly to give conservation of fisheries priority over short-term economic interests. The Act sets this priority in part because the longer-term economic interests of fishing communities are aligned with the conservation goals set forth in the Act. Without immediate efforts to rebuild depleted fisheries, the very survival of those fishing communities is in doubt.<sup>23</sup>

The tradeoff between short-term and long-term yield is exactly what the MSA and the conservation standards in NS1 are intended to address. In fact, the whole of the MSA NS1 and the scientific concepts it is based on are focused on the question of how to optimize the long-term value of fisheries. And, as generally recognized by the courts, these conservation standards—preventing overfishing, achieving optimum yield on a continuing basis, and rebuilding overfished stocks—are designed specifically to give priority to conservation over short-term economic interests. Yet, what the courts have not seemed to recognize—probably because we have not effectively communicated as much—is that delaying rebuilding based on short-term concerns might have little to no cost to conservation and the long-term economic return to communities. In fact, in pure economic terms, some delay in rebuilding can be in the best long-term economic interests of fishing communities.

Again, we have apparently not communicated or analyzed this point effectively with regard to existing rebuilding plans. In evaluation of the darkblotched rebuilding plan, the recent court order observed that “there will always be some short-term economic gain associated with extending rebuilding periods to increase harvests.”<sup>24</sup> Following that observation the court went on to reason and conclude that:

[i]f section 304(e)(4)(A)(i) allowed the Agency to extend a species’ rebuilding period whenever the Agency could identify some short-term economic benefit to fishing communities, it is hard to imagine circumstances under which the Agency could not delay rebuilding. That is precisely why, if it is to serve the MSA’s overarching conservation mandate, the section’s balance between rebuilding and the “needs of fishing communities” must remain heavily weighted towards rebuilding. Conservation has priority over short-term economic interests.<sup>25</sup>

The court is perhaps correct in that there will always be some short-term benefit to delay, yet this is simply a “slippery slope” argument that may be missing the bigger picture. Short-term benefits are only the first part of the central question involved with rebuilding. The second part involves comparing that short-term benefit against the long-term cost to conservation and fishing communities. Answering that question involves looking at delay from what to what, i.e. of the tradeoff between the short- and long-term benefits arising from one rebuilding alternative against another. Again, an analysis of that question might show that the short-term benefit leads to no appreciable long-term cost.

It is important to understand that of the ACL alternatives the Council considers for rebuilding, including those under consideration for petrale, none are meant to delay rebuilding indefinitely (i.e., maintain the stock at a level lower than what would produce  $B_{MSY}$ ) as was and still may be the case in the past or in other parts of the country or world. Rather, the slower-to-rebuild alternatives simply slow the trajectory

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<sup>23</sup> NRDC v. Locke, at p. 9-10. The second passage quoted cites to NRDC v NMFS, 421 F.3d at 879.

<sup>24</sup> NRDC v. Locke, at p. 33.

<sup>25</sup> NRDC v. Locke, at p. 33. The last two sentences cite to NRDC v. NMFS, 421 F.3d at 879-82 and 878-870, respectively

at which the stock rebuilds back to  $B_{MSY}$ . In fact, the slowest alternatives to rebuild are usually based on the harvest control rule that is specifically designed to produce MSY over the long-term.<sup>26</sup> It is therefore not surprising that that delay to this degree often makes more economic sense than rebuilding more quickly. With the long-lived rockfish, small changes in the harvest rate can make large differences in the number of years to rebuild. Many of the rockfish are at the extreme end of fish life history and this has made the rebuilding legal standards tough to analyze.

More focus and articulation of long-term implications of rebuilding appears necessary to show that delays in rebuilding do not necessarily sacrifice conservation. NRDC's arguments and the court's perception that the Council has improperly emphasized short-term economics over conservation show that we have fallen short with our past analyses and articulation or rebuilding rationales:

NMFS's economic analyses, according to NRDC, also neglected important and available information on the long-term economic benefits of faster rebuilding, as a lawful rebuilding alternative to prioritizing short-term benefits over rebuilding a species as quickly as biologically possible. . . . Neither [the EIS for Amendment 16-4 or the 2009-10 harvest specifications and management measures] considers the economic effects of rebuilding alternative harvest levels over the length of the rebuilding periods the Agency actually adopted, which are many decades long for some species.<sup>27</sup>

The line between “measured” and improper emphasis on the short-term seems one that people can easily disagree upon, and a line that is difficult line for the analysts on the GMT and Council staff to advise the Council on where its policy discretion might begin and end. We believe one way of finding that line is to compare the short-term benefits conveyed by a rebuilding alternative against the long-term costs that the delay may have. This has been difficult for rockfish. We think it is possible for petrale.

### **Taking into Account the Needs of Fishing Communities – Finding Measured Proportionately Between Short-Term Concerns and Conservation in Rebuilding Petrale Sole**

The court's recent interpretations of the MSA have created a strong presumption that delay in rebuilding is detrimental to conservation. That presumption can be rebutted for petrale. To do so here, we start with the court's observation that there are two major purposes to the MSA's conservation mandates: (1) long-term economic return to fishing communities; and, (2) improvement to the marine environment.

On the first prong, we again highlight that that there is no long-term economic return expected from rebuilding petrale in the shortest time possible. To better explain this, we briefly discuss the analysis shown in Table 2-14. Table 2-14 simply identifies the projected catches by year and the expected years in

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<sup>26</sup> That these “least conservative” alternatives considered by the Council are actually the scientifically-derived best available estimates of the harvest that produce a not only sustainable—but a maximally sustainable—yield is something we wonder is well-appreciated outside of fisheries management circles. There seems to be a tendency to associate overfished species with species that are threatened by the risk of extinction. Here is an example from the recent court order:

This Court has made its ruling and the ruling should be implemented, due to the dire circumstances of several of the species.

Certain rockfish stocks are below, and in some cases, considerably below the target abundance levels. Yet, every alternative under consideration is projected—by the best available science—to increase the abundance of the stock. The situation does not seem dire to the authors of this analysis. Overharvest in the past may have caused the populations to drop to their current abundance. With petrale, this overharvest was unintentional and a symptom of stock assessment uncertainty. The best available science expects that lowering the harvest rate will correct the situation and increase abundance.

<sup>27</sup> NRDC v. Locke, at p. 23-2.4

which the stock rebuilds to the  $B_{25\%}$  target from the rebuilding analysis. After each rebuilding alternative hits that  $B_{25\%}$  target, the catches that result are equivalent to the catch at MSY, which we approximate that catch with a catch of 2,100 mt. The essential question examined by this analysis is: what is the economic benefit of reaching that MSY level of catch more quickly? The answer to that question is no benefit.

The “no fishing” rebuilding strategy would rebuild three years faster than OFL/ $F_{MSY}$  rebuilding strategy, the slowest to rebuild, yet it would also produce 25 percent less overall yield. Thus, there is no reasonable economic assumption that can turn the shortest possible time to rebuild into the rebuilding alternative that is in the best long-term economic interests of fishing communities. This logic applies to all the alternatives under consideration for petrale. If conservation for long-term economic return is the main criterion for setting rebuilding plans, the OFL/ $F_{MSY}$  rebuilding strategy is superior to all.<sup>28</sup>

This result is not surprising because, as explained above, the standard  $F_{MSY}$  proxy control rule is specifically designed to produce the long-term maximum sustainable yield for petrale and flatfish. We would need to analyze a more aggressive rebuilding alternative harvest rate to see a situation where delay for short-term benefit leads to a long-term cost in terms of foregone yield. Such a harvest rate would constitute overfishing and so would not be allowable under NS1.

As to the second prong of conservation benefit, the state of the science is such that we can only speculate on how the alternatives compare in terms of their benefit to the marine environment. It is a question that fisheries science and this Council are beginning to look at more closely with the transition towards ecosystem approaches to fisheries management. The role petrale plays in the marine environment, whatever that may be, is a function of its abundance. Differences between the rebuilding alternatives in terms of the expected population abundance are minor. Again, all rebuilding alternatives are designed to rebuild the stock to  $B_{25\%}$ , which the rebuild analysis estimates as a spawning biomass level of 6,334 mt. In 2014, the year rebuilding alternative 1 is expected to reach  $B_{25\%}$ , the rebuilding analysis projects that the stock would be at 5,461 mt ( $\sim B_{22\%}$ ) under rebuilding alternative 4. The OFL/ $F_{MSY}$  rebuilding strategy would reach the same level of biomass—6,334 mt—three years later. This level of difference would not seem to raise concerns over ecological impact. Yet, again, the respective impact of the rebuilding alternatives on ecosystem structure and function is unknown to science at this time.

### **Evaluation of the Council’s Preliminary Preferred Rebuilding Alternative**

As explained above, the Council’s preliminary preferred rebuilding alternative, ACL alternative 3, is based on an ACL equal to the  $P^*$  adjusted ABC in 2011 and the rebuilding alternative 3 ACL for 2012 of 1,160 mt. The rebuilding plan would then follow the 25-5 harvest control strategy in 2013 through rebuilding. The Council identified the 25-5 control rule as its preliminary preferred rebuilding strategy yet believed that the needs of the fishing communities justified modifying that strategy for 2011-12.

We again use Table 2-14 and the “year-round” fishery scenario to compare the Council’s PPA against the other rebuilding alternatives. The  $T_{TARGET}$  for rebuilding alternative 5 is 2016. This is two years later than the no fishing scenario ( $T_{MIN}$ ), one year later than ACL alternative 1 and alternative 2, and one year faster than the OFL/ $F_{MSY}$  rebuilding strategy. The one year delay between  $T_{TARGET}$  for rebuilding alternative 2 and alternative 3 may overstate the difference between the two. The expected spawning biomass trajectories for the two rebuilding alternatives look very similar. For example, the spawning biomass level in for the Council’s PPA is expected to be 6,060 mt in 2015 and then reach 6,347 mt in

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<sup>28</sup> The GMT highlighted this dynamic to the Council in April. PFMC, April 2010 Briefing Book, Agenda Item I.4.b, Supplemental GMT Report 3, at p. 2 ([www.pcouncil.org/wp-content/uploads/I4b\\_SUP\\_GMT\\_RPT3\\_APRIL\\_2010\\_BB.pdf](http://www.pcouncil.org/wp-content/uploads/I4b_SUP_GMT_RPT3_APRIL_2010_BB.pdf)).

2016. The projections for alternative 2 are just barely ahead, reaching 6,130mt in 2015 and hitting 6,399 mt in 2016.

In terms of long-term economic return to communities, the Council's PPA produces less expected yield than rebuilding alternative 2 and the OFL/ $F_{MSY}$  rebuilding strategy, yet the difference is miniscule and just ~0.3 percent less. The Council's PPA would produce 11.5 percent more overall yield than rebuilding alternative 1 and 24.9 percent more than a no fishing rebuilding strategy. In comparing the rebuilding alternatives by the probability of rebuilding, we highlight that the Council's PPA has an 86 percent chance of reaching  $B_{25\%}$  by 2021 ( $T_{MAX}$ ). This is slightly lower than alternative 2 (87 percent) and slightly higher than the OFL/ $F_{MSY}$  rebuilding strategy (84 percent). In contrast, the rebuilding analysis projects that rebuilding alternative 1 and a no fishing strategy would have a 100 percent chance of rebuilding by  $T_{MAX}$ .

### **The Importance of Petrale to Fishing Communities**

That the Council's PPA shows measured proportionality between the short-term needs of fishing communities and the conservation goals of the MSA seems abundantly clear when comparing the alternative rebuilding strategies over the 10-year rebuilding period. This strategy is based on the Council's precautionary 25-5 harvest control rule and default rebuilding strategy. The rebuilding analysis predicts no long-term cost from fishing at this control rule. In turn, rebuilding under alternative 1 or a no fishing strategy cannot be justified based on the rationale that rebuilding in as short as time as possible is in the long-term economic interests of fishing communities. The Council may choose to rebuild quicker based on the rationale that a more abundant petrale population is better for the marine environment, yet, again, we cannot provide the Council with a quantitative evaluation of the differences between the rebuilding alternatives in this regard. Of course, the Council may also prefer no fishing strategy or alternative 1 because of their higher probabilities of rebuilding by 2021.

The case that the Council's PPA shows measured proportionately between short-term concerns and long-term conservation would seem convincing even if petrale were of little importance to fishing communities. The fact of the matter though is that petrale sole is one of the most economically important stocks to the non-whiting trawl fishery. Petrale is the third most valuable species in terms of overall annual ex-vessel value, contributing, on average, 19 percent of total ex-vessel revenue in the non-whiting trawl fishery (Table 2-15 [A] & [B]). Dover sole is more valuable overall only because of its greater abundance and larger available harvest. On a price per pound basis, petrale sole is second only to sablefish and considerably more valuable than all other flatfish harvested in the fishery (Table 2-15 [C]).

All petrale rebuilding alternatives reduce the petrale harvest considerably from the levels shown in Table 2-15. The Council has already restricted the petrale OY for 2010 to 1,200 mt, a 50 percent decrease from the 2009 OY. We do not have the data to demonstrate this other than the high price-per-lb, yet the GAP and others in the trawl industry are likely to testify that petrale is so unique in its market desirability that it will be difficult if not impossible to make up the revenue by switching to the harvest of other groundfish species.

Additional information, including the needs of the tribal trawl fishery, will be provided to the Council at the June meeting. Petrale is caught by other sectors yet the non-tribal, non-whiting trawl has taken 98-99 percent of the catch in 2006-2008. The tribal trawl fishery makes up the vast majority of the remaining 1-2 percent.

Lastly, while specifics on impacts to communities are important, we close this analysis by highlighting that the central focus should be on comparing the rebuilding alternatives against one another for the relative emphasis they place on short-term economic needs and long-term conservation goals. This, we



believe, is the clearest way of demonstrating where the Council may or may not be improperly placing emphasis on the short-term economic needs at the expense of conservation.

**Table 2-15. Basic revenue statistics for the non-whiting trawl fishery, 2004-2009. Data is from the PacFIN database.**

**A. Total annual coastwide ex-vessel value**

	2004	2005	2006	2007	2008	2009	Average	Median
Sablefish	\$5,302,020	\$5,896,984	\$7,381,783	\$8,117,009	\$11,451,380	\$12,447,727	\$8,432,817	\$7,749,396
Dover sole	\$5,375,612	\$5,553,625	\$4,852,421	\$7,637,178	\$9,200,367	\$8,627,604	\$6,874,468	\$6,595,402
Petrals sole	\$4,348,712	\$5,509,846	\$5,781,407	\$4,961,114	\$4,957,029	\$3,550,946	\$4,851,509	\$4,959,072
Shortspine	\$984,694	\$887,779	\$1,008,993	\$1,248,540	\$1,843,563	\$1,700,771	\$1,279,057	\$1,128,767
Longspine	\$657,198	\$590,072	\$874,584	\$789,634	\$1,202,900	\$761,796	\$812,697	\$775,715
Other non-whiting	\$5,451,899	\$4,430,321	\$3,809,725	\$3,528,515	\$3,568,699	\$3,962,105	\$4,125,211	\$3,885,915
Total non-whiting	\$22,120,135	\$22,868,627	\$23,708,913	\$26,281,990	\$32,223,938	\$31,050,949	\$26,375,759	\$24,995,452

**B. Percentage of total annual coastwide ex-vessel value**

	2004	2005	2006	2007	2008	2009	Average
Sablefish	24.0%	25.8%	31.1%	30.9%	35.5%	40.1%	31.2%
Dover sole	24.3%	24.3%	20.5%	29.1%	28.6%	27.8%	25.7%
Petrals sole	19.7%	24.1%	24.4%	18.9%	15.4%	11.4%	19.0%
Shortspine	4.5%	3.9%	4.3%	4.8%	5.7%	5.5%	4.8%
Longspine	3.0%	2.6%	3.7%	3.0%	3.7%	2.5%	3.1%
Other non-whiting	24.6%	19.4%	16.1%	13.4%	11.1%	12.8%	16.2%

**C. Average coastwide annual ex-vessel price-per-lb**

	2004	2005	2006	2007	2008	2009	Average
Sablefish	\$0.96	\$1.02	\$1.23	\$1.38	\$1.69	\$1.65	\$1.32
Petrals sole	\$1.04	\$0.95	\$0.99	\$1.14	\$1.02	\$0.98	\$1.02
Shortspine	\$0.72	\$0.91	\$0.84	\$0.78	\$0.95	\$0.69	\$0.81
Sand sole	\$0.75	\$0.73	\$0.60	\$0.67	\$0.79	\$0.72	\$0.71
Longspine	\$0.49	\$0.49	\$0.58	\$0.51	\$0.46	\$0.36	\$0.48
Starry flounder	\$0.49	\$0.48	\$0.45	\$0.41	\$0.39	\$0.38	\$0.43
Pacific sandab	\$0.33	\$0.34	\$0.41	\$0.61	\$0.38	\$0.37	\$0.41
Dover sole	\$0.41	\$0.37	\$0.36	\$0.38	\$0.39	\$0.44	\$0.39
Rex sole	\$0.39	\$0.37	\$0.35	\$0.34	\$0.36	\$0.35	\$0.36
English sole	\$0.34	\$0.35	\$0.31	\$0.33	\$0.31	\$0.34	\$0.33
Arrowtooth	\$0.11	\$0.13	\$0.14	\$0.10	\$0.11	\$0.12	\$0.12

## **2.1.5 Harvest Specifications for Non-Overfished Species**

This section to be completed after the June briefing book deadline.

### *2.1.5.1 Lingcod*

### *2.1.5.2 Pacific Cod*

### *2.1.5.3 Pacific Whiting*

### *2.1.5.4 Sablefish*

**Sablefish North of 36° N Lat.**

**Sablefish South of 36° N Lat.**

### *2.1.5.5 Shortbelly Rockfish*

### *2.1.5.6 Chilipepper Rockfish*

### *2.1.5.7 Splitnose Rockfish South of 40°10' N lat.*

### *2.1.5.8 Shortspine Thornyheads*

**Shortspine Thornyhead North of 34°27' N lat.**

**Shortspine Thornyhead South of 34°27' N lat.**

### *2.1.5.9 Longspine Thornyheads*

**Longspine Thornyhead North of 34°27' N lat.**

**Longspine Thornyhead South of 34°27' N lat.**

### *2.1.5.10 Black Rockfish off Washington*

*2.1.5.11 Black Rockfish off California and Oregon*

*2.1.5.12 California Scorpionfish*

*2.1.5.13 Cabezon off California*

*2.1.5.14 Cabezon off Oregon*

*2.1.5.15 Dover Sole*

*2.1.5.16 English Sole*

*2.1.5.17 Arrowtooth Flounder*

*2.1.5.18 Starry Flounder*

*2.1.5.19 Longnose Skate*

**2.1.6 Harvest Specifications for Stock Complexes**

None of the groundfish stock complexes are proposed to be restructured under the preferred alternative, with the following exceptions:

- Dusky and dwarf-red rockfish are proposed to be removed from the FMP under a separate Amendment 23 action. These species were managed in the northern and southern minor shelf rockfish subcomplexes, but they contributed no harvest since they are not endemic to the west coast;
- Chilipepper rockfish south of 40°10' N lat. was managed with stock-specific harvest specifications and the northern portion of the coastwide stock occurring off northern California and Oregon was managed within the minor shelf rockfish north complex under the No Action alternative. The stock is proposed to be removed from the northern minor shelf rockfish complex and managed on a coastwide basis with stock-specific harvest specifications (see section 2.1.5.6); and
- The stock of cabezon off Oregon is proposed to be removed from the Other Fish complex and managed with stock-specific harvest specifications (see section 2.1.5.14).

There are four stock complexes for which 2010 ABCs and OYs have been specified under the No Action alternative. These are the minor rockfish complexes north and south of 40°10' N lat., Other Flatfish, and Other Fish complexes. Each of the north and south minor rockfish complexes are comprised of subcomplexes for nearshore, shelf, and slope rockfish. OYs have been specified for the rockfish subcomplexes under the No Action alternative, but not ABCs.

The preliminary preferred alternative for 2011 and 2012 harvest specifications for stock complexes proposes the SSC-recommended OFLs, ABCs that assume each component stock of a complex is a category 3 stock ( $P^* = 0.4$  and the resulting ABC buffer = 30.6% of OFL); and ACLs that are either status quo OYs or, for the Other Fish complex, minimally changed from status quo.

The 2010 ABCs under the No Action harvest specification framework and the preferred 2011 and 2012 OFLs under the proposed Amendment 23 framework were/are specified for the minor rockfish north, minor rockfish south, Other Flatfish, and Other complexes. The 2010 ABCs specified under the No Action alternative were based on the contribution of component stocks to the complexes; however, only the stocks with a known catch history tended to contribute to the ABC. ABCs were set higher than the summed contribution of the main component stocks with catch history to accommodate the unknown catch contribution of the other component stocks. The approaches used to determine the No Action ABCs are poorly documented except for the Other Flatfish complex, where a systematic approach was documented in the 2007-2008 biennial specifications EIS {PFMC 2006}. The Other Fish complex has no component species-specific basis for the 2010 ABC.

The 2011 and 2012 OFLs proposed for the stock complexes under the preliminary preferred alternative are based on the summed contribution of each component stock to the complex. These are the SSC-recommended OFLs and are based on improved data and analyses informing the MSY/overfishing threshold for each component stock to the complex. The analytical approach used to estimate an appropriate OFL contribution for each component stock varies by stock category/subcategory. The OFLs for category 1 and 2 stocks that are proposed to be managed in a complex (e.g., splitnose rockfish in the northern minor slope rockfish) are estimated by applying proxy  $F_{MSY}$  harvest rates to the exploitable biomass estimated in quantitative assessments. The approach for determining the OFLs for category 3 stocks, which are the vast majority of stocks managed in complexes, use catch-based approaches that vary by the sub-category of the stock (Table 2-7). The OFLs for most of these stocks are determined using a longer time series of catch data, following either a depletion-based stock reduction analysis, a depletion corrected average catch, or if catch data are sparse or less certain, an average catch approach. Category 3a stocks have a negligible catch history; therefore, a zero-harvest contribution to the OFL is assumed.

The proposed 2011 and 2012 ABCs under the preliminary preferred alternative assume all the component stocks to a stock complex are category 3 stocks and a  $P^*$  of 0.4 is used to estimate a scientific uncertainty buffer of ~30.6% (see section 2.1.2). The preliminary preferred ABCs for stock complexes are the summed contribution of ABCs calculated for component stocks.

The preliminary preferred 2011 and 2012 ACLs for stock complexes are the No Action OYs for the four stock complexes, as well as the minor rockfish subcomplexes.

The preliminary preferred OFLs and ABCs are recommended for the northern and southern minor rockfish complexes, as well as the Other Flatfish and Other Fish complexes, but not the rockfish subcomplexes. This may be a problem given the need to set ACLs for the minor rockfish subcomplexes to accommodate other management needs (e.g., actions proposed under amendments 20 and 21). The NS1 guidelines and the FMP require an estimate of MSY for each stock complex, which are the proposed OFLs. The NS1 guidelines further state, “For stocks and stock complexes required to have an ABC, each Council must establish an ABC control rule based on scientific advice from its SSC. The determination of ABC should be based, when possible, on the probability that an actual catch equal to the stock’s ABC would result in overfishing” ... “The ABC control rule must articulate how ABC will be set compared to the OFL based on the scientific knowledge about the stock or stock complex and the scientific uncertainty in the estimate of OFL and any other scientific uncertainty.” The NS1 guidelines further stipulate ACLs cannot

exceed ABCs. These are considerations for deciding a final preferred alternative for Amendment 23 and the 2011 and 2012 specifications.

Specifying the No Action OYs for the minor rockfish subcomplexes without an associated OFL and ABC under the preliminary preferred alternative may increase the risk of overfishing for some stocks managed in a complex. If the SSC and other advisors recommend specifying OFLs and ACLs for the minor rockfish subcomplexes, the summed contribution of OFLs and alternative ABCs for the rockfish subcomplexes could be considered (Table 2-16). The ABC alternatives for stock complexes provided in Table 2-16 vary by either:

- 1) calculating the ABC by summing the ABC contributions of component stocks assuming they are all category 3 stocks (assume a P\* of 0.4 to apply a 30.6% scientific uncertainty buffer); or
- 2) calculating the ABC by summing the ABC contributions of component stocks assuming the preferred P\* approach is applied to each stock according to the stock categories recommended by the SSC for each stock.

The second approach results in a higher ABCs for some of the rockfish complexes and subcomplexes because some of the component stocks are category 1 stocks (e.g., splitnose rockfish in the northern minor slope rockfish subcomplex) and category 2 stocks (e.g., blue rockfish in the southern minor nearshore rockfish subcomplex) with smaller scientific uncertainty buffers defining their ABC contribution.

The preliminary preferred alternative ACLs for the stock complexes and subcomplexes may only be problematic in cases where the ACL is greater than the summed contribution of the ABCs for each component stock managed within the complex (Table 2-16). There are two cases where the summed ABC contribution of component stocks is less than the preliminary preferred ACL:

- Minor Nearshore Rockfish North: The No Action OY of 155 mt proposed for managing the minor nearshore rockfish north complex in 2011 and 2012 is higher than the summed contribution of the ABCs of the component stocks (range of 81-85 mt using either stock category approach) and the summed OFL contribution of the component stocks (116 mt).
- Minor Slope Rockfish North: The No Action OY of 1,160 mt proposed for managing the minor slope rockfish north complex in 2011 and 2012 is higher than the summed ABC contribution of component stocks using the preliminary preferred ABC approach that assumes all component stocks are category 3.

Of these two cases, the minor nearshore rockfish north complex ACL is of most concern given that the ACL is greater than the summed OFL contribution of the component stocks. The minor slope rockfish north ACL is less than the summed ABC contribution of component stocks if the ABC contribution is calculated using the SSC-assigned stock categories and the Council's preferred P\* approach (Table 2-16) and may therefore not be a concern.

The following sections describe each complex, the component stocks for each complex, and the relative vulnerability of these stocks according to the GMT's Productivity and Susceptibility Assessment (PSA) of each stock.

**Table 2-16. The 2011 and 2012 harvest specifications for complexes assuming the summed contribution of the specifications of component stocks compared to the preliminary preferred ACLs.**

Stock Complex and Component Stocks	Specifications Based on Stock Contribution							Preliminary Preferred	
	2010 OY	2011 OFL	2012 OFL	Using SSC Stock Cat.		Assume Stock Cat. 3		2011 ACL	2012 ACL
				2011 ABC	2012 ABC	2011 ABC	2012 ABC		
Minor Rockfish North	2,283	3,611	3,680	2,901	2,964	2,507	2,555	2,283	2,283
Minor Nearshore Rockfish North	155	116	116	85	84	81	81	155	155
Minor Shelf Rockfish North	968	2,032	2,056	1,578	1,598	1,411	1,428	968	968
Minor Slope Rockfish North	1,160	1,462	1,507	1,238	1,281	1,015	1,047	1,160	1,160
Minor Rockfish South	1,990	4,302	4,291	3,242	3,231	2,987	2,979	1,990	1,990
Minor Nearshore Rockfish South	650	1,156	1,145	875	864	803	795	650	650
Minor Shelf Rockfish South	714	2,238	2,243	1,584	1,588	1,554	1,558	714	714
Minor Slope Rockfish South	626	907	903	783	779	630	627	626	626
Other Flatfish	4,884	10,146	10,146	7,041	7,041	7,044	7,044	4,884	4,884
Other Fish	5,600	11,150	11,150	7,742	7,742	7,742	7,742	5,575	5,575

### 2.1.6.1 Minor Rockfish North of 40°10' N lat.

The Minor Rockfish North complex is the aggregate assemblage of three subcomplexes of nearshore, shelf and slope rockfish species that occur north of 40°10' N lat. The preliminary preferred OFLs for the minor rockfish north complex are 3,611 and 3,680 mt for 2011 and 2012, respectively. The proposed OFLs are the summed contribution of the SSC-recommended OFLs for the northern minor nearshore shelf, and slope rockfish species.

The ABCs recommended for the minor rockfish north complex are 2,507 and 2,555 mt for 2011 and 2012, respectively. The proposed ABCs are the summed contribution of the ABCs for the northern minor nearshore, shelf, and slope rockfish species assuming they are all category 3 stocks to determine the associated scientific uncertainty buffer under the Council's preferred alternative (Table 2-16).

The proposed 2011 and 2012 ACL of 2,283 mt for the minor rockfish north complex is the No Action 2010 OY specified for the complex. This ACL equals the sum of the 2010 OYs under the No Action alternative and the preliminary preferred ACLs proposed for the northern minor nearshore, shelf, and slope rockfish subcomplexes.

The relative vulnerability of stocks in the minor rockfish north complex as rated in the GMT's PSA analysis are shown in Table 2-17.

**Table 2-17. The relative vulnerability of rockfish stocks as rated by the GMT in their PSA analysis managed in the minor rockfish complex north of 40°10' N lat. by stock subcomplex and relative level of vulnerability within the subcomplex.**

Stock Complex and Component Stocks	PSA Results	
	Vulnerability	
	Score	Level
Minor Rockfish North	NA	NA
Minor Nearshore Rockfish North	NA	NA
<i>China</i>	2.23	High
<i>Copper</i>	2.27	High
<i>Quillback</i>	2.22	High
<i>Blue (CA)</i>	2.01	Med/High
<i>Blue (OR &amp; WA)</i>	2.01	Med/High
<i>Brown</i>	1.99	Med/High
<i>Grass</i>	1.89	Med
<i>Olive</i>	1.87	Med
<i>Black and yellow</i>	1.70	Low
<i>Calico</i>	1.57	Low
<i>Gopher</i>	1.76	Low
<i>Kelp</i>	1.59	Low
<i>Treefish</i>	1.73	Low
Minor Shelf Rockfish North	NA	NA
<i>Bronzespotted</i>	2.12	High
<i>Cowcod</i>	2.13	High
<i>Greenblotched</i>	2.12	High
<i>Redstripe</i>	2.16	High
<i>Speckled</i>	2.10	High
<i>Bocaccio</i>	1.93	Med/High
<i>Chameleon</i>	2.03	Med/High



Stock Complex and Component Stocks	PSA Results	
	Vulnerability	
	Score	Level
<i>Flag</i>	1.97	Med/High
<i>Greenspotted</i>	1.98	Med/High
<i>Harlequin</i>	1.94	Med/High
<i>Honeycomb</i>	1.97	Med/High
<i>Pink</i>	2.02	Med/High
<i>Rosethorn</i>	2.09	Med/High
<i>Silvergray</i>	2.02	Med/High
<i>Swordspine</i>	1.94	Med/High
<i>Tiger</i>	2.06	Med/High
<i>Vermilion</i>	2.05	Med/High
<b><i>Greenstriped</i></b>	1.88	Med
<i>Mexican</i>	1.80	Med
<i>Pinkrose</i>	1.82	Med
<i>Rosy</i>	1.89	Med
<i>Squarespot</i>	1.86	Med
<i>Stripetail</i>	1.80	Med
<i>Freckled</i>	1.55	Low
<i>Halfbanded</i>	1.38	Low
<i>Puget Sound</i>	1.59	Low
<i>Pygmy</i>	1.55	Low
<i>Starry</i>	1.02	Low
Minor Slope Rockfish North	NA	NA
<i>Aurora</i>	2.10	High
<i>Rougheye</i>	2.27	High
<i>Shortraker</i>	2.25	High
<i>Bank</i>	2.02	Med/High
<i>Blackgill</i>	2.08	Med/High
<i>Redbanded</i>	2.02	Med/High
<i>Sharpchin</i>	2.05	Med/High
<i>Yellowmouth</i>	1.96	Med/High
<b><i>Splitnose</i></b>	1.82	Med

### Minor Nearshore Rockfish North

The northern minor nearshore rockfish complex north of 40°10' N latitude is composed of the following species: black and yellow rockfish (*S. chrysomelas*); blue rockfish (*S. mystinus*); brown rockfish (*S. auriculatus*); calico rockfish (*S. dalli*); China rockfish (*S. nebulosus*); copper rockfish (*S. caurinus*); gopher rockfish (*S. carnatus*); grass rockfish (*S. rastrelliger*); kelp rockfish (*S. atrovirens*); olive rockfish (*S. serranoides*); quillback rockfish (*S. maliger*); and treefish (*S. serriceps*).

These are all unassessed species except for the portion of the blue rockfish stock occurring in waters off California (i.e., 40°10' N lat. to the California-Oregon border at 42° N lat.). All stocks other than blue rockfish off California are category 3 stocks with catch-based approaches for determining the OFL contribution of the stock. The OFL contribution for blue rockfish off California is based on a 2007 assessment (Key et al. 2008) and is recommended as a category 2 stock based on relatively high assessment uncertainty.

No 2011 and 2012 OFLs or ABCs are proposed for the minor nearshore rockfish north complex under the preliminary preferred alternative. If an OFL were considered for the minor nearshore rockfish north complex, the summed contribution of OFLs of the component species is 116 mt (Table 2-18). The summed contribution of component species' ABCs under the preliminary preferred approach of assuming all component stocks are category 3 is 81 mt. If the ABC contribution was determined using stock-specific categories assigned by the SSC, then ABCs for 2011 and 2012 would be 85 and 84 mt, respectively.

The preliminary preferred ACL for minor nearshore rockfish north of 155 mt is the same as the No Action 2010 OY. This ACL is higher than any of the ABC approaches summarized in Table 2-18 if stock contributions are used to determine an ABC. The preliminary preferred ACL for the complex is also higher than the summed OFL contribution of component stocks, which may pose an overfishing risk to one or more of the component stocks.

The GMT PSA analysis of the relative vulnerability of stocks to overfishing indicated that China, copper, and quillback rockfish have a relatively high vulnerability; and blue and brown rockfish have a medium to high relative vulnerability (Table 2-17). These are the stocks within the minor nearshore rockfish north subcomplex that are most at risk of overfishing. These stocks may be at a particularly high risk of overfishing given the ACL proposed for the subcomplex under the preliminary preferred alternative is higher than the summed ABC and OFL contributions of component stocks.

**Table 2-18. The summed contribution of component stock specifications to the 2011 and 2012 OFLs and ABCs for the minor nearshore rockfish north complex relative to the preliminary preferred ACLs.**

Stock Complex and Component Stocks	Specifications Based on Stock Contribution							Preliminary Preferred	
	2010 OY	2011 OFL	2012 OFL	Using SSC Stock Cat.		Assume Stock Cat. 3		2011 ACL	2012 ACL
				2011 ABC	2012 ABC	2011 ABC	2012 ABC		
Minor Nearshore Rockfish North	155	116	116	85	84	81	81	155	155
<i>Black and yellow</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Blue (CA)</i>		27.7	27.5	23.1	22.9	19.3	19.1		
<i>Blue (OR &amp; WA)</i>		33.1	33.1	23.0	23.0	23.0	23.0		
<i>Brown</i>		5.3	5.3	3.7	3.7	3.7	3.7		
<i>Calico</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>China</i>		11.7	11.7	8.1	8.1	8.1	8.1		
<i>Copper</i>		28.6	28.6	19.9	19.9	19.9	19.9		
<i>Gopher</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Grass</i>		0.6	0.6	0.4	0.4	0.4	0.4		
<i>Kelp</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Olive</i>		0.3	0.3	0.2	0.2	0.2	0.2		
<i>Quillback</i>		8.7	8.7	6.0	6.0	6.0	6.0		
<i>Treefish</i>		0.2	0.2	0.1	0.1	0.1	0.1		

## Minor Shelf Rockfish North

The northern minor shelf rockfish complex north of 40°10' N latitude is comprised of the following species: bronzespotted rockfish (*S. gilli*); bocaccio (*Sebastes paucispinis*); chameleon rockfish (*S. phillipsi*); cowcod (*S. levis*); flag rockfish (*S. rubrivinctus*); freckled rockfish (*S. lentiginosus*); greenblotched rockfish (*S. rosenblatti*); greenspotted rockfish (*S. chlorostictus*); greenstriped rockfish (*S. elongatus*); halfbanded rockfish (*S. semicinctus*); harlequin rockfish (*S. variegatus*); honeycomb rockfish (*S. umbrosus*); Mexican rockfish (*S. macdonaldi*); pink rockfish (*S. eos*); pinkrose rockfish (*S. simulator*); pygmy rockfish (*S. wilsoni*); redstripe rockfish (*S. proriger*); rosethorn rockfish (*S. helvomaculatus*); rosy rockfish (*S. rosaceus*); silvergray rockfish (*S. brevispinis*); speckled rockfish (*S. ovalis*); squarespot rockfish (*S. hopkinsi*); starry rockfish (*S. constellatus*); stripetail rockfish (*S. saxicola*); swordspine rockfish (*S. ensifer*); tiger rockfish (*S. nigrocinctus*); and vermilion rockfish (*S. miniatus*). Chilipepper rockfish (*S. goodei*) caught in the north are managed under this complex under the No Action alternative, but are proposed to be removed from the complex and managed with coastwide stock-specific harvest specifications under the preliminary preferred alternative. Dusky (*S. ciliatus*) and dwarf-red rockfish (*S. rufianus*) are managed under this under the No Action alternative, but are proposed to be removed from the FMP under a separate Amendment 23 action.

These are all unassessed species except for greenstriped rockfish, which was newly assessed in 2009 {Hicks et al. 2009}. All stocks other than greenstriped rockfish are category 3 stocks with catch-based approaches for determining the OFL contribution of the stock. The OFL contribution for greenstriped rockfish is based on the new assessment and is recommended as a category 2 stock based on relatively high assessment uncertainty. The greenstriped assessment was a coastwide assessment and the harvest specifications were apportioned using the mean of the 2003-2008 swept area biomass estimates north of 40.5° N lat. (84.5%) from the NMFS trawl survey.

No 2011 and 2012 OFLs or ABCs are proposed for the minor shelf rockfish north complex under the preliminary preferred alternative. If an OFL were considered for the minor shelf rockfish north complex, the summed contribution of OFLs of the component species are 2,032 and 2,056 mt for 2011 and 2012, respectively (Table 2-19). The summed contribution of component species' ABCs under the preliminary preferred approach of assuming all component stocks are category 3 are 1,411 and 1,428 mt. If the ABC contribution was determined using stock-specific categories assigned by the SSC, then ABCs for 2011 and 2012 would be 1,578 and 1,598 mt, respectively.

The preliminary preferred ACL for minor shelf rockfish north of 968 mt is the same as the No Action 2010 OY. This ACL is lower than the any of the ABC approaches summarized in Table 2-19 if stock contributions are used to determine an ABC.

The GMT PSA analysis of the relative vulnerability of stocks to overfishing indicated that a number of the component rockfish stocks have a medium to high relative vulnerability to overfishing (Table 2-17). However, the RCAs implemented to reduce mortality on overfished species greatly protect shelf rockfish leading to few concerns regarding overfishing.

**Table 2-19. The summed contribution of component stock specifications to the 2011 and 2012 OFLs and ABCs for the minor shelf rockfish north complex relative to the preliminary preferred ACLs.**

Stock Complex and Component Stocks	Specifications Based on Stock Contribution							Preliminary Preferred	
	2010 OY	2011 OFL	2012 OFL	Using SSC Stock Cat.		Assume Stock Cat. 3		2011 ACL	2012 ACL
				2011 ABC	2012 ABC	2011 ABC	2012 ABC		
Minor Shelf Rockfish North	968	2,032	2,056	1,578	1,598	1,411	1,428	968	968
<i>Bronzespotted</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Bocaccio</i>		268.2	268.2	186.1	186.1	186.2	186.2		
<i>Chameleon</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Cowcod</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Flag</i>		0.1	0.1	0.1	0.1	0.1	0.1		
<i>Freckled</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Greenblotched</i>		1.4	1.4	0.9	0.9	0.9	0.9		
<i>Greenspotted</i>		20.9	20.9	14.5	14.5	14.5	14.5		
<b><i>Greenstriped</i></b>		1,208.0	1,232.0	1,006.3	1,026.3	838.7	855.4		
<i>Halfbanded</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Harlequin</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Honeycomb</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Mexican</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Pink</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Pinkrose</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Puget Sound</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Pygmy</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Redstripe</i>		288.3	288.3	200.1	200.1	200.2	200.2		
<i>Rosethorn</i>		15.2	15.2	10.6	10.6	10.6	10.6		
<i>Rosy</i>		2.5	2.5	1.7	1.7	1.7	1.7		
<i>Silvergray</i>		180.0	180.0	124.9	124.9	125.0	125.0		
<i>Speckled</i>		0.2	0.2	0.1	0.1	0.1	0.1		
<i>Squarespot</i>		0.1	0.1	0.1	0.1	0.1	0.1		
<i>Starry</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Stripetail</i>		35.3	35.3	24.5	24.5	24.5	24.5		
<i>Swordspine</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Tiger</i>		1.1	1.1	0.8	0.8	0.8	0.8		
<i>Vermilion</i>		11.1	11.1	7.7	7.7	7.7	7.7		

## Minor Slope Rockfish North

The northern minor slope rockfish complex north of 40°10' N latitude is comprised of the following species: aurora rockfish (*S. aurora*); bank rockfish (*S. rufus*); blackgill rockfish (*S. melanostomus*); redbanded rockfish (*S. babcocki*); rougheye rockfish (*S. aleutianus*); sharpchin rockfish (*S. zacentrus*); shorttraker rockfish (*S. borealis*); splitnose rockfish (*S. diploproa*); and yellowmouth rockfish (*S. reedi*).

These are all unassessed species except for splitnose rockfish, which was newly assessed in 2009 {Gertseva et al. 2009}. All stocks other than splitnose rockfish are category 3 stocks with catch-based approaches for determining the OFL contribution of the stock. The OFL contribution for splitnose rockfish is based on the new assessment and is recommended as a category 1 stock by the SSC.

No 2011 and 2012 OFLs or ABCs are proposed for the minor slope rockfish north complex under the preliminary preferred alternative. If an OFL were considered for the minor slope rockfish north complex, the summed contribution of OFLs of the component species are 1,462 and 1,507 mt for 2011 and 2012, respectively (Table 2-20). The summed contribution of component species' ABCs under the preliminary preferred approach of assuming all component stocks are category 3 species are 1,015 and 1,047 mt for 2011 and 2012, respectively. If the ABC contribution was determined using stock-specific categories assigned by the SSC, then ABCs for 2011 and 2012 would be 1,238 and 1,281 mt, respectively.

The preliminary preferred ACL for minor slope rockfish north of 1,160 mt is the same as the No Action 2010 OY. This ACL is higher than the preliminary preferred ABC approach that assumes all component stocks are category 3. However, if the stock-specific categories recommended by the SSC are used to determine the ABC contributions of component stocks, then the preferred ACL is less than the summed ABC contribution (Table 2-20). The difference between these two ABC approaches is the fact that splitnose rockfish are a category 1 stock with a smaller scientific uncertainty buffer and this stock's OFL is the primary contributor to the complex summed OFL.

The GMT PSA analysis of the relative vulnerability of stocks to overfishing indicated that most of these rockfish stocks have a medium to high vulnerability to overfishing (Table 2-17). These are the stocks within the minor slope rockfish south subcomplex that are most at risk of overfishing.

**Table 2-20. The summed contribution of component stock specifications to the 2011 and 2012 OFLs and ABCs for the minor slope rockfish north complex relative to the preliminary preferred ACLs.**

Stock Complex and Component Stocks	Specifications Based on Stock Contribution							Preliminary Preferred	
	2010 OY	2011 OFL	2012 OFL	Using SSC Stock Cat.		Assume Stock Cat. 3		2011 ACL	2012 ACL
				2011 ABC	2012 ABC	2011 ABC	2012 ABC		
Minor Slope Rockfish North	1,160	1,462	1,507	1,238	1,281	1,015	1,047	1,160	1,160
<i>Aurora</i>		17.3	17.3	12.0	12.0	12.0	12.0		
<i>Bank</i>		19.7	19.7	13.7	13.7	13.7	13.7		
<i>Blackgill</i>		4.7	4.7	3.3	3.3	3.3	3.3		
<i>Redbanded</i>		51.7	51.7	35.9	35.9	35.9	35.9		
<i>Rougheye</i>		78.3	78.3	54.3	54.3	54.3	54.3		
<i>Sharpchin</i>		231.9	231.9	160.9	160.9	161.0	161.0		
<i>Shortraker</i>		21.8	21.8	15.1	15.1	15.2	15.2		
<i>Splitnose</i>		852.2	897.3	814.7	857.8	591.7	623.0		
<i>Yellowmouth</i>		184.7	184.7	128.2	128.2	128.2	128.2		

### 2.1.6.2 Minor Rockfish South of 40°10' N lat.

The Minor Rockfish North complex is the aggregate assemblage of three subcomplexes of nearshore, shelf and slope rockfish species that occur south of 40°10' N lat. The preliminary preferred OFLs for the minor rockfish south complex are 4,302 and 4,291 mt for 2011 and 2012, respectively. The proposed OFLs are the summed contribution of the SSC-recommended OFLs for the southern minor nearshore shelf, and slope rockfish species.

The ABCs recommended for the minor rockfish south complex are 2,987 and 2,979 mt for 2011 and 2012, respectively. The proposed ABCs are the summed contribution of the ABCs for the northern minor nearshore, shelf, and slope rockfish species assuming they are all category 3 stocks to determine the associated scientific uncertainty buffer under the Council's preferred alternative (Table 2-16).

The proposed 2011 and 2012 ACL of 1,190 mt for the minor rockfish south complex is the No Action 2010 OY specified for the complex. This ACL equals the sum of the 2010 OYs under the No Action alternative and the preliminary preferred ACLs proposed for the northern minor nearshore, shelf, and slope rockfish subcomplexes.

None of the ACLs recommended for the minor rockfish south complex and sub-complexes exceed the ABC contributions of the respective component stocks regardless of the approach used to calculate the ABCs (Table 2-16).

The relative vulnerability of stocks in the minor rockfish south complex as rated in the GMT's PSA analysis are shown in Table 2-21.

**Table 2-21. The relative vulnerability of rockfish stocks as rated by the GMT in their PSA analysis managed in the minor rockfish complex south of 40°10' N lat. by stock subcomplex and relative level of vulnerability within the subcomplex.**

Stock Complex and Component Stocks	PSA Results	
	Vulnerability	
	Score	Level
Minor Rockfish South	NA	NA
Minor Nearshore Rockfish South	NA	NA
<i>China</i>	2.23	High
<i>Copper</i>	2.27	High
<i>Quillback</i>	2.22	High
<i>Blue (assessed area)</i>	2.01	Med/High
<i>Blue (S of 34°27' N latitude)</i>	2.01	Med/High
<i>Brown</i>	1.99	Med/High
<i>Grass</i>	1.89	Med
<i>Olive</i>	1.87	Med
<i>Black and yellow</i>	1.70	Low
<i>Calico</i>	1.57	Low
<i>Gopher (N of Pt. Conception)</i>	1.76	Low
<i>Gopher (S of Pt. Conception)</i>	1.76	Low
<i>Kelp</i>	1.59	Low
<i>Treefish</i>	1.73	Low
Minor Shelf Rockfish South	NA	NA
<i>Bronzespotted</i>	2.12	High



Stock Complex and Component Stocks	PSA Results	
	Vulnerability	
	Score	Level
<i>Greenblotched</i>	2.12	High
<i>Redstripe</i>	2.16	High
<i>Speckled</i>	2.10	High
<i>Chameleon</i>	2.03	Med/High
<i>Flag</i>	1.97	Med/High
<i>Greenspotted</i>	1.98	Med/High
<i>Harlequin</i>	1.94	Med/High
<i>Honeycomb</i>	1.97	Med/High
<i>Pink</i>	2.02	Med/High
<i>Rosethorn</i>	2.09	Med/High
<i>Silvergray</i>	2.02	Med/High
<i>Swordspine</i>	1.94	Med/High
<i>Tiger</i>	2.06	Med/High
<i>Vermilion</i>	2.05	Med/High
<b><i>Greenstriped</i></b>	1.88	Med
<i>Mexican</i>	1.80	Med
<i>Pinkrose</i>	1.82	Med
<i>Rosy</i>	1.89	Med
<i>Squarespot</i>	1.86	Med
<i>Stripetail</i>	1.80	Med
<i>Yellowtail</i>	1.88	Med
<i>Freckled</i>	1.55	Low
<i>Halfbanded</i>	1.38	Low
<i>Pygmy</i>	1.55	Low
<i>Starry</i>	1.02	Low
Minor Slope Rockfish South		
<i>Aurora</i>	2.10	High
<i>Rougheye</i>	2.27	High
<i>Shortraker</i>	2.25	High
<i>Bank</i>	2.02	Med/High
<i>Blackgill</i>	2.08	Med/High
<i>Redbanded</i>	2.02	Med/High
<i>Sharpchin</i>	2.05	Med/High
<i>Yellowmouth</i>	1.96	Med/High
<i>Pacific ocean perch</i>	1.69	Low

### Minor Nearshore Rockfish South

The southern minor nearshore rockfish complex south of 40°10' N latitude is further subdivided into the following management categories: 1) shallow nearshore rockfish [comprised of black and yellow rockfish (*S. chrysomelas*); China rockfish (*S. nebulosus*); gopher rockfish (*S. carnatus*); grass rockfish (*S. rastrelliger*), and kelp rockfish (*S. atrovirens*)] and 2) deeper nearshore rockfish: [comprised of black rockfish (*S. melanops*), blue rockfish (*S. mystinus*); brown rockfish (*S. auriculatus*); calico rockfish (*S. dalli*); copper rockfish (*S. caurinus*); olive rockfish (*S. serranoides*); quillback rockfish (*S. maliger*); and treefish (*S. serriceps*)].

These are all unassessed species except for the portion of the blue rockfish stock occurring in waters off California north of Pt. Conception (i.e., 34°27' N lat. to 40°10' N lat.) and gopher rockfish north of Pt.

Conception (i.e., 34°27' N lat. to 40°10' N lat.) . All stocks other than the assessed portions of the blue and gopher rockfish stocks off California are category 3 stocks with catch-based approaches for determining the OFL contribution of the stock. The OFL contribution for blue rockfish off California is based on a 2007 assessment (Key et al. 2008) and is recommended as a category 2 stock based on relatively high assessment uncertainty. The OFL contribution for gopher rockfish is based on a 2005 assessment (Key, *et al.* 2006) and is recommended as a category 1 stock by the SSC.

No 2011 and 2012 OFLs or ABCs are proposed for the minor nearshore rockfish south complex under the preliminary preferred alternative. If an OFL were considered for the minor nearshore rockfish south complex, the summed contribution of OFLs of the component species are 1,156 and 1,145 mt for 2011 and 2012, respectively (Table 2-22). The summed contribution of component species' ABCs under the preliminary preferred approach of assuming all component stocks are category 3 species are 803 and 795 mt for 2011 and 2012, respectively. If the ABC contribution was determined using stock-specific categories assigned by the SSC, then ABCs for 2011 and 2012 would be 875 and 864 mt, respectively.

The preliminary preferred ACL for minor slope rockfish north of 650 mt is the same as the No Action 2010 OY. This ACL is lower than the either approach used to determine summed ABC contributions for the complex (Table 2-22). The difference between these two ABC approaches is the fact that blue and gopher rockfish are assessed species and therefore have smaller scientific uncertainty buffers.

The GMT PSA analysis of the relative vulnerability of stocks to overfishing indicated that China, copper, and quillback rockfish have a relatively high vulnerability; and blue and brown rockfish have a medium to high relative vulnerability (Table 2-21). These are the stocks within the minor nearshore rockfish north subcomplex that are most at risk of overfishing

**Table 2-22. The summed contribution of component stock specifications to the 2011 and 2012 OFLs and ABCs for the minor nearshore rockfish south complex relative to the preliminary preferred ACLs.**

Stock Complex and Component Stocks	Specifications Based on Stock Contribution							Preliminary Preferred	
	2010 OY	2011 OFL	2012 OFL	Using SSC Stock Cat.		Assume Stock Cat. 3		2011 ACL	2012 ACL
				2011 ABC	2012 ABC	2011 ABC	2012 ABC		
Minor Nearshore Rockfish South	650	1,156	1,145	875	864	803	795	650	650
<i>Shallow Nearshore Species</i>		NA	NA	NA	NA	NA	NA		
<i>Black and yellow</i>		26.8	26.8	18.6	18.6	18.6	18.6		
<i>China</i>		19.8	19.8	13.7	13.7	13.7	13.7		
<i>Gopher (N of Pt. Conception)</i>		175.0	165.0	167.3	157.7	121.5	114.6		
<i>Gopher (S of Pt. Conception)</i>		26.0	26.0	18.1	18.1	18.1	18.1		
<i>Grass</i>		55.6	55.6	38.6	38.6	38.6	38.6		
<i>Kelp</i>		25.9	25.9	18.0	18.0	18.0	18.0		
<i>Deeper Nearshore Species</i>		NA	NA	NA	NA	NA	NA		
<i>Blue (assessed area)</i>		191.3	189.5	159.3	157.9	132.8	131.6		
<i>Blue (S of 34°27' N latitude)</i>		74.0	74.0	51.4	51.4	51.4	51.4		
<i>Brown</i>		197.4	197.4	137.0	137.0	137.0	137.0		
<i>Calico</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Copper</i>		156.0	156.0	108.2	108.2	108.3	108.3		
<i>Olive</i>		189.5	189.5	131.5	131.5	131.6	131.6		
<i>Quillback</i>		6.3	6.3	4.4	4.4	4.4	4.4		
<i>Treefish</i>		12.9	12.9	9.0	9.0	9.0	9.0		

## Minor Shelf Rockfish South

The southern minor shelf rockfish complex south of 40°10' N latitude is composed of the following species: bronzespotted rockfish (*S. gilli*); chameleon rockfish (*S. phillipsi*); dusky rockfish (*S. ciliatus*); dwarf-red rockfish (*S. rufianus*); flag rockfish (*S. rubrivinctus*); freckled rockfish (*S. lentiginosus*); greenblotched rockfish (*S. rosenblatti*); greenspotted rockfish (*S. chlorostictus*); greenstriped rockfish (*S. elongatus*); halfbanded rockfish (*S. semicinctus*); harlequin rockfish (*S. variegatus*); honeycomb rockfish (*S. umbrosus*); Mexican rockfish (*S. macdonaldi*); pink rockfish (*S. eos*); pinkrose rockfish (*S. simulator*); pygmy rockfish (*S. wilsoni*); redstripe rockfish (*S. proriger*); rosethorn rockfish (*S. helvomaculatus*); rosy rockfish (*S. rosaceus*); silvergray rockfish (*S. brevispinis*); speckled rockfish (*S. ovalis*); squarespot rockfish (*S. hopkinsi*); starry rockfish (*S. constellatus*); stripetail rockfish (*S. saxicola*); swordspine rockfish (*S. ensifer*); tiger rockfish (*S. nigrocinctus*); vermilion rockfish (*S. miniatus*); and yellowtail rockfish (*S. flavidus*).

These are all unassessed species except for greenstriped rockfish, which was newly assessed in 2009 {Hicks et al. 2009}. All stocks other than greenstriped rockfish are category 3 stocks with catch-based approaches for determining the OFL contribution of the stock. The OFL contribution for greenstriped rockfish is based on the new 2009 assessment and is recommended as a category 2 stock based on relatively high assessment uncertainty. The greenstriped assessment was a coastwide assessment and the harvest specifications were apportioned using the mean of the 2003-2008 swept area biomass estimates south of 40.5° N lat. (15.5%) from the NMFS trawl survey.

No 2011 and 2012 OFLs or ABCs are proposed for the minor shelf rockfish south complex under the preliminary preferred alternative. If an OFL were considered for the minor shelf rockfish south complex, the summed contribution of OFLs of the component species are 2,238 and 2,243 mt for 2011 and 2012, respectively (Table 2-23). The summed contribution of component species' ABCs under the preliminary preferred approach of assuming all component stocks are category 3 species are 1,554 and 1,558 mt for 2011 and 2012, respectively. If the ABC contribution was determined using stock-specific categories assigned by the SSC, then ABCs for 2011 and 2012 would be 1,584 and 1,588 mt, respectively.

The preliminary preferred ACL for minor slope rockfish north of 714 mt is the same as the No Action 2010 OY. This ACL is lower than the either approach used to determine summed ABC contributions for the complex (Table 2-23). The difference between these two ABC approaches is the fact that greenstriped rockfish is an assessed species and therefore has a smaller scientific uncertainty buffer.

The GMT PSA analysis of the relative vulnerability of stocks to overfishing indicated that a number of the component rockfish stocks have a medium to high relative vulnerability to overfishing (Table 2-21). However, the RCAs implemented to reduce mortality on overfished species greatly protect shelf rockfish leading to few concerns regarding overfishing.

**Table 2-23. The summed contribution of component stock specifications to the 2011 and 2012 OFLs and ABCs for the minor shelf rockfish south complex relative to the preliminary preferred ACLs.**

Stock Complex and Component Stocks	Specifications Based on Stock Contribution							Preliminary Preferred	
	2010 OY	2011 OFL	2012 OFL	Using SSC Stock Cat.		Assume Stock Cat. 3		2011 ACL	2012 ACL
				2011 ABC	2012 ABC	2011 ABC	2012 ABC		
Minor Shelf Rockfish South	714	2,238	2,243	1,584	1,588	1,554	1,558	714	714
<i>Bronzespotted</i>		6.7	6.7	4.6	4.6	4.6	4.6		
<i>Chameleon</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Flag</i>		26.6	26.6	18.5	18.5	18.5	18.5		
<i>Freckled</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Greenblotched</i>		24.6	24.6	17.1	17.1	17.1	17.1		
<i>Greenspotted</i>		195.3	195.3	135.5	135.5	135.6	135.6		
<b><i>Greenstriped</i></b>		221.0	226.0	184.1	188.3	153.4	156.9		
<i>Halfbanded</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Harlequin</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Honeycomb</i>		7.8	7.8	5.4	5.4	5.4	5.4		
<i>Mexican</i>		2.8	2.8	2.0	2.0	2.0	2.0		
<i>Pink</i>		2.8	2.8	2.0	2.0	2.0	2.0		
<i>Pinkrose</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Pygmy</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Redstripe</i>		0.5	0.5	0.4	0.4	0.4	0.4		
<i>Rosethorn</i>		2.5	2.5	1.7	1.7	1.7	1.7		
<i>Rosy</i>		36.9	36.9	25.6	25.6	25.7	25.7		
<i>Silvergray</i>		0.6	0.6	0.4	0.4	0.4	0.4		
<i>Speckled</i>		42.9	42.9	29.8	29.8	29.8	29.8		
<i>Squarespot</i>		5.8	5.8	4.0	4.0	4.0	4.0		
<i>Starry</i>		70.5	70.5	49.0	49.0	49.0	49.0		
<i>Stripetail</i>		20.6	20.6	14.3	14.3	14.3	14.3		
<i>Swordspine</i>		12.9	12.9	9.0	9.0	9.0	9.0		
<i>Tiger</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Vermilion</i>		308.4	308.4	214.0	214.0	214.1	214.1		
<i>Yellowtail</i>		1,248.9	1,248.9	866.7	866.7	867.1	867.1		

## Minor Slope Rockfish South

The southern minor slope rockfish complex south of 40°10' N latitude is composed of the following species: aurora rockfish (*S. aurora*); bank rockfish (*S. rufus*); blackgill rockfish (*S. melanostomus*); Pacific ocean perch (*S. alutus*); redbanded rockfish (*S. babcocki*); rougheye rockfish (*S. aleutianus*); sharpchin rockfish (*S. zacentrus*); shortraker rockfish (*S. borealis*); and yellowmouth rockfish (*S. reedi*).

These are all unassessed species except for bank rockfish, which was last assessed in 2000 {Piner, 2000 1463 /id}, and blackgill rockfish, which was assessed in 2005 (Helser 2006). All stocks other than bank and blackgill rockfish are category 3 stocks with catch-based approaches for determining the OFL contribution of the stock. The OFL contribution for bank rockfish is based on the 2000 assessment and is recommended as a category 2 stock by the SSC. The OFL contribution for blackgill rockfish is based on the 2005 assessment and is recommended as a category 1 stock by the SSC.

No 2011 and 2012 OFLs or ABCs are proposed for the minor slope rockfish south complex under the preliminary preferred alternative. If an OFL were considered for the minor slope rockfish south complex, the summed contribution of OFLs of the component species are 907 and 903 mt for 2011 and 2012, respectively (Table 2-23). The summed contribution of component species' ABCs under the preliminary preferred approach of assuming all component stocks are category 3 species are 630 and 627 mt for 2011 and 2012, respectively. If the ABC contribution was determined using stock-specific categories assigned by the SSC, then ABCs for 2011 and 2012 would be 783 and 779 mt, respectively.

The preliminary preferred ACL for minor slope rockfish south of 626 mt is the same as the No Action 2010 OY. This ACL is lower than the either approach used to determine summed ABC contributions for the complex (Table 2-24). The difference between these two ABC approaches is the fact that blackgill and rockfish is an assessed species and therefore has a smaller scientific uncertainty buffer.

The GMT PSA analysis of the relative vulnerability of stocks to overfishing indicated that most of these rockfish stocks have a medium to high vulnerability to overfishing (Table 2-21). These are the stocks within the minor slope rockfish south subcomplex that are most at risk of overfishing.

**Table 2-24. The summed contribution of component stock specifications to the 2011 and 2012 OFLs and ABCs for the minor slope rockfish south complex relative to the preliminary preferred ACLs.**

Stock Complex and Component Stocks	Specifications Based on Stock Contribution							Preliminary Preferred	
	2010 OY	2011 OFL	2012 OFL	Using SSC Stock Cat.		Assume Stock Cat. 3		2011 ACL	2012 ACL
				2011 ABC	2012 ABC	2011 ABC	2012 ABC		
Minor Slope Rockfish South	626	907	903	783	779	630	627	626	626
<i>Aurora</i>		29.4	29.4	20.4	20.4	20.4	20.4		
<i>Bank</i>		574.8	574.8	478.8	478.8	399.1	399.1		
<i>Blackgill</i>		279.0	275.0	266.7	262.9	193.7	190.9		
<i>Pacific ocean perch</i>		0.0	0.0	0.0	0.0	0.0	0.0		
<i>Redbanded</i>		11.9	11.9	8.2	8.2	8.2	8.2		
<i>Rougheye</i>		0.5	0.5	0.3	0.3	0.3	0.3		
<i>Sharpchin</i>		10.6	10.6	7.4	7.4	7.4	7.4		
<i>Shortraker</i>		0.1	0.1	0.1	0.1	0.1	0.1		
<i>Yellowmouth</i>		0.8	0.8	0.6	0.6	0.6	0.6		

### 2.1.6.3 Other Flatfish

The Other Flatfish complex contains all the unassessed flatfish species in the Groundfish FMP. These species include butter sole (*Isopsetta isolepis*), curlfin sole (*Pleuronichthys decurrens*), flathead sole (*Hippoglossoides elassodon*), Pacific sanddab (*Citharichthys sordidus*), rex sole (*Glyptocephalus zachirus*), rock sole (*Lepidopsetta bilineata*), and sand sole (*Psettichthys melanostictus*).

An OFL of 10,146 mt for 2011 and 2012 is recommended for the Other Flatfish complex and is based on the summed contribution of OFLs determined for the component stocks (Table 2-25). These stocks are all category 3 relying on catch-based approaches for determining the OFL contribution.

The proposed 2011 and 2012 ABC for the Other Flatfish complex is 7,044 mt and is based on applying a 30.6% scientific uncertainty buffer consistent with a P\* approach for category 3 stocks under a P\* of 0.4. The ABC contributions of the component stocks are summed to derive the ABC for the complex.

The preliminary preferred 2011 and 2012 ACL for the Other Flatfish complex of 4,884 mt is the No Action 2010 OY and is recommended given there has been no significant change in the status or management of stocks managed within the complex.

**Table 2-25. The summed contribution of component stock specifications to the 2011 and 2012 OFLs and ABCs for the Other Flatfish complex relative to the preliminary preferred ACLs.**

Stock Complex and Component Stocks	Specifications Based on Stock Contribution					Preliminary Preferred	
	2010 OY	2011 OFL	2012 OFL	Assume Stock Cat. 3		2011 ACL	2012 ACL
				2011 ABC	2012 ABC		
Other Flatfish	4,884	10,146	10,146	7,044	7,044	4,884	4,884
<i>Butter sole</i>		5	5	3	3		
<i>Curlfin sole</i>		8	8	6	6		
<i>Flathead sole</i>		35	35	24	24		
<i>Pacific sanddab</i>		4,943	4,943	3,432	3,432		
<i>Rex sole</i>		4,309	4,309	2,992	2,992		
<i>Rock sole</i>		66	66	46	46		
<i>Sand sole</i>		781	781	542	542		

The Other Flatfish complex is the most reasonably constructed complex since all the species have similar life history characteristics, distributions, and low relative vulnerabilities to overfishing (Table 2-26). There may be no reason to restructure this complex in the 2013-2014 biennial cycle unless a new assessment of one of the component species (e.g., rex sole) is done next year that compels removing the stock from the complex. The GMT did a systematic overhaul of the Other Flatfish complex in 2004, which is documented in the 2055-2005 biennial specifications EIS {PFMC 2004}.



**Table 2-26. The relative vulnerability of stocks managed under the Other Flatfish complex as rated by the GMT in their PSA analysis.**

Stock Complex and Component Stocks	PSA Results	
	Vulnerability	
	Score	Level
Other Flatfish		
<i>Butter sole</i>	1.18	Low
<i>Curlfin sole</i>	1.23	Low
<i>Flathead sole</i>	1.03	Low
<i>Pacific sanddab</i>	1.25	Low
<i>Rex sole</i>	1.28	Low
<i>Rock sole</i>	1.42	Low
<i>Sand sole</i>	1.23	Low

#### 2.1.6.4 Other Fish

The Other Fish stock complex contains all the unassessed Groundfish FMP species that are neither rockfish (family *Scorpaenidae*) nor flatfish. These species include big skate (*Raja binoculata*), California skate (*Raja inornata*), leopard shark (*Triakis semifasciata*), soupfin shark (*Galeorhinus zyopterus*), spiny dogfish (*Squalus acanthias*), finescale codling (*Antimora microlepis*), Pacific rattail (*Coryphaenoides acrolepis*), ratfish (*Hydrolagus coliei*), cabezon (*Scorpaenichthys marmoratus*) (off Washington), and kelp greenling (*Hexagrammos decagrammus*). The cabezon stock off Oregon is managed under the Other Fish complex under the No Action alternative. A new assessment of the cabezon stock off Oregon was done in 2009 {Cope and Key 2009} and the stock is proposed to be managed with stock-specific harvest specifications under the preferred alternative.

The SSC recommended the No Action ABC for the 2011 and 2012 OFL modified by removing 50 mt that represents the contribution of the Oregon cabezon stock. The 11,150 mt OFL is recommended for managing the Other Fish complex in 2011 and 2012.

All the component stocks in the Other Fish complex are category 3 stocks and the ABC is calculated accordingly using a P\* approach. The ABC is calculated by applying the P\* buffer amount of 30.6% under a P\* of 0.4. The resulting ABC for 2011 and 2012 is 7,742 mt.

The preliminary preferred ACL for the Other Fish complex (5,575 mt) is based on the No Action 2010 OY of 5,600 mt minus half the OFL contribution of the Oregon stock of cabezon.

The No Action and preliminary preferred harvest specifications for the Other Fish complex specifications do not have an analytical basis and the component species are a dissimilar assemblage of species, many with high vulnerabilities to overfishing (Table 2-27). The GMT and SSC recommend a complete overhaul of the Other Fish complex for the 2013-2014 biennial cycle. The recommended approach to doing this is consideration for adding new species related to the component species of the complex into the FMP and re-grouping species with similar vulnerabilities, ecological interactions, and distributions. This will require an FMP amendment and is not considered in this cycle due to workload.

**Table 2-27. The relative vulnerability of stocks managed under the Other Fish complex as rated by the GMT in their PSA analysis.**

Stock Complex and Component Stocks	PSA Results	
	Vulnerability	
	Score	Level
Other Fish		
<i>California skate</i>	2.12	High
<i>Leopard shark</i>	2.00	High
<i>Southern shark</i>	2.02	High
<i>Spiny dogfish</i>	2.13	High
<i>Big skate</i>	1.99	Med/High
<i>Pacific rattail</i>	1.82	Med
<i>Cabezon (WA)</i>	1.68	Low
<i>Finescale codling</i>	1.48	Low
<i>Kelp greenling</i>	1.56	Low
<i>Ratfish</i>	1.72	Low

## 2.2 Description of the Integrated Alternatives

The alternatives for the 2011-2012 groundfish fisheries have been restructured and integrated such they are composed of the following elements

- an analytical scenario that explains how the alternative is structured,
- strategic combinations of overfished rockfish species ACLs,
- ranges of petrale sole ACLs,
- estimates of the overall harvest of non-overfished species, given the overfished species constraints,
- sector allocations of overfished species, and
- management measures necessary to stay within the sector allocations or ACLs (e.g., alternative seasons, size and bag limits, specific areas closed or open to fishing, trip limits, gear restrictions, etc.).

### 2.2.1 Analytical Scenario

The analytical scenario explains the purpose of the alternative. For example, the No Action alternative analyzes the impacts if no action were taken by the Council and the 2010 OYs and management measures currently specified in Federal regulations prevailed for the 2011-2012 fisheries. The remaining alternatives are structured around overfished species constraints.

### 2.2.2 Overfished Species ACLs

The remaining alternatives, in addition to the No Action alternative, represent combinations of overfished rockfish species ACLs that were developed by arranging the range of depleted species' ACLs in various combinations in order to understand how rebuilding plans for different species interact to constrain fishing opportunities (Table 2-28 and Table 2-29). In previous cycles, these arrangements were known as the strategic rebuilding alternatives. In the current structure of the alternatives, these harvest limits for overfished species are integrated into the more comprehensive alternatives described here. The overfished species ACLs are strategically arrayed to illuminate how each species might differentially constrain

fishing opportunities by sector (or gear type) and region along the west coast, depending on the amount of allowable harvest of each species.

**Table 2-28.** Range of overfished species alternatives for 2011 for more detailed analysis.

<b>Species</b>	<b>Association</b>	<b>No Action 2010 OY (mt)</b>	<b>Alt 1 PPA (mt)</b>	<b>Alt 2 Intermediate (mt)</b>	<b>Alt 3 Low (mt)</b>
Bocaccio	Shelf, south	288	263	109	53
Canary	Shelf, north	105	102	94	49
Cowcod	Shelf, south	4	4	3	2
Darkblotched	Slope, north	291	332	298	222
Petrale	Slope, shelf	1,200	976	776	459
POP	Slope, north	200	180	111	80
Widow	Midwater	509	600	400	200
YE	Shelf, north	17	20	17	13

**Table 2-29.** Range of overfished species alternatives for 2012 for more detailed analysis.

<b>Species</b>	<b>Association</b>	<b>No Action 2010 OY (mt)</b>	<b>Alt 1 PPA (mt)</b>	<b>Alt 3 Intermediate (mt)</b>	<b>Alt 4 Lower (mt)</b>
Bocaccio	Shelf, south	288	274	115	56
Canary	Shelf, north	105	107	99	51
Cowcod	Shelf, south	4	4	3	2
Darkblotched	Slope, north	291	329	296	222
Petrale	Slope, shelf	1,200	1160	1160	624
POP	Slope, north	200	183	113	80
Widow	Midwater	509	600	400	200
YE	Shelf, north	17	20	17	13

In developing the management measures to keep petrale catches within the ACL, the Council, as part of their preliminary preferred decision, recommended a year-round fishery. Further, the Council recommended that the rebuilding strategy affect the sectors proportionate to the allocation percentages under Amendment 21: Intersector Allocation, which are 95% trawl and 5% non-trawl (i.e., fixed gear commercial and recreational). The results of this analysis can be found in Agenda Item B.3.a Attachment 1.

### **2.2.3 Projected Harvest of Selected Non-Overfished Species**

With regard to the projected total harvest of selected non-overfished species under each alternative, the analyses performed by the GMT will estimate how much target species could be accessed, given the overfished species constraints within the alternative. The Council should not consider these point estimates of target species catch but rather an approximation given the assumptions and changing

variables. For example, estimates of target species catch is heavily influenced by the West Coast Groundfish Observer Program (WCGOP) bycatch rates, which are updated with the latest available data between the time in which the biennial cycle decisions are made (i.e., June) and the first month of the biennial cycle (i.e., January). The overfished species bycatch rates (generated from WCGOP and state recreational sampling data) vary as a result of changing fishery behaviors as well as differences in stock distributions (e.g., rebuilding, ecosystem dynamics, etc.). For both the commercial and recreational fisheries, complex dynamics relative to other fishing opportunities (e.g., salmon and tuna) affect effort estimates and thus total groundfish take. Additionally, the estimates are generated by imprecise modeling platforms which contain assumptions of how the sectors perform under the variables contained within the action alternatives. In summary, the estimates are useful for conceptually understanding how the overfished species ACLs affect access to target stocks but should not be considered point estimates.

#### **2.2.4 Sector Allocations for Overfished Species**

Under Amendment 21, formal allocations of the trawl-dominant non-overfished species and overfished species (darkblotched rockfish, Pacific ocean perch, and widow rockfish) were decided for the non-treaty trawl (hereinafter trawl sector) and non-treaty non-trawl sectors (hereinafter non-trawl sector), as well as for each non-treaty trawl sector (i.e., shoreside non-whiting, shoreside whiting, catcher-processor, and mothership). Since Amendment 21 is scheduled to be implemented January 1, 2011, these allocations were used in the analysis of the alternatives.

The Council must decide two-year allocations for the non-Amendment 21 overfished species (yelloweye, canary, cowcod, and bocaccio) during the harvest specifications and management measures process. Historically, these allocations were flexible such that the Council had the ability to move fish between sectors through inseason action as needed. For example, the sector projections of estimated bycatch are frequently updated with new WCGOP data, which often changes the sector allocations relative to the decision made under the harvest specifications and management measures process. In these situations, the Council had the option of constraining the sector to within the initial allocation, implementing inseason action if there was concern for exceeding the OY, or accommodating the increased overfished species interactions by moving fish between sectors within the balance of the OY.

The consideration of a rationalized trawl fishery for 2011-2012 reduces the inseason flexibility to move fish between the trawl and non-trawl sectors since the trawl allocation will be converted into quota pounds and co-op allocations. It would be very difficult, if not impossible, to reduce the trawl allocation mid-year if need arises or an overage occurs in the non-trawl sector. As such, it is anticipated that the two-year allocation between the trawl and non-trawl sectors for yelloweye, canary, cowcod, and bocaccio will be a very difficult and complex decision. Within the non-trawl sector, it is still anticipated that the Council will have inseason flexibility to move fish between sectors (e.g., recreational and fixed gear commercial) as need arises.

The Council must strike a delicate balance when considering the trawl allocation in a rationalized fishery. First, the trawl sector has not yet operated under a rationalized system and it is difficult to precisely estimate the predicted overfished species impacts. While one objective of the rationalized fishery is to promote practices that reduce bycatch and discard mortality, it is expected that there will be a learning curve as the fleet adjusts to this new management regime. Further, while rationalized fisheries have a worldwide history of success, the west coast groundfish trawl fishery has the unique challenge of interacting with eight overfished stocks. The quota pounds and co-op allocations for the overfished species are expected to be scarce, especially for yelloweye and canary rockfish. The Council may consider that the two-year trawl allocation is somewhat of a performance standard and thus the fleet should be given an allocation to reasonably accommodate fishing operations.

The overfished species allocations to the trawl sector likely cannot flow into the non-trawl sector if need arises or if excess should become available (e.g., the at-sea whiting sector harvests all of their whiting allocation and has remaining overfished species quota). If unused, the trawl allocation of quota pounds to permits will rollover (if 10 percent or less) for the second year of the biennium (2012) or remain stranded in the trawl sector in the final year of the biennial cycle. As such, the Council should ensure that the non-trawl sector also has sufficient allocation to reasonably accommodate fishing operations.

## **2.2.5    *Management Measures***

In a parallel process to the 2011-2012 harvest specifications and management measures action, the Council is working on Amendment 23: Annual Catch Limits, which is creating a new framework for deciding groundfish harvest specifications consistent with new National Standard 1 (NS1) guidelines. Decisions made under Amendment 23 provide the foundation upon which the 2011-2012 harvest specifications and management measures action will be made. Essentially, the Council is writing the “rules” under Amendment 23 and, at the same time, applying those rules for the first time through this harvest specifications and management measures process.

The new NS1 guidelines identify two primary sources of management uncertainty: 1) uncertainty in the ability of managers to constrain catch so the ACL is not exceeded; and, 2) uncertainty in quantifying the true catch amounts. In other words, management uncertainty involves consideration of the effectiveness of management measures at stopping catch at desired levels, and at the same time, an examination of the accuracy and precision of the estimates used to quantify catch. The new NS1 guidelines recommend consideration of the annual catch target (ACT), which can be set below the ACL if there is uncertainty in the ability of the management system to effectively keep total fishing mortality below the prescribed ACL.

Under the No Action alternative, the Council uses harvest guidelines for some sectors (e.g., recreational) as a tool to constrain catch below the OY. The regulatory definition of a harvest guideline is “a specified numerical harvest objective that is not a quota. Attainment of a harvest guideline does not require closure of a fishery.” The Council also uses sector specific bycatch limits in the whiting fishery to constrain catches of overfished species. As specified in regulation, the National Marine Fisheries Service has the authority to close the whiting fishery upon projected attainment of a bycatch limit. In defining use of an ACT, the Council should consider whether action is required to prevent catches exceeding the ACL or if the tool is intended to be more of a guideline.

At its March 2010 meeting, the Council adopted draft Groundfish Fishery Management Plan (GFMP) amendatory language which included the ACT concept. A report on the performance of the current management system was prepared in March 2010 (Agenda Item E.4.a Attachment 4) and should assist the Council in determining whether ACTs or other management measures should be used to ensure catches stay within the ACLs and the Amendment 21 sector allocations. The GMT may also provide the Council with additional advice on the use of ACTs in the 2011-2012 management cycle.

With regard to uncertainty in quantifying the true catch amounts, the GMT is aware of the estimation error inherent in the modeling platforms and estimation process and has begun some initial scoping to address estimation error within the model platforms. However, given workload and the complexities in resolving this issue it is unlikely that uncertainty will be fully evaluated in this cycle. Rather, it is a consideration that should be continually evaluated and improved upon during every biennial cycle.

### 2.2.5.1 Yield Set Asides for Overfished Species

Set asides are used to account for groundfish mortality in tribal fisheries, incidental open access fisheries, research and exempted fishing permits (EFPs). Set aside amounts are an important consideration for the Council to use as an accountability measure to prevent fisheries from exceeding the ACLs. The Council does not have direct management control over treaty tribal fisheries, incidental open access fisheries, or scientific research activities, nevertheless, the catch must be considered in the accounting of total mortality. Further, if EFPs are to be accommodated there has to be enough set aside available to answer the question at hand.

Under status quo trip limit management of the trawl fishery, the set aside amounts can be adjusted prior to the start of the year with the most recent information on the previous year's impacts. However, under a rationalized fishery structure static set asides for calculating trawl allocation under Amendment 21 is required. The rationale for an unchanging trawl allocation is to have a "one time" quota pound calculation that remains for 2011-2012, which would provide some certainty to quota holders. The static trawl allocation makes the set aside consideration for fully prescribed species, like the overfished species, challenging. If the set aside is higher than necessary, the remaining poundage can be assigned to non-trawl fisheries fairly easily, but cannot be reassigned to the trawl fishery without recalculating quota pounds for the year. Assuming the Council wants to minimize the disruption caused by recalculating QP inseason, and the set aside is too low, the burden of such restrictions would fall on the non-trawl fisheries.

The Amendment 21 framework specifies that the tribal, research, and incidental open access fishery mortality be taken "off the top" prior to the sector allocations. For EFPs, the Council has the option of accommodating mortality either "off the top" or within the sector allocation (i.e., trawl or non-trawl allocation). Under a rationalized trawl fishery, EFPs may still be needed to allow for innovative gear use, for example, but those could be prosecuted with an individual's existing quota pounds. However, it is also possible that a trawl EFP could be designed and the Council may wish to provide access to greater amounts than the applicant's current quota pounds holdings. As such the Council may want to consider establishing EFP set asides for the trawl or non-trawl sectors based on the expected benefit of the EFP research. For example, if the EFP project ultimately benefits the trawl sector, the set aside could come out of the trawl allocation. Alternatively, the amount could be taken "off the top" of the ACL.

At its April 2010 meeting, the Council adopted preliminarily preferred set asides for seven overfished rockfish species and petrale sole (Table 2-30). For the purposes of the analysis, the set asides were taken "off the top". Details behind the projected impacts are described in the following sections.

**Table 2-30.** The Council's preliminary preferred set asides for overfished species.

Category	Bocaccio South 40°10	Canary	Cowcod South 40°10	DRK	POP	Widow	YE	Petrals
Tribal Whiting Trawl		4.3		0.1	7.2	5	0	
Tribal Mid-water Trawl		3.6			0	40	0	
Tribal Bottom Trawl		0.8			3.7	0	0	45.4
Tribal Troll		0.5			0		0	
Tribal Fixed Gear		0.3			0	0	2.3	
Open Access Incidental	0.8	1.7	0	15	0	3.3	0.3	43.2
Research	1.7	4.5	0.1	2.1	1.8	1.6	3.3	10
EFP	11	1.3	0.2	1.5	0.1	11	0.4	6
<b>Total</b>	<b>13.5</b>	<b>17</b>	<b>0.3</b>	<b>18.7</b>	<b>12.8</b>	<b>60.9</b>	<b>6.3</b>	<b>104.6</b>

## Tribal

The following description of set asides for the tribal fisheries gives some of the rationale behind the numbers found in the GMT scorecard to estimate bycatch by fishery and sector. The methods used to estimate these impacts represent the best judgment of tribal fishery managers based on both past performance and anticipated potential impacts in the coming season(s). Though the impact estimates are divided by fishery for the sake of precision in estimating overfished species impacts, tribal managers typically manage to stay within overall projected impacts (i.e., across fisheries).

### Whiting Fishery

The GMT updated the 2010 set asides for the tribal whiting fishery at the March 2010 Council meeting. This was based on the whiting set aside amounts described in the proposed rule for 2010 Tribal Fishery for Pacific Whiting (75 FR 11829, March 12, 2010). Using the methodology described in the 2009-2010 harvest specifications and management measures EIS, the GMT calculated 4.3 mt for canary, 0 mt for darkblotched, 7.2 mt for POP, 5 mt for widow, and 0 mt for yelloweye rockfish (Table 2-31). This methodology used a weighted average approach for calculating Makah's bycatch rate assuming recent years are more representative of bycatch. Those rates are tripled to provide a conservative estimate of potential bycatch for the Quileute Tribe's developing fishery.

**Table 2-31.** Estimated bycatch (mt) in the tribal whiting fisheries for 2010.

<b>Sector</b>	<b>Canary</b>	<b>Darkblotched</b>	<b>POP</b>	<b>Widow</b>	<b>Yelloweye</b>
Makah	1.78	0.02	2.99	2.06	0.00
Quileute	2.52	0.03	4.22	2.92	0.00
<b>Total Tribal</b>	<b>4.30</b>	<b>0.05</b>	<b>7.21</b>	<b>4.99</b>	<b>0.00</b>

### Non-Whiting Midwater Trawl Fishery

The Makah Tribe is the only tribe that conducts a midwater trawl fishery. The fishery targets yellowtail rockfish and the combined fleet is subject to a limit of 180,000 lbs/2 months. Overfished species bycatch in this fishery consists of widow and canary rockfish. Widow rockfish are subject to an annual limit of 10 percent of the weight of yellowtail landed and may be changed inseason to stay within projected impacts. This was changed from a per-landing limit in 2010 in response to increasing encounters of widow rockfish on some trips. The widow rockfish set aside of 40 mt is based on the maximum expected catch of yellowtail (490 mt) as well as recent bycatch in the fishery (Table 2-32). Canary rockfish is subject to a limit of 300 lbs/trip. As reflected in Agenda Item F.9.c, Supplemental GMT Report, June 2008 the canary set aside was changed beginning in 2009:

The GMT notes that one change in the set asides for overfished species from these fisheries compared to status quo is the increased estimate of canary rockfish in the Makah midwater trawl fishery targeting yellowtail rockfish. Due to higher encounters of canary bycatch in recent years, particularly 2007 and 2008, the Tribe has been unable to successfully prosecute the fishery while remaining within the canary estimate provided in the scorecard. The Makah Tribe is proposing a doubling of those estimated impacts (from 1.8 mt to 3.6 mt) to allow for resumption of the fishery given increased availability of canary rockfish yield in 2009-2010.

**Table 2-32.** Catch in metric tons of canary, widow, and yellowtail rockfish in the Makah midwater trawl fishery for 2005-2009.

Species	2005	2006	2007	2008	2009
Canary	1.9	0.9	0.0	0.6	1.3
Widow	25.6	9.2	0.5	13.0	35.1
Yellowtail	480.0	111.2	7.3	155.5	429.1

#### Bottom Trawl Fishery

The Makah Tribe is also the only tribe conducting a bottom trawl fishery. Overfished species bycatch is primarily canary rockfish and POP. The Makah Tribe also targets petrale sole, which has been declared as overfished. The Makah indicated that their expected catch of petrale in 2011-2012 is 45.4 mt based on effort projections and recent catch (Table 2-33). The canary set aside of 0.8 mt is based on recent average catch which has remained fairly consistent (Table 2-33). The high catch in 2009 was the result of increased encounters associated with Pacific cod availability (as well as commensurate lower impacts from other Makah fisheries). POP bycatch is more variable in recent years. The set aside for POP is 3.7 mt based on the highest year of landings (2006).

**Table 2-33.** Catch in metric tons of canary rockfish, Pacific ocean perch, and petrale in the Makah bottom trawl fishery for 2005-2009.

Species	2005	2006	2007	2008	2009
Canary	0.8	0.5	0.8	0.6	1.5
POP	3.2	3.7	1.8	0.6	0.2
Petrals	30	26	45	44	69

#### Salmon Troll Fishery

These estimates include catch from all tribes participating in the treaty troll fishery. The canary set aside of 0.5 mt is based on the highest recent landings from 2004-2005 (Table 2-34). Using a similar approach for yelloweye would lead to a set aside of 0.2 mt while using the average of recent years would result in 0.1 mt. The tribes are not recommending a set aside specific to the treaty troll fishery as the scorecard currently contains a conservative estimate of yelloweye impacts (see below) for the long line fisheries for Pacific halibut and sablefish and tribes will manage all fisheries to stay within that estimate.

**Table 2-34.** Catch in metric tons of canary and yelloweye rockfish in the treaty troll fishery for 2005-2009.

Species	2005	2006	2007	2008	2009
Canary	0.5	0.2	0.1	0.1	0.0
Yelloweye	0.2	0.1	0.1	0.1	0.0

#### Fixed Gear Fishery

The coastal tribes participate in longline fisheries for Pacific halibut and sablefish. Set asides for these fisheries are based on combined past performance of these closely related fisheries (Table 2-35). The set aside for canary is 0.3 mt and is based on average historical catch from 2001-2009. An average is used for canary given they are not predictably associated with target species and the trend across this time



period is generally decreasing. For yelloweye, bycatch is more strongly associated with target species, especially when they are located on the shelf. Another factor in estimating bycatch is the lack of a trip limit during open competition halibut fisheries. The set aside for yelloweye is 2.3 mt, representing the highest amount of bycatch from a year when yelloweye were classified as overfished and when the status quo halibut plan under a recent court ruling in *U.S. v Washington* was in place (i.e., 2002). The status quo halibut plan that was in place for 2001-2003, and includes an open competition fishery, is the same plan that is in effect for the 2010 fishery and likely to be in place for 2011-2012.

**Table 2-35.** Catch in metric tons of canary and yelloweye rockfish in treaty longline fisheries for 2001-2009.

Species	2001	2002	2003	2004	2005	2006	2007	2008	2009
Canary	1.1	0.3	0.5	0.5	0.2	0.2	0.0	0.1	0.1
Yelloweye	2.9	2.3	0.2	0.7	0.6	0.4	0.3	0.1	0.1

### Incidental Open Access

#### California Halibut trawl fishery

The California halibut trawl fishery is a state permitted fishery that operates in southern California. Commercial trawling is prohibited in all state waters except for the California halibut trawl grounds located south of Point Conception. Conservation measures such as minimum mesh sizes, minimum poundage limits, closed seasons, and Federal observer coverage have been implemented to reduce bycatch of species other than California halibut.

The GMT reviewed the Estimated Discard and Total Catch of Selected Groundfish Species in the 2008 U.S. West Coast Fisheries (hereinafter 2008 Total Mortality report) and examined state landing receipts to determine the best estimate of overfished rockfish species impacts from this fishery. Observer data from the limited entry and open access fisheries indicate no discards of any overfished species in this fishery except canary rockfish, which was miniscule. State landing receipts from 2004 -2008 indicate trace landings of bocaccio rockfish. Impacts to overfished species are not expected in this fishery because it occurs in an area with low overfished species encounters because it takes place and over sandy bottom habitat. The best estimates of impacts to this fishery have been updated in Table 2-36.

Estimates of petrale sole catch in the California halibut trawl fishery are 43 mt from 2004-2006 (Table 2-37).

#### California Gillnet Fishery

The California gillnet fishery is a state permitted fishery that occurs in California. This fishery is not observed under the Federal groundfish observer program. State landing receipts from 2004-2008 indicate small landings of bocaccio (0.3 mt) and widow rockfish (2.9 mt) in this fishery. Minimal impacts to overfished species are expected in this fishery because this gear is not allowed inside the Rockfish Conservation Areas (RCAs) and is subject to depth restrictions which preclude them from fishing in nearshore waters. The best estimates of impacts to this fishery based on state landing receipts have been updated in Table 2-36.

Estimates of petrale sole impacts in the California gillnet fishery are 0.1 mt (Table 2-37).

### California Sheephead Fishery

The California sheephead fishery is a state permitted fishery that is primarily taken by trap gear in southern California. This fishery is not observed under the Federal groundfish observer program. State landing receipts from 2004-2008 indicate trace amounts of bocaccio rockfish in this fishery. Impacts to overfished species are not expected in this fishery because it occurs in an area of low overall bycatch of overfished species.

### Coastal Pelagic Species (CPS) – Wetfish Fishery

The CPS fishery for wetfish is a limited entry fishery that occurs coastwide. In California, this fishery primarily occurs in Monterey and southern California. CPS (sardine, anchovy, jack mackerel, Pacific mackerel) are targeted with “round-haul” gear including purse and drum seines.

In the sardine fishery, 2009 landings data indicate no catch of overfished species (however groundfish species are not required to be landed). In California, state landing receipts from 2004 -2008 indicate trace landings of bocaccio rockfish in this fishery. In Oregon reported logbook and observed catches of non-target species caught in the Oregon sardine fishery showed no catch of rockfish (Table 13 of the 2008 SAFE document). Washington at-sea observer data also indicates miniscule amounts of bycatch. Impacts to overfished species are not expected in this fishery because it occurs in an area of low overall bycatch of overfished species.

### Coastal Pelagic Species – Squid Fishery

The CPS fishery for squid is a limited entry fishery that is focused around two major fishery areas in California: northern California (Monterey Bay) and southern California (ports of Ventura, Port Hueneme, San Pedro, and Terminal Island). Targeting occurs on shallow-water spawning aggregations with “round-haul” gear similar to the CPS wetfish fishery. This fishery is not observed under the Federal groundfish observer program. State landing receipts from 2004-2008 indicate trace amounts of bocaccio rockfish in this fishery. Impacts to overfished species are not expected in this fishery, because targeting occurs over sandy bottom habitat. Rocky reef areas (where many overfished groundfish species occur) are avoided due to gear conflicts. The Council’s SAFE reports also have bycatch information for some of the other CPS fisheries (based on Observer or logbook information). For example, the report showed that the frequency of bycatch in observed loads of California market squid (2003-2007) was less than 1% for bocaccio rockfish (the highest annual incidence rate was 0.8%).

### Dungeness Crab Fishery

The Dungeness crab fishery is a restricted access fishery that occurs on the west coast. This fishery targets Dungeness crab using trap gear in shallow waters. Conservation measures such as gear modifications have been implemented to reduce bycatch, specifically crab pots are constructed with escape rings designed to let small fish and small crab escape and pots are made with a release mechanism to allow escapement of all animals that are caught by lost pots. These measures have been implemented to reduce bycatch of species other than crab. Fishermen in this fishery are not permitted to land incidental species except for octopus, so information on groundfish species is limited.

This fishery is not observed under the Federal groundfish observer program. California state landing receipts from 2004-2008 indicate trace landings of bocaccio and darkblotched rockfish in this fishery. Impacts to overfished species are not expected in this fishery due to the selectivity of the gear.

### Highly Migratory Species (HMS) Fishery

The fishery for HMS is an open access fishery on the West Coast, with the exception of the swordfish drift gillnet fishery off California. Targeting of tunas, sharks, billfish/swordfish, and other pelagic species occurs with a variety of gears (troll gear, drift gillnets, pelagic longline, purse seines) and in waters ranging from the nearshore to outside the 200-mile zone. This fishery is not observed under the Federal groundfish observer program. State landing receipts from 2004 -2008 indicate small landings of bocaccio rockfish and trace landings of darkblotched rockfish in this fishery. Impacts to overfished species are not expected in this fishery, because most of the targeting occurs in the offshore, in the open ocean where few overfished rockfish species are expected to occur.

### Ridgeback prawn Fishery

The ridgeback prawn trawl fishery is a state permitted fishery that primarily occurs in southern California within the California halibut trawl grounds. This fishery is not observed under the Federal groundfish observer program. State landing receipts from 2004-2008 indicate no landings of overfished species in this fishery. Impacts to overfished species are not expected in this fishery because it occurs in an area of low overall bycatch of overfished species and over sandy bottom habitat. The best estimates of impacts to this fishery have been updated in Table 2-36.

### Sea Cucumber Trawl Fishery

The Sea Cucumber trawl fishery is a state permitted fishery that primarily occurs in southern California within the California halibut trawl grounds. This fishery is not observed under the Federal groundfish observer program. State landing receipts from 2004-2008 indicate trace landings of bocaccio rockfish in this fishery. Impacts to overfished species are not expected in this fishery because it occurs in an area of low overall bycatch of overfished species and over sandy bottom habitat.

Estimates of petrale sole impacts in the sea cucumber trawl fishery are 0.1 mt.

### Spot Prawn Fishery

The spot prawn fishery is a state permitted fishery that is taken by trap gear in California. The fishery occurs from just north of Monterey Bay to southern California. This fishery is not observed under the Federal groundfish observer program. State landing receipts from 2004-2008 indicate no landings of overfished species in this fishery. Impacts to overfished species are not expected in this fishery because it occurs in an area of low overall bycatch of overfished species.

### Pink Shrimp trawl fishery

The pink shrimp trawl fishery is not restricted by an RCA, but approved bycatch reduction devices or fish excluders in shrimp trawls are mandated to minimize incidental groundfish bycatch. 2007 was the first year that observer discard ratios from the pink shrimp fishery were used to estimate fleet-wide amounts of groundfish discards. The Total Mortality reports for darkblotched rockfish at 18 mt (2007) and 11 mt (2008), therefore for 2011-2012 the GMT recommends using a yearly set aside amount of 15 mt for darkblotched rockfish which is the mean of the 2007 and 2008 observed catch rounded to the nearest whole metric ton. Given the results of the 2007 and 2008 Total Mortality reports, the GMT recommends yearly set asides for POP of 0.1 mt because this is the amount landed in both 2007 and 2008 and 0.4 for canary rockfish, there was 0.4 mt landed in 2007 and 0.3 mt in 2008, 0.4 is the average rounded up accordingly. The best estimates of impacts to this fishery have been updated in Table 2-36.

### Salmon Troll Fishery

The salmon troll fishery operates all along the west coast, however in recent years the fishery has been severely restricted because of salmon abundance and the set asides recommended by the GMT have been reduced accordingly. Currently the salmon troll fishery is exempted from RCA restrictions and groundfish species, including lingcod, are allowed to be retained while fishing in the non-trawl RCA. Salmon trollers are required to have VMS on their vessels and there are two mandatory yelloweye rockfish conservation areas (YRCAs) and two voluntary YRCAs that apply to salmon trollers. Currently there are set aside amounts in the salmon troll fishery for canary, bocaccio, widow and yelloweye rockfish. The canary impacts that the GMT accounts for in the salmon troll fishery changed after 2005 because the salmon fishery was shifting from one with higher Chinook quotas to higher coho quotas, and canary bycatch in that fishery was most associated with Chinook targeting. The yield set asides were 1.6 mt (2005), 2 mt (2007/2008) and 0.8 mt (2009/2010). Because of the possible higher Chinook opportunities in the north for 2011-2012 the GMT recommends using 1.6 mt as the canary yield set aside in the salmon troll fishery. The other overfished species set aside amounts should remain the same as 2009/2010 because the GMT does not have any new information which would indicate a change in impacts. The best estimates of impacts to this fishery have been updated in Table 2-36.

**Table 2-36.** Projected incidental open access impacts for rockfish.

	Bocaccio b/	Canary	Cowcod	Dkbl	POP	Widow	Yelloweye
<b>Open Access: Incidental Groundfish TOTAL</b>	<b>0.8</b>	<b>1.7</b>	<b>0.0</b>	<b>15.0</b>	<b>0.0</b>	<b>3.3</b>	<b>0.3</b>
CA Halibut	0.0						
CA Gillnet c/	0.3					2.9	
CA Sheephead c/	0.0						
CPS- wetfish c/	0.1					0.0	
CPS- squid d/	0.0						
Dungeness crab c/	0.0			0.0			
HMS b/	0.1			0.0			
Pacific Halibut c/							
Pink shrimp	0.1	0.1	0.0	15.0	0.0	0.1	0.1
Ridgeback prawn							
Salmon troll	0.2	1.6				0.3	0.2
Sea Cucumber	0.0						
Spot Prawn (trap)							

**Table 2-37.** Projected incidental open access fishery impacts for petrale sole.

<b>Fishery</b>	<b>Impact (mt)</b>
California halibut trawl	43
California gillnet fishery	0.1
California sea cucumber trawl	0.1

### **Research**

Overfished groundfish species are caught in scientific research projects off the west coast. Annually, in the Total Mortality reports, National Marine Fisheries Service (NMFS) Northwest Region (NWR) provides the NWFSC with the best available estimates of groundfish species mortality in scientific research. These best estimates of research are deducted “off the top” before any allocations are made to

groundfish fisheries. Table 2-38 summarizes overfished rockfish groundfish species mortality in scientific research from 2005-2008. Table 2-39 summarizes research catches of petrale sole.

Given the variation in the research catches the GMT recommends using the maximum amounts seen for each species from 2005-2008, except for yelloweye which is discussed below. For example, canary rockfish impacts are highly variable and the Council might want to be more precautionary in establishing the set aside given that “lightning strikes” have forced the Council to restrict other fisheries in the past and canary rockfish is a constraining species; however, the Council may also want to weigh the likelihood of similar high impact events in calculating the set aside (i.e., as in the 2010 scorecard). Additionally, darkblotched catches in research have been close to 1 mt from 2005-2008 (except for 2005), however the GMT currently has a remainder of 18.4 mt in the scorecard for darkblotched. If the Council chooses to leave some residual of darkblotched in the scorecard for 2011-2012, then keeping the research set aside at 1.0 will most likely accommodate fisheries; whereas if the research were to take twice that much and the rest of the darkblotched ACL were fully subscribed, then it might be best to establish the set aside as the maximum that is currently in the scorecard.

At the March 2010 meeting the Council chose to use 1.1 mt for yelloweye in the IPHC survey (see Agenda Item E.5.b, Supplemental GMT Report), which along with other yelloweye research catches results in a research set aside for yelloweye of 3.3 mt. Therefore the GMT recommends using a yelloweye set aside in research of 3.3 mt, rather than the highest amount from the 2005-2008 Total Mortality reports.

**Table 2-38.** Research catches of overfished rockfish species (mt) from 2005-2008 and the median, average, maximum and minimum by species.

<b>Year</b>	<b>Bocaccio</b>	<b>Canary</b>	<b>Cowcod</b>	<b>Dkbl</b>	<b>POP</b>	<b>Widow</b>	<b>Yelloweye</b>
<b>2008</b>	1.2	1.8	0	1	1	1	1
<b>2007</b>	1	3	0	1	1	0	2
<b>2006</b>	0.2	7.2	0	0.9	1.2	0.2	0.1
<b>2005</b>	1.7	2.3	0.1	2.1	1.8	1.6	0.6
<b>Median</b>	1.1	2.7	0.0	1.0	1.1	0.6	0.8
<b>Average</b>	1.0	3.6	0.0	1.3	1.3	0.7	0.9
<b>Max</b>	1.7	7.2	0.1	2.1	1.8	1.6	2.0
<b>Min</b>	0.2	1.8	0.0	0.9	1.0	0.0	0.1

The GMT also examined recent research catches of petrale sole (Table 2-39).

**Table 2-39.** Research catches (mt) for petrale sole from 2001-2009, including maximum, minimum, and average catch.

<b>Year</b>	<b>MT</b>
2005	1.73
2006	2.30
2007	17.00
2008	2.00
<b>Min</b>	<b>17.0</b>
<b>Max</b>	<b>1.73</b>
<b>Avg.</b>	<b>5.8</b>

### **Exempted Fishing Permits (EFPs)**

In November 2009, the Council recommended catch limits for overfished rockfish species in five non-whiting EFPs that would operate in 2010 and, in some cases, continue for a 12-month period that may extend into 2011 (Table 2-40). The set asides for non-whiting EFPs may change for 2011-2012, depending on projected impacts to overfished species in non-EFP fisheries, the number and type of EFP projects that are recommended. For analytical purposes, we assume the same catch limits are adopted in 2011-2012 as were adopted for the 2010 EFPs (Table 2-40).

**Table 2-40.** Council approved EFPs and bycatch caps for 2010.

<b>EFP</b>	<b>Bocaccio</b>	<b>Canary</b>	<b>Cowcod</b>	<b>Darkblotched</b>	<b>POP</b>	<b>Widow</b>	<b>Yelloweye</b>
Trolled longline for chilipepper in CA	3.300	0.027	0.015	0.400	*	3.000	0.005
Morro Bay/Port San Luis regional fishing assoc.	5.000	0.023	0.200	1.000	0.136	2.000	0.068
OR recreational yellowtail	*	1.000	*	*	*	3.000	0.200
CA recreational chilipepper	2.700	0.200	0.023	0.100	*	3.000	0.023
ODFW yelloweye	*	*	*	*	*	*	0.060
<b>Total all EFP's</b>	<b>11.000</b>	<b>1.250</b>	<b>0.237</b>	<b>1.500</b>	<b>0.136</b>	<b>11.000</b>	<b>0.356</b>

Note: "\*" = no proposed EFP cap.

In 2010, two EFPs were approved that had petrale sole impacts. The Morro Bay/Port San Luis Regional Fishing Association (TNC) EFP is expected to take 6 mt, unless a proportional reduction is applied, in which case the impacts would be 2 mt. The shoreside Pacific whiting EFPs were estimated to take trace amounts of petrale sole (0.02 mt).

Historically, EFPs have been issued for the shoreside whiting fishery and overfished species bycatch caps were taken "off the top" annually in March. However, under rationalized trawl fishery the traditional EFP for the shoreside whiting fishery would not be necessary. Further, Amendment 21, which is scheduled for implementation January 1, 2011, specifies allocations for all whiting sectors, including the shoreside

sector. As such, with Amendment 21 in place under both trawl management regimes (rationalized or trip limit management), there is no longer a need to specify overfished species allocations annually and thus no need to determine a set aside. There was no Amendment 21 allocation of petrale to the whiting sectors and to date the Council has not recommended any petrale allocation to the whiting sectors, given that it occurs in trace amounts. As such, it appears that it is unnecessary to calculate a petrale sole set aside for the whiting fishery.

#### *2.2.5.2 Yield Set Asides for Non-Overfished Species*

In preparation for the Council's final preferred groundfish harvest specifications and management measures for 2011-2012, the following set asides were calculated for non-overfished species based on the highest impacts seen in recent years (Table 2-41, Table 2-42, Table 2-43, and Table 2-44). Documentation for the projected impacts is further described below. These amounts were also used to determine the trawl and non-trawl allocations when analyzing integrated alternatives and management measures for 2011-2012 fisheries.

**Table 2-41.** Non-Overfished Species Set asides Assumed for Modeling 2011 Fisheries.

Species/Species Group/Area	2011 PPA ACL	Tribal	EFP	Research	Incidental OA	Fishery HG	Trawl A21%	Non- trawl A21%	Trawl A21 mt	Non- Whiting A21 %	Whiting A21 %	Non- Whiting A21 mt	Whiting A21 mt	Non-trawl A21 mt
Lingcod N. of 42° N. lat. (OR & WA)	2,330	250	0	5	16	2,059	45%	55%	927	99.7%	0.3%	924	3	1,132
Lingcod S. of 42° N. lat. (CA)	2,102	0	0	0	7	2,095	45%	55%	943	99.7%	0.3%	940	3	1,152
Pacific Cod	1,600	400	0	0	0	1,200	95%	5%	1,140	99.9%	0.1%	1,139	1	60
Sablefish S of 36° N. lat.	1,167	0	26	2	6	1,133	42%	58%	476	100.0%		476	0	657
Dover sole	17,560	1497	0	38	55	15,970	95%	5%	15,172	100.0%		15,172	0	799
English sole	19,761	91	0	5	4	19,661	95%	5%	18,678	99.9%	0.1%	18,659	19	983
<b>PETRALE SOLE</b>	976	45.4	6	10	43.2	871	95%	5%	828	100.0%		828	0	44
Arrow tooth flounder	15,174	2041	0	7	30	13,096	95%	5%	12,441	100.0%		12,441	0	655
Starry Flounder	1,352	2	0	0	5	1,345	50%	50%	673	100.0%		673	0	673
Other flatfish	4,884	60	0	13	125	4,686	90%	10%	4,217	99.9%	0.1%	4,213	4	469
<b>PACIFIC OCEAN PERCH</b>	180	10.9	0.10	2	0	167	95%	5%	159	The rest	17% or	129	30	8
<b>WIDOW</b>	600	45	11	2	3	539	91%	9%	491	The rest	52.0%	235	255	49
Chilipepper (coastw ide)	2,130	1		9	5	2,115	75%	25%	1,586	100.0%		1,586	0	529
Splitnose S. of 40°10' N. lat.	1,461	0	0	7	0	1,454	95%	5%	1,381	100.0%		1,381	0	73
Yellow tail N. of 40°10' N. lat.	4,364	490	2	4	3	3,865	88%	12%	3,401	The rest	300	3,101	300	464
Shortspine thornyhead N. of 34° 27' N. lat.	1,573	38	0	5	2	1,528	95%	5%	1,452	99.9%	0.1%	1,450	1	76
Shortspine Thornyhead S. of 34 27' N. lat.	405	0	0	1	41	363	50 mt	The Rest	50	100.0%		50	0	313
Longspine thornyhead N. of 34°27' N. lat.	2,119	30	0	13	1	2,075	95%	5%	1,971	100.0%		1,971	0	104
<b>DARKBLOTCHED</b>	332	0.1	2	2	15	313	95%	5%	298	The rest	mt	271	27	16
Minor Slope Rockfish North 40°10' N. lat.	1,160	36	2	11	19	1,092	81%	19%	885	98.6%	1.4%	872	12	207
Minor Slope Rockfish South 40°10' N. lat.	626	0	2	8	17	599	63%	37%	377	100.0%		377	0	222

\***Bold** indicates overfished species w ith A:21 allocations. These set-asides w ere adopted by the Council April 2010.



**Table 2-42.** Non-Overfished Species Set asides Assumed for Modeling 2012 Fisheries.

Species/Species Group/Area	2012 PPA ACL	Tribal	EFP	Research	Incidental OA	Fishery HG	Trawl A21%	Non- trawl A21%	Trawl A21 mt	Non- Whiting A21 %	Whiting A21 %	Non-Whiting A21 mt	Whiting A21 mt	Nontrawl A21 mt
Lingcod N. of 42° N. lat. (OR & WA)	2,151	250	0	5	16	1,880	45%	55%	846	99.7%	0.3%	843	3	1,034
Lingcod S. of 42° N. lat. (CA)	2,164	0	0	0	7	2,157	45%	55%	971	99.7%	0.3%	968	3	1,186
Pacific Cod	1,600	400	0	0	0	1,200	95%	5%	1,140	99.9%	0.1%	1,139	1	60
Sablefish S of 36° N. lat.	1,103	0	26	2	6	1,069	42%	58%	449	100.0%		449	0	620
Dover sole	17,560	1497	0	38	55	15,970	95%	5%	15,172	100.0%		15,172	0	799
English sole	10,150	91	0	5	4	10,050	95%	5%	9,548	99.9%	0.1%	9,538	10	503
<b>PETRALE SOLE</b>	1,160	45.4	6	10	43.2	1,055	95%	5%	1,003	100.0%		1,003	0	53
Arrowtooth flounder	12,049	2041	0	7	30	9,971	95%	5%	9,472	100.0%		9,472	0	499
Starry Flounder	1,360	2	0	0	5	1,353	50%	50%	677	100.0%		677	0	677
Other flatfish	4,884	60	0	13	125	4,686	90%	10%	4,217	99.9%	0.1%	4,213	4	469
<b>PACIFIC OCEAN PERCH</b>	183	10.9	0.10	2	0	170	95%	5%	162	The rest	17% or 30 mt	132	30	9
<b>WIDOW</b>	600	45	11	2	3	539	91%	9%	491	The rest	52.0%	235	255	49
Chilipepper (coastwide)	1,924	1		9	5	1,909	75%	25%	1,432	100.0%		1,432	0	477
Splitnose S. of 40°10' N. lat.	1,538		0	7	0	1,531	95%	5%	1,454	100.0%		1,454	0	77
Yellow tail N. of 40°10' N. lat.	4,371	490	2	4	3	3,872	88%	12%	3,407	The rest	300	3,107	300	465
Shortspine thornyhead N. of 34° 27' N. lat.	1,556	38	0	5	2	1,511	95%	5%	1,435	99.9%	0.1%	1,434	1	76
Shortspine Thornyhead S. of 34 27' N. lat.	401		0	1	41	359	50 mt	The Rest	50	100.0%		50	0	309
Longspine thornyhead N. of 34°27' N. lat.	2,064	30	0	13	1	2,020	95%	5%	1,919	100.0%		1,919	0	101
<b>DARKBLOTCHED</b>	329	0.1	2	2	15	310	95%	5%	295	The rest	9% or 25 mt	268	27	16
Minor Slope Rockfish North 40°10' N. lat.	1,160	36	2	11	19	1,092	81%	19%	885	98.6%	1.4%	872	12	207
Minor Slope Rockfish South 40°10' N. lat.	626	0	2	8	17	599	63%	37%	377	100.0%		377	0	222

\***Bold** indicates overfished species with A:21 allocations. These set-asides were adopted by the Council April 2010.

**Table 2-43.** Sablefish north of 36° N. latitude allocations, given the Council's preliminary preferred ACL decision.

Year	Sablefish OY N of 36° N lat	Tribal Share*	Research, Rec., EFP, and Inc. OA Set- Aside	Non-Tribal Comm. Share	LE Share	LE Trawl Share	LE FG			OA Share
							LE FG Share	LE FG Primary	LE FG DTL	
2009	7,052	705	200	6,147	5,569	3,230	2,339	1,988	351	578
2010	6,471	647	200	5,624	5,095	2,955	2,140	1,819	321	529
2011	4,961	496	39.3	4,426	4,010	2,326	1,684	1,431	253	416
2012	4,689	469	39.3	4,181	3,788	2,197	1,591	1,352	239	393

\*This is the total tribal share, which is reduced by 1.6% to account for discard mortality. See 2010 regs. footnote g. for Table 2a.

**Table 2-44.** Non-overfished species allocations determined through the biennial harvest specifications and management measures, based on the Council's preliminary preferred decisions.

Species/Species Group/Area	2011/2012 PPA ACL	Tribal	EFP	Research	Incidental OA	Fishery HG				Within Trawl (%)		Within Trawl (MT)		Nontrawl SPEX mt
							Trawl SPEX %	Non-trawl SPEX %	Trawl SPEX mt	Whiting	Non- whiting	Whiting	Non- whiting	
Longnose Skate	1,349	56	0	8	65	1,220	95%	5%	1,159	5%	95%	58	1101	61
Minor Shelf N. of 40 10' N. lat.	968	9	4	4	26	925	60.2%	39.8%	557	17.4%	82.6%	97	460	368
Minor Shelf S. of 40 10' N. lat.	714	0	2	2	9	701	12.2%	87.8%	86	N/A	N/A	N/A	N/A	615

Non-overfished species set asides are most important for species where the non-overfished species ACL is nearly fully prescribed. Table 2-45 outlines species where greater than 80 percent of the ACL was harvested from 2005-2008, which the Council may wish to consider as fully prescribed. For comparison, the 2011-2012 PPA ACL is included. For some stocks (e.g., Dover sole and black rockfish) the 2011-2012 ACL is significantly higher and due to overfished species constraints or other limiting factors it is not anticipated that it would be fully prescribed in 2011-2012. It appears that cabezon in California, nearshore rockfish north and south of 40°10 N. latitude, sablefish, and shortspine thornyhead north of 34°27 have the potential to be fully prescribed in 2011-2012. As such, the Council should pay particular attention to calculating these set asides to prevent an ACL overage.

**Table 2-45.** Species from 2005-2008 where the OY was attained by 80 percent or greater, compared to the 2011-2012 PPA ACL.

Species	Year	Catch/OY	11-12 PPA ACL
Black rockfish s. 46°16	2007	577/722	1,000
Black rockfish s. 46°16	2008	593/722	
Cabezon CA	2005	80/69	179 - 168
Cabezon CA	2006	106/69	
Dover Sole	2005	7,507/7,476	17,560
Dover sole	2006	7,730/7,564	
Nearshore rockfish coastwide	2005	590/737	805*
Nearshore rockfish N 40°10	2007	133/142	155
Nearshore rockfish S 40°10	2006	711/615	650
Nearshore rockfish S 40°10	2007	466/564	650
Sablefish	2005	6,543/7,761	5,858 - 5792*
Sablefish	2006	6,470/7,634	
Sablefish	2007	5,545/5,934	
Sablefish	2008	6,078/5,934	
Shortspine thornyhead (coastwide)	2005	796/999	1,978-1,957 *
Shortspine thornyhead (coastwide)	2006	853/1018	1,978-1,957 *
Shortspine thornyhead n. 34°27	2008	1,313/1,634	1,573 - 1,556

\*The Council's preliminary preferred decision for nearshore rockfish, sablefish, and shortspine thornyhead does not contain the specification of a coastwide ACL. For the purposes of this comparison the ACLs north and south were summed to represent a coastwide ACL.

### 2.2.5.3 Tribal

Set asides for treaty tribal fisheries were estimated based on catches of all non-overfished species and complexes in recent years (i.e., since 2004). This represents a period of time with effort levels that are expected to be similar to the next two years (i.e. 2011-2012). Recommended set asides are based on the maximum catch for this time period for all stocks except for those with specific allocations, harvest guidelines, or existing set asides and the following species (Table 2-46).

For Dover sole, arrowtooth flounder, and longspine thornyhead the Makah Tribe has managed their fisheries with annual fleet limits for the past several years (i.e. bimonthly limits are multiplied by the

number of vessels in the fleet and summed across periods to create an annual harvest target). Using cumulative limits similar to those in place in 2010 and an estimated 5 non-whiting trawl vessels, the set asides for Dover sole and arrowtooth flounder are 1,497 mt and 2,041 mt respectively. For longspine thornyhead the cumulative fleet limit would represent a significant departure from anything seen in recent years or anticipated in the next biennium. As such the fleet limit that would result from status quo bimonthly limits is reduced to 30 mt (~ 10 % of the fleet limit). The yellowtail estimate is also based on the sum of total fleet limits for the Makah midwater fishery as reflected in Agenda Item I.4.b, Supplemental Tribal Report, April 2010.

**Table 2-46.** Tribal set asides for 2011-2012 Fisheries.

<b>Species</b>	<b>Amount (mt)</b>
Dover sole	1,497
English sole	91
Arrowtooth flounder	2,041
Starry flounder	2
Other flatfish	60
Chilipepper	1
Shortspine Thornyhead N. 34°27' N.	38
Longspine Thornyhead N. 34°27' N.	30
Minor slope north 40°10' N. lat.	36
Minor shelf north 40°10' N. lat.	9
Longnose skate	56

#### *2.2.5.4 Scientific Research*

Generally, scientific research is not regulated at the Federal level under the Magnuson-Stevens Act. Therefore, higher than expected catches in scientific research activities may necessitate inseason restrictions to fisheries to keep total mortality within an ACL. Based on the relative inability to manage scientific research catch, as well as the potential for some unreported research mortality, the Council should use the maximum catch during scientific research activities, as estimated in 2005-2008, for set asides in 2011-2012.

The NMFS NWR compiled the best estimates of catch of groundfish in scientific research projects that were Federally permitted from 2005-2008. Unlike most other species, sablefish (north of 36°N. lat. and south of 36°N. lat.) and the minor rockfish complex (north of 40°10' N. lat. and south of 40°10' N. lat.) mortality estimates for scientific research are those reported in the WCGOP annual Total Mortality reports from 2005-2008. Further discussion on the research mortality estimates for sablefish and minor rockfish are provided below.

The best estimates do not include scientific research impacts to groundfish species that go unpermitted and unreported. It is most likely that these catches only occur in small amounts; however there is no way to quantify them.

Most 2009 research catches have been reported to NMFS, however the data have not yet been compiled and synthesized nor have they been quality assured. No 2009 catches reported so far have caused concern that using 2005-2008 would be unrepresentative.

Sablefish: The Total Mortality reports do not separate total mortality estimates for sablefish north and south of 36° N. lat. For use in calculating set asides for the sablefish ACLs, which are separated north

and south of 36° N. lat., NMFS provided the area-specific mortality estimates for sablefish taken in scientific research activities for 2005-2008.

**Minor Rockfish:** The scientific research catch estimates for the minor rockfish complex were accounted for differently between years in the Total Mortality reports. Therefore, to provide the Council with the best estimates to use for determining the appropriate set aside amounts for the 2011-2012 harvest specifications and management measures, the scientific research catch data were reviewed to ensure that research catches of species within the minor rockfish complex were not being double counted, or not counted at all at the complex and sub-complex levels.

In 2005 minor rockfish (shelf, slope and nearshore) research catch were all made on a coastwide basis. Due to difficulties in accurately apportioning this catch north and south, the few research estimates available for 2005 were not used. Therefore, for estimating appropriate scientific research set asides for the minor rockfish complexes, data from only 2006-2008 were used.

Review of 2006-2008 research catch data revealed some inconsistencies in the reporting on research catch for the complex and sub-complexes between the Total Mortality reports and the best estimates of research catch, as depicted in Table 2-47 .

**Table 2-47.** Considerations for the scientific research set asides for the minor rockfish complex. Bold numbers indicate the highest catch in the 2006-2008 period.

	<b>2008</b>		<b>2007</b>		<b>2006</b>	
	Total Mortality Report (mt)	Best Estimate for set aside (mt)	Total Mortality Report (mt)	Best Estimate for set aside (mt)	Total Mortality Report (mt)	Best Estimate for set aside (mt)
Minor rockfish North <sup>29</sup>	12.8	12.8	11.5	11.8	Not reported	7.5
Nearshore	0	<b>0</b>	0	0	0	0
Shelf	13.6	1.9	6.0	3.7	4.6	<b>3.8</b>
Slope	3.9	<b>10.9</b>	5.5	8.1	2.5	3.8
Minor rockfish South <sup>1</sup>	7.8	7.8	3.8	5.7	Not reported	6.0
Nearshore	0	0	0	0	0	0
Shelf	0	<b>2.0</b>	3.0	1.4	3.1	0.4
Slope	0	<b>5.9</b>	0.7	4.3	1.3	5.6

The discrepancies between the Total Mortality reports and NMFS's best estimates of research catch are mostly due to how catches were incorporated into the Total Mortality estimates in the reports. The NWR has thoroughly reviewed the scientific catch information for the minor rockfish complex from 2006-2008 and presents the values in Table 2-47 as the best estimates of documented catch. The maximum values recommended by the NWR for set asides for each sub-complex are bolded.

Note that a portion of the research catch was reported as "remaining rockfish" or "other rockfish" rather than the management units (i.e. sub-complex) that they belong to. For purposes of estimating set asides those were attributed to the minor shelf and minor slope subcomplexes pro-rata. Those conducting research in the future will be encouraged to report to these categories in the future.

<sup>29</sup> Rockfish reported as remaining or other rockfish were attributed to the sub-complexes on a pro-rata basis.

#### **2.2.5.5 Incidental Open Access fisheries**

Estimates of the amount of groundfish taken in the incidental open access fisheries for establishing set asides from 2011-2012 ACLs were taken from the highest amounts published in the 2007-2008 Total Mortality reports (sum of CA halibut, Pink shrimp, remaining incidental fishery landings). Mortality estimates from incidental open access fisheries were not broken out by sector in Total Mortality reports prior to 2007.

The “remaining incidental fishery landings” in the Total Mortality Report also include landings that occur under the non-whiting EFPs. Since the Council considers EFPs separately and on an annual basis, the EFP catches (e.g., for sablefish, chilipepper, etc.) were subtracted from the incidental open access estimates expressed in the Total Mortality reports and are presented separately (see EFP section).

#### **2.2.5.6 Exempted Fishing Permits**

For 2011-2012 it will also be necessary to estimate EFP set asides as part of the harvest specifications process. Given the need to allocate a set amount for the trawl fishery for rationalization, the Council should consider potential needs of EFP applicants as well as effects on existing fisheries in establishing these set asides. As described in section 2.2.5.2, the Council has the option of taking the EFP set asides “off the top” or off of the trawl allocation. Table 2-48 contains the EFP removals from the 2008 non-whiting EFP permits, from NMFS NWR. The 2009 data has not yet been processed. Of interest is the 26 mt of sablefish from the Morro Bay/Port San Luis Regional Fishing Association (TNC) EFP. It is unclear at this point whether this EFP, should it be continued in the future would require a set aside of sablefish or whether such impacts would be accommodated within the permit holder’s existing quota pounds.

**Table 2-48.** EFP catches of non-overfished species for 2008, provided by NMFS NWR.

<b>Species/Species Group/Area</b>	<b>EFP</b>
Sablefish S of 36° N. lat.	26
Chilipepper (coastwide)	0.1
Minor Slope Rockfish North 40°10' N lat.	2

#### **2.2.6 Two Year Allocations for Overfished Species**

Under Amendment 21, formal allocations of the trawl-dominant non-overfished species and overfished species (darkblotched rockfish, Pacific ocean perch, and widow rockfish) were decided for the non-treaty trawl (hereinafter trawl sector) and non-treaty non-trawl sectors (hereinafter non-trawl sector), as well as for each non-treaty trawl sector (i.e., shoreside non-whiting, shoreside whiting, catcher-processor, and mothership). Since Amendment 21 is scheduled to be implemented January 1, 2011, these allocations were used in the analysis of the alternatives (Table 2-41 and Table 2-42).

The Council must decide two-year allocations for the non-Amendment 21 overfished species (yelloweye, canary, cowcod, and bocaccio) during the harvest specifications and management measures process. Historically, these allocations were flexible such that the Council had the ability to move fish between sectors through inseason action as needed. For example, the sector projections of estimated bycatch are frequently updated with new WCGOP data, which often changes the sector allocations relative to the decision made under the harvest specifications and management measures process. In these situations, the

Council had the option of constraining the sector to within the initial allocation, implementing inseason action if there was concern for exceeding the OY, or accommodating the increased overfished species interactions by moving fish between sectors within the balance of the OY.

The consideration of a rationalized trawl fishery for 2011-2012 reduces the inseason flexibility to move fish between the trawl and non-trawl sectors since the trawl allocation will be converted into quota pounds and co-op allocations. It would be very difficult, if not impossible, to reduce the trawl allocation mid-year if need arises or an overage occurs in the non-trawl sector. As such, it is anticipated that the two-year allocation between the trawl and non-trawl sectors for yelloweye, canary, cowcod, and bocaccio will be a very difficult and complex decision. Within the non-trawl sector, it is still anticipated that the Council will have inseason flexibility to move fish between sectors through routine inseason actions (e.g., recreational and fixed gear commercial) as need arises.

The Council must strike a delicate balance when considering the trawl allocation in a rationalized fishery. First, the trawl sector has not yet operated under a rationalized system and it is difficult to precisely estimate the predicted overfished species impacts. While one objective of the rationalized fishery is to promote practices that reduce bycatch and discard mortality, it is expected that there will be a learning curve as the fleet adjusts to this new management regime. Further, while rationalized fisheries have a worldwide history of success, the west coast groundfish trawl fishery has the unique challenge of interacting with eight overfished stocks. The quota pounds and co-op allocations for the overfished species are expected to be scarce, especially for yelloweye and canary rockfish. The Council may consider that the two-year trawl allocation is somewhat of a performance standard and thus the fleet should be given an allocation to reasonably accommodate fishing operations.

The overfished species allocations to the trawl sector cannot flow into the non-trawl sector if need arises or if excess should become available (e.g., the at-sea whiting sector harvests all of their whiting allocation and has remaining overfished species quota). If unused, the allocation will remain stranded in the trawl sector. As such, the Council should ensure that the non-trawl sector also has sufficient allocation to reasonably accommodate fishing operations.

At its November 2009 and April 2010 meeting, the Council considered a wide range of two year allocations for bocaccio, cowcod, canary rockfish and yelloweye rockfish. In April, the Council narrowed that range for further analysis. Results of the Council's preliminary preferred allocation scheme is found in **Table 2-49**.

**Table 2-49.** The Council's Preliminary Preferred Two Year Allocations of Overfished Rockfish Species.

**Bocaccio Preliminary Preferred Allocations: 2009-2010 SPEX**

Alternative	No Action	Alt. 1		Alt. 2		Alt. 3	
	<i>Apr-10</i>	2011	2012	2011	2012	2011	2012
Sector	<i>288 mt</i>	263 mt	274 mt	109 mt	115 mt	53 mt	56 mt
LE Trawl- Non-Whiting	<i>16.1</i>	29.6	30.9	11.3	12	4.7	5
LE Trawl- Whiting	<i>0</i>	0	0	0	0	0	0
OA: Directed	<i>5.3</i>	26	27.1	9.9	10.6	4.1	4.4
LE Fixed Gear	<i>0</i>	32.2	33.6	12.3	13.1	5.1	5.5
Rec: WA	<i>0</i>	0	0	0	0	0	0
Rec: OR	<i>0</i>	0	0	0	0	0	0
Rec: CA	<i>67.3</i>	161.8	168.9	61.9	65.8	25.6	27.6

**Canary Preliminary Preferred Allocations: April 2010 Scorecard**

Alternative	No Action	Alt. 1		Alt. 2		Alt. 3	
	<i>Apr-10</i>	2011	2012	2011	2012	2011	2012
Sector	<i>105 mt</i>	102 mt	107 mt	94 mt	99 mt	49 mt	51 mt
LE Trawl- Non-Whiting	<i>21.3</i>	21.3	22.5	19.3	20.5	8	8.5
LE Trawl- Whiting	<i>14</i>	14	14.8	12.7	13.5	5.3	5.6
Nearshore Fixed Gear	<i>3.6</i>	3.6	3.8	3.3	3.5	1.4	1.4
Non-nearshore Fixed Gear	<i>2.5</i>	2.5	2.6	2.3	2.4	0.9	1
Rec: WA	<i>4.9</i>	4.9	5.2	4.4	4.7	1.8	2
Rec: OR	<i>16</i>	16	16.9	14.5	15.4	6	6.4
Rec: CA	<i>22.9</i>	22.9	24.2	20.7	22	8.6	9.1

**Cowcod Preliminary Preferred Allocations: 2009-2010 SPEX**

Alternative	No Action	Alt. 1		Alt. 2		Alt. 3	
	<i>Apr-10</i>	2011	2012	2011	2012	2011	2012
Sector	<i>4 mt</i>	4 mt	4 mt	3 mt	3 mt	2 mt	2 mt
LE Trawl- Non-Whiting	<i>1.5</i>	3.4	3.4	2.5	2.5	1.6	1.6
LE Trawl- Whiting	<i>0</i>	0	0	0	0	0	0
OA: Directed	<i>0</i>	0	0	0	0	0	0
LE Fixed Gear	<i>0</i>	0	0	0	0	0	0
Rec: WA	<i>0</i>	0	0	0	0	0	0
Rec: OR	<i>0</i>	0	0	0	0	0	0
Rec: CA	<i>0.3</i>	0.3	0.3	0.2	0.2	0.1	0.1



**Cowcod Alternative Allocations: 2008 Total Mortality Report**

<b>Alternative</b>	<b>No Action</b>	<b>Alt. 1</b>		<b>Alt. 2</b>		<b>Alt. 3</b>	
	<i>Apr-10</i>	2011	2012	2011	2012	2011	2012
Sector	<i>4 mt</i>	4 mt	4 mt	3 mt	3 mt	2 mt	2 mt
LE Trawl- Non-Whiting	1.5	1.9	1.9	1.4	1.4	0.9	0.9
LE Trawl- Whiting	0	0	0	0	0	0	0
OA: Directed	0	0	0	0	0	0	0
LE Fixed Gear	0	0	0	0	0	0	0
Rec: WA	0	0	0	0	0	0	0
Rec: OR	0	0	0	0	0	0	0
Rec: CA	0.3	1.9	1.9	1.4	1.4	0.9	0.9

**Yelloweye Preliminary Preferred Allocation: 2009-2010 SPEX EIS**

<b>Alternative</b>	<b>No Action</b>	<b>Alt. 1</b>		<b>Alt. 2</b>		<b>Alt. 3</b>	
	<i>Apr-10</i>	2011	2012	2011	2012	2011	2012
Sector	<i>17 mt</i>	20 mt	20 mt	17 mt	17 mt	13 mt	13 mt
LE Trawl- Non-Whiting	0.6	0.7	0.7	0.6	0.6	0.4	0.4
LE Trawl- Whiting	0	0	0	0	0	0	0
OA: Directed	1.3	1.3	1.3	1	1	0.6	0.6
LE Fixed Gear	0.9	1.7	1.7	1.3	1.3	0.8	0.8
Rec: WA	2.7	3.3	3.3	2.6	2.6	1.6	1.6
Rec: OR	2.4	3	3	2.4	2.4	1.5	1.5
Rec: CA	2.8	3.4	3.4	2.6	2.6	1.6	1.6

## **2.2.7 Two Year Allocations of Non-Overfished Species**

### **2.2.7.1 Black Rockfish in Oregon and California**

*[Decision to be made at the June 2010 Council meeting]*

### **2.2.7.2 Minor Shelf Rockfish North and South of 40°10 N. Latitude**

The GMT analyzed Amendment 21 and the Total Mortality report data in order to inform two-year allocations of the minor shelf rockfish complex north and south of 40°10 N. latitude. At its April 2010 meeting, the Council chose preliminary preferred allocations for minor shelf rockfish which were used in the analysis of the integrated alternatives (Table 2-50). Documentation for the allocations is described below.

**Table 2-50.** The Council's preliminary preferred two year allocations for the trawl and non-trawl sectors. Additionally, a onetime allocation between whiting and non-whiting trawl is recommended for the initial allocation of trawl rationalization.

Complex	Trawl	Non-trawl
Minor shelf rockfish north 40°10 N. lat.	60.2%	39.8%
	Whiting: 17.4% Non-Whiting: 82.6%	
Minor shelf rockfish north 40°10 N. lat.	12.2%	87.8%

## Background

In its final alternative under Amendment 21, the Council chose long term allocations for trawl dominant species based on the years 2003-2005. The GMT used this as a starting place relative to informing a decision on two-year allocations for minor shelf rockfish north and south of 40°10' N lat. Table 2-51 shows a range of percentages the Council could consider.

**Table 2-51.** Summary of shelf rockfish catches in 2003-2007.

	2003	2004	2005	2006	2007	03-05 avg	05-07 avg
<b>Shelf rockfish north of 40°10 N. lat.</b>							
trawl	9.2%	27.7%	31.5%	66.1%	88.1%	22.8%	61.9%
non-trawl	90.8%	72.3%	68.5%	33.9%	11.9%	77.2%	68.5%
<b>Shelf rockfish north of 40°10 N. lat.</b>							
trawl	1.3%	4.1%	3.7%	0.0%	80.1%	3.0%	27.9%
non-trawl	98.7%	95.9%	96.3%	100.0%	19.9%	97.0%	72.1%

In addition, the Council will need to make a onetime allocation between the non-whiting and whiting trawl sectors for initial issuance of trawl individual quotas. Table 2-52 shows a short and longer term average of sector catch shares of shelf rockfish in the non-whiting and whiting sector.

**Table 2-52.** Percent of total shoreside trawl catches caught by the whiting and non-whiting sectors, 1995-2005 (Intersector Allocation EIS)

Stocks and Stock Complexes	Shoreside Trawl Sectors			
	1995-05 %		2003-05 %	
	Non-whiting	Whiting	Non-whiting	Whiting
Minor Shelf RF north of 40°10 N. lat.	96.5%	3.5%	81.7%	18.3%
Minor Shelf RF South 40°10 N. lat.	100.0%	0.0%	100.0%	0.0%

The GMT also examined total catch using the Total Mortality reports as another way to inform two year allocations for those species not formally allocated under Amendment-21. Table 2-53 shows these results as well as possible percentages to inform non-whiting and whiting trawl sectors allocations for initial issuance of IQ.

**Table 2-53.** Summary of total mortality of shelf rockfish based on Total Mortality reports.

	2005	2006	2007	2008	Average
<b>Shelf rockfish north of 40°10 N. lat</b>					
trawl	59.8%	66.1%	70.5%	44.4%	60.2%
<i>non-whiting</i>	74.0%	96.8%	89.5%	70.0%	82.6%
<i>whiting</i>	26.0%	3.2%	10.5%	30.0%	17.4%
non-trawl	40.2%	33.9%	29.5%	55.6%	39.8%
<b>Shelf rockfish south of 40°10 N. lat</b>					
trawl	20.6%	6.6%	9.9%	11.8%	12.2%
non-trawl	79.4%	93.4%	90.1%	88.2%	87.8%

### 2.2.7.3 Longnose Skate

Longnose skate has not been routinely sorted to species due to the lack of specified sorting requirement and many were landed as unspecified skate, making reconstructing historical landings more difficult. Longnose skate is caught primarily as bycatch in trawl fisheries, where most are discarded. In deciding two-year allocations for this species, the GMT scoped the availability of data to inform a decision but was unable to use the Total Mortality reports as a basis to inform a decision due to the lack of species specific sorting. For trawl dominant species under Amendment-21, trawl:non-trawl allocations were set at 95%:5%. The Council's preliminary preferred decision was to employ this ratio for longnose skate.

### 2.2.8 Unallocated Species

The following species do not yet have allocations specified. Several species (e.g., cabezon, California scorpionfish, and black rockfish) are nearshore species and subject to state management. As such, allocations may be done at the state level.

**Table 2-54.** Groundfish species without allocations.

Species	2011 PPA ACL (MT)	2012 PPA ACL (MT)
Cabezon Oregon	50	48
Cabezon S of 42° N. lat. (CA)	179	168
Shortbelly rockfish	6,950	6,950
Longspine Thornyhead S. of 34° 27 N. lat.	376	366
California Scorpionfish	135	126
Black Rockfish N .of 46°16 N. lat.	426	415

### **2.2.9    *New Management Lines***

The GMT reviewed selected RCA coordinates in order to propose changes that more closely approximate the RCA with depth contours, which should result in better estimates of overfished species bycatch and provide improved and more efficient access to target species while protecting overfished species. The results of these analyses are provided in Agenda Item B.3.a Attachment 1.

## Appendix F: Historical Landings and Revenue in Groundfish Fisheries

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## Introduction

This appendix contains tabular data and figures showing landings of groundfish and other species and associated ex-vessel revenue by fishery, season, month, and port. Other tables show fishery participation measured by numbers of vessels making landings and vessel length. The data underlying these tables were obtained through a request to the Pacific Fishery Information Network (PacFIN) for customized output from their database. The data source is organized around vessel-level monthly summaries of landings for the period 1998-2009. As part of the request, PacFIN staff coded the data by fishery sectors, which are commonly used in groundfish management. Vessels are generally assigned to these sectors based on their regulatory status; in particular, whether the vessel is registered to a Federal groundfish limited access permit, and the specific endorsement on that permit. Since not all vessels landing groundfish possess a Federal groundfish limited access permit, some fishery sectors comprise vessels identified based on the composition of their landings. The following criteria were used to identify 12 fishery sectors:

1. Whiting catcher-processor sector: PARGRP=C. AGID =N. Gear Group is TWL. DRVID=PROC
2. Whiting mothership sector: PARGRP=C. AGID =N. Gear Group is TWL. DRVID<>PROC
3. Shoreside whiting sector: PARGRP=C. AGID = O, C or W. whiting is at least 50% of landing by weight. Gear Group is TWL. Valid trawl endorsement.<sup>1</sup>
4. Shoreside nonwhiting trawl sector: PARGRP=C. AGID = O, C or W. whiting is less than 50% of landing by weight. groundfish (sp.mgrp) is at least 50% of landing by weight. Groundfish (sp.mgrp) RWT > California halibut RWT; pink shrimp, ridgbeback prawn, or spot prawn (PHSP, RPRW, SPRW) RWT < 100 lbs, Gear Group is TWL. Valid trawl endorsement.
5. Limited entry fixed gear sector: PARGRP=C. AGID = O, C or W. groundfish (sp.mgrp) is at least 50% of landing by weight. Gear Group is HKL or POT. Valid longline endorsement or pot gear endorsement.
6. Open access fixed gear sector: PARGRP=C. AGID = O, C or W. groundfish (sp.mgrp) is at least 50% of landing by weight. Gear Group is HKL or POT. No valid endorsement for gear used.
7. Incidentally-caught groundfish (including exempted trawl): PARGRP=C. area. AGID = O, C or W. groundfish (sp.mgrp) RWT is > 0.
8. Commercial nongroundfish sector: PARGRP=C. AGID = O, C or W. groundfish (sp.mgrp) RWT is = 0.
9. Treaty mothership whiting sector: PARGRP=I. AGID =N. whiting is at least 50% of catch by weight. Gear Group is TWL. PROC is a mothership.
10. Treaty shoreside whiting sector: PARGRP=I. AGID = O, C or W. whiting is at least 50% of landing by weight. Gear Group is TWL.
11. Treaty Shoreside nonwhiting groundfish sector: PARGRP=I. AGID = O, C or W. whiting is less than 50% of landing by weight. groundfish RWT is > 0.
12. Treaty Nongroundfish sector: PARGRP=I. AGID = O, C or W. groundfish (sp.mgrp) RWT is = 0.

The data set only includes catch from a PFMC area as designated in PacFIN. Research and exempted fishing permit (EFP) landings recorded in the PaFIN database were not excluded from the requested data set.

Several different groupings of groundfish and other species were developed to categorize species level records from PacFIN. These groupings are intended to reflect species and species groups that have some relevance from a regulatory

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<sup>1</sup> All computations based on 50% of landings by weight are calculated "per landing" or "per trip" (may be more than one fish ticket) based on grouping records by agid, drvid and, tdate (agency, vessel, day).

or revenue standpoint. Tables presenting landings by fishery sector include a category “other non-FMP groundfish.” These are species assigned to the groundfish “management group” category in PacFIN but are not necessarily specified in the Pacific Council’s Groundfish FMP. Landings in this category are attributed to the following species: deepsea sole, fantail sole, Greenland turbot, hornyhead turbot, unspecified skates, unspecified turbot, walleye pollock, and yellowfin sole.

## Landings and Revenue by Species and Species Groups

**Table 1. Landings (commercial and tribal, at sea and shoreside) by species group (mt), 1998-2009**

Year	Coastal Pelagic Species	Crab	Groundfish	Highly Migratory Species	Salmon	Shellfish	Shrimp	Other
1998	75,276.67	12,387.83	276,775.11	16,335.89	1,863.47	56.65	5,661.77	7,842.08
1999	171,378.59	16,190.52	268,694.80	11,878.39	2,740.35	44.76	14,225.07	9,634.33
2000	225,877.68	13,568.32	244,939.92	11,005.50	3,729.84	113.56	16,305.51	10,097.02
2001	196,006.85	11,857.61	205,008.70	12,726.92	3,375.18	93.09	18,646.79	9,178.65
2002	182,851.18	16,115.25	161,368.72	10,833.82	5,118.06	168.25	26,245.66	9,678.37
2003	125,389.02	34,018.88	170,881.79	17,648.80	6,038.73	108.31	14,594.30	8,017.54
2004	143,457.91	28,537.15	240,171.80	15,190.34	5,674.74	190.56	9,687.39	9,394.94
2005	157,890.77	25,097.47	287,563.99	10,051.40	4,318.47	112.69	11,403.86	8,987.14
2006	159,805.08	35,707.23	291,429.35	13,511.45	1,197.12	137.31	8,913.54	7,889.16
2007	195,044.82	20,721.11	244,157.70	12,518.56	1,456.85	147.51	11,603.99	8,719.90
2008	145,501.59	17,372.62	279,402.34	11,610.64	282.60	176.56	15,834.70	10,356.40
2009	170,851.95	23,427.63	154,886.41	13,280.95	504.74	239.52	14,951.50	9,614.84
<i>Average, 2005-2009</i>	<i>165,818.84</i>	<i>24,465.21</i>	<i>251,487.96</i>	<i>12,194.60</i>	<i>1,551.96</i>	<i>162.72</i>	<i>12,541.52</i>	<i>9,113.49</i>

**Table 2. Ex-vessel revenue (commercial and tribal, at sea and shoreside) by species group in current (2009) dollars, \$1,000s, 1998-2009.**

Year	Coastal Pelagic Species	Crab	Groundfish	Highly Migratory Species	Salmon	Shellfish	Shrimp	Other
1998	\$12,667	\$61,254	\$79,652	\$32,890	\$7,307	\$90	\$17,622	\$24,704
1999	\$54,235	\$86,125	\$87,240	\$29,822	\$12,212	\$62	\$25,315	\$30,490
2000	\$51,689	\$77,707	\$93,093	\$28,198	\$17,169	\$198	\$25,297	\$33,137
2001	\$39,141	\$63,956	\$72,207	\$29,291	\$12,765	\$161	\$20,249	\$28,761
2002	\$38,755	\$70,558	\$63,895	\$20,437	\$17,007	\$380	\$25,395	\$27,751
2003	\$40,841	\$136,559	\$71,164	\$32,723	\$24,401	\$157	\$13,323	\$24,592
2004	\$36,342	\$115,750	\$68,635	\$33,225	\$34,699	\$527	\$12,353	\$24,837
2005	\$46,849	\$91,265	\$77,844	\$25,081	\$26,206	\$305	\$15,293	\$22,664
2006	\$42,849	\$137,822	\$81,600	\$28,307	\$10,692	\$378	\$11,508	\$23,249
2007	\$45,972	\$107,620	\$79,294	\$25,997	\$13,076	\$369	\$15,686	\$22,359
2008	\$45,001	\$90,811	\$113,159	\$31,293	\$1,990	\$493	\$23,357	\$27,527
2009	\$72,602	\$104,168	\$73,793	\$30,166	\$2,828	\$676	\$15,028	\$25,714
<i>Average, 2005-2009</i>	<i>\$50,655</i>	<i>\$106,337</i>	<i>\$85,138</i>	<i>\$28,169</i>	<i>\$10,959</i>	<i>\$444</i>	<i>\$16,174</i>	<i>\$24,302</i>

**Table 3. Groundfish landings (commercial and tribal, at sea and shoreside) by species or species group (mt), 1998-2009.**

Species or group	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Lingcod	347.36	355.34	144.80	155.22	204.57	164.54	177.85	204.87	262.20	272.32	288.79	234.01
P. Cod	412.10	279.32	278.42	323.09	751.33	1,249.82	1,402.65	850.75	369.13	88.51	38.24	241.83
P. Whiting	232,404.88	224,385.75	206,568.45	173,742.92	130,458.95	141,948.21	213,477.64	260,122.47	266,954.24	217,685.13	248,443.16	121,576.10
Sablefish	4,420.67	6,649.66	6,339.84	5,657.89	3,825.00	5,452.83	5,783.55	6,223.12	6,199.56	5,243.33	5,873.14	7,180.92
Pacific Ocean Perch	147.67	90.08	29.77	20.52	7.02	2.81	20.69	2.60	2.64	1.00	0.40	2.64
Shortbelly Rockfish	19.87	8.02	20.27	32.52	0.69	0.74	0.09	2.69	11.59	0.02	0.06	0.05
Widow Rockfish	4,198.78	4,105.40	4,056.86	1,967.56	428.02	41.39	75.62	189.85	207.73	237.76	233.50	173.68
Canary Rockfish	1,184.10	667.76	60.55	44.88	53.19	10.16	15.61	13.08	15.23	14.18	13.03	14.15
Chilipepper Rockfish	1,415.63	953.64	460.86	475.78	172.05	19.03	67.51	64.24	48.57	55.53	103.95	241.83
Bocaccio	236.18	111.64	31.84	35.85	26.21	8.59	16.02	9.90	5.51	7.95	8.66	6.97
Splitnose Rockfish	1,524.66	270.80	145.49	135.48	76.17	168.38	190.64	112.19	125.97	91.99	85.81	57.84
Yellowtail Rockfish	3,340.58	3,436.00	3,572.20	1,955.87	1,219.79	451.13	615.60	868.07	473.22	360.91	453.63	717.27
Sh spine Thornyhead	1,237.75	822.22	845.43	548.34	779.11	829.60	762.80	661.43	703.15	1,008.97	1,423.70	1,531.78
Longspine Thornyhead	2,238.16	1,783.57	1,479.86	1,178.01	1,890.78	1,546.27	697.25	646.16	750.40	809.26	1,256.28	1,166.17
Other Thornyheads	48.90	38.87	70.03	47.59	56.31	39.67	25.85	9.88	4.32	4.24	1.97	2.14
Cowcod	18.57	11.75	1.22	0.77	0.09	0.03	0.02	0.04		0.39		0.06
Darkblotched Rockfish	947.19	360.20	260.66	172.40	112.31	83.89	189.71	97.22	106.25	143.08	116.02	137.58
Yelloweye Rockfish	65.75	91.87	11.22	10.53	3.48	1.42	1.64	1.53	1.33	2.33	1.55	0.87
Black Rockfish	291.34	177.11	153.67	245.66	220.36	173.73	185.21	172.93	156.32	185.13	180.96	224.01
Nearshore Rockfish	349.97	274.28	189.33	197.85	155.28	88.90	103.89	111.00	110.66	113.99	130.59	103.43
Shelf Rockfish	849.41	297.79	91.10	113.85	84.69	37.75	43.84	52.13	50.01	41.26	34.39	32.37
Slope Rockfish	1,287.59	423.29	583.09	457.12	610.65	515.31	558.66	380.81	346.44	348.05	436.42	458.61
Other Rockfish	749.43	461.89	66.56	21.81	2.80	2.21	4.23	3.62	4.37	13.66	1.09	1.07
Pacific Ocean Perch	496.33	408.61	112.93	243.16	143.56	130.51	100.07	59.68	68.92	130.39	90.33	92.62
Ca Scorpionfish	50.35	38.08	17.75	19.02	12.84	5.06	4.41	4.89	2.39	3.32	3.43	3.34
Cabazon	201.91	149.74	145.87	118.01	95.48	65.97	76.65	59.18	49.38	46.61	47.43	47.30
Dover Sole	8,022.16	9,140.41	8,781.02	6,891.69	6,301.06	7,355.82	6,745.46	6,901.96	5,967.30	9,278.76	11,217.81	11,750.38
English Sole	1,138.57	911.34	769.11	992.72	1,175.20	930.27	952.23	928.24	925.71	689.19	362.43	357.06
Petrale Sole	1,460.83	1,496.36	1,892.50	1,844.46	1,796.26	2,068.80	1,961.57	2,733.35	2,609.73	2,252.27	2,219.24	1,765.53
Arrowtooth Flounder	3,169.03	5,290.12	3,286.25	2,467.60	2,089.79	2,330.57	2,329.91	2,242.87	1,920.81	2,264.19	2,673.26	3,846.32
Starry Flounder	52.98	22.14	25.24	7.20	18.58	41.12	79.85	53.46	66.70	21.04	13.03	20.31
Other Flatfish	1,643.66	1,988.92	1,600.99	1,724.92	1,715.44	1,538.54	1,313.02	1,183.37	1,145.80	949.27	796.67	949.18
Kelp Greenling	16.18	37.49	40.80	38.06	60.64	24.78	24.72	22.01	15.47	19.21	22.52	21.10
Spiny Dogfish	780.87	983.15	767.28	797.05	1,175.00	719.36	1,033.49	823.39	486.17	579.98	1,308.92	426.40
California Halibut	545.71	604.09	390.70	414.00	433.47	380.60	457.09	421.04	326.21	178.40	217.09	284.00
Longnose Skate	0.01	0.11					0.46	0.64	0.11	0.77	0.11	804.82
Other Groundfish	2,005.69	2,100.51	2,021.46	1,691.17	1,080.24	1,616.88	910.70	1,120.21	1,260.66	1,192.59	1,521.80	682.55

**Table 4. Groundfish ex-vessel revenue (commercial and tribal, at sea and shoreside) by species or species group in current (2009) dollars, \$1,000s, 1998-2009.**

Species or Group	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Lingcod	\$730	\$791	\$427	\$467	\$617	\$479	\$490	\$501	\$608	\$682	\$743	\$601
P. Cod	\$510	\$333	\$357	\$432	\$998	\$1,656	\$1,608	\$947	\$429	\$111	\$55	\$253
P. Whiting	\$17,288	\$23,101	\$25,934	\$16,827	\$17,452	\$20,613	\$24,279	\$31,057	\$34,285	\$33,043	\$57,881	\$14,165
Sablefish	\$14,535	\$21,503	\$25,051	\$21,173	\$13,927	\$21,283	\$18,954	\$22,000	\$24,065	\$21,327	\$27,316	\$34,252
Pacific Ocean Perch	\$159	\$100	\$34	\$24	\$8	\$3	\$23	\$3	\$3	\$1	\$0	\$3
Shortbelly Rockfish	\$12	\$2	\$9	\$28	\$0	\$1	\$0	\$3	\$0	\$0	\$0	\$0
Widow Rockfish	\$4,150	\$4,281	\$4,713	\$2,197	\$417	\$46	\$75	\$135	\$124	\$161	\$154	\$140
Canary Rockfish	\$1,784	\$1,016	\$113	\$84	\$65	\$13	\$17	\$15	\$18	\$22	\$12	\$14
Chilipepper Rockfish	\$1,675	\$1,207	\$738	\$695	\$232	\$22	\$82	\$76	\$66	\$99	\$191	\$330
Bocaccio	\$318	\$165	\$57	\$62	\$42	\$11	\$32	\$22	\$18	\$22	\$21	\$17
Splitnose Rockfish	\$1,080	\$205	\$142	\$116	\$71	\$129	\$164	\$93	\$89	\$83	\$75	\$50
Yellowtail Rockfish	\$3,139	\$2,866	\$3,869	\$2,263	\$1,457	\$538	\$692	\$907	\$461	\$296	\$424	\$751
Shortspine Thornyhead	\$2,919	\$2,549	\$2,548	\$1,643	\$2,629	\$2,617	\$2,168	\$2,103	\$2,327	\$2,643	\$3,542	\$3,323
Longspine Thornyhead	\$4,034	\$3,759	\$3,758	\$2,985	\$4,265	\$2,568	\$845	\$780	\$1,060	\$972	\$1,290	\$887
Other Thornyheads	\$211	\$99	\$244	\$257	\$157	\$63	\$180	\$26	\$22	\$25	\$16	\$7
Cowcod	\$33	\$23	\$4	\$1	\$0	\$0	\$0	\$0	\$0	\$1	\$0	\$1
Darkblotched Rockfish	\$1,006	\$354	\$299	\$196	\$127	\$93	\$218	\$102	\$111	\$157	\$135	\$159
Yelloweye Rockfish	\$175	\$292	\$45	\$52	\$7	\$3	\$4	\$4	\$3	\$8	\$4	\$2
Black Rockfish	\$406	\$316	\$378	\$581	\$647	\$558	\$604	\$590	\$622	\$768	\$755	\$910
Nearshore Rockfish	\$2,169	\$2,247	\$2,305	\$2,387	\$1,930	\$1,170	\$1,396	\$1,457	\$1,506	\$1,652	\$1,764	\$1,461
Shelf Rockfish	\$1,413	\$588	\$292	\$256	\$176	\$89	\$165	\$167	\$181	\$183	\$159	\$137
Slope Rockfish	\$1,688	\$484	\$815	\$678	\$947	\$903	\$856	\$518	\$525	\$475	\$689	\$699
Other Rockfish	\$1,030	\$740	\$97	\$62	\$15	\$7	\$13	\$8	\$15	\$43	\$6	\$5
Pacific Ocean Perch	\$520	\$420	\$128	\$262	\$166	\$144	\$115	\$67	\$74	\$122	\$93	\$81
California Scorpionfish	\$244	\$257	\$127	\$148	\$91	\$37	\$36	\$36	\$19	\$26	\$26	\$30
Cabazon	\$1,700	\$1,407	\$1,616	\$1,207	\$965	\$711	\$797	\$611	\$538	\$505	\$504	\$455
Dover Sole	\$7,704	\$8,351	\$8,439	\$6,629	\$5,992	\$6,888	\$6,048	\$6,035	\$5,125	\$7,853	\$9,274	\$8,635
English Sole	\$1,125	\$851	\$743	\$959	\$1,076	\$830	\$815	\$727	\$693	\$503	\$267	\$246
Petrale Sole	\$3,898	\$3,955	\$5,210	\$4,920	\$4,300	\$5,231	\$4,908	\$5,981	\$6,100	\$5,095	\$4,993	\$3,547
Arrowtooth Flounder	\$915	\$1,447	\$1,037	\$784	\$592	\$647	\$628	\$564	\$481	\$513	\$590	\$831
Starry Flounder	\$57	\$23	\$27	\$8	\$22	\$51	\$96	\$75	\$72	\$24	\$15	\$24
Other Flatfish	\$1,647	\$1,954	\$1,778	\$2,019	\$1,996	\$1,768	\$1,385	\$1,208	\$1,073	\$829	\$691	\$804
Kelp Greenling	\$139	\$385	\$467	\$406	\$535	\$266	\$266	\$251	\$180	\$206	\$259	\$224
Spiny Dogfish	\$191	\$280	\$314	\$266	\$412	\$222	\$220	\$242	\$212	\$209	\$329	\$129
California Halibut	\$3,595	\$4,146	\$3,014	\$3,256	\$3,366	\$2,909	\$3,500	\$3,115	\$2,868	\$1,898	\$2,325	\$2,562
Longnose Skate	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$333
Other Groundfish	\$1,047	\$866	\$977	\$878	\$469	\$764	\$381	\$464	\$496	\$633	\$889	\$285

**Table 5. Groundfish landings (commercial and tribal, at sea and shoreside) by gear type (mt), 1998-2009.**

Year	Dredge	Hook and Line	Net	Pot/Trap	Troll	Trawl	Shrimp Trawl	Miscellaneous	Total
1998		4,642.66	385.30	544.42	276.77	270,541.92	382.09	1.95	276,775.11
1999		4,621.75	137.98	820.10	91.76	262,600.33	422.63	0.25	268,694.80
2000		4,101.06	92.09	936.90	33.32	239,464.55	311.02	0.98	244,939.92
2001		3,676.72	85.26	732.46	35.11	200,238.32	240.39	0.44	205,008.70
2002	0.63	3,182.33	72.18	519.16	23.08	157,480.04	88.37	2.93	161,368.09
2003		3,494.79	79.15	840.91	23.46	166,411.75	31.11	0.62	170,881.79
2004	-	3,691.94	64.55	849.56	38.47	235,498.86	26.78	1.64	240,171.80
2005		3,920.69	55.69	1,022.25	41.27	282,506.12	15.58	2.39	287,563.99
2006		3,651.48	62.49	1,077.83	38.77	286,579.64	19.07	0.07	291,429.35
2007		3,144.88	46.36	712.94	22.45	240,206.16	24.27	0.64	244,157.70
2008		3,575.11	33.47	702.88	14.64	275,061.79	14.34	0.11	279,402.34
2009		4,355.39	12.40	890.16	13.14	149,598.73	16.22	0.37	154,886.41
<i>Average, 2005-2009</i>	-	3,729.51	42.08	881.21	26.05	246,790.49	17.90	0.72	251,487.96

**Table 6. Groundfish ex-vessel revenue (commercial and tribal, at sea and shoreside) by gear type in current (2009) dollars, \$1,000s, 1998-2009.**

Year	Dredge	Hook and Line	Net	Pot/Trap	Troll	Trawl	Shrimp Trawl	Miscellaneous	Total
1998	\$-	\$14,633	\$548	\$2,277	\$389	\$61,260	\$542	\$2	\$79,652
1999	\$-	\$17,615	\$223	\$3,426	\$153	\$65,238	\$583	\$2	\$87,240
2000	\$-	\$18,418	\$146	\$4,894	\$81	\$68,963	\$581	\$9	\$93,093
2001	\$-	\$16,200	\$152	\$3,453	\$73	\$51,965	\$357	\$6	\$72,207
2002	\$2	\$13,162	\$126	\$2,535	\$54	\$47,819	\$168	\$30	\$63,895
2003	\$-	\$15,194	\$130	\$4,083	\$51	\$51,617	\$79	\$10	\$71,164
2004	\$0	\$15,008	\$139	\$3,311	\$73	\$50,033	\$67	\$3	\$68,635
2005	\$-	\$16,531	\$91	\$4,096	\$83	\$56,972	\$65	\$7	\$77,844
2006	\$-	\$16,729	\$122	\$4,724	\$75	\$59,893	\$56	\$1	\$81,600
2007	\$-	\$15,293	\$102	\$3,197	\$67	\$60,578	\$48	\$9	\$79,294
2008	\$-	\$18,090	\$57	\$3,778	\$34	\$91,173	\$24	\$3	\$113,159
2009	\$-	\$22,794	\$14	\$4,718	\$18	\$46,224	\$23	\$3	\$73,793
<i>Average, 2005-2009</i>	\$-	\$17,887	\$77	\$4,103	\$55	\$62,968	\$43	\$4	\$85,138

## Landing and Revenue by Nonwhiting Fishery Sectors

**Table 7. Nonwhiting limited entry trawl landings by groundfish species or species group (mt), 2005-2009.**

Species / Group	2005	2006	2007	2008	2009	Average
Lingcod	75.42	118.00	119.91	107.52	108.12	105.79
P. Cod	723.39	330.31	43.08	11.46	91.02	239.85
P. Whiting	18.77	2.57	3.28	0.50	0.34	5.09
Sablefish	2,317.59	2,468.73	2,429.99	2,873.16	3,009.75	2,619.84
Rockfish	507.78	524.78	577.98	602.10	749.43	592.41
Thornyheads	1,135.75	1,261.87	1,604.97	2,438.80	2,458.16	1,779.91
Arrowtooth Flounder	2,075.08	1,714.20	2,025.04	2,634.39	3,822.88	2,454.32
Dover Sole	6,753.57	5,743.74	8,955.96	10,976.68	11,611.69	8,808.33
English Sole	859.26	867.74	621.51	326.03	264.60	587.83
Petrale Sole	2,701.47	2,581.68	2,206.95	2,174.46	1,694.67	2,271.85
Other Flatfish	1,106.27	1,098.50	883.64	740.37	887.88	943.33
Cabezon	0.09	0.03	0.02	0.02	0.02	0.04
Spiny Dogfish	126.32	85.03	56.88	68.78	87.32	84.87
Other Groundfish	98.40	92.86	92.03	66.79	893.96	248.81
Other Non-FMP Groundfish	901.32	1,023.27	941.89	1,286.15	468.24	924.17

**Table 8. Nonwhiting limited entry trawl ex-vessel revenue by groundfish species or species group in current (2009) dollars, \$1,000s, 2005-2009.**

Species / Group	2005	2006	2007	2008	2009	Average
Lingcod	\$116	\$179	\$206	\$169	\$175	\$169
P. Cod	\$809	\$381	\$54	\$15	\$94	\$270
P. Whiting	\$2	\$0	\$0	\$1	\$0	\$1
Sablefish	\$6,134	\$7,553	\$8,097	\$11,448	\$12,433	\$9,133
Rockfish	\$550	\$568	\$716	\$819	\$929	\$716
Thornyheads	\$1,666	\$2,052	\$2,187	\$3,149	\$2,588	\$2,328
Arrowtooth Flounder	\$522	\$437	\$460	\$583	\$826	\$566
Dover Sole	\$5,909	\$4,933	\$7,580	\$9,069	\$8,524	\$7,203
English Sole	\$668	\$646	\$448	\$238	\$177	\$435
Petrale Sole	\$5,903	\$6,031	\$4,984	\$4,883	\$3,375	\$5,035
Other Flatfish	\$1,074	\$968	\$740	\$619	\$733	\$827
Cabezon	\$0	\$0	\$0	\$0	\$0	\$0
Spiny Dogfish	\$61	\$35	\$27	\$58	\$73	\$51
Other Groundfish	\$34	\$26	\$27	\$22	\$357	\$93
Other Non-FMP Groundfish	\$326	\$362	\$498	\$767	\$192	\$429

**Table 9. Limited entry fixed gear landings by groundfish species or species group (mt), 2005-2009.**

Species / Group	2005	2006	2007	2008	2009	Average
Lingcod	14.46	17.39	14.7	20.77	15.82	16.63
P. Cod	1.92	0.27	0.05	0.05	1.15	0.69
P. Whiting	0.5	0.23	0.57	0.17	0.37	0.37
Sablefish	2,222.27	2,210.21	1,780.95	1,844.8	2,412.69	2,094.18
Rockfish	115.22	136.68	112.97	131.28	171.57	133.54
Thornyheads	161.29	172.29	173.93	199.41	199.3	181.24
Arrowtooth Flounder	3.24	2.54	2.81	3.44	4.37	3.28
Dover Sole	2.21	1.22	0.95	1.55	2.6	1.71
English Sole		0				-
Petrale Sole	0.28	0.17	0.14	0.3	0.08	0.19
Other Flatfish	0.37	0.01	0.18	1.27	0.49	0.46
Cabazon	1.87	1.84	3.93	8.98	7.11	4.75
Spiny Dogfish	229.82	131.04	195.95	180.87	23.79	152.29
Other Groundfish	28.91	22	29.93	39.42	25.76	29.20
Other Non-FMP Groundfish	14.73	15.39	17.3	28.36	26.14	20.38

**Table 10. Limited entry fixed gear ex-vessel revenue by groundfish species or species group in current (2009) dollars, \$1,000s, 2005-2009.**

Species / Group	2005	2006	2007	2008	2009	Average
Lingcod	\$32	\$42	\$42	\$61	\$46	\$44
P. Cod	\$2	\$0	\$0	\$0	\$1	\$1
P. Whiting	\$3	\$1	\$2	\$2	\$0	\$2
Sablefish	\$9,800	\$10,519	\$8,732	\$10,159	\$13,454	\$10,533
Rockfish	\$268	\$329	\$324	\$404	\$405	\$346
Thornyheads	\$1,201	\$1,308	\$1,373	\$1,622	\$1,525	\$1,406
Arrowtooth Flounder	\$1	\$1	\$1	\$1	\$1	\$1
Dover Sole	\$2	\$1	\$1	\$2	\$3	\$2
English Sole	\$-	\$0	\$-	\$-	\$-	\$0
Petrale Sole	\$1	\$0	\$0	\$1	\$0	\$0
Other Flatfish	\$1	\$0	\$0	\$5	\$3	\$2
Cabazon	\$16	\$15	\$29	\$60	\$48	\$34
Spiny Dogfish	\$125	\$71	\$109	\$90	\$9	\$81
Other Groundfish	\$31	\$24	\$34	\$40	\$36	\$33
Other Non-FMP Groundfish	\$6	\$5	\$7	\$13	\$12	\$9



**Table 11. Open access fixed gear gear landings by groundfish species or species group (mt), 2005-2009.**

Species / Group	2005	2006	2007	2008	2009	Average
Lingcod	66.27	65.29	69.28	75.07	56.99	66.58
P. Cod	0.50	0.11	-	0.02	0.04	0.13
P. Whiting			-	-	-	-
Sablefish	902.59	796.36	460.89	602.06	1,043.86	761.15
Rockfish	318.25	303.76	325.74	331.00	371.94	330.14
Thornyheads	1.18	1.83	1.34	1.07	6.73	2.43
Arrowtooth Flounder	0.35	0.48	0.38	2.09	1.15	0.89
Dover Sole	0.26	0.38	1.17	0.51	0.65	0.59
English Sole				0.01		0.01
Petrale Sole	-	0.11	0.02	0.03	0.01	0.03
Other Flatfish	1.45	2.16	2.43	2.01	1.72	1.95
Cabazon	56.39	45.89	41.39	37.29	39.31	44.05
Spiny Dogfish	3.34	60.04	1.77	11.12	5.07	16.27
Other Groundfish	61.22	31.01	30.96	43.27	28.50	38.99
Other Non-FMP Groundfish	5.43	5.11	3.61	10.18	3.46	5.56

**Table 12. Open access fixed gear ex-vessel revenue by groundfish species or species group in current (2009) dollars, \$1,000s, 2005-2009.**

Species / Group	2005	2006	2007	2008	2009	Average
Lingcod	\$264	\$275	\$299	\$354	\$278	\$294
P. Cod	\$1	\$0	\$0	\$0	\$0	\$0
P. Whiting	\$-	\$-	\$0	\$0	\$0	\$0
Sablefish	\$3,160	\$3,007	\$1,787	\$2,771	\$4,640	\$3,073
Rockfish	\$2,143	\$2,244	\$2,484	\$2,535	\$2,471	\$2,375
Thornyheads	\$9	\$15	\$10	\$11	\$53	\$20
Arrowtooth Flounder	\$0	\$0	\$0	\$1	\$0	\$0
Dover Sole	\$1	\$1	\$5	\$1	\$1	\$2
English Sole	\$-	\$-	\$-	\$0	\$-	\$0
Petrale Sole	\$0	\$0	\$0	\$0	\$0	\$0
Other Flatfish	\$6	\$16	\$18	\$14	\$10	\$13
Cabazon	\$584	\$503	\$460	\$427	\$394	\$473
Spiny Dogfish	\$2	\$33	\$2	\$5	\$2	\$9
Other Groundfish	\$264	\$183	\$201	\$252	\$208	\$222
Other Non-FMP Groundfish	\$2	\$2	\$2	\$6	\$2	\$3

**Table 13. Incidentally caught groundfish landings by groundfish species or species group, including by exempted trawl gear (mt), 2005-2009.**

Species / Group	2005	2006	2007	2008	2009	Average
Lingcod	9.73	7.82	9.89	5.02	2.99	7.09
P. Cod	0.07	2.02	0.02	0.03	1.96	0.82
P. Whiting	52.94	0.31	2.86	27.26	0	16.67
Sablefish	43.53	42.26	43.15	24.02	25.72	35.74
Rockfish	35.71	30.78	23.39	8.53	7.64	21.21
Thornyheads	1.06	0.08	0.85	0.08	4.54	1.32
Arrowtooth Flounder	1.72	1.69	5.24	0.42	1.22	2.06
Dover Sole	0.63	0.62	17.16	0.12	4.75	4.66
English Sole	3.03	16.05	1.11	0.82	0.93	4.39
Petrale Sole	1.98	1.45	0.21	0.48	1.37	1.10
Other Flatfish	68.6	49.63	33.46	20.19	32.94	40.96
Cabazon	0.83	1.62	1.27	1.14	0.86	1.14
Spiny Dogfish	7.46	38.5	0.21	14.96	1.29	12.48
Other Groundfish	34.25	33.64	25.31	9.37	7.07	21.93
Other Non-FMP Groundfish	10.68	11.24	13.07	9.24	10.02	10.85

**Table 14. Incidentally caught groundfish ex-vessel revenue by groundfish species or species group, current (2009) dollars, \$1,000s, 2005-2009.**

Species / Group	2005	2006	2007	2008	2009	Average
Lingcod	\$34	\$28	\$42	\$23	\$13	\$28
P. Cod	\$0	\$2	\$0	\$0	\$2	\$1
P. Whiting	\$6	\$0	\$1	\$5	\$-	\$3
Sablefish	\$182	\$196	\$191	\$126	\$142	\$168
Rockfish	\$128	\$110	\$107	\$60	\$47	\$90
Thornyheads	\$6	\$0	\$2	\$0	\$8	\$3
Arrowtooth Flounder	\$1	\$1	\$1	\$0	\$0	\$1
Dover Sole	\$1	\$1	\$16	\$0	\$4	\$4
English Sole	\$8	\$15	\$5	\$2	\$1	\$6
Petrale Sole	\$6	\$4	\$1	\$1	\$4	\$3
Other Flatfish	\$150	\$115	\$55	\$32	\$50	\$80
Cabazon	\$12	\$21	\$16	\$17	\$12	\$15
Spiny Dogfish	\$4	\$29	\$0	\$12	\$0	\$9
Other Groundfish	\$49	\$54	\$41	\$16	\$11	\$34
Other Non-FMP Groundfish	\$8	\$7	\$9	\$8	\$6	\$8

**Table 15. Treaty nonwhiting groundfish sector landings (mt), 2005-2009.**

Species / Group	2005	2006	2007	2008	2009	Average
Lingcod	29.79	44.22	46.34	67.66	44.86	46.57
P. Cod	123.7	35.51	45.35	26.44	147.07	75.61
Sablefish	699.67	668.56	516.3	526.25	639.55	610.07
Rockfish	594.44	190.26	64.51	228.28	529.52	321.40
Thornyheads	10.88	21.24	38.35	36.06	30.69	27.44
Arrowtooth Flounder	158.03	194.44	223.35	19.96	8.32	120.82
Dover Sole	144.91	221.29	303.36	238.19	130.53	207.66
English Sole	65.89	41.92	66.52	35.57	91.36	60.25
Petrale Sole	29.61	26.27	44.93	43.97	69.4	42.84
Other Flatfish	48.03	59.69	48.91	43.08	45.36	49.01
Spiny Dogfish	2.79		25.42	89.06	25.73	35.75
Other Non-FMP Groundfish	34.28	39.04	57.1	52.74	44.92	45.62

**Table 16. Treaty nonwhiting groundfish sector ex-vessel revenue by groundfish species or species group, current (2009) dollars, \$1,000s, 2005-2009.**

Species / Group	2005	2006	2007	2008	2009	Average
Lingcod	\$48	\$76	\$84	\$125	\$85	\$84
P. Cod	\$134	\$44	\$56	\$40	\$157	\$86
Sablefish	\$2,657	\$2,764	\$2,497	\$2,805	\$3,576	\$2,860
Rockfish	\$678	\$213	\$73	\$277	\$632	\$375
Thornyheads	\$17	\$33	\$66	\$58	\$43	\$44
Arrowtooth Flounder	\$39	\$41	\$50	\$4	\$1	\$27
Dover Sole	\$122	\$188	\$251	\$201	\$103	\$173
English Sole	\$51	\$32	\$50	\$27	\$68	\$46
Petrale Sole	\$72	\$65	\$109	\$107	\$168	\$104
Other Flatfish	\$41	\$45	\$38	\$34	\$31	\$38
Spiny Dogfish	\$1	\$-	\$12	\$37	\$10	\$12
Other Non-FMP Groundfish	\$11	\$13	\$21	\$26	\$19	\$18

**Table 17. Groundfish landings (mt) by nonwhiting sector, 2005-2009.**

Sector	2005	2006	2007	2008	2009
Shoreside nonwhiting trawl sector	19,400.48	17,913.31	20,563.13	24,307.21	26,148.08
Limited entry fixed sector	2,797.09	2,711.28	2,334.36	2,460.67	2,891.24
Open access fixed gear sector	1,417.23	1,312.53	938.98	1,115.73	1,559.43
Incidentally caught groundfish, including with exempted trawl	272.22	237.71	177.20	121.68	103.30
Treaty Shoreside nonwhiting groundfish sector	1,942.02	1,542.44	1,480.44	1,407.26	1,807.31

**Table 18. Ex-vessel revenue from groundfish by nonwhiting sector in current (2009) dollars, \$1,000s, 2005-2009**

Sector	2005	2006	2007	2008	2009	Average
Shoreside nonwhiting trawl sector	\$23,773	\$24,170	\$26,025	\$31,839	\$30,475	\$27,256
Limited entry fixed sector	\$11,488	\$12,317	\$10,654	\$12,460	\$15,544	\$12,492
Open access fixed gear sector	\$6,435	\$6,279	\$5,267	\$6,376	\$8,060	\$6,483
Incidentally caught groundfish, including with exempted trawl	\$595	\$583	\$489	\$304	\$301	\$455
Treaty Shoreside nonwhiting groundfish sector	\$3,873	\$3,516	\$3,307	\$3,740	\$4,893	\$3,866

## Landings and Revenue by Whiting Sectors

**Table 19. Landings of Pacific whiting (mt) by whiting sectors, 1998-2009.**

Year	Catcher-Processor Sector	Mothership Sector	Shoreside Whiting Sector	Treaty Mothership Sector	Treaty Shoreside Whiting Sector
1998	70,372.98	49,666.87	87,708.70	24,507.90	
1999	67,672.40	47,405.34	83,444.82	25,836.82	
2000	67,803.75	46,657.51	85,818.78	6,252.38	
2001	58,628.13	35,622.42	73,386.75	6,080.01	
2002	36,341.82	26,593.56	45,503.91	21,815.53	
2003	41,214.79	26,021.76	51,182.71	19,376.23	4,078.88
2004	69,411.65	24,102.20	89,641.00	23,459.44	6,848.30
2005	78,890.25	48,596.74	97,558.87	23,582.09	11,422.31
2006	78,864.74	55,355.20	97,266.92	5,568.00	29,896.27
2007	73,265.69	47,810.53	73,277.15	5,167.00	18,158.05
2008	108,240.47	57,497.87	50,760.35	14,944.48	16,972.06
2009	34,800.68	24,091.44	40,293.88	13,460.53	8,928.86

**Table 20. Ex-vessel revenue, current (2009) dollars, \$1,000s, from Pacific whiting by whiting sectors, 1998-2009.**

Year	Catcher-Processor Sector	Mothership Sector	Shoreside Whiting Sector	Treaty Mothership Sector	Treaty Shoreside Whiting Sector
1998	\$5,082	\$4,242	\$6,072	\$1,868	-
1999	\$6,773	\$4,426	\$8,613	\$3,283	-
2000	\$8,036	\$7,413	\$9,791	\$688	-
2001	\$6,080	\$3,176	\$6,920	\$647	-
2002	\$5,749	\$3,739	\$5,367	\$2,569	-
2003	\$6,264	\$5,731	\$5,887	\$2,228	\$490
2004	\$10,914	\$2,972	\$7,894	\$1,990	\$506
2005	\$9,343	\$5,641	\$11,805	\$2,924	\$1,331
2006	\$9,985	\$6,793	\$13,227	\$735	\$3,544
2007	\$10,856	\$6,984	\$11,630	\$822	\$2,749
2008	\$24,056	\$15,174	\$11,659	\$3,383	\$3,600
2009	\$3,947	\$2,673	\$5,306	\$1,230	\$1,007

**Table 21. Landings of nonwhiting species (mt) by whiting sectors, 2008-2009.**

Species/ Group	Whiting catcher processors sector		Whiting mothership sector		Shoreside whiting sector		Treaty mothership whiting sector		Treaty shoreside whiting sector	
	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
Lingcod	0.58	0.01	2.96	0.6	3.27	0.78	2.02	1.88	3.92	1.96
P. Cod	0		0.05		0.18	0	0.01	0.51	0	0.08
Sablefish	1.3	0.17	0.35	0.01	0.17	49.14	0.76	0.02	0.27	0.01
Rockfish	217.12	19.88	133.02	189.42	150.73	210.59	41.71	10.01	50.05	8.39
Thornyheads	5.69	0.43	0.17		0.13	0.12	0	0.12	0.54	0
Flatfish	4.1	0.38	1.28	1.41	1.55	3.83	2.01	1.5	5.26	2.24
Other Groundfish	489.4	28.28	24.22	6.88	59.12	20.82	158.57	128.24	213.75	99.67
Other Non-FMP Groundfish			0		0.25	0.13			0.05	14.15

**Table 22. Ex-vessel revenue from nonwhiting species by whiting sectors, \$1,000s, 2008-2009.**

Species / Group	Whiting catcher processors sector		Whiting mothership sector		Shoreside whiting sector		Treaty mothership whiting sector		Treaty shoreside whiting sector	
	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
Lingcod	\$1	\$0	\$2	\$1	\$2	\$1	-	\$0	\$6	\$3
P. Cod	\$0	-	\$0	-	\$0	\$0	-	-	\$0	\$0
Sablefish	\$5	\$1	\$1	\$0	\$0	\$7	\$0	\$0	\$1	\$0
Rockfish	\$153	\$11	\$61	\$134	\$102	\$143	\$48	\$11	\$46	\$7
Thornyheads	\$7	\$0	\$0	-	\$0	\$0	\$0	\$0	\$1	\$0
Flatfish	\$1	\$0	\$0	\$0	\$0	\$1	-	-	\$1	\$1
Other Groundfish	\$37	\$0	\$2	\$1	\$3	\$1	-	-	\$85	\$33
Other Non-FMP Groundfish	-	-	-	-	\$0	\$0	-	-	\$0	\$2

## Landings and Revenue by Month

**Table 23. Average landings (mt) per 2-month period by nonwhiting sectors, 2005-2009.**

Sector	Jan-Feb.	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	Nov-Dec
Shoreside Nonwhiting Trawl	3,637.56	3,672.64	3,918.69	3,988.75	3,788.83	2,659.96
Limited Entry Fixed Gear	101.90	261.88	678.20	759.48	718.41	119.06
Open Access Fixed Gear	101.82	142.69	266.89	280.65	289.08	187.65
Incidentally Caught	25.58	23.40	37.23	48.43	37.08	10.70
Treaty Shoreside Nonwhiting Groundfish	68.71	427.75	362.38	304.72	299.57	172.77

**Table 24. Average ex-vessel revenue per 2-month period by nonwhiting sectors, \$1,000s, 2005-2009.**

Sector	Jan-Feb	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	Nov-Dec
Shoreside Nonwhiting Trawl	\$4,507	\$3,962	\$4,621	\$5,006	\$4,771	\$3,587
Limited Entry Fixed Gear	\$401	\$1,018	\$3,084	\$3,634	\$3,394	\$582
Open Access Fixed Gear	\$531	\$553	\$1,423	\$1,480	\$1,449	\$846
Incidentally Caught	\$55	\$40	\$111	\$149	\$52	\$29
Treaty Shoreside Nonwhiting Groundfish	\$69	\$1,289	\$732	\$532	\$743	\$380

**Table 25. Average landings monthly landings (mt) by whiting sectors, 2005-2009.**

Sector	April	May	June	July	August	September	October	November	December
Whiting catcher processors	0.00	18,987.99	15,392.85	4,662.40	4,918.70	7,845.93	10,607.70	8,545.44	4,107.07
Whiting motherships	0.00	24,322.48	12,601.96	1,639.67	2,986.31	969.75	2,468.55	1,844.66	0.00
Shoreside whiting	927.73	2,735.87	21,008.15	31,134.92	12,215.49	0.00	3,358.61	602.78	198.32
Treaty mothership	0.00	0.00	2,559.13	2,685.69	752.60	1,276.05	3,025.17	1,869.00	630.04
Treaty shoreside whiting	0.00	531.87	1,226.55	1,255.41	2,674.95	4,670.91	4,232.49	1,865.96	756.34

**Table 26. Average monthly ex-vessel revenue by whiting sectors, \$1,000s, 2005-2009.**

Sector	April	May	June	July	August	September	October	November	December
Whiting catcher processors	-	\$2,556	\$2,627	\$577	\$837	\$919	\$1,855	\$1,386	\$626
Whiting motherships	-	\$3,222	\$2,148	\$518	\$579	\$112	\$463	\$272	-
Shoreside whiting	\$109	\$428	\$2,862	\$4,157	\$2,069	-	\$763	\$119	\$35
Treaty mothership	-	-	\$284	\$331	\$89	\$300	\$510	\$261	\$22
Treaty shoreside whiting	-	\$61	\$125	\$158	\$367	\$710	\$648	\$266	\$105

**Table 27. Average groundfish landings (mt) per 2-month period by species or species group, all sectors, including tribal, 2005-2009.**

	Jan-Feb	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	Nov-Dec
Lingcod	14.45	18.10	71.04	73.38	54.89	20.57
P. Cod	22.83	39.79	135.10	87.46	20.32	12.20
P. Whiting	0.09	923.36	98,818.93	64,653.76	38,376.57	20,183.51
Sablefish	367.32	889.46	1,293.33	1,473.53	1,453.19	667.18
Rockfish	170.23	211.78	612.73	436.84	329.84	197.93
Thornyheads	273.60	310.88	383.70	349.61	411.67	266.51
Arrowtooth Flounder	363.94	478.19	570.60	544.47	391.93	240.36
Dover Sole	1,383.32	1,887.43	1,457.09	1,426.15	1,641.30	1,227.95
English Sole	97.37	63.63	137.10	186.05	126.45	41.93
Petrale Sole	876.71	233.86	322.19	356.28	235.03	291.96
Other Flatfish	119.49	121.87	230.20	292.45	193.99	78.92
Cabazon	6.94	4.00	13.85	10.35	11.85	2.98
Spiny Dogfish	47.65	84.78	174.75	87.03	108.23	222.53
Other Groundfish	21.84	68.08	74.40	81.98	66.46	28.07
Other Non-FMP Groundfish	169.80	120.86	335.23	248.81	166.42	87.16

**Table 28. Average groundfish ex-vessel revenue, \$1,000s, per 2-month period by species or species group, all sectors, including tribal, 2005-2009.**

	Jan-Feb	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	Nov-Dec
Lingcod	\$22	\$31	\$184	\$179	\$148	\$44
P. Cod	\$25	\$44	\$142	\$92	\$23	\$13
P. Whiting	\$0	\$105	\$14,080	\$9,521	\$6,242	\$3,045
Sablefish	\$1,255	\$3,431	\$5,399	\$6,236	\$6,196	\$2,533
Rockfish	\$418	\$365	\$1,061	\$1,011	\$850	\$452
Thornyheads	\$540	\$552	\$678	\$647	\$730	\$551
Arrowtooth Flounder	\$82	\$107	\$126	\$124	\$87	\$53
Dover Sole	\$1,103	\$1,485	\$1,169	\$1,161	\$1,319	\$946
English Sole	\$70	\$48	\$97	\$131	\$89	\$31
Petrale Sole	\$1,708	\$497	\$746	\$819	\$543	\$641
Other Flatfish	\$110	\$108	\$209	\$261	\$167	\$68
Cabazon	\$78	\$31	\$145	\$101	\$119	\$31
Spiny Dogfish	\$24	\$43	\$59	\$19	\$38	\$33
Other Groundfish	\$48	\$66	\$84	\$80	\$65	\$28
Other Non-FMP Groundfish	\$80	\$56	\$105	\$101	\$74	\$48

## Landings and Revenue by Port

Table 29. Landings by species or species group (mt) by port group in Washington and Oregon, 2008.

	Puget Sound	North Washington Coast	South & Central WA Coast	Washington Total	Astoria	Tillamook	Newport	Coos Bay	Brookings	Oregon Total
Lingcod	4.4	3.7	10.7	18.8	43.0	6.8	17.9	25.7	30.5	123.8
P. Cod	0.0	3.1	2.0	5.1	6.5	0.0	0.3	0.0		6.8
P. Whiting			17,962.9	17,962.9	10,355.1		15,473.6	2,051.7	0.0	27,880.4
Sablefish	311.4	135.0	346.8	793.2	933.1	2.6	969.0	659.4	394.2	2,958.2
Rockfish	25.4	11.2	103.5	140.0	140.2	22.6	93.4	34.3	112.6	403.1
Thornyheads	31.3	3.9	25.2	60.4	635.0	0.6	351.1	345.5	131.9	1,464.1
Arrowtooth Flounder	253.2	3.9	187.4	444.5	1,712.2		221.8	211.6	7.7	2,153.3
Dover Sole	351.8	6.8	360.3	719.0	3,333.5	2.7	1,475.9	1,735.6	717.3	7,265.1
English Sole	0.3	5.9	29.4	35.6	109.2	0.3	11.6	29.6	4.2	154.9
Petrale Sole	56.4	2.0	74.6	132.9	473.6	1.5	146.4	351.6	144.8	1,118.0
Other Flatfish	6.1	1.2	17.8	25.1	198.3	0.3	47.8	127.2	50.7	424.3
Cabazon				0.0	0.0	3.3	0.0	0.4	21.3	25.1
Spiny Dogfish	70.5	119.7	58.5	248.7	39.7		0.1	0.0	1.8	41.5
Other Groundfish			0.0	0.0	0.9	0.1	0.2	28.4	25.4	55.0
Pacific Halibut	13.6	14.2	20.1	48.0	14.1	1.3	72.2	17.0	5.7	110.3
California Halibut				0.0	0.0					0.0
CPS			6,540.4	6,540.4	22,991.3		317.0	3.3		23,311.5
HMS	133.5	6.6	6,585.1	6,725.2	1,214.1	107.2	1,476.1	1,214.1	20.7	4,032.1
Salmon	1.1	22.1	52.0	75.1	22.7	10.3	1.5	0.6	4.1	39.2
Crab	404.3	184.7	4,862.6	5,451.5	1,451.6	395.7	2,546.9	1,433.2	473.0	6,300.4
Pink Shrimp			2,853.2	2,853.2	3,308.5	206.5	3,804.1	3,637.1	619.5	11,575.8
Ridgeback Prawn				0.0						0.0
Spotted Prawn				0.0						0.0
Shrimp	0.2		21.2	21.4		6.4	3.8	4.5	0.2	15.0
Shellfish			93.3	93.3	8.1	65.9	0.7	6.9	0.7	82.3
Other Nongroundfish	0.0	0.1	966.1	966.2	210.5	3.7	479.8	515.2	195.7	1,405.0
Other Non-FMP Groundfish	27.5	15.2	102.6	145.3	460.9	0.3	264.6	249.3	28.0	1,003.1
Total	1,691.0	539.3	41,275.7	43,506.0	47,662.1	838.0	27,775.7	12,682.2	2,990.1	91,948.1



**Table 30. Landings by species or species group (mt) by port group in California, 2008.**

	Crescent City	Eureka	Fort Bragg	Bodega Bay	San Francisco (excl. Bodega Bay)	Monterey	Morro Bay	Santa Barbara	Los Angeles	San Diego	California Total	Coastwide Total
Lingcod	12.3	16.3	17.0	2.9	8.5	4.6	7.5	0.7	0.7	0.1	<b>70.6</b>	213.2
P. Cod	0.0										<b>0.0</b>	11.9
P. Whiting	3,334.3	1,609.6		0.0	0.5			0.0	0.2	0.0	<b>4,944.6</b>	50,787.9
Sablefish	136.2	491.4	403.0	5.3	140.9	197.5	156.0	7.0	37.7	18.0	<b>1,593.0</b>	5,344.5
Rockfish	138.8	46.4	143.9	17.5	85.9	102.7	115.4	15.4	17.3	17.8	<b>701.2</b>	1,244.3
Thornyheads	112.8	401.8	232.6	0.2	92.4	84.8	13.8	23.9	73.1	82.8	<b>1,118.2</b>	2,642.6
Arrowtooth Flounder	5.7	37.6	1.2	0.0					0.0		<b>44.5</b>	2,642.3
Dover Sole	463.2	1,491.5	645.3	3.4	330.2	25.7	35.5	0.1	0.1		<b>2,995.0</b>	10,979.1
English Sole	0.6	66.0	24.5	8.6	33.9	2.9	0.2	0.4	0.0		<b>137.1</b>	327.6
Petrale Sole	36.3	338.5	204.3	74.9	200.2	28.2	42.1	0.5			<b>924.8</b>	2,175.8
Other Flatfish	32.2	113.6	18.9	0.9	118.6	7.1	9.6	10.0	5.0	0.0	<b>316.0</b>	765.4
Cabazon	2.3	0.1	3.2	0.0	0.4	2.5	10.9	3.1	0.3	0.3	<b>23.1</b>	48.2
Spiny Dogfish	0.1	0.1	26.7			2.8		14.9	0.0		<b>44.6</b>	334.8
Other Groundfish	0.4	6.5	4.1	0.0	2.8	80.9	0.9	2.0	4.8	2.5	<b>104.8</b>	159.8
Pacific Halibut	0.0										<b>0.0</b>	158.3
California Halibut	0.6			2.0	92.9	4.4	6.1	75.4	26.0	10.2	<b>217.5</b>	217.5
CPS	0.1				565.4	38,693.2		20,666.2	54,069.5	0.2	<b>113,994.7</b>	143,846.6
HMS	69.1	36.2	3.2	1.0	38.3	52.6	76.1	104.3	128.4	343.3	<b>852.5</b>	11,609.9
Salmon	0.4	0.3									<b>0.6</b>	115.0
Crab	1,119.5	1,043.0	313.9	498.1	858.6	56.7	38.9	422.4	78.2	43.2	<b>4,472.5</b>	16,224.4
Pink Shrimp	633.9	311.5									<b>945.5</b>	15,374.5
Ridgeback Prawn							0.7	231.5	1.4		<b>233.6</b>	233.6
Spotted Prawn						14.3	4.0	44.0	46.1	22.2	<b>130.6</b>	130.6
Shrimp	38.6				20.8			0.0		0.1	<b>59.5</b>	95.9
Shellfish			0.8						0.1	0.1	<b>1.0</b>	176.6
Other Nongroundfish	15.8	573.4	1,228.4	29.8	650.5	188.4	93.8	3,511.0	1,627.5	677.4	<b>8,595.9</b>	10,967.1
Other Non-FMP Groundfish	8.8	118.7	33.0	4.5	12.4	0.9	0.7	1.5	5.8		<b>186.4</b>	1,334.7
Total	6,161.2	6,703.1	3,304.1	649.0	3,253.2	39,550.1	612.2	25,134.4	56,122.4	1,218.3	<b>142,708.0</b>	278,162.1

**Table 31. Landings by species or species group (mt) by port group in Washington and Oregon, 2009.**

	Puget Sound	North Washington Coast	South & Central WA Coast	Washington Total	Astoria	Tillamook	Newport	Coos Bay	Brookings	Oregon Total
Lingcod	10.1	5.3	8.9	<b>24.4</b>	38.0	5.2	20.9	16.4	24.8	<b>105.3</b>
P. Cod	20.8	22.9	0.3	<b>43.9</b>	50.2		0.3	0.0		<b>50.5</b>
P. Whiting			9,945.6	<b>9,945.6</b>	13,995.6		12,952.6	1,608.1		<b>28,556.4</b>
Sablefish	304.3	172.0	453.5	<b>929.9</b>	921.2	3.6	1,152.6	691.9	532.4	<b>3,301.8</b>
Rockfish	33.8	26.3	168.5	<b>228.5</b>	183.0	25.7	128.4	40.6	138.3	<b>516.0</b>
Thornyheads	34.8	4.7	87.8	<b>127.3</b>	549.1	1.4	458.6	385.0	123.1	<b>1,517.2</b>
Arrowtooth Flounder	496.6		450.3	<b>946.9</b>	2,345.7	3.5	316.3	164.3	11.7	<b>2,841.5</b>
Dover Sole	489.2	6.4	501.8	<b>997.3</b>	3,260.2	7.3	1,626.3	1,846.4	716.4	<b>7,456.6</b>
English Sole	5.0	6.8	9.6	<b>21.4</b>	96.5	1.9	34.8	34.6	3.5	<b>171.2</b>
Petrale Sole	77.5	9.4	68.4	<b>155.3</b>	397.9	3.8	255.5	277.9	77.4	<b>1,012.6</b>
Other Flatfish	12.7	3.1	19.8	<b>35.6</b>	355.3	6.7	59.0	173.2	36.6	<b>630.8</b>
Cabezon				<b>0.0</b>	0.0	2.3	0.6	1.7	25.2	<b>29.8</b>
Spiny Dogfish	2.5	24.9	7.4	<b>34.8</b>	52.2		1.8	1.7	1.9	<b>57.6</b>
Other Groundfish			0.1	<b>0.1</b>	262.2	0.2	220.8	210.4	46.6	<b>740.2</b>
Pacific Halibut	2.9	8.0	14.1	<b>24.9</b>	8.8	0.0	52.3	19.4	5.9	<b>86.4</b>
California Halibut				<b>0.0</b>						<b>0.0</b>
CPS			8,810.3	<b>8,810.3</b>	21,574.7		1.0	0.1		<b>21,575.8</b>
HMS	172.5	14.2	7,185.0	<b>7,371.7</b>	1,210.6	102.0	2,275.4	947.5	38.2	<b>4,573.7</b>
Salmon	1.2	65.8	111.7	<b>178.7</b>	28.7	24.8	18.6	2.4	2.5	<b>76.9</b>
Crab	352.4	47.7	4,041.7	<b>4,441.8</b>	2,005.7	457.5	2,991.6	2,901.5	1,559.3	<b>9,915.5</b>
Pink Shrimp			3,180.0	<b>3,180.0</b>	2,098.5	2.3	2,989.5	4,460.6	497.7	<b>10,048.6</b>
Ridgeback Prawn				<b>0.0</b>						<b>0.0</b>
Spotted Prawn				<b>0.0</b>						<b>0.0</b>
Shrimp	1.1		59.0	<b>60.0</b>		11.1	11.8	6.5	0.6	<b>30.0</b>
Shellfish			113.3	<b>113.3</b>	37.2	74.8	0.8	13.1		<b>125.9</b>
Other Nongroundfish	92.3	0.1	503.7	<b>596.2</b>	28.3	6.2	171.6	230.6	336.2	<b>772.8</b>
Other Non-FMP Groundfish	70.4	16.9	68.6	<b>155.9</b>	155.1	0.7	118.2	62.4	5.5	<b>341.9</b>
Total	2,180.0	434.5	35,809.4	<b>38,423.9</b>	49,654.6	740.9	25,859.6	14,096.4	4,183.5	<b>94,535.0</b>

**Table 32. Landings by species or species group (mt) by port group in California, 2009.**

	Crescent City	Eureka	Fort Bragg	Bodega Bay	San Francisco (excl. Bodega Bay)	Monterey	Morro Bay	Santa Barbara	Los Angeles	San Diego	California Total	Coastwide Total
Lingcod	7.8	8.9	22.1	1.6	4.7	2.8	7.6	0.6	0.3	0.1	<b>56.5</b>	186.1
P. Cod											<b>0.0</b>	94.5
P. Whiting	1,484.0	307.9				0.3		0.1	0.0		<b>1,792.2</b>	40,294.1
Sablefish	218.0	477.8	523.4	26.1	140.1	160.0	653.3	47.6	45.1	18.4	<b>2,309.9</b>	6,541.5
Rockfish	97.7	37.3	243.9	15.9	98.7	106.0	133.7	35.3	7.5	12.4	<b>788.5</b>	1,533.0
Thornyheads	141.3	352.9	203.2	1.1	68.6	72.5	19.3	26.5	76.4	65.0	<b>1,026.9</b>	2,671.4
Arrowtooth Flounder	4.2	40.7	0.4		0.1						<b>45.4</b>	3,833.8
Dover Sole	588.6	1,584.0	707.8	5.4	248.6	11.6	20.1	0.2	0.1		<b>3,166.4</b>	11,620.2
English Sole	4.8	30.9	12.6	2.1	16.7	6.4	0.0	0.1			<b>73.6</b>	266.2
Petrale Sole	46.1	154.0	159.9	23.8	92.2	33.9	18.9	0.0	0.0	0.0	<b>528.9</b>	1,696.8
Other Flatfish	48.6	57.0	18.0	3.9	95.2	12.3	8.1	8.7	6.3	0.0	<b>258.2</b>	924.6
Cabazon	1.8	0.1	3.3	0.1	0.2	2.5	7.0	3.0	0.2	0.4	<b>18.4</b>	48.2
Spiny Dogfish	0.1	0.0	26.9		0.4	18.3		0.1			<b>45.8</b>	138.2
Other Groundfish	18.8	110.0	20.6	1.4	7.9	49.6	3.2	1.5	0.8	2.9	<b>216.8</b>	957.1
Pacific Halibut	0.0	0.0									<b>0.0</b>	111.4
California Halibut		0.1		11.0	134.6	3.9	8.5	105.5	11.6	9.1	<b>284.3</b>	284.3
CPS			0.1		1,006.4	26,180.8	161.7	62,178.0	48,252.2	0.0	<b>137,779.3</b>	168,165.4
HMS	100.0	106.2	11.1	8.3	127.2	48.2	68.5	70.0	541.9	253.7	<b>1,335.0</b>	13,280.4
Salmon	0.6	0.0						0.0			<b>0.6</b>	256.3
Crab	3,331.9	2,355.6	100.4	166.1	899.3	75.0	17.9	489.5	60.2	48.4	<b>7,544.3</b>	21,901.5
Pink Shrimp	1,103.8	79.7			0.0	0.0					<b>1,183.5</b>	14,412.1
Ridgeback Prawn					0.2		15.6	210.3	8.9		<b>234.9</b>	234.9
Spotted Prawn				0.1	2.1	11.4	4.1	42.5	45.2	20.8	<b>126.2</b>	126.2
Shrimp	45.6	0.2			41.4	0.8		0.0	0.2	0.1	<b>88.3</b>	178.3
Shellfish		0.0							0.0	0.3	<b>0.4</b>	239.5
Other Nongroundfish	12.4	390.1	1,679.9	212.2	476.6	132.7	255.9	3,608.4	2,824.6	635.9	<b>10,228.6</b>	11,597.6
Other Non-FMP Groundfish		0.5	0.0		0.3	0.0	1.4	2.1	6.6		<b>10.8</b>	508.6
<b>Total</b>	<b>7,255.9</b>	<b>6,094.0</b>	<b>3,733.8</b>	<b>479.1</b>	<b>3,461.4</b>	<b>26,929.0</b>	<b>1,404.9</b>	<b>66,829.7</b>	<b>51,888.1</b>	<b>1,067.6</b>	<b>169,143.6</b>	<b>302,102.5</b>

**Table 33. Ex-vessel revenue (\$1,000s) by species or species group by port group in Washington and Oregon in 2008.**

	Puget Sound	North Washington Coast	South & Central WA Coast	Washington Total	Astoria	Tillamook	Newport	Coos Bay	Brookings	Oregon Total
Lingcod	\$6.5	\$6.8	\$14.1	<b>\$27.4</b>	\$59.8	\$32.1	\$73.8	\$56.9	\$116.3	<b>\$338.8</b>
P. Cod	\$0.0	\$4.8	\$2.1	<b>\$6.9</b>	\$7.4	\$0.0	\$0.3	\$0.0		<b>\$7.7</b>
P. Whiting			\$3,677.0	<b>\$3,677.0</b>	\$2,408.6		\$3,758.2	\$663.1	\$0.0	<b>\$6,829.8</b>
Sablefish	\$1,847.7	\$786.4	\$1,734.3	<b>\$4,368.5</b>	\$4,041.6	\$11.1	\$4,684.5	\$3,157.1	\$1,842.2	<b>\$13,736.6</b>
Rockfish	\$27.3	\$13.9	\$81.8	<b>\$123.0</b>	\$144.5	\$85.4	\$105.5	\$39.1	\$449.4	<b>\$823.9</b>
Thornyheads	\$41.2	\$6.0	\$36.4	<b>\$83.7</b>	\$770.8	\$0.7	\$443.9	\$393.4	\$176.9	<b>\$1,785.7</b>
Arrowtooth Flounder	\$55.3	\$0.7	\$40.9	<b>\$96.9</b>	\$379.2		\$48.0	\$45.0	\$1.8	<b>\$473.9</b>
Dover Sole	\$285.2	\$5.7	\$288.5	<b>\$579.4</b>	\$2,729.7	\$2.3	\$1,180.4	\$1,369.1	\$593.4	<b>\$5,874.9</b>
English Sole	\$0.2	\$4.5	\$20.2	<b>\$24.8</b>	\$73.6	\$0.2	\$7.8	\$18.3	\$2.8	<b>\$102.7</b>
Petrale Sole	\$122.5	\$4.5	\$160.9	<b>\$287.9</b>	\$1,040.6	\$3.6	\$296.9	\$713.8	\$317.7	<b>\$2,372.6</b>
Other Flatfish	\$4.9	\$0.8	\$14.5	<b>\$20.2</b>	\$165.8	\$0.3	\$35.7	\$99.3	\$36.0	<b>\$337.0</b>
Cabezon				<b>\$-</b>	\$0.0	\$33.1	\$0.1	\$1.7	\$154.1	<b>\$189.1</b>
Spiny Dogfish	\$39.3	\$54.1	\$3.1	<b>\$96.6</b>	\$32.8				\$0.3	<b>\$33.1</b>
Other Groundfish				<b>\$-</b>	\$0.2	\$0.8	\$0.1	\$6.8	\$236.5	<b>\$244.4</b>
Pacific Halibut	\$108.0	\$99.1	\$142.9	<b>\$349.9</b>	\$114.4	\$9.8	\$583.3	\$153.7	\$43.9	<b>\$905.1</b>
California Halibut				<b>\$-</b>	\$0.0					<b>\$0.0</b>
CPS			\$1,363.0	<b>\$1,363.0</b>	\$5,658.9		\$71.1	\$0.3		<b>\$5,730.2</b>
HMS	\$367.0	\$17.3	\$16,840.9	<b>\$17,225.3</b>	\$3,291.3	\$251.8	\$3,912.2	\$3,198.3	\$60.8	<b>\$10,714.3</b>
Salmon	\$9.8	\$204.2	\$438.5	<b>\$652.4</b>	\$223.0	\$121.2			\$51.1	<b>\$395.4</b>
Crab	\$2,944.3	\$1,220.9	\$26,585.6	<b>\$30,750.8</b>	\$6,410.7	\$1,911.8	\$12,120.2	\$6,453.1	\$2,272.5	<b>\$29,168.2</b>
PINK SHRIMP			\$3,294.6	<b>\$3,294.6</b>	\$3,927.8	\$246.9	\$4,736.5	\$4,295.9	\$730.3	<b>\$13,937.4</b>
Ridgeback Prawn				<b>\$-</b>						<b>\$-</b>
Spotted Prawn				<b>\$-</b>						<b>\$-</b>
Shrimp	\$0.4		\$115.3	<b>\$115.7</b>		\$29.1	\$25.0	\$59.6	\$4.5	<b>\$118.1</b>
Shellfish			\$355.8	<b>\$355.8</b>	\$42.5	\$74.9	\$0.9	\$12.0	\$2.4	<b>\$132.7</b>
Other Nongroundfish	\$0.0	\$0.1	\$558.5	<b>\$558.6</b>	\$13.9	\$2.2	\$404.4	\$651.0	\$157.6	<b>\$1,229.1</b>
Other Non-FMP Groundfish	\$11.2	\$6.4	\$52.3	<b>\$69.8</b>	\$228.4	\$0.1	\$165.5	\$204.8	\$16.6	<b>\$615.4</b>
Total	\$5,870.8	\$2,436.1	\$55,821.3	<b>\$64,128.3</b>	\$31,765.4	\$2,817.6	\$32,654.2	\$21,592.1	\$7,267.0	<b>\$96,096.3</b>

**Table 34. Ex-vessel revenue (\$1,000s) by species or species group by port group in California in 2008.**

	Crescent City	Eureka	Fort Bragg	Bodega Bay	San Francisco (excl. Bodega Bay)	Monterey	Morro Bay	Santa Barbara	Los Angeles	San Diego	California Total	Coastwide Total
Lingcod	\$51.3	\$37.2	\$44.4	\$8.9	\$33.4	\$17.1	\$36.2	\$5.0	\$5.0	\$0.5	<b>\$239.1</b>	\$605.3
P. Cod	\$0.0										<b>\$0.0</b>	\$14.7
P. Whiting	\$726.9	\$351.3		\$0.0	\$1.2			\$0.1	\$1.9	\$0.0	<b>\$1,081.4</b>	\$11,588.2
Sablefish	\$491.4	\$1,942.8	\$1,574.8	\$29.4	\$538.1	\$743.8	\$572.3	\$37.7	\$179.5	\$123.4	<b>\$6,233.1</b>	\$24,338.1
Rockfish	\$566.9	\$75.6	\$335.4	\$73.4	\$264.0	\$263.0	\$998.7	\$206.7	\$98.5	\$65.0	<b>\$2,947.2</b>	\$3,894.1
Thornyheads	\$186.5	\$464.9	\$291.0	\$0.2	\$148.3	\$255.7	\$19.0	\$195.9	\$602.1	\$716.3	<b>\$2,879.8</b>	\$4,749.2
Arrowtooth Flounder	\$1.3	\$8.4	\$0.3	\$0.0							<b>\$9.9</b>	\$580.8
Dover Sole	\$398.0	\$1,269.2	\$553.5	\$2.6	\$283.4	\$17.0	\$31.9	\$0.3	\$0.4		<b>\$2,556.3</b>	\$9,010.6
English Sole	\$0.4	\$46.7	\$19.6	\$6.9	\$32.6	\$2.9	\$0.2	\$1.4	\$0.0		<b>\$110.7</b>	\$238.3
Petrals Sole	\$76.4	\$732.0	\$508.4	\$180.2	\$493.8	\$71.9	\$127.6	\$1.4			<b>\$2,191.7</b>	\$4,852.2
Other Flatfish	\$23.9	\$89.2	\$15.3	\$0.7	\$123.6	\$10.1	\$12.5	\$11.6	\$21.6	\$0.0	<b>\$308.4</b>	\$665.6
Cabazon	\$17.6	\$0.4	\$38.6	\$0.3	\$4.5	\$36.3	\$153.5	\$52.3	\$3.6	\$3.9	<b>\$311.1</b>	\$500.2
Spiny Dogfish		\$0.0	\$22.9			\$1.5		\$12.0	\$0.0		<b>\$36.4</b>	\$166.1
Other Groundfish	\$3.3	\$1.4	\$4.2	\$0.2	\$4.3	\$44.1	\$10.6	\$3.4	\$6.7	\$5.2	<b>\$83.3</b>	\$327.7
Pacific Halibut	\$-										<b>\$-</b>	\$1,255.1
California Halibut		\$2.5		\$23.2	\$886.0	\$43.8	\$68.6	\$884.0	\$292.8	\$108.4	<b>\$2,309.4</b>	\$2,309.4
CPS		\$0.0			\$123.7	\$5,371.8		\$14,324.4	\$16,516.8	\$0.4	<b>\$36,337.2</b>	\$43,430.4
HMS	\$152.1	\$105.3	\$16.0	\$2.8	\$107.5	\$154.0	\$257.7	\$325.7	\$598.6	\$1,420.8	<b>\$3,140.5</b>	\$31,080.1
Salmon	\$3.3	\$2.4									<b>\$5.7</b>	\$1,053.5
Crab	\$5,484.4	\$5,168.0	\$1,867.3	\$3,470.7	\$6,135.7	\$409.4	\$168.6	\$1,212.0	\$239.0	\$108.9	<b>\$24,264.1</b>	\$84,183.1
PINK SHRIMP	\$732.9	\$361.8									<b>\$1,094.7</b>	\$18,326.7
Ridgeback Prawn							\$2.6	\$861.3	\$5.7		<b>\$869.6</b>	\$869.6
Spotted Prawn						\$390.1	\$111.3	\$1,176.3	\$1,098.0	\$433.7	<b>\$3,209.4</b>	\$3,209.4
Shrimp	\$361.9				\$195.1			\$0.2		\$1.9	<b>\$559.1</b>	\$792.9
Shellfish			\$1.3						\$0.1	\$0.2	<b>\$1.6</b>	\$490.0
Other Nongroundfish	\$15.2	\$643.5	\$1,829.2	\$51.1	\$639.7	\$136.8	\$213.6	\$9,076.9	\$5,222.4	\$3,829.1	<b>\$21,657.3</b>	\$23,445.1
Non-FMP Groundfish	\$4.9	\$65.1	\$14.6	\$3.0	\$6.8	\$0.8	\$1.0	\$2.2	\$4.9		<b>\$103.3</b>	\$788.5
<b>Total</b>	<b>\$9,298.3</b>	<b>\$11,367.9</b>	<b>\$7,136.6</b>	<b>\$3,853.7</b>	<b>\$10,021.8</b>	<b>\$7,970.1</b>	<b>\$2,785.7</b>	<b>\$28,390.9</b>	<b>\$24,897.7</b>	<b>\$6,817.7</b>	<b>\$112,540.2</b>	<b>\$272,764.8</b>

**Table 35. Ex-vessel revenue (\$1,000s) by species or species group by port group in Washington and Oregon in 2009.**

	Puget Sound	North Washington Coast	South & Central WA Coast	Washington Total	Astoria	Tillamook	Newport	Coos Bay	Brookings	Oregon Total
Lingcod	\$14.7	\$9.6	\$12.0	<b>\$36</b>	\$55.2	\$25.9	\$78.1	\$33.1	\$98.7	<b>\$291</b>
P. Cod	\$21.2	\$25.8	\$0.3	<b>\$47</b>	\$48.9		\$0.4	\$0.0		<b>\$49</b>
P. Whiting			\$1,326.5	<b>\$1,327</b>	\$1,974.3		\$1,546.9	\$261.7		<b>\$3,783</b>
Sablefish	\$1,852.7	\$1,013.4	\$2,147.6	<b>\$5,014</b>	\$3,980.2	\$14.6	\$5,846.9	\$3,389.3	\$2,663.5	<b>\$15,894</b>
Rockfish	\$32.4	\$25.7	\$117.5	<b>\$176</b>	\$180.6	\$98.1	\$155.6	\$52.7	\$573.5	<b>\$1,060</b>
Thornyheads	\$39.9	\$7.2	\$75.8	<b>\$123</b>	\$508.6	\$1.4	\$474.7	\$324.8	\$129.7	<b>\$1,439</b>
Arrowtooth Flounder	\$107.7		\$94.0	<b>\$202</b>	\$511.0	\$0.8	\$67.5	\$34.8	\$2.6	<b>\$617</b>
Dover Sole	\$357.3	\$4.9	\$316.4	<b>\$679</b>	\$2,408.6	\$4.7	\$1,147.0	\$1,221.4	\$510.5	<b>\$5,292</b>
English Sole	\$3.5	\$5.1	\$6.4	<b>\$15</b>	\$60.7	\$1.3	\$21.5	\$20.8	\$2.2	<b>\$106</b>
Petrale Sole	\$146.1	\$22.8	\$128.3	<b>\$297</b>	\$774.2	\$7.5	\$502.7	\$515.6	\$144.0	<b>\$1,944</b>
Other Flatfish	\$10.2	\$2.0	\$13.8	<b>\$26</b>	\$303.9	\$10.0	\$43.3	\$125.6	\$25.8	<b>\$509</b>
Cabazon				<b>\$-</b>	\$0.0	\$22.0	\$2.5	\$11.4	\$187.0	<b>\$223</b>
Spiny Dogfish	\$1.0	\$9.9	\$0.7	<b>\$12</b>	\$33.1			\$0.0	\$0.4	<b>\$34</b>
Other Groundfish				<b>\$-</b>	\$89.3	\$1.3	\$119.9	\$76.3	\$209.7	<b>\$497</b>
Pacific Halibut	\$16.6	\$40.1	\$73.6	<b>\$130</b>	\$56.3	\$0.1	\$321.1	\$124.2	\$31.3	<b>\$533</b>
California Halibut				<b>\$-</b>						<b>\$-</b>
CPS			\$1,765.4	<b>\$1,765</b>	\$5,304.0					<b>\$5,304</b>
HMS	\$430.5	\$35.4	\$16,010.6	<b>\$16,477</b>	\$2,740.7	\$216.0	\$5,072.0	\$2,067.7	\$94.5	<b>\$10,191</b>
Salmon	\$9.2	\$428.8	\$1,041.3	<b>\$1,479</b>	\$103.3	\$101.2	\$95.6	\$13.3	\$30.1	<b>\$343</b>
Crab	\$2,448.1	\$313.3	\$19,310.9	<b>\$22,072</b>	\$8,376.6	\$2,144.2	\$13,235.9	\$12,192.1	\$6,464.2	<b>\$42,413</b>
PINK SHRIMP			\$2,157.1	<b>\$2,157</b>	\$1,449.5	\$1.5	\$2,026.2	\$3,012.1	\$323.2	<b>\$6,813</b>
Ridgeback Prawn				<b>\$-</b>						<b>\$-</b>
Spotted Prawn				<b>\$-</b>						<b>\$-</b>
Shrimp	\$7.7		\$381.5	<b>\$389</b>		\$40.7	\$62.1	\$67.1	\$11.4	<b>\$181</b>
Shellfish			\$406.8	<b>\$407</b>	\$163.4	\$84.3	\$0.8	\$18.8		<b>\$267</b>
Other Nongroundfish	\$149.5	\$0.1	\$784.5	<b>\$934</b>	\$9.7	\$7.8	\$143.0	\$294.3	\$338.5	<b>\$793</b>
Non-FMP Groundfish	\$26.3	\$5.9	\$24.7	<b>\$57</b>	\$60.7	\$0.2	\$61.6	\$22.9	\$1.5	<b>\$147</b>
<b>Total</b>	<b>\$5,674.6</b>	<b>\$1,950.0</b>	<b>\$46,195.8</b>	<b>\$53,820</b>	<b>\$29,192.8</b>	<b>\$2,783.6</b>	<b>\$31,025.2</b>	<b>\$23,879.9</b>	<b>\$11,842.2</b>	<b>\$98,724</b>

**Table 36. Ex-vessel revenue (\$1,000s) by species or species group by port group in California in 2009, .**

	Crescent City	Eureka	Fort Bragg	Bodega Bay	San Francisco (excl. Bodega Bay)	Monterey	Morro Bay	Santa Barbara	Los Angeles	San Diego	California Total	Coastwide Total
Lingcod	\$28	\$22	\$56	\$5	\$21	\$10	\$37	\$4	\$2	\$1	<b>\$186</b>	\$514
P. Cod											<b>\$-</b>	\$97
P. Whiting	\$164	\$34				\$0		\$0	\$0		<b>\$198</b>	\$5,307
Sablefish	\$984	\$2,058	\$2,356	\$128	\$584	\$622	\$2,462	\$196	\$260	\$118	<b>\$9,767</b>	\$30,676
Rockfish	\$393	\$75	\$427	\$56	\$228	\$264	\$958	\$266	\$52	\$39	<b>\$2,759</b>	\$3,995
Thornyheads	\$197	\$401	\$232	\$1	\$94	\$211	\$86	\$222	\$630	\$536	<b>\$2,612</b>	\$4,174
Arrowtooth Flounder	\$1	\$9	\$0		\$0						<b>\$10</b>	\$829
Dover Sole	\$467	\$1,280	\$581	\$3	\$204	\$7	\$18	\$1	\$1		<b>\$2,562</b>	\$8,533
English Sole	\$3	\$22	\$9	\$2	\$15	\$6	\$0	\$0			<b>\$57</b>	\$178
Petrals Sole	\$85	\$293	\$364	\$56	\$209	\$79	\$53	\$0	\$0	\$0	<b>\$1,138</b>	\$3,379
Other Flatfish	\$41	\$44	\$15	\$5	\$95	\$18	\$13	\$12	\$17	\$0	<b>\$260</b>	\$795
Cabazon	\$14	\$1	\$40	\$1	\$2	\$35	\$90	\$43	\$2	\$5	<b>\$232</b>	\$455
Spiny Dogfish	\$0		\$25		\$0	\$14		\$0			<b>\$39</b>	\$84
Other Groundfish	\$9	\$36	\$12	\$1	\$7	\$29	\$12	\$3	\$1	\$6	<b>\$115</b>	\$612
Pacific Halibut	\$0	\$0									<b>\$0</b>	\$664
California Halibut		\$1		\$102	\$1,176	\$34	\$89	\$956	\$119	\$86	<b>\$2,562</b>	\$2,562
CPS			\$0		\$255	\$4,539	\$110	\$35,944	\$22,668	\$0	<b>\$63,516</b>	\$70,585
HMS	\$213	\$295	\$48	\$19	\$459	\$134	\$250	\$169	\$874	\$1,038	<b>\$3,499</b>	\$30,166
Salmon	\$5	\$0						\$0			<b>\$6</b>	\$1,828
Crab	\$13,845	\$9,815	\$658	\$1,032	\$4,823	\$480	\$68	\$1,439	\$169	\$109	<b>\$32,437</b>	\$96,922
PINK SHRIMP	\$730	\$53			\$0	\$0					<b>\$783</b>	\$9,753
Ridgeback Prawn					\$1		\$61	\$864	\$39		<b>\$965</b>	\$965
Spotted Prawn				\$2	\$60	\$304	\$108	\$999	\$1,047	\$408	<b>\$2,929</b>	\$2,929
Shrimp	\$402	\$0			\$391	\$11		\$0	\$3	\$4	<b>\$811</b>	\$1,382
Shellfish		\$0							\$0	\$0	<b>\$1</b>	\$675
Other Nongroundfish	\$14	\$455	\$2,575	\$314	\$346	\$69	\$498	\$8,406	\$5,699	\$3,686	<b>\$22,061</b>	\$23,789
Non-FMP Groundfish		\$0	\$0		\$0	\$0	\$2	\$2	\$4		<b>\$9</b>	\$213
Total	\$17,598	\$14,893	\$7,399	\$1,727	\$8,970	\$6,866	\$4,914	\$49,526	\$31,587	\$6,034	<b>\$149,514</b>	\$302,058

**Table 37. Landings (mt) by sector and port group, 2008.**

Port Group	Shoreside Whiting Trawl	Shoreside Nonwhiting Trawl	Limited Entry Fixed Gear	Open Access Fixed Gear	Incidentally Caught Groundfish	Grand Total
Puget Sound		823.1	314.2		X	X
North Washington Coast		X	251.2	29.8	X	311.7
South & Central WA Coast	18,082.3	873.5	277.5	27.7	20.6	19,281.6
Astoria	10,371.1	7,911.1	140.6	15.5	2.7	18,441.1
Tillamook		X		33.3	0.5	X
Newport	15,491.8	3,143.8	371.2	43.3	23.4	19,073.5
Coos Bay	X	3,540.0	180.4	74.1	3.4	X
Brookings		1,279.9	162.5	227.0	1.1	1,670.5
Crescent City	3,358.2	754.0	64.0	106.9	0.8	4,283.9
Eureka	1,620.8	2,921.0	123.0	73.0	0.2	4,738.0
Fort Bragg		1,534.4	111.1	111.5	0.8	1,757.8
Bodega Bay		X	X	2.3	X	118.1
San Francisco*		943.3	33.4	35.3	14.7	1,026.7
Monterey		X	143.5	110.3	1.1	X
Morro Bay		168.9	X	190.2	2.8	X
Santa Barbara		X	32.0	15.3	31.7	X
Los Angeles			113.0	17.7	14.5	145.2
San Diego			104.8	12.8	4.0	121.6
Total	X	24,323.2	2,462.7	1,126.1	123.5	79,012.1

\*excluding Bodega Bay

X- excluded for data confidentiality

**Table 38. Landings (mt) by sector and port group, 2009.**

Port Group	Shoreside Whiting Trawl	Shoreside Nonwhiting Trawl	Limited Entry Fixed Gear	Open Access Fixed Gear	Incidentally Caught Groundfish	Grand Total
Puget Sound		1,295.5	257.4		X	X
North Washington Coast		X	220.2	23.1	1.7	X
South & Central WA Coast	10,090.9	1,346.2	308.6	41.0	3.8	11,790.6
Astoria	14,085.8	8,406.4	148.3	16.5	5.1	22,662.2
Tillamook		X		34.5	0.2	X
Newport	12,993.0	3,774.6	525.1	42.4	11.8	17,347.0
Coos Bay	X	3,619.1	191.4	85.2	6.5	X
Brookings		1,201.1	263.5	276.9	1.8	1,743.3
Crescent City	1,489.4	982.5	108.0	81.4	0.4	2,661.7
Eureka	X	2,678.7	101.8	73.0	X	3,162.0
Fort Bragg		1,684.1	154.6	102.9	0.6	1,942.3
Bodega Bay		X	X	17.2	3.8	81.4
San Francisco*		648.5	59.9	36.3	29.0	773.7
Monterey		X	108.2	71.3	0.7	X
Morro Bay		X	202.0	568.8	2.1	X
Santa Barbara			35.6	74.2	15.9	125.7
Los Angeles			117.7	12.9	12.7	143.2
San Diego			82.1	13.3	3.8	99.2
Total	40,580.1	26,164.7	X	1,571.1	104.7	71,314.5

\*excluding Bodega Bay

X- excluded for data confidentiality



**Table 39. Ex-vessel revenue (\$1,000s) by sector and port group, 2008.**

Port Group	Shoreside Whiting Trawl	Shoreside Nonwhiting Trawl	Limited Entry Fixed Gear	Open Access Fixed Gear	Incidentally Caught Groundfish	Grand Total
Puget Sound		\$1,001.0	\$1,435.1		X	X
North Washington Coast		X	\$757.1	\$90.2	X	X
South & Central WA Coast	\$3,728.7	\$836.6	\$1,390.4	\$133.5	\$36.9	\$6,126.1
Astoria	\$2,422.5	\$8,785.4	\$797.4	\$67.9	\$9.7	\$12,082.9
Tillamook		X		\$155.5	\$1.7	X
Newport	\$3,782.2	\$4,651.1	\$2,103.7	\$218.6	\$45.1	\$10,800.7
Coos Bay	X	\$4,640.5	\$1,082.4	\$366.7	\$15.0	X
Brookings		\$1,876.6	\$821.3	\$1,240.5	\$5.5	\$3,944.0
Crescent City	\$728.3	\$977.1	\$299.2	\$541.4	\$2.7	\$2,548.7
Eureka	\$362.4	\$3,949.6	\$481.1	\$291.0	\$0.3	\$5,084.3
Fort Bragg		\$2,286.2	\$544.0	\$585.5	\$7.1	\$3,422.8
Bodega Bay		X	X	\$37.1	X	\$305.8
San Francisco*		\$1,479.4	\$130.2	\$279.3	\$45.0	\$1,933.9
Monterey		X	\$480.0	\$468.3	\$6.4	X
Morro Bay		\$350.5	X	\$1,485.6	\$16.3	X
Santa Barbara		X	\$245.2	\$226.8	\$56.8	X
Los Angeles			\$806.4	\$85.3	\$32.6	\$924.2
San Diego			\$839.9	\$59.3	\$15.1	\$914.3
Total	X	\$31,622.5	\$12,375.0	\$6,332.5	\$301.8	\$62,319.5

\*excluding Bodega Bay

**Table 40. Ex-vessel revenue (\$1,000s) by sector and port group, 2009.**

Port Group	Shoreside Whiting Trawl	Shoreside Nonwhiting Trawl	Limited Entry Fixed Gear	Open Access Fixed Gear	Incidentally Caught Groundfish	Grand Total
Puget Sound		\$1,130.7	\$1,474.9		X	X
North Washington Coast		X	\$963.5	\$97.3	\$2.1	X
South & Central WA Coast	\$1,408.2	\$1,146.7	\$1,490.0	\$202.9	\$16.3	\$4,264.1
Astoria	\$2,011.2	\$8,052.8	\$825.4	\$83.1	\$16.8	\$10,989.2
Tillamook		X		\$152.9	\$0.7	\$187.8
Newport	\$1,574.3	\$5,106.3	\$3,103.0	\$222.5	\$62.7	\$10,068.7
Coos Bay	X	\$4,166.1	\$1,204.1	\$423.7	\$32.5	X
Brookings		\$1,618.3	\$1,438.5	\$1,483.1	\$9.2	\$4,549.1
Crescent City	\$167.5	\$1,321.0	\$532.4	\$365.4	\$1.6	\$2,387.9
Eureka	X	\$3,500.0	\$427.9	\$192.6	X	\$4,154.6
Fort Bragg		\$2,626.2	\$880.3	\$607.0	\$4.0	\$4,117.6
Bodega Bay		X	X	\$101.2	\$6.4	\$257.1
San Francisco*		\$899.4	\$263.1	\$252.5	\$43.9	\$1,459.0
Monterey		X	\$406.7	\$376.9	\$4.2	X
Morro Bay		X	\$709.8	\$2,802.9	\$8.7	X
Santa Barbara			\$259.1	\$440.8	\$49.8	\$749.7
Los Angeles			\$858.0	\$91.7	\$20.6	\$970.3
San Diego			\$645.3	\$43.3	\$14.4	\$702.9
Total	\$5,459.0	\$30,475.0	X	\$8,059.9	\$301.4	\$59,838.9

\*excluding Bodega Bay

# Participation

**Table 41. Number of vessels making at least one groundfish landing each year by Port Group and Sector, 2005-2006.**

Port Group	Limited Entry Fixed Gear	Open Access Fixed Gear	Nonwhiting Trawl	Incidentally Caught Groundfish	Shoreside Whiting Trawl
<b>2005</b>					
Puget Sound	18	5	6	3	0
North Washington Coast	12	26	7	13	0
South & Central WA Coast	16	51	4	35	9
Astoria	9	32	29	18	5
Tillamook	0	42	1	35	0
Newport	13	20	22	89	12
Coos Bay	11	73	19	84	2
Brookings	9	89	7	38	0
Crescent City	6	28	5	9	2
Eureka	6	30	14	6	3
Fort Bragg	2	65	10	10	0
Bodega Bay	1	13	0	12	0
San Francisco*	6	41	17	54	0
Monterey	8	62	9	58	1
Morro Bay	0	78	9	25	0
Santa Barbara	9	32	0	52	0
Los Angeles	28	26	0	47	0
San Diego	18	13	0	19	0
<b>Total Vessels</b>	<b>126</b>	<b>678</b>	<b>123</b>	<b>552</b>	<b>29</b>
<b>2006</b>					
Puget Sound	20	5	6	3	0
North Washington Coast	15	23	4	17	0
South & Central WA Coast	14	73	5	36	15
Astoria	5	25	32	34	11
Tillamook	0	46	1	23	0
Newport	16	47	23	78	10
Coos Bay	8	75	19	30	3
Brookings	9	90	9	20	0
Crescent City	7	33	7	15	2
Eureka	8	33	17	3	4
Fort Bragg	2	63	9	14	0
Bodega Bay	1	13	2	15	0
San Francisco*	6	58	16	46	0
Monterey	12	56	9	34	0
Morro Bay	4	105	4	34	0
Santa Barbara	11	49	0	65	0
Los Angeles	24	27	0	40	0
San Diego	18	14	0	30	0
<b>Total Vessels</b>	<b>132</b>	<b>774</b>	<b>122</b>	<b>481</b>	<b>37</b>

\*excluding Bodega Bay

**Table 42. Number of vessels making at least one groundfish landing each year by Port Group and Sector, 2007-2008.**

Port Group	Limited Entry Fixed Gear	Open Access Fixed Gear	Nonwhiting Trawl	Incidentally Caught Groundfish	Shoreside Whiting Trawl
<b>2007</b>					
Puget Sound	20	3	6	5	0
North Washington Coast	13	24	2	11	0
South & Central WA Coast	10	38	8	20	14
Astoria	6	15	32	21	10
Tillamook	0	38	1	25	0
Newport	15	39	22	75	14
Coos Bay	13	53	23	60	3
Brookings	11	90	8	29	0
Crescent City	6	27	7	17	3
Eureka	8	34	18	4	4
Fort Bragg	4	58	8	11	0
Bodega Bay	1	14	2	10	0
San Francisco (excl. Bodega Bay)	4	56	16	33	0
Monterey	9	57	5	23	0
Morro Bay	1	110	6	18	0
Santa Barbara	8	45	0	56	0
Los Angeles	28	28	0	50	0
San Diego	17	18	0	26	0
Total Vessels	136	707	121	468	39
<b>2008</b>					
Puget Sound	16	0	4	2	0
North Washington Coast	9	13	3	3	0
South & Central WA Coast	14	32	7	22	10
Astoria	5	10	31	10	15
Tillamook	0	33	2	5	0
Newport	16	50	24	36	15
Coos Bay	11	53	21	13	3
Brookings	12	85	9	12	0
Crescent City	6	24	10	11	5
Eureka	9	35	14	5	5
Fort Bragg	6	53	7	9	0
Bodega Bay	2	10	1	3	0
San Francisco*	5	49	16	20	0
Monterey	8	68	3	14	0
Morro Bay	2	95	4	25	0
Santa Barbara	8	38	1	49	0
Los Angeles	19	24	0	39	0
San Diego	19	15	0	28	0
Total Vessels	135	663	120	284	37

\*excluding Bodega Bay

**Table 43. Number of vessels making at least one groundfish landing each year by Port Group and Sector, 2005-2009.**

Port Group	Limited Entry Fixed Gear	Open Access Fixed Gear	Nonwhiting Trawl	Incidentally Caught Groundfish	Shoreside Whiting Trawl
	<b>2009</b>				
Puget Sound	16	0	5	3	0
North Washington Coast	8	14	1	9	0
South & Central WA Coast	16	34	7	18	9
Astoria	7	14	33	20	12
Tillamook	0	34	2	9	0
Newport	19	59	26	28	11
Coos Bay	13	48	23	25	3
Brookings	16	88	10	14	0
Crescent City	7	18	7	11	5
Eureka	8	33	12	2	2
Fort Bragg	5	48	7	4	0
Bodega Bay	2	12	2	6	0
San Francisco*	6	57	8	28	0
Monterey	9	64	3	17	0
Morro Bay	8	113	1	19	0
Santa Barbara	5	47	0	50	0
Los Angeles	17	23	0	29	0
San Diego	16	13	0	17	0
Total Vessels	139	670	117	291	34

\*excluding Bodega Bay

**Table 44. Average annual number of commercial vessels making groundfish deliveries by sector and length category, 2005-2009.**

Sector	Vessel Length Categories (feet)								Sector Totals
	< 40	40 - 50	50 - 60	60 - 70	70 - 150	> 150	Unspecified	All Lengths	
Commercial whiting CPs				0.2		7.0	0.4		7.6
Commercial mothership whiting CVs				0.4	17.8		0.8		19.0
Commercial shoreside whiting			1.0	5.0	29.6				35.6
Commercial shoreside non-whiting trawl	1.6	14.8	33.6	28.8	44.8				123.6
Commercial shoreside LE fixed gear	62.2	39.6	18.8	10.0	4.8				135.4
Commercial shoreside OA fixed gear	528.0	126.4	23.6	7.0	3.0	0.2	0.6		688.8
Commercial incidental groundfish	243.4	117.2	25.4	7.2	8.0		0.8		402.0
Commercial non-groundfish									
Length Class Totals	695.6	233.4	83.6	48.2	71.6	7.2	2.0	1,133.8	

**Table 45. Average annual number of vessels making groundfish deliveries by port group and length category, 2005-2009.**

Port Group	Vessel Length Categories (feet)								Port Group Totals
	< 40	40 - 50	50 - 60	60 - 70	70 - 150	> 150	Unspecified	All Lengths	
Puget Sound	2.0	9.0	5.2	5.6	6.0				27.8
North Washington Coast	16.0	18.8	4.8	1.0	0.6	0.2			41.4
South & Central WA Coast	17.2	33.8	9.4	4.4	12.8		0.4		78.0
Astoria	11.2	12.2	11.2	12.8	22.0				69.4
Tillamook	41.6	6.2	1.6	0.8	0.4				50.6
Newport	40.0	31.2	16.6	7.6	19.0				114.4
Coos Bay	43.4	34.4	12.8	11.2	10.0		0.2		112.0
Brookings	97.8	6.0	2.4	0.4	6.4				113.0
Crescent City	23.2	8.2	6.0	0.8	4.6				42.8
Eureka	27.2	15.2	4.6	3.6	6.0		0.2		56.8
Fort Bragg	46.4	15.0	8.2	0.8	1.2				71.6
Bodega Bay	17.6	2.4	0.6						20.6
San Francisco (excl. Bodega Bay)	52.2	17.2	5.2	3.6	5.2		0.6		84.0
Monterey	68.8	12.2	3.0	1.6	2.4		0.2		88.2
Morro Bay	86.8	17.2	5.0	1.4	2.2		0.4		113.0
Santa Barbara	67.2	15.2	2.0	0.6	0.4		0.2		85.6
Los Angeles	58.2	11.2	3.6	0.6	1.8		0.6		76.0
San Diego	40.4	6.8	0.4						47.6
At- Sea Sectors				0.6	17.8	7.0	1.2		26.6
Length Class Totals	695.6	233.4	83.6	48.2	71.6	7.2	2.0	1,133.8	1,133.8

## Figures

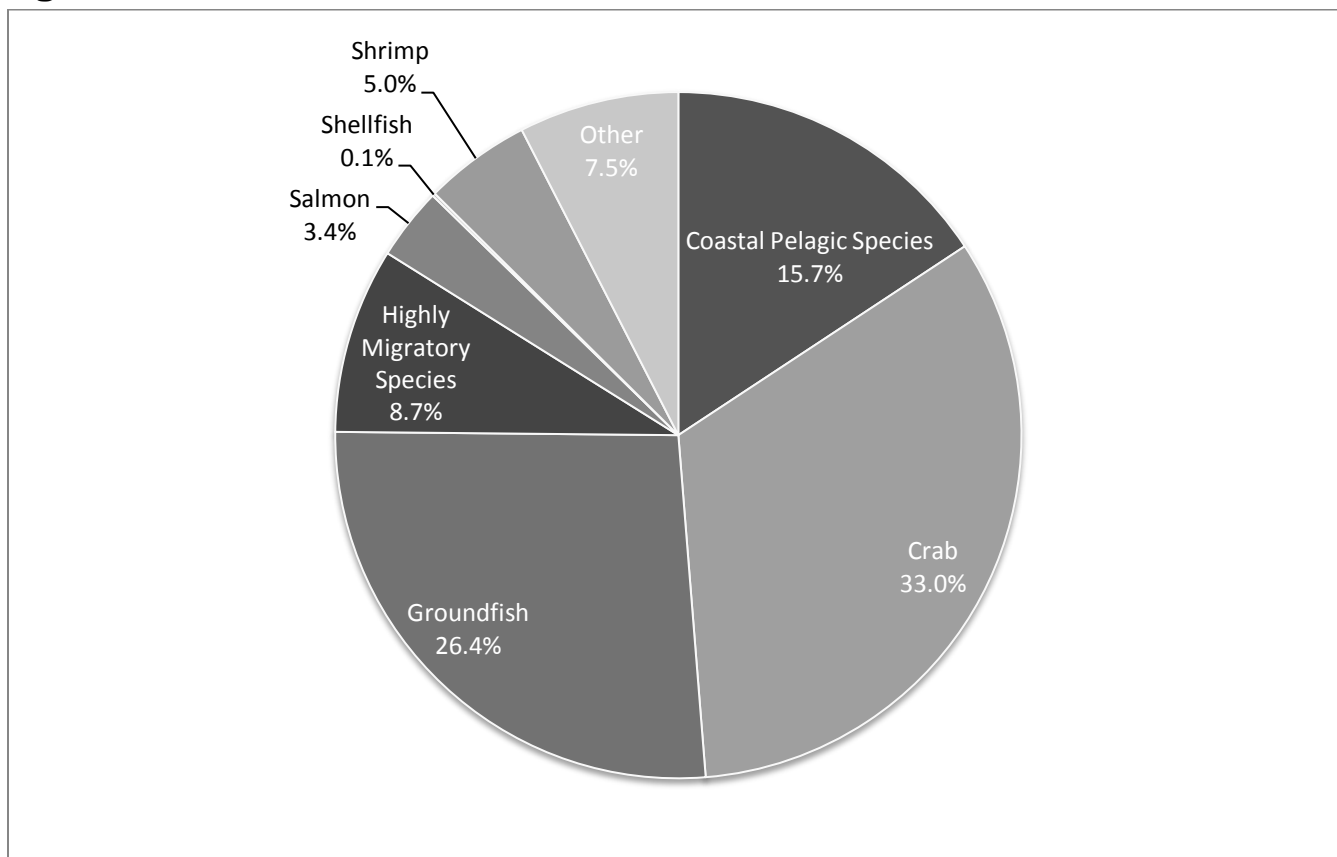


Figure 1. Average ex-vessel revenue by management group (commercial and tribal, at sea and shoreside) in current (2009) dollars as a percent of total, 2005-2009.

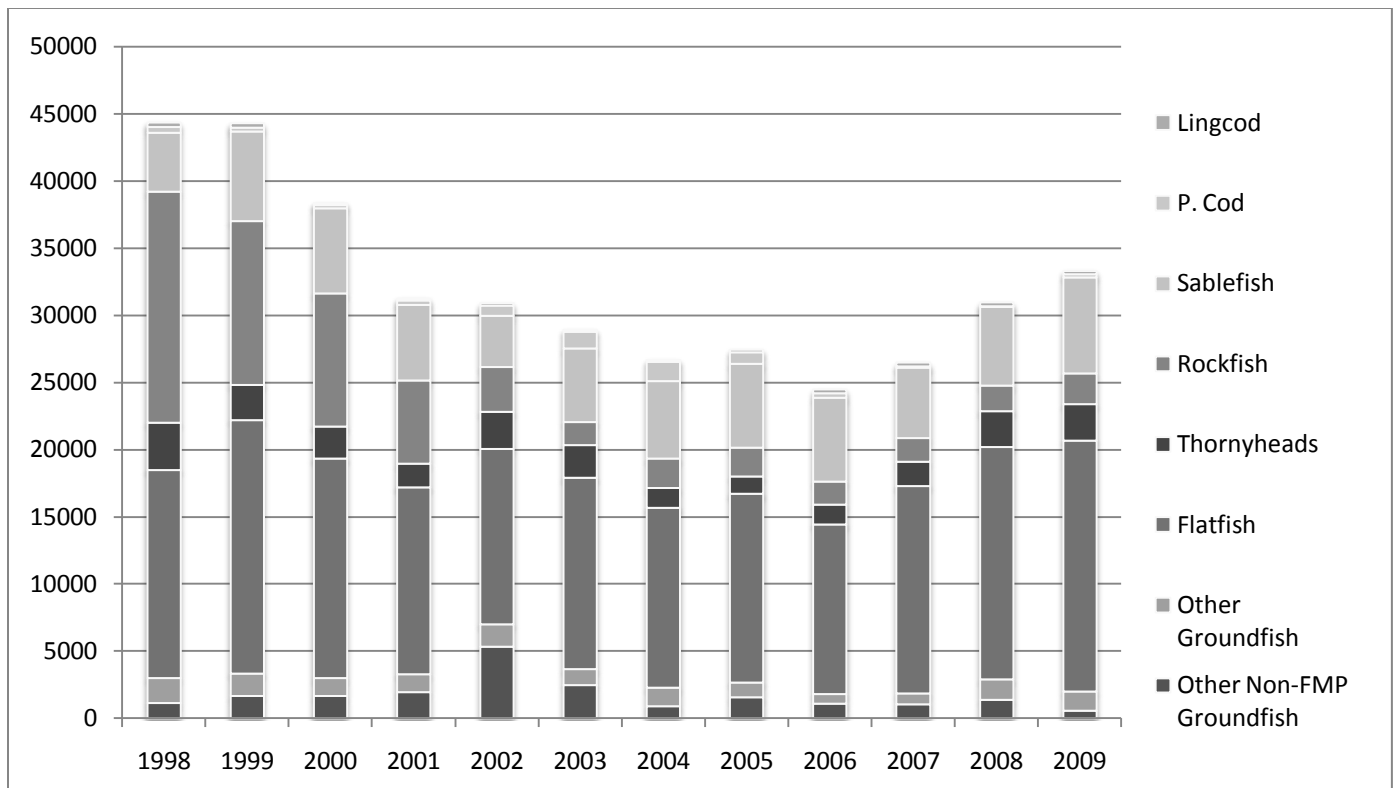


Figure 2. Nonwhiting groundfish landings (mt), 1998-2009.

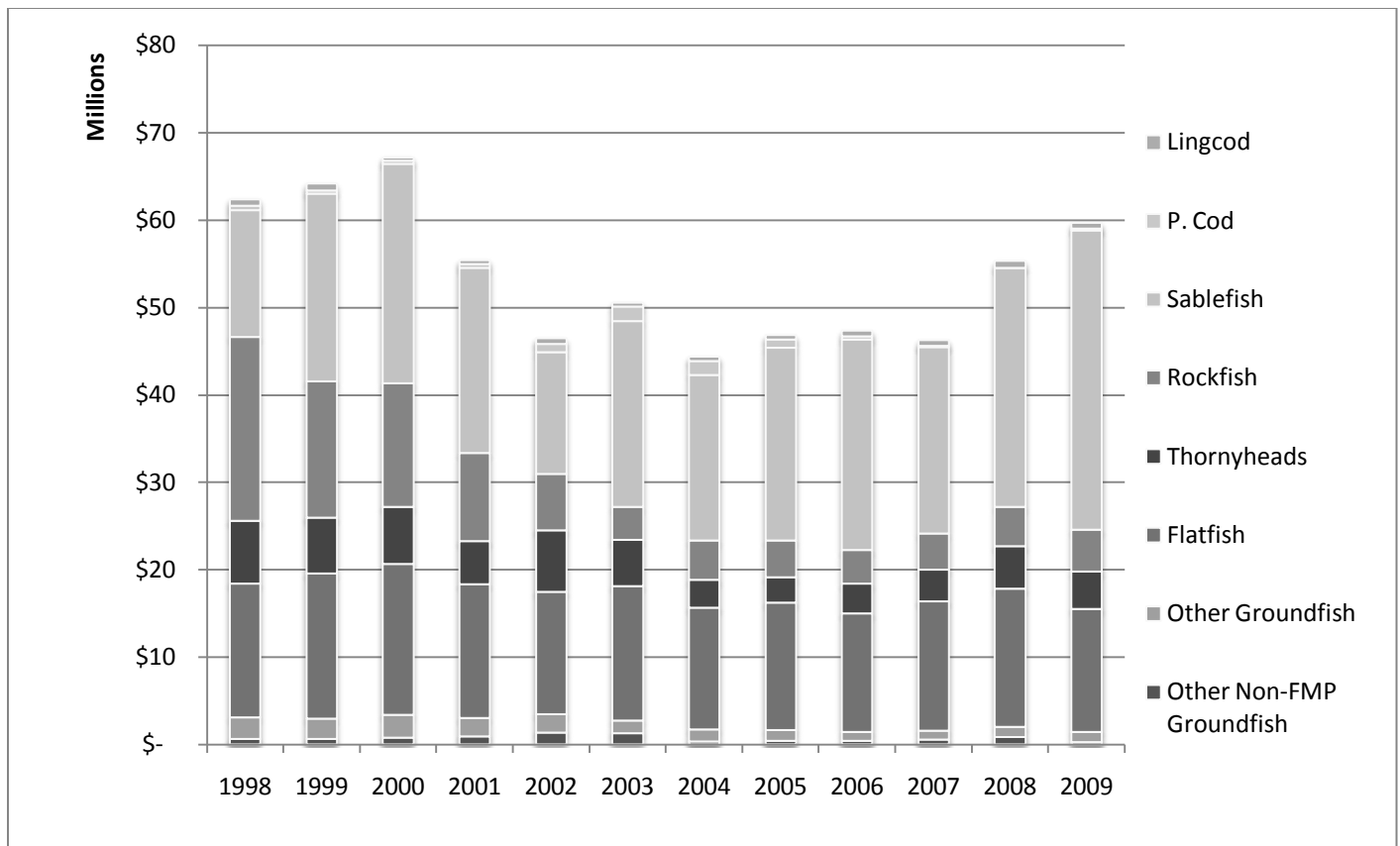


Figure 3. Nonwhiting groundfish ex-vessel revenue in current (2009) dollars, 1998-2009.



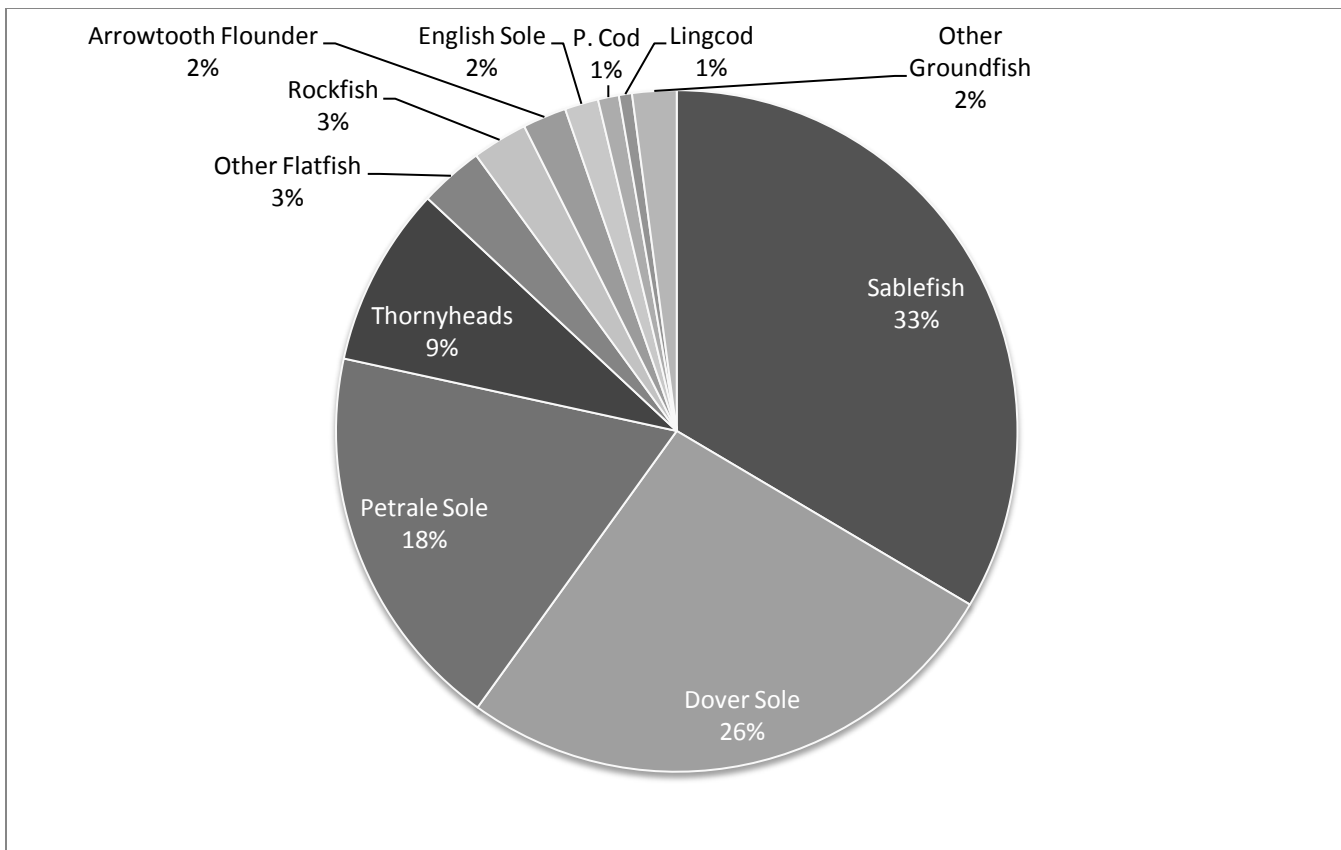


Figure 4. Composition of limited entry nonwhiting trawl ex-vessel revenue, average 2005-2009.

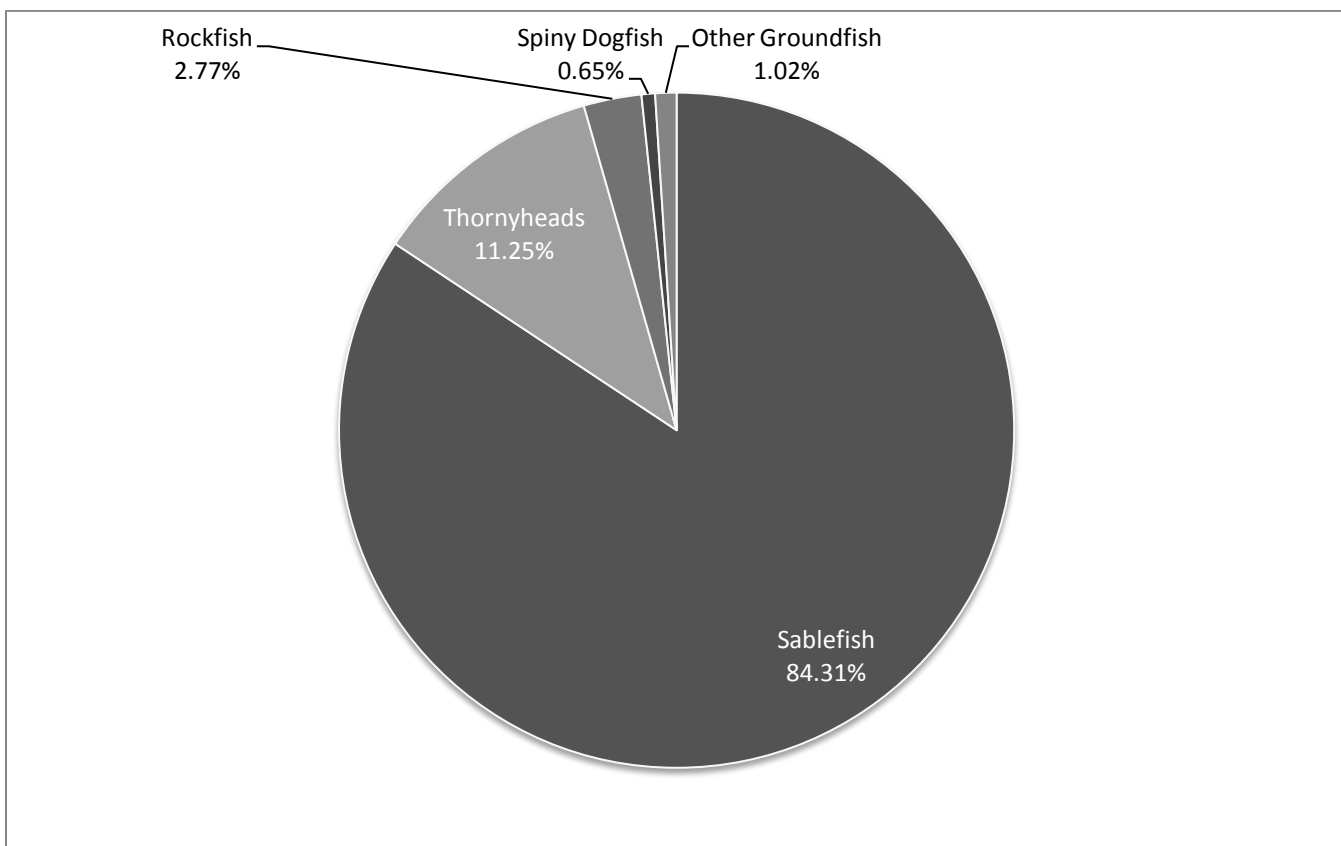


Figure 5. Composition of limited entry fixed gear ex-vessel revenue, average 2005-2009.

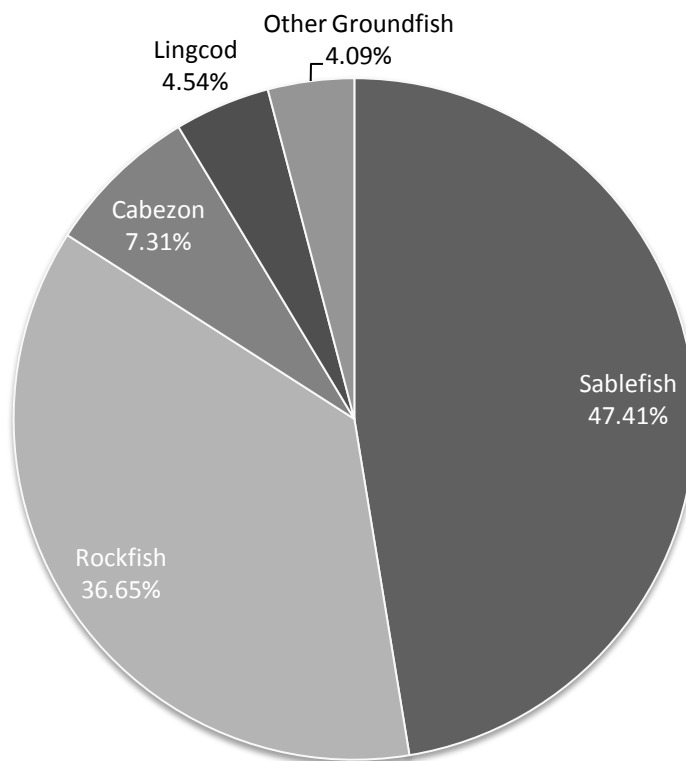


Figure 6. Composition of open access fixed gear ex-vessel revenue, average 2005-2009.

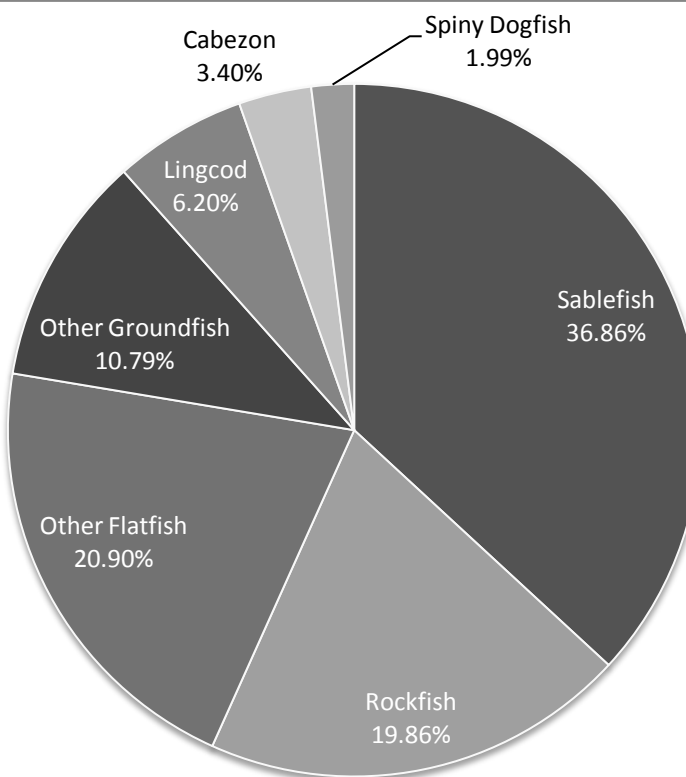


Figure 7. Composition of incidentally caught groundfish ex-vessel revenue, average 2005-2009.

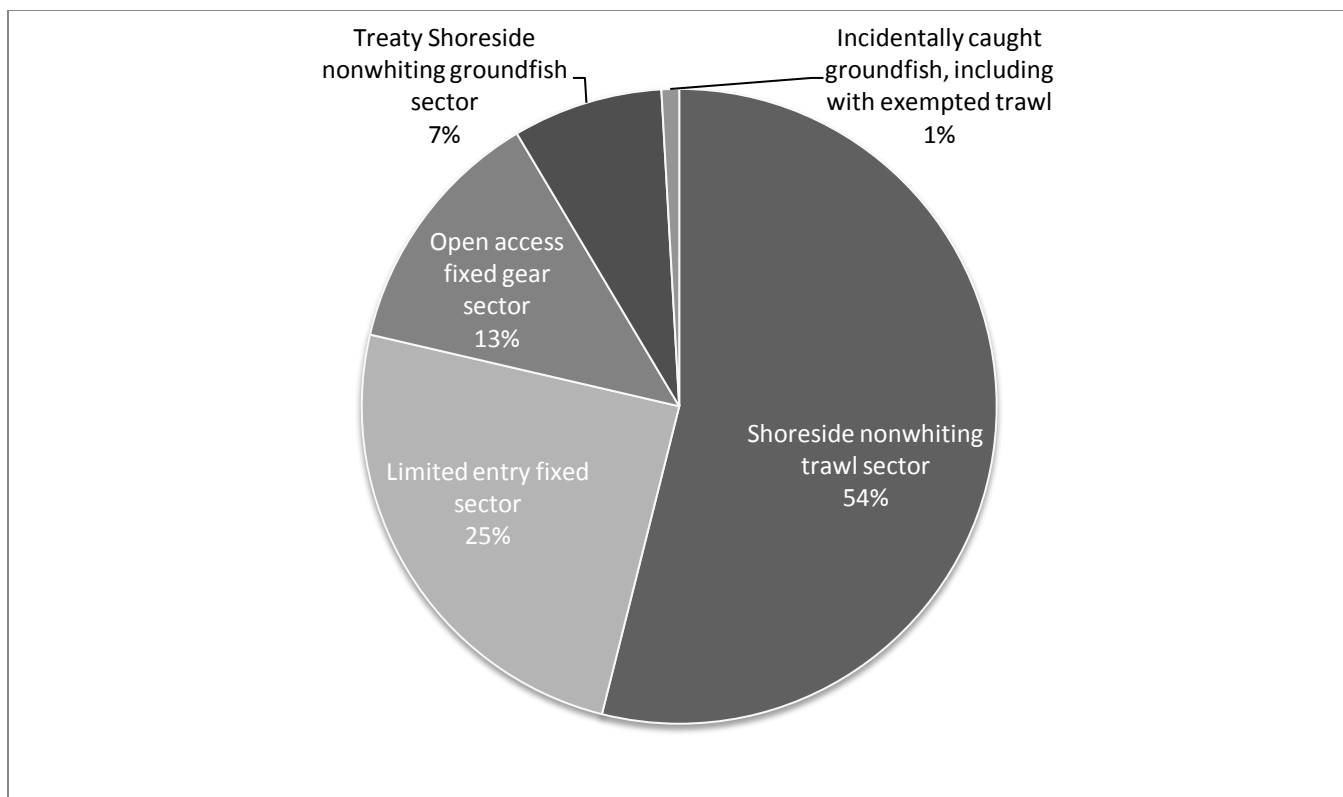


Figure 8. Groundfish ex-vessel revenue, proportion by nonwhiting sectors, 2005-2009.

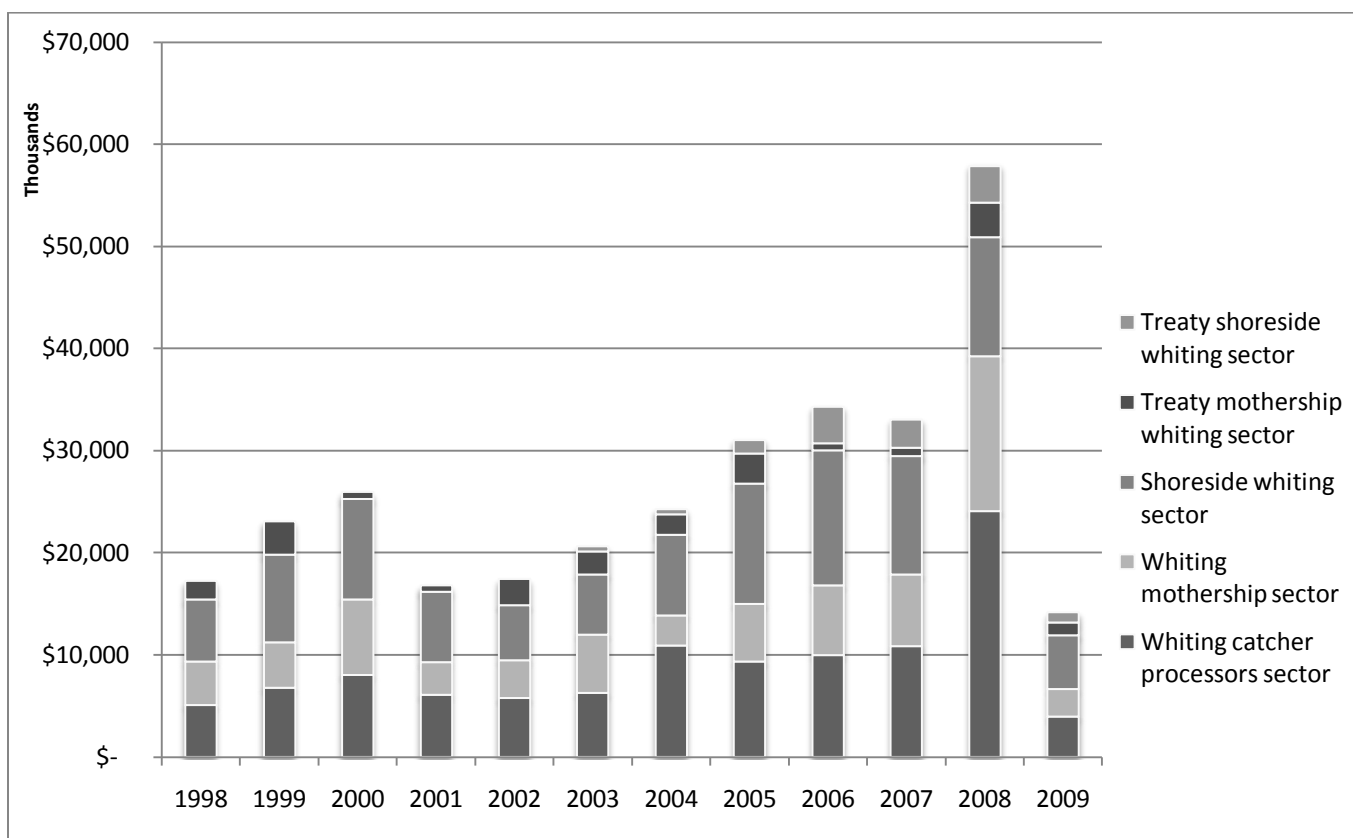


Figure 9. Whiting ex-vessel revenue (mt) by whiting sectors, current (2009) dollars, 1998-2009.

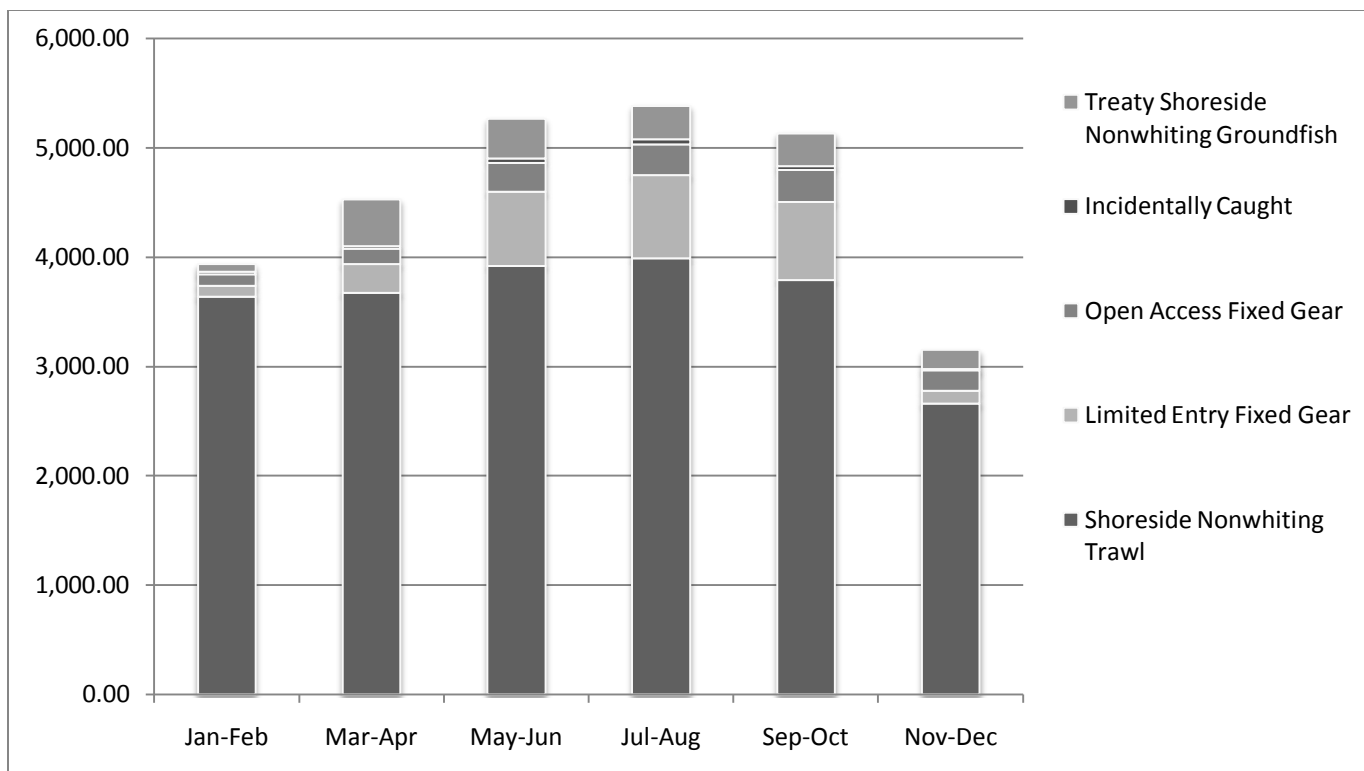


Figure 10. Average landings per 2-month period by nonwhiting sectors, 2005-2009.

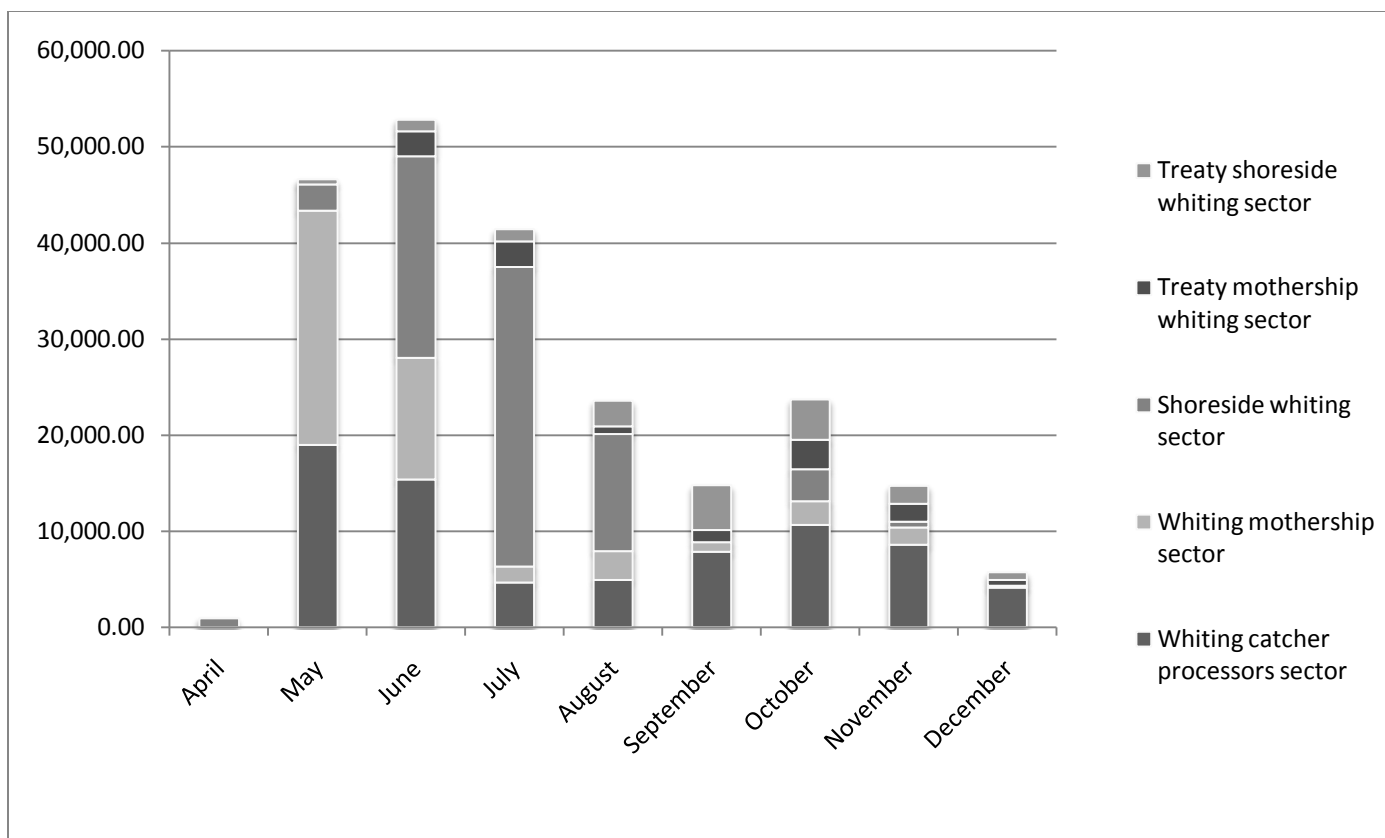


Figure 11. Average monthly landings (mt) by whiting sectors, 2005-2009.

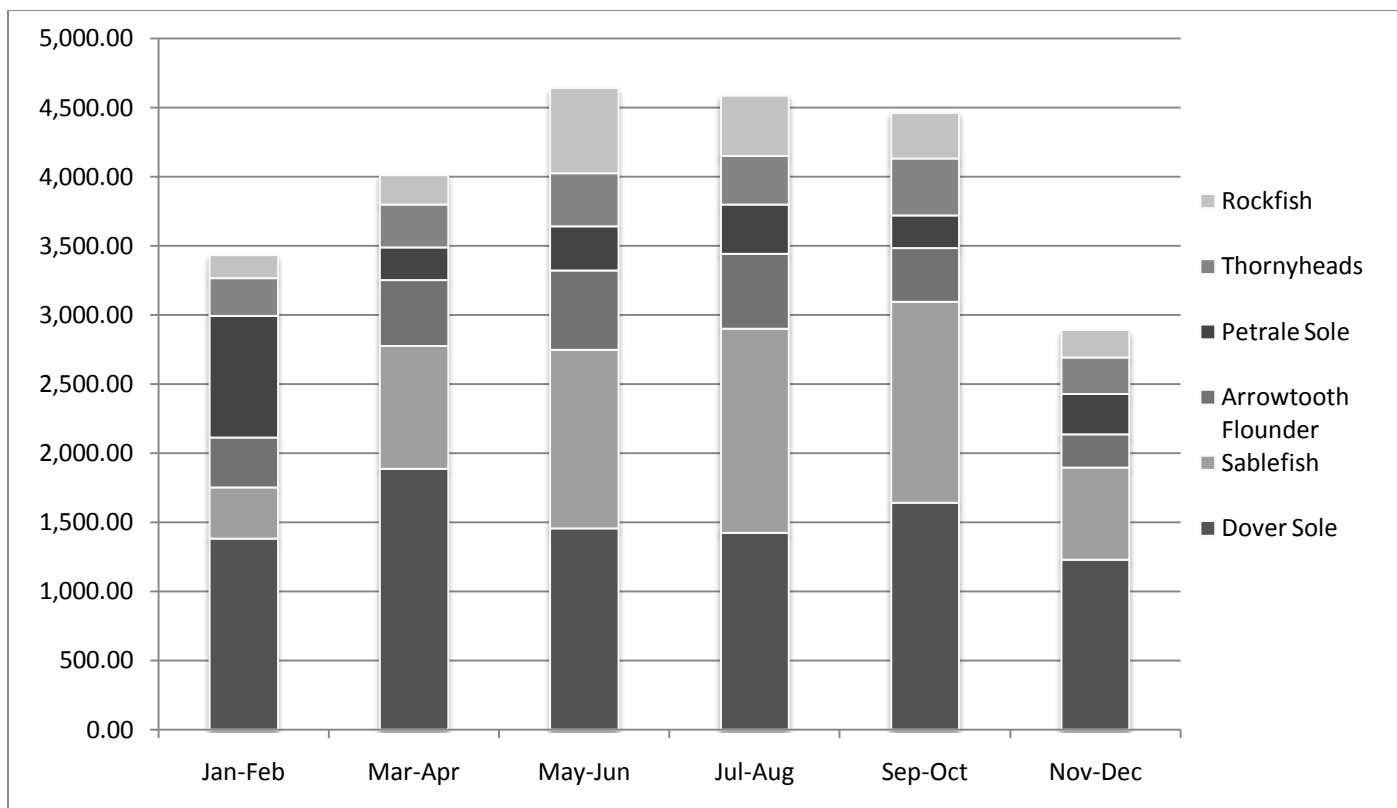


Figure 12. Average landings (mt) per 2-month period of selected groundfish species, 2005-2009.

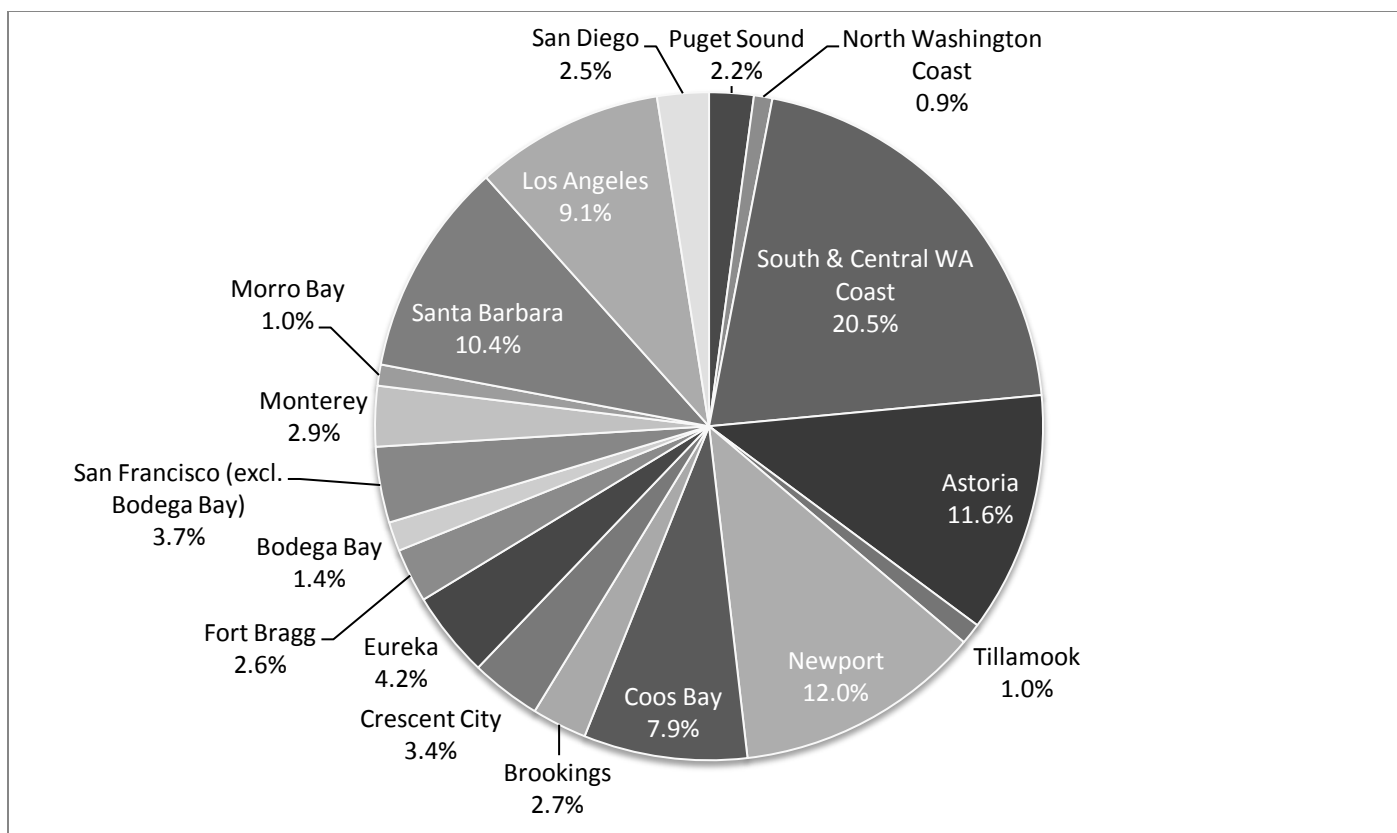


Figure 13. Ex-vessel revenue in 2009 by port group, for all species.

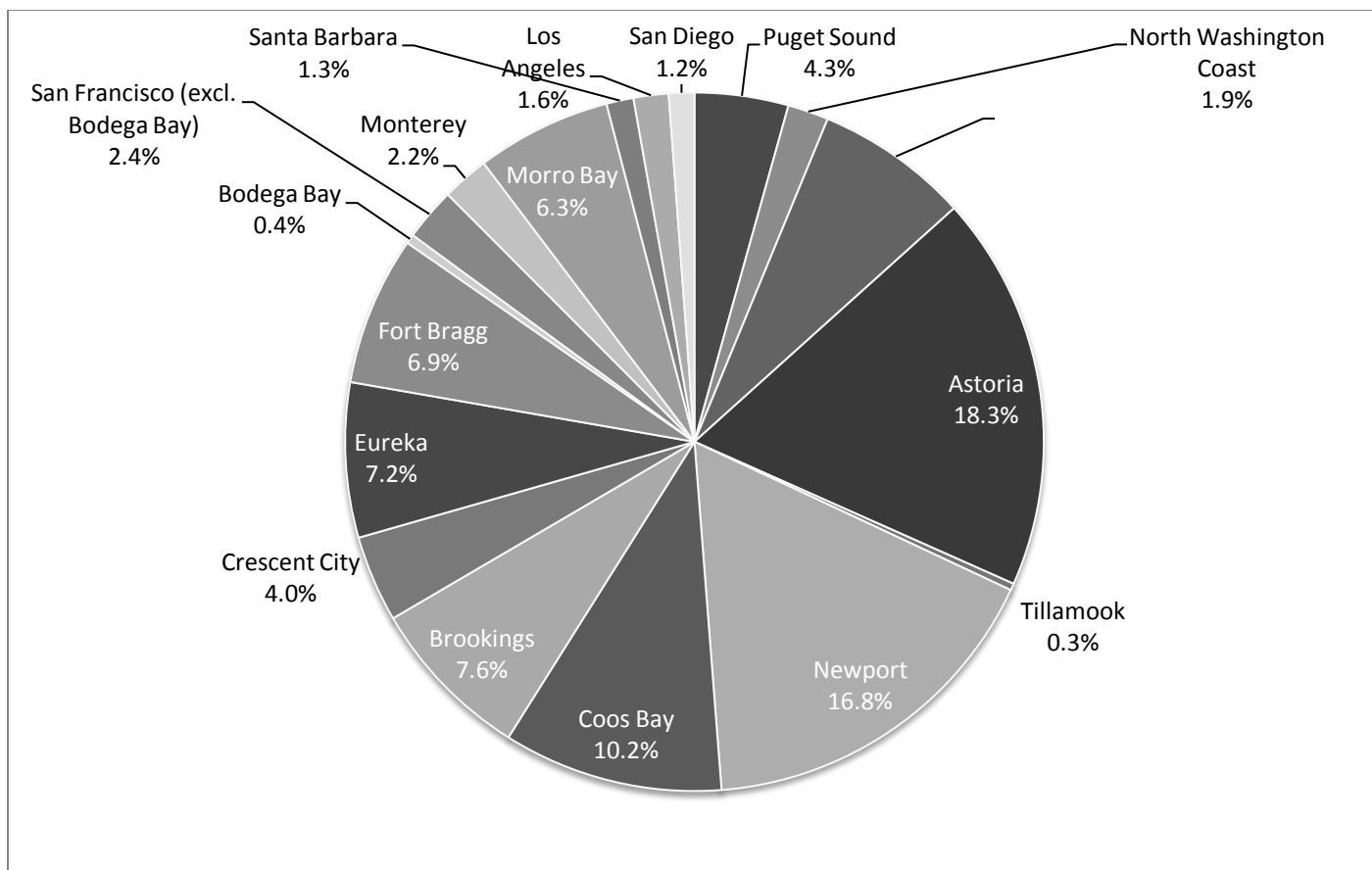


Figure 14. Ex-vessel revenue in 2009 by port group, for groundfish species

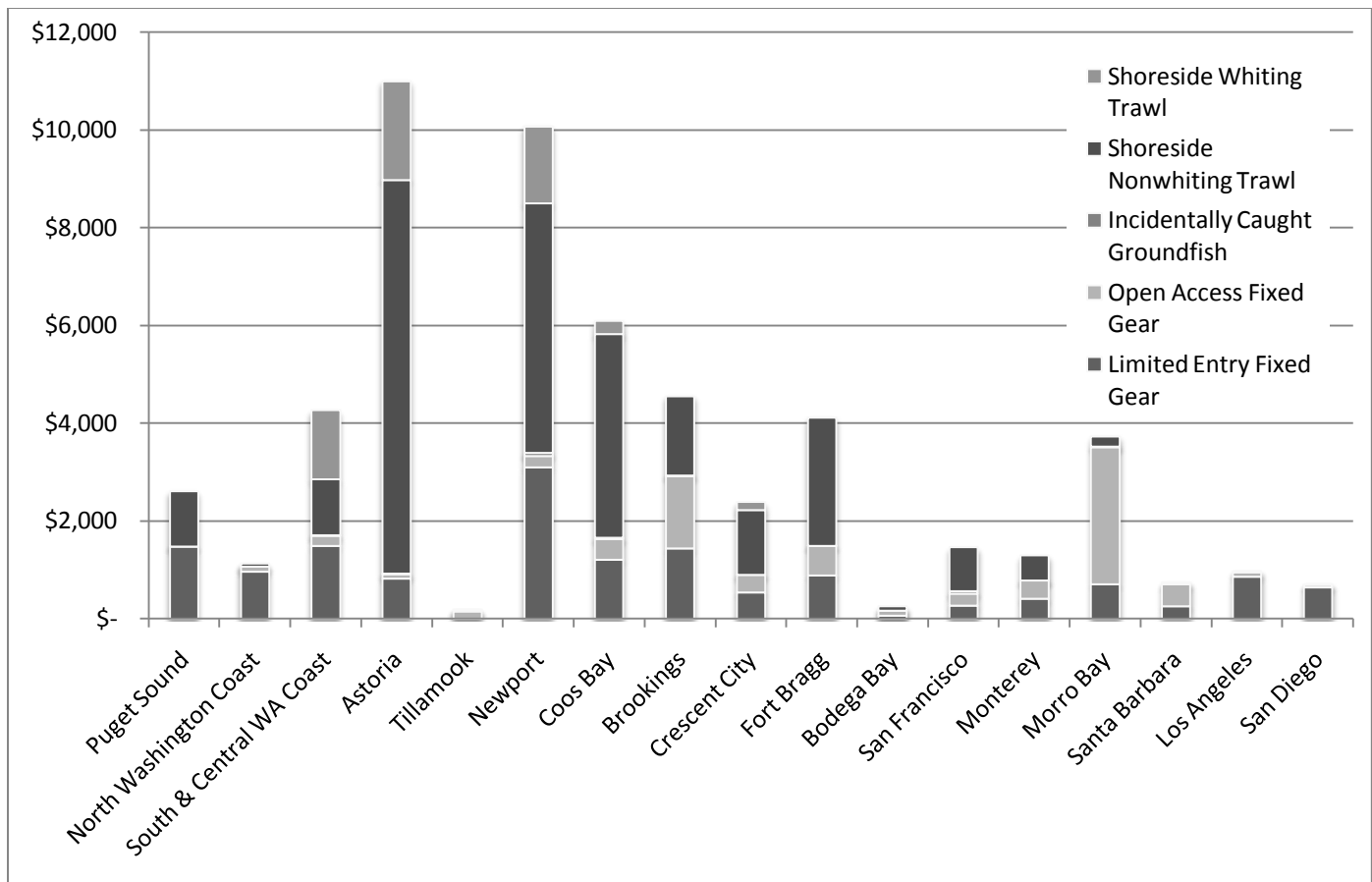


Figure 15. Ex-vessel revenue (\$1,000s) in 2009 by sector and port group.

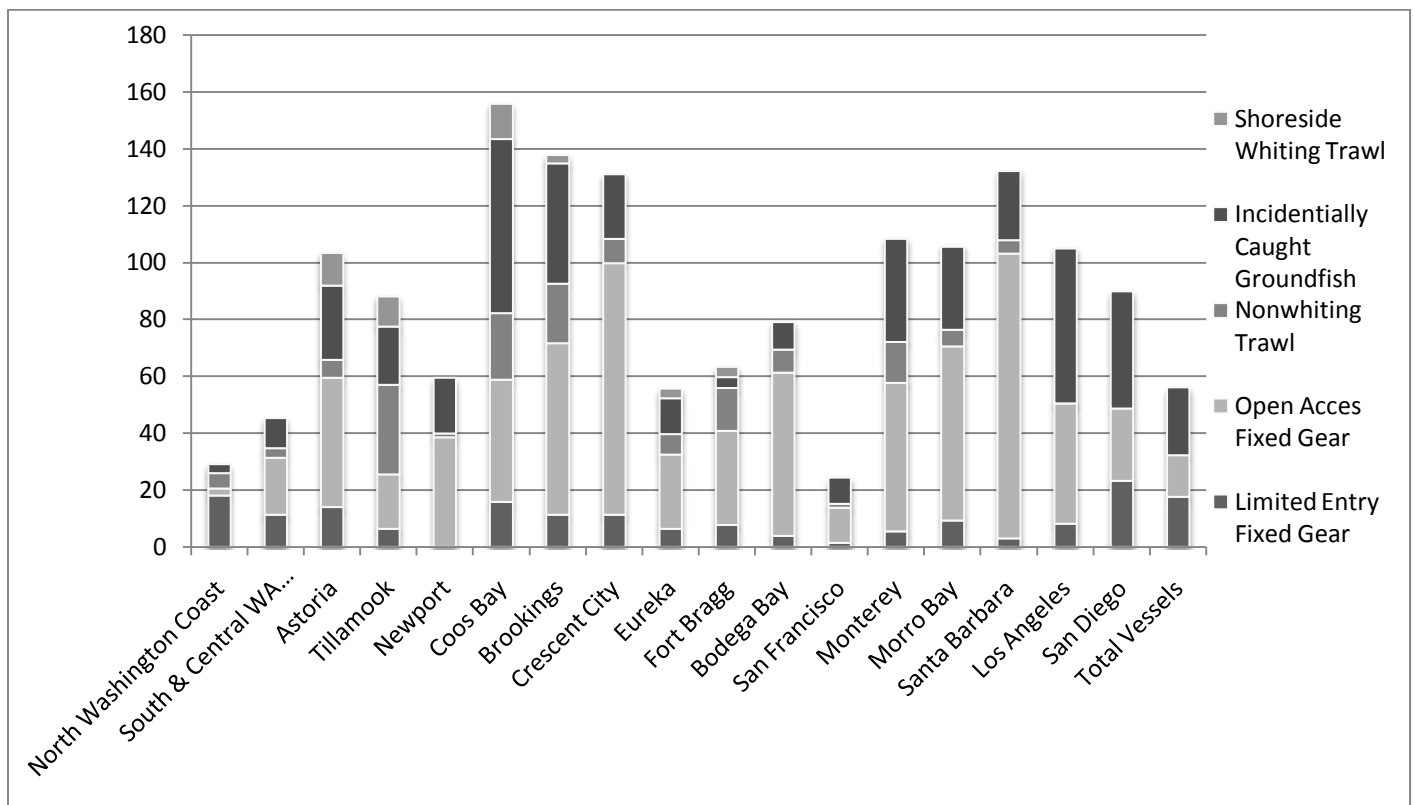


Figure 16. Average number of vessels making landings by sector and port group, 2005-2009.

## Update of the 2006 Community Vulnerability Analysis

### **1. Introduction**

The 2007-2008 Groundfish Harvest Specifications EIS included an evaluation of west coast fishing community engagement in fishing, dependence on groundfish fisheries, and socioeconomic resilience (PFMC 2006, Appendix A). Together, these criteria were used to assess each community's overall vulnerability to adverse socioeconomic impacts. The 2006 analysis was based on a review of available literature describing community vulnerability assessment methods, which provided guidance in developing the metrics specific to the assessment of community impacts related to groundfish fishery management. (Section 8, below, excerpts the description of this methodology from the 2006 EIS.) This document describes an update to the 2006 analysis, which will be used to supplement the evaluation of socioeconomic impacts in the 2011-2012 Groundfish Harvest Specifications EIS.

This update is not a comprehensive redesign of the 2006 methodology. However, in looking at some aspects of the 2006 methodology various modifications have been implemented in the type of data used for certain indicators and the methods for classifying communities relative to the metric values. In the 2011-2012 harvest specifications EIS projected personal income impacts at the community level under different harvest specifications/management measures alternatives can then be compared to the assessment of community status derived from the updated analysis.

### **2. Geographic Resolution of the Analysis**

This analysis uses somewhat different geographic units for the analysis. As with the 2006 analysis, dependence and engagement metrics are based on commercial fishery landings and recreational participation data, and resiliency metrics are based on U.S. Census Bureau and Bureau of Labor Statistics (BLS) data. The description of the 2006 analysis does not specify precisely what census data were used, but it is presumed that it was 2000 decennial census data, because only that source has the needed geographic resolution for the types of data used. These data likely come from the census long form, including Summary File 3 (SF3) tables. The estimates in these tables are based on survey data rather than a whole population enumeration. The Census Bureau has replaced the long form with the American Community Survey (ACS), which provides inter-decennial estimates on an ongoing basis (US Census Bureau 2008). The ACS uses a rolling sample frame that produces 1-year, 3-year, and 5-year estimates. The multi-year estimates incorporate single year estimates to produce data at a finer geographic resolution. The 1-year estimates release data for geographic areas with populations of 65,000 and greater; the 3-year estimates for areas with populations of 20,000 and greater, while the 5-year estimates are at the census block group level (the resolution of decennial long form data). Thus, to replicate the geographic



resolution of the 2006 analysis 5-year ACS estimates would be necessary.<sup>1</sup> However, the first ACS 5-year estimate, 2005-2009, will only become available in latter half of 2010. For that reason the most recent 3-year estimate, 2006-2008, was used.<sup>2</sup> The geographic resolution of this data set only allows evaluation at a county level. (Several west coast counties have populations less than 65,000 preventing use of the most recent 1-year estimate.)

Another important difference between ACS data and decennial census long form data is the inclusion of margin of error estimates (MOEs). (Although the Census Bureau estimated error in the long form data, these estimates were not made publicly available.) An assessment of statistical significance can be derived from these MOEs. A pair-wise test of one of the derived statistics, unemployment, suggests that when county level statistics are arrayed in ranked order, there is no statistical difference between counties adjacent to one on another in the rank order, although statistically significant differences may emerge when comparing counties far apart in the rank order.<sup>3</sup> Table 1 illustrates this for the calculated unemployment rate from ACS data. Counties are ranked by unemployment rate and each column and row is a county so that each cell represents a pairwise comparison derived from the standard errors for the statistic. If the test value is greater than the critical value of 1.645 then the difference between the two unemployment values are considered statistically significant at the 90 percent confidence interval and the cell is shaded. It can be seen that the unemployment rate for Del Norte County, which is ranked highest and thus the first column, is not statistically different from the unemployment rates for the next 10 lower ranked counties but is statistically different from 22 of the 23 counties ranked below the top 11. On the other hand, Curry and Pacific Counties (in Oregon and Washington respectively) show no significant difference in unemployment rate from any other county (of the 34 coastal counties included in the analysis), probably because of their small population size. Generally, it can be said that higher ranked counties as a group are significantly different from lower ranked counties as a group. For this reason, as discussed below, counties are put into three groups for each metric in order to assess socioeconomic vulnerability.

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<sup>1</sup> Although not documented, it is likely the 2006 analysis used data at the level of Census Designated Places (CDPs), Zip Code Tabulation Areas (ZCTAs), or block groups since results are reported at a “city” level.

<sup>2</sup> ACS data may be downloaded at [http://factfinder.census.gov/home/saff/main.html?\\_lang=en](http://factfinder.census.gov/home/saff/main.html?_lang=en).

<sup>3</sup> The margin of error tends to decrease with population size of the geographic unit. Thus, two counties with large populations may be more likely to show a statistical difference in relatively similar estimates as compared to counties with small populations.

**Table 1. Pairwise comparison of counties for statistically significant difference in calculated unemployment rate.**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
2	0.659																																	
3	0.781	0.416																																
4	0.818	0.517	0.067																															
5	0.862	0.724	0.123	0.049																														
6	0.805	0.464	0.273	0.240	0.224																													
7	1.203	2.019	0.885	0.826	0.924	0.117																												
8	0.933	0.646	0.435	0.401	0.390	0.114	0.037																											
9	1.227	1.707	0.898	0.844	0.911	0.171	0.139	0.023																										
10	1.244	1.527	0.901	0.850	0.897	0.218	0.232	0.077	0.102																									
11	1.484	3.369	1.562	1.518	1.784	0.399	0.873	0.255	0.554	0.348																								
12	1.544	4.244	1.760	1.721	2.088	0.450	1.130	0.307	0.715	0.467	0.181																							
13	1.647	6.143	2.095	2.067	2.621	0.546	1.641	0.406	1.027	0.696	0.625	0.534																						
14	1.668	6.768	2.170	2.145	2.747	0.566	1.768	0.427	1.098	0.747	0.742	0.695	0.264																					
15	1.651	3.114	1.813	1.775	1.998	0.597	1.249	0.465	0.942	0.717	0.573	0.483	0.245	0.189																				
16	1.761	6.521	2.375	2.356	2.977	0.666	2.062	0.531	1.351	0.963	1.135	1.18	1.091	1.112	0.126																			
17	1.765	5.952	2.351	2.330	2.904	0.673	2.004	0.539	1.343	0.968	1.108	1.123	0.947	0.907	0.151	0.064																		
18	1.802	6.859	2.484	2.469	3.129	0.707	2.232	0.574	1.471	1.058	1.327	1.431	1.519	1.654	0.253	0.344	0.220																	
19	1.542	1.753	1.327	1.290	1.330	0.619	0.867	0.503	0.743	0.632	0.479	0.420	0.295	0.268	0.162	0.116	0.102	0.056																
20	1.862	7.856	2.667	2.658	3.412	0.767	2.540	0.636	1.662	1.202	1.659	1.906	2.690	3.821	0.439	1.003	0.699	0.612	0.029															
21	1.856	5.566	2.510	2.492	3.040	0.773	2.201	0.644	1.555	1.164	1.393	1.431	1.312	1.286	0.438	0.612	0.516	0.397	0.052	0.094														
22	1.717	2.573	1.771	1.734	1.863	0.713	1.262	0.591	1.042	0.859	0.742	0.676	0.511	0.474	0.284	0.250	0.227	0.163	0.047	0.041	0.005													
23	1.965	7.782	2.900	2.897	3.682	0.876	2.865	0.750	1.938	1.436	2.061	2.366	3.037	3.496	0.767	1.719	1.366	1.424	0.192	1.15	0.507	0.196												
24	1.958	6.202	2.774	2.763	3.394	0.877	2.587	0.752	1.840	1.395	1.813	1.936	1.975	2.000	0.736	1.21	1.057	0.996	0.201	0.729	0.451	0.207	0.050											
25	1.978	7.410	2.906	2.902	3.659	0.891	2.849	0.766	1.955	1.459	2.058	2.321	2.768	3.017	0.803	1.652	1.361	1.383	0.216	1.11	1.0564	0.229	0.122	0.040										
26	2.015	8.085	3.027	3.028	3.853	0.927	3.059	0.803	2.081	1.551	2.286	2.654	3.513	4.082	0.923	2.141	1.715	1.857	0.267	1.684	0.780	0.305	0.424	0.235	0.254									
27	2.075	7.766	3.141	3.144	3.957	0.992	3.190	0.872	2.222	1.680	2.454	2.796	3.399	3.693	1.102	2.295	1.938	2.051	0.365	1.882	1.061	0.444	0.840	0.567	0.663	0.482								
28	2.138	8.916	3.348	3.359	4.289	1.054	3.557	0.936	2.440	1.839	2.860	3.399	4.811	5.745	1.313	3.251	2.618	2.998	0.454	3.110	1.471	0.575	1.512	0.950	1.212	1.080	0.418							
29	2.150	9.858	3.420	3.436	4.441	1.064	3.724	0.946	2.511	1.880	3.046	3.760	6.600	10.613	1.368	4.128	3.067	3.887	0.467	4.964	1.636	0.597	1.978	1.082	1.499	1.438	0.547	0.082						
30	1.985	3.280	2.296	2.266	2.459	0.982	1.865	0.868	1.577	1.339	1.351	1.310	1.170	1.139	0.819	0.895	0.860	0.805	0.403	0.686	0.611	0.448	0.432	0.395	0.391	0.319	0.166	0.039	0.023					
31	2.278	9.827	3.710	3.733	4.780	1.198	4.117	1.086	2.846	2.165	3.508	4.241	6.285	7.648	1.756	4.521	3.648	4.308	0.665	4.770	2.260	0.882	2.776	1.771	2.319	2.340	1.463	1.274	1.559	0.279				
32	2.388	11.254	4.030	4.065	5.258	1.309	4.666	1.202	3.199	2.434	4.151	5.200	9.157	13.575	2.128	6.416	4.894	6.286	0.829	8.203	3.028	1.124	4.403	2.551	3.570	3.892	2.519	2.683	3.982	0.525	1.183			
33	2.587	###	4.411	4.451	5.607	1.522	5.055	1.424	3.643	2.845	4.581	5.382	6.973	7.631	2.657	5.694	4.958	5.528	1.140	5.798	3.600	1.555	4.346	3.205	3.911	4.010	3.172	3.211	3.607	0.990	2.259	1.674		
34	2.621	8.491	4.302	4.330	5.269	1.566	4.681	1.471	3.547	2.839	4.160	4.607	5.173	5.341	2.610	4.411	4.068	4.257	1.202	4.217	3.195	1.610	3.423	2.848	3.203	3.180	2.680	2.590	2.721	1.070	1.903	1.442	0.268	
35	2.208	2.783	2.304	2.277	2.355	1.329	1.947	1.236	1.788	1.638	1.608	1.573	1.479	1.458	1.270	1.314	1.294	1.260	0.904	1.189	1.14	0.992	1.036	1.008	1.010	0.968	0.873	0.800	0.794	0.672	0.609	0.466	0.168	0.087

Key: 1. Del Norte County, California; 2. Monterey County, California; 3. Mason County, Washington; 4. Grays Harbor County, Washington; 5. Douglas County, Oregon; 6. Curry County, Oregon; 7. Humboldt County, California; 8. Pacific County, Washington; 9. Mendocino County, California; 10. Coos County, Oregon; 11. Whatcom County, Washington; 12. Santa Cruz County, California; 13. Alameda County, California; 14. Los Angeles County, California; 15. Clallam County, Washington; 16. Pierce County, Washington; 17. Lane County, Oregon; 18. Contra Costa County, California; 19. Jefferson County, Washington; 20. San Diego County, California; 21. Thurston County, Washington; 22. Clatsop County, Oregon; 23. Ventura County, California; 24. San Luis Obispo County, California; 25. Sonoma County, California; 26. San Francisco County, California; 27. Santa Barbara County, California; 28. Snohomish County, Washington; 29. Orange County, California; 30. Lincoln County, Oregon; 31. San Mateo County, California; 32. King County, Washington; 33. Marin County, California; 34. Skagit County, Washington; 35. Tillamook County, Oregon.

Commercial landings data do not have the same limitations in that it is not sample data; in principal all commercial landings are direct measurements (although there is undoubtedly some level of unquantified measurement error). For that reason metrics based on these data can be reported at the port level. But to allow comparison with the resiliency metrics, fishery data are presented at the county level. Recreational fishery data are also estimates, but since no quantification of sample error (statistical uncertainty) is available it is not possible to determine whether differences among the values are significant.

### **3. Description of Metrics Used in the Analysis**

#### ***Engagement and Dependence Metrics***

As discussed in Section 8, the 2006 analysis used state and Federal permit holder address information, number of vessels making landings in a port, the amount of nongroundfish and groundfish landings, and the number of processors/buyers as metrics to evaluate fishery engagement and groundfish fishery dependence. In this updated analysis the permits addresses were not used for two reasons. First, this information is more difficult to obtain. Second, it is not clear permit holder address best represents where economic activity related to the vessel is occurring, because the permit holder could reside at a different location from where economic activity related to fishery landings is occurring. The following measures of commercial fishery engagement are used, based on PacFIN data:

- Total number of vessels making at least one landing by port in 2008
- Total commercial ex-vessel revenue by port in 2008
- Total buyers that received at least one landing by port in 2008

For recreational fisheries the following measures of engagement are used:

- Number of charter vessels in each port
- Total of private/rental plus charter angler trips by port<sup>4</sup>

Recreational fishery data were provided by the state representatives on the Groundfish Management Team.

The following measures of dependence on the groundfish fishery are used:

- The number of “groundfish vessels” that made landings in 2008 as a proportion of all vessels that made at least one landing in the port in 2008. Groundfish vessels were determined by the composition of the vessel’s landings. If the largest proportion of a vessel’s total landings into a given port was groundfish it was counted as a groundfish vessel.<sup>5</sup>
- Total revenue from groundfish as a proportion of total revenue from all species for the port in 2008

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<sup>4</sup> In cases where reporting regions consisted of more than one county, angler trips were distributed to counties based on county populations.

<sup>5</sup> A vessel can be counted in more than one port if they have a different mix of landings in two or more ports. For example, a vessel could be a groundfish vessel in one port 1 and a salmon vessel another port. Although this suggests some double counting, since the metric is counting vessels within each port this should not be an issue, because a vessel can only have one primary fishery in a given port.

- The number of buyers for which at least 10 percent of the fish they received in a port in 2008 was groundfish.
- Total revenue from groundfish as a proportion of total revenue from groundfish for all ports in analysis in 2008

For recreational fisheries the following measures of groundfish dependence are used:

- Private/rental plus charter groundfish trips in the port as a proportion of total trips for port<sup>6</sup>
- Private/rental plus charter groundfish trips in the port as a proportion of total groundfish trips for all ports in the analysis<sup>7</sup>

#### **4. Resiliency metrics**

The metrics used in the analysis are described below, which are for the most part the same as those used in the 2006 analysis.<sup>8</sup> As noted above, these metrics are derived from ACS 3-year estimates tables and the BLS.

##### ***Industry diversity index***

The Shannon-Weiner index is conventionally used in ecology to measure ecosystem diversity. However, it has also been used in socioeconomic analyses to measure industry diversification. According to Wikipedia, the Shannon-Weaver Index is one of several diversity indices used to measure diversity in categorical data. It is the information entropy of the distribution, treating species as symbols and their relative population sizes as the probability. The computation is  $H = -\sum P_i(\ln P_i)$  where  $P_i$  is the proportion of each species in a sample. In this application the “species” is an industry category in census employment data and the sample is the county. The 2006-2008 ACS Table C24030 is used to obtain the estimates. This table provides estimates of the civilian employed population 16 years and over in each industry category. The table includes 20 industry employment categories as shown in Table 2.

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<sup>6</sup> In cases where reporting regions consisted of more than one county, angler trips were distributed to counties based on county populations.

<sup>7</sup> In cases where reporting regions consisted of more than one county, angler trips were distributed to counties based on county populations.

<sup>8</sup> The description of the 2006 analysis does specify which census tables were used, so the tables to use had to be deduced from the available descriptions.

**Table 2. Industry categories in ACS Table C24030.**

1	Agriculture, forestry, fishing and hunting
2	Mining, quarrying, and oil and gas extraction
3	Construction
4	Manufacturing
5	Wholesale trade
6	Retail trade
7	Transportation and warehousing
8	Utilities
9	Information
10	Finance and insurance
11	Real estate and rental and leasing
12	Professional, scientific, and technical services
13	Management of companies and enterprises
14	Administrative and support and waste management services
15	Educational services
16	Health care and social assistance
17	Arts, entertainment, and recreation
18	Accommodation and food services
19	Other services, except public administration
20	Public administration

### ***Population Density***

Population density figures are not reported in 2006 analysis although it appears that this metric was used in the communities scores (since communities could have a maximum score of 5 with one point assigned for each metric). ACS Table B0001 provides total population estimates. Land area values for each county were obtained from Wikipedia and used to compute population density values at the port group level.

### ***Unemployment Rate***

Estimates from the Bureau of Labor Statistics are used for the unemployment rate. County level data for 2008 was downloaded from the BLS website (<http://www.bls.gov/data/#unemployment>). The unemployment rate may also be derived from 2006-2008 ACS Table C23001. This table reports sex by age by employment status for the population 16 years and over. The unemployment rate is determined by dividing the sum of the unemployed population in each sex-age category, by the sum of the civilian population in the labor force from each sex-age category. (This approach excludes those in the armed forces and those not in the labor force.) Unemployment data from these two sources were compared in the evaluation and showed some differences as to whether a county would be rated high medium or low for this statistic. Although these census derived estimates of unemployment were not used on the resiliency scores, the MOE estimates were used to explore the issue of whether differences between counties are statistically significant, as discussed above.

### ***Percentage of the Population Living Below the Poverty Line***

Table B17001 from the 2006-2008 ACS is used to compute the percentage of the population below the poverty line. The table presents estimates of the population with income in the past 12 months below the poverty level by sex and age. The universe is the population for whom poverty status is determined. To

arrive at the poverty rate the estimated number below the poverty level are summed for the age and sex categories and divided by the total population.

### ***Isolated Cities***

The 2006 analysis uses an earlier study to identify isolated cities.<sup>9</sup> Because of uncertainty about the definition that was used and the fact that this update reports metrics at a larger geographic scale, this metric was not used.

## **5. Method for Assigning Scores to Communities for Each Metric**

This update derives scores for engagement, dependence, and resiliency differently than the 2006 analysis. In the original analysis the number of times a community fell in the top one-third of ranked communities for a metric was summed. Those with the highest frequency of falling in the top third were then identified as vulnerable. In this update communities are identified in high, low, and medium categories based on an overall score for engagement, dependence, and resiliency. (Since some communities show no groundfish landings for the dependence score a fourth category, not dependent, is added.) Counties are ranked for each metric and given a score of 1, 2, or 3 depending on their rank. These scores are then summed for each of the three metric categories (engagement, dependence, and resiliency) and the results are again binned into three categories and assigned to the high-medium-low descriptive categories.

In the 2006 analysis commercial and recreational fishery metrics were considered separately in the scoring scheme while in this update those scores are combined to arrive at single score for fishery engagement and groundfish fishery dependence. The 2006 analysis classified vulnerable areas as those that are highly engaged in fisheries or dependent on groundfish fisheries and also least resilient. Some areas were rated “most vulnerable” if they had the highest levels of engagement or dependence and the lowest level of resiliency. Since this update uses a different scoring scheme, the assessment of vulnerability is also slightly different: As with the 2006 analysis, counties were rated vulnerable if they are highly engaged or highly dependent, and have low resiliency. But since the scores are descriptive bins (high, medium, low) rather than frequency counts (number of times in the top third), “most vulnerable” counties are identified as those that are highly engaged, highly dependent, and have low resiliency rather than based on the value of a numeric score.

## **6. Results of Evaluation**

Table 5 through Table 7 show the metric values, rank, and resulting classification of counties by engagement, dependence, and resiliency. Table 3 summarizes the results and, using the criteria described above, identifies counties rated vulnerable and most vulnerable. The table also reports the vulnerability ratings from the 2006 analysis for comparison. There is a good correspondence between the results, although the 2006 analysis rated a greater number of counties as vulnerable or most vulnerable. Clallam County, Washington, Clatsop County Oregon; and Monterey and Los Angeles Counties in California were rated vulnerable in the 2006 analysis but not rated vulnerable in this update. Of these, Clatsop,

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<sup>9</sup> The 2006 analysis states the criteria for defining geographically isolated cities as those cities located in coastal counties with a population of 1,900 or less, which were not located on a major highway and fell outside of the 35-mile buffer of cities over 20,000. However, no counties have a population of 1,900 or less. They may have meant cities with a population of 1,900 or less.

Monterey, and Los Angeles rated high/low in at least one metric category and Clallam rate medium in all three categories in this update.

The evaluation of socioeconomic impacts will use the port group area as the unit of analysis; the results of the income impacts model are reported at this scale, for example. Port group areas are regional entities that have been created to evaluate socioeconomic impacts of groundfish fisheries. Table 4 lists the port group areas and shows the number of counties within the area rated vulnerable or most vulnerable out of the total number of counties in the area. As part of the impact assessment the relative change in ex-vessel revenue and personal income from status quo for a port group area under an alternative set of harvest limits and management measures can be assessed in relation to the occurrence of vulnerable rated counties in the port group area as part of the impact assessment.

**Table 3. Summary of fishery engagement, groundfish dependence, and economic resiliency scores, and vulnerability rating.**

County	Engagement Rating	Dependence Rating	Resiliency Rating	Vulnerability Rating	2006 Rating
King County, Washington	Low	Not dependent	High		
Pierce County, Washington	Low	Not Dependent	High		
Skagit County, Washington	Low	Not Dependent	Medium		
Snohomish County, Washington	Low	Not Dependent	Medium		
Thurston County, Washington	Low	Not Dependent	High		
Whatcom County, Washington	Low	Medium	Medium		
Clallam County, Washington	Medium	Medium	Medium		Vulnerable
Jefferson County, Washington	Low	Not Dependent	Medium		
<b>Grays Harbor County, Washington</b>	High	Medium	Low	Vulnerable	Most Vulnerable
<b>Pacific County, Washington</b>	High	Low	Low	Vulnerable	Most Vulnerable
Clatsop County, Oregon	High	Medium	Medium		Vulnerable
<b>Tillamook County, Oregon</b>	High	Medium	Low	Vulnerable	
<b>Lincoln County, Oregon</b>	High	High	Low	<b>Most Vulnerable</b>	Most Vulnerable
<b>Coos County, Oregon</b>	Medium	High	Low	Vulnerable	Most Vulnerable
Douglas County, Oregon	Low	Low	Low		
Lane County, Oregon	High	Low	Medium		
<b>Curry County, Oregon</b>	Medium	High	Low	Vulnerable	Vulnerable
<b>Del Norte County, California</b>	High	High	Low	<b>Most Vulnerable</b>	Vulnerable
<b>Humboldt County, California</b>	Medium	High	Low	Vulnerable	Most Vulnerable
<b>Mendocino County, California</b>	High	High	Low	<b>Most Vulnerable</b>	Most Vulnerable
Marin County, California	Medium	Low	High		
Sonoma County, California	Medium	Medium	High		
Alameda County, California	High	Low	High		
Contra Costa County, California	Low	Low	High		
San Francisco County, California	Medium	Medium	High		
San Mateo County, California	Medium	Medium	High		
Monterey County, California	High	High	Medium		Vulnerable
Santa Cruz County, California	Medium	Medium	Medium		
San Luis Obispo County, California	High	High	Medium		
Santa Barbara County, California	High	Medium	High		
Ventura County, California	High	Medium	High		
Los Angeles County, California	High	Medium	Medium		Vulnerable
Orange County, California	High	Medium	High		
San Diego County, California	High	Medium	High		

**Table 4. Comparison of port group areas containing vulnerable counties.**

<b>Port Group Area</b>	<b>Number of Counties of Total in Group Rated Vulnerable or Most Vulnerable</b>
Puget Sound, Washington	None out of 8*
North Washington Coast, Washington	None out of 2
South and Central Washington Coast	2 out of 3
Astoria, Oregon	None out of 2
Tillamook, Oregon	1 out of 1
Newport, Oregon	1 out of 1 (Most Vulnerable)
Coos Bay, Oregon	1 out of 3
Brookings, Oregon	1 out of 1
Crescent City, California	1 out of 1 (Most Vulnerable)
Eureka, California	1 out of 1
Fort Bragg, California	1 out of 1 (Most Vulnerable)
Bodega Bay, California	None out of 2
San Francisco, California	None out of 2
Monterey, California	None out of 2
Morro Bay, California	None out of 1
Santa Barbara, California	None out of 2
Los Angeles, California	None out of 2
Sand Diego, California	None out 1

\*Two counties in the port group area, Mason and San Juan, were not rated. Mason was not rated because of the lack of fishery landings activity and San Juan because the population is too small to obtain 3-year ACS data.



**Table 5. Fishery engagement metrics and county ratings.**

County	Total Revenue		Number of Commercial Vessels		Total Buyers		Total Recreational Trips		Number of Charter Vessels		Engagement Rating
	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	
Whatcom	\$4,408,090	20	49	2	14	11	0	0	0	0	Low
Skagit	\$1,384,550	13	15	2	3	6	0	0	0	0	Low
Snohomish	\$1,295	1	3	2	2	3	0	0	0	0	Low
King	\$35,605	5	4	2	4	7	0	0	0	0	Low
Pierce	\$38,591	6	5	2	3	5	0	0	0	0	Low
Thurston	\$2,711	2	1	1	1	1	0	0	0	0	Low
Jefferson	\$490,735	11	23	2	2	4	0	0	0	0	Low
Clallam	\$1,945,411	14	76	2	10	9	15,400	9	15	20	Medium
Grays Harbor	\$38,253,505	35	261	2	44	26	37,547	21	35	25	High
Pacific	\$17,161,923	29	228	2	23	15	41,496	22	28	23	High
Klickitat	\$15,080	3	5	2	1	2	0	0	0	0	Low
Clatsop	\$31,722,869	33	255	2	30	19	5,545	6	13	17	High
Tillamook	\$2,763,287	15	133	2	31	21	24,089	16	13	18	High
Lincoln	\$32,624,821	34	300	2	71	33	51,595	24	30	24	High
Lane	\$110,125	7	7	2	8	8	16,907	10	0	0	Low
Douglas	\$1,069,549	12	28	2	18	12	5,024	4	9	13	Medium
Coos	\$20,384,735	30	201	2	42	25	3,056	2	4	5	Medium
Curry	\$7,266,993	25	152	2	29	18	27,409	18	13	19	High
Del Norte	\$9,292,238	27	129	2	23	14	4,418	3	1	1	Medium
Humboldt	\$11,219,829	28	139	2	48	27	19,715	12	4	6	High
Mendocino	\$7,136,539	23	113	2	36	24	1,603	1	5	9	Medium
Sonoma	\$3,638,528	19	91	2	32	22	8,718	7	7	10	Medium
Marin	\$274,051	9	40	2	31	20	5,324	5	2	3	Low
Alameda	\$113,998	8	36	2	26	16	31,522	19	15	21	High
Contra Costa	\$31,149	4	14	2	14	10	21,984	15	0	0	Low
San Francisco	\$6,658,290	21	194	2	66	30	17,322	11	1	2	Medium
San Mateo	\$3,157,404	17	87	2	61	28	15,181	8	8	12	Medium
Santa Cruz	\$390,391	10	38	2	19	13	20,734	13	4	7	Medium
Monterey	\$7,579,474	26	113	2	28	17	33,254	20	4	8	High
San Luis Obispo	\$2,775,024	16	133	2	35	23	21,734	14	9	14	Medium
Santa Barbara	\$7,228,139	24	170	2	67	31	26,102	17	7	11	High
Ventura	\$21,162,551	31	188	2	94	35	51,393	23	10	15	High
Los Angeles	\$21,475,021	32	222	2	71	32	332,352	27	10	16	High
Orange	\$3,421,499	18	131	2	72	34	101,587	25	2	4	High
San Diego	\$6,814,849	22	162	2	63	29	102,611	26	19	22	High

**Table 6. Groundfish dependence metrics and county ratings.**

County	Groundfish Vessels		Groundfish Revenue		Groundfish Buyers		Groundfish Revenue, All Ports		Rec. Groundfish Trips		Rec. Groundfish Trips, All ports		Dependence Rating
	Percent	Rank	Percent	Rank	Number	Rank	Percent	Rank	Percent	Rank	Percent	Rank	
Whatcom	42.86%	22	55.38%	27	6	10	3.918%	20	0.00%	0	0.00%	0	Medium
Skagit	0.00%	0	0.00%	0	0	0	0.000%	0	0.00%	0	0.00%	0	Not Dependent
Snohomish	0.00%	0	0.00%	0	0	0	0.000%	0	0.00%	0	0.00%	0	Not Dependent
King	0.00%	0	0.00%	0	0	0	0.000%	0	0.00%	0	0.00%	0	Not Dependent
Pierce	0.00%	0	0.00%	0	0	0	0.000%	0	0.00%	0	0.00%	0	Not Dependent
Thurston	0.00%	0	0.00%	0	0	0	0.000%	0	0.00%	0	0.00%	0	Not Dependent
Jefferson	0.00%	0	0.00%	0	0	0	0.000%	0	0.00%	0	0.00%	0	Not Dependent
Clallam	30.26%	20	45.99%	24	3	7	1.436%	14	29.58%	3	0.78%	8	Medium
Grays Harbor	7.66%	5	12.55%	11	2	5	7.701%	24	39.33%	4	2.52%	16	Medium
Pacific	5.26%	2	7.73%	9	1	3	2.130%	16	3.47%	1	0.25%	2	Low
Klickitat	0.00%	0	0.00%	0	0	0	0.000%	0	0.00%	0	0.00%	0	Not Dependent
Clatsop	15.29%	12	38.09%	22	4	8	19.389%	28	7.86%	2	0.07%	1	Medium
Tillamook	18.05%	14	6.15%	8	8	13	0.273%	7	46.21%	10	1.90%	14	Medium
Lincoln	19.00%	16	33.11%	21	12	20	17.332%	27	58.97%	17	5.20%	23	High
Lane	0.00%	0	2.63%	4	1	1	0.005%	2	48.74%	12	1.41%	12	Low
Douglas	10.71%	8	5.56%	7	1	2	0.095%	6	48.74%	11	0.42%	6	Low
Coos	23.38%	17	32.90%	20	12	19	10.761%	26	48.74%	13	0.25%	3	High
Curry	55.92%	25	54.27%	26	13	21	6.329%	23	82.35%	22	3.86%	21	High
Del Norte	25.58%	19	27.43%	19	7	12	4.090%	21	79.28%	20	0.60%	7	High
Humboldt	31.65%	21	45.32%	23	14	24	8.159%	25	79.28%	21	2.67%	17	High
Mendocino	46.90%	23	47.96%	25	15	25	5.493%	22	93.16%	27	0.26%	4	High
Sonoma	7.69%	6	8.35%	10	10	14	0.487%	10	93.16%	26	1.39%	11	Medium
Marin	0.00%	0	0.92%	1	2	4	0.004%	1	44.43%	6	0.40%	5	Low
Alameda	2.78%	1	5.53%	6	5	9	0.010%	3	44.43%	7	2.39%	15	Low
Contra Costa	14.29%	10	22.05%	18	3	6	0.011%	4	44.43%	8	1.67%	13	Low
San Francisco	14.43%	11	21.82%	17	16	27	2.332%	18	44.43%	9	1.32%	10	Medium

County	Groundfish Vessels		Groundfish Revenue		Groundfish Buyers		Groundfish Revenue, All Ports		Rec. Groundfish Trips		Rec. Groundfish Trips, All ports		Dependence Rating
	Percent	Rank	Percent	Rank	Number	Rank	Percent	Rank	Percent	Rank	Percent	Rank	
San Mateo	16.09%	13	14.74%	14	18	28	0.747%	12	44.43%	5	1.15%	9	Medium
Santa Cruz	23.68%	18	12.64%	12	12	17	0.079%	5	83.86%	25	2.97%	18	Medium
Monterey	47.79%	24	18.66%	15	16	26	2.270%	17	83.86%	23	4.77%	22	High
San Luis Obispo	67.67%	26	70.75%	28	13	22	3.150%	19	83.86%	24	3.12%	19	High
Santa Barbara	7.65%	4	3.05%	5	7	11	0.353%	8	71.93%	19	3.21%	20	Medium
Ventura	7.98%	7	1.46%	3	14	23	0.497%	11	71.93%	18	6.32%	24	Medium
Los Angeles	5.86%	3	1.23%	2	11	16	0.423%	9	55.71%	15	31.65%	27	Medium
Orange	18.32%	15	19.30%	16	12	18	1.060%	13	55.71%	16	9.67%	25	Medium
San Diego	14.20%	9	13.42%	13	10	15	1.467%	15	55.71%	14	9.77%	26	Medium

**Table 7. Resiliency metrics and county ratings.**

County	Pop. Density	Rank	Industry Diversity	Rank	Poverty Rate	Rank	Unemployment Rate	Rank	Resiliency Rating
King County, Washington	802.45	7	2.691	12	9.5%	6	4.6%	1	High
Pierce County, Washington	712.84	8	2.678	16	11.3%	12	5.5%	13	High
Skagit County, Washington	60.42	21	2.684	14	12.3%	17	5.5%	13	Medium
Snohomish County, Washington	306.74	13	2.644	25	7.8%	3	5.4%	9	Medium
Thurston County, Washington	308.44	12	2.607	30	10.1%	9	4.9%	4	High
Whatcom County, Washington	76.83	18	2.685	13	15.2%	25	4.9%	4	Medium
Clallam County, Washington	26.33	27	2.702	8	14.2%	22	6.8%	23	Medium
Jefferson County, Washington	13.39	33	2.577	33	13.5%	19	5.4%	9	Medium
Grays Harbor County, Washington	31.96	25	2.604	31	15.2%	26	7.4%	28	Low
Pacific County, Washington	17.44	32	2.646	24	17.0%	31	7.3%	26	Low
Clatsop County, Oregon	34.30	24	2.579	32	12.2%	16	5.2%	6	Medium
Tillamook County, Oregon	22.02	30	2.644	26	17.6%	32	5.4%	9	Low
Lincoln County, Oregon	38.32	22	2.615	29	16.8%	30	6.5%	21	Low
Coos County, Oregon	35.17	23	2.664	20	15.1%	24	8.2%	31	Medium
Douglas County, Oregon	20.25	31	2.647	23	14.0%	21	9.8%	34	Low
Lane County, Oregon	72.62	19	2.648	22	15.7%	28	6.7%	22	Medium
Curry County, Oregon	10.93	34	2.631	27	15.3%	27	8.0%	30	Low
Del Norte County, California	23.47	28	2.449	34	20.3%	34	8.7%	33	Low
Humboldt County, California	31.81	26	2.672	18	18.4%	33	7.2%	25	Low
Mendocino County, California	22.22	29	2.664	21	16.8%	29	6.8%	23	Low
Marin County, California	298.29	14	2.666	19	7.1%	2	4.7%	2	High
Sonoma County, California	262.06	15	2.701	9	10.0%	8	5.7%	15	High
Alameda County, California	1774.87	4	2.672	17	10.8%	10	6.2%	18	High
Contra Costa County, California	1267.70	5	2.705	6	8.8%	5	6.2%	18	High
San Francisco County, California	3440.41	1	2.616	28	11.0%	11	5.2%	6	High
San Mateo County, California	949.70	6	2.703	7	6.7%	1	4.8%	3	High
Monterey County, California	107.56	16	2.699	11	11.5%	13	8.4%	32	Medium
Santa Cruz County, California	360.32	10	2.700	10	12.0%	15	7.3%	26	Medium
San Luis Obispo County, California	72.52	20	2.718	3	12.9%	18	5.7%	15	Medium
Santa Barbara County, California	106.26	17	2.729	2	13.5%	20	5.4%	9	High
Ventura County, California	359.52	11	2.758	1	8.7%	4	6.2%	18	High
Los Angeles County, California	2069.05	3	2.710	5	15.1%	23	7.5%	29	Medium
Orange County, California	3149.78	2	2.683	15	9.5%	7	5.3%	8	High
San Diego County, California	655.31	9	2.715	4	11.7%	14	6.0%	17	High

Note: Rank order for each metric is 1 = highest resiliency.

**Table 8. Port group areas, counties and PacFIN ports.**

State	Port Group Area	County	PCID	PacFIN Port Name
Washington	<b>Puget Sound</b>	Whatcom	BLN	Blaine
		Whatcom	BLL	Bellingham Bay
		San Juan	FRI	Friday Harbor
		Skagit	ANA	Anacortes
		Skagit	LAC	La Conner
		Snohomish	ONP	Other North Puget Sound Ports
		Snohomish	EVR	Everett
		King	SEA	Seattle
		Pierce	TAC	Tacoma
		Thurston	OLY	Olympia
		Mason	SHL	Shelton
	<b>North Washington Coast</b>	Jefferson	TNS	Port Townsend
		Clallam	SEQ	Sequim
		Clallam	PAG	Port Angeles
		Clallam	NEA	Neah Bay
		Clallam	LAP	La Push
	<b>South &amp; Central WA Coast</b>	Grays Harbor	CPL	Copalis Beach
		Grays Harbor	GRH	Grays Harbor
		Grays Harbor	WPT	Westport
		Pacific	WLB	Willapa Bay
		Pacific	LWC	Ilwaco/chinook
		Klickitat	OCR	Other Columbia River Ports
Oregon			OWC	
	<b>Columbia River</b>	Multnomah	CRV	Psuedo Port Code for Columbia R.
	<b>Astoria-Tillamook</b>	Clatsop	AST	Astoria
		Clatsop	GSS	Gearhart - Seaside
		Clatsop	CNB	Cannon Beach
		Tillamook	NHL	Nehalem Bay
		Tillamook	TLL	Tillamook / Garibaldi
		Tillamook	NTR	Netarts Bay
		Tillamook	PCC	Pacific City
	<b>Newport</b>	Lincoln	SRV	Salmon River
		Lincoln	SLZ	Siletz Bay
		Lincoln	DPO	Depoe Bay
		Lincoln	NEW	Newport
		Lincoln	WLD	Waldport
		Lincoln	YAC	Yachats
	<b>Coos Bay</b>	Lane	FLR	Florence
		Douglas	WIN	Winchester Bay
		Coos	COS	Coos Bay
		Coos	BDN	Bandon
	<b>Brookings</b>	Curry	ORF	Port Orford
		Curry	GLD	Gold Beach
		Curry	BRK	Brookings
California	<b>Crescent City</b>	Del Norte	CRS	Crescent City
		Del Norte	ODN	Other Del Norte County Ports
	<b>Eureka</b>	Humboldt	ERK	Eureka (Includes Fields Landing)
		Humboldt	FLN	Fields Landing

State	Port Group Area	County	PCID	PacFIN Port Name
	<b>Fort Bragg</b>	Humboldt	TRN	Trinidad
		Humboldt	OHB	Other Humboldt County Ports
		Mendocino	BRG	Fort Bragg
		Mendocino	ALB	Albion
		Mendocino	ARE	Arena
	<b>Bodega Bay</b>	Mendocino	OMD	Other Mendocino County Ports
		Sonoma	BDG	Bodega Bay
	<b>San Francisco</b>	Marin	BOL	Bolinas
		Marin	TML	Tomales Bay
		Marin	RYS	Point Reyes
				Other Son. and Mar. Co. Outer Coast Ports
		Marin	OSM	
		Marin	SLT	Sausalito
		Alameda	OAK	Oakland
		Alameda	ALM	Alameda
		Alameda	BKL	Berkely
		Contra Costa	RCH	Richmond
		San Francisco	SF	San Francisco
		San Mateo	PRN	Princeton
		San Francisco	SFA	San Francisco Ara
		San Francisco	OSF	Other S.F. Bay and S.M. Co. Ports
	<b>Monterey</b>	Santa Cruz	CRZ	Santa Cruz
		Monterey	MOS	Moss Landing
		Monterey	MNT	Monterey
		Monterey	OCM	Other S.C. and Mon. Co. Ports
	<b>Morro Bay</b>	San Luis Obispo	MRO	Morro Bay
		San Luis Obispo	AVL	Avila
		San Luis Obispo	OSL	Other S.L.O. Co. Ports
	<b>Santa Barbara</b>	Santa Barbara	SB	Santa Barbara
		Santa Barbara	SBA	Santa Barbara Area
		Ventura	HNM	Port Hueneme
		Ventura	OXN	Oxnard
		Ventura	VEN	Ventura
		Ventura	OBV	Other S.B. and Ven. Co. Ports
	<b>Los Angeles</b>	Los Angeles	TRM	Terminal Island
		Los Angeles	SPA	San Pedro Area
		Los Angeles	SP	San Pedro
		Los Angeles	WLM	Willmington
		Los Angeles	LGB	Longbeach
		Orange	NWB	Newport Beach
		Orange	DNA	Dana Point
		Orange	OLA	Other LA and Orange Co. Ports
	<b>San Diego</b>		OCA	
		San Diego	SD	San Diego
		San Diego	OCN	Oceanside
		San Diego	SDA	San Diego Area
		San Diego	OSD	Other S.D. Co. Ports

## **7. References**

- PFMC. 2006. Final environmental impact statement for the proposed groundfish acceptable biological catch and optimum yield specifications and management measures: 2007-2008 Pacific coast groundfish fishery and Amendment 16-4: Rebuilding plans for seven depleted Pacific coast groundfish species. Portland, OR: Pacific Fishery Management Council. Oct. 2006.
- US Census Bureau. 2008. A compass for understanding and using American Community Survey data; What Federal agencies need to know.: Department of Commerce, Economics and Statistics Administration. Dec. 2008.

## **8. Description of Methodology Used in the 2006 Vulnerability Analysis (Source: PFMC 2006, Appendix A)**

### ***Methodology for determining engagement and dependence in the commercial and recreational fisheries***

Characterization of community engagement in fishing requires consideration of geographic use on the Pacific fish resource in general while a description of community dependence requires consideration of geographic use of the Pacific groundfish resource specifically. The following indicators are used as proxies for overall community engagement in the Pacific coast commercial fishery:

- Number of federal and state fishing permits as a percentage of each state's total number of permits (based on owner mailing address).
- Number of commercial fishing vessels (based on owner mailing address).
- Revenue from fish landings as a share of coastwide revenue from fishing landings
- Number of processors/buyers.

Port/city and county level data was available for each of the above indicators. Data for 2005 is used because it is the most recent year data is available for and because using a single year is the most simplified way to conduct the analysis (which was deemed necessary due to time constraints).

The following indicators are used as proxies for overall community engagement and dependence in the Pacific coast recreational fishery:

- Number of charter vessels as a percentage of each state's total number of charter vessels.
- Number of private/rental angler trips as a percentage of each state's total number of private/rental angler trips.
- Number of private/rental groundfish angler trips as a percentage of each state's total number of private/rental groundfish angler trips.
- Number of party/charter trips as a percentage of each state's total number of party/charter trips.
- Number of party/charter groundfish trips as a percentage of each state's total number of party/charter groundfish trips.

Port/city level data was available for Oregon and Washington. Region level data was available for California. Data for 2005 is used for the reasons given above.

The following indicators are used as proxies for community dependence on the Pacific coast groundfish fishery specifically:

- Number of federal and state groundfish permits as a percentage of each state's total number of groundfish permits (based on owner mailing address).<sup>10</sup>

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<sup>10</sup> Permits were characterized as "groundfish" permits if they were one of the following types: federal LE groundfish permit with a trawl or fixed gear endorsement, CA deeper nearshore species fishery permit, CA nearshore fishery bycatch permit, CA nearshore north central trap endorsement permit, CA nearshore north central fishery permit, CA nearshore north fishery permit, CA nearshore south central fishery permit, CA nearshore south central trap endorsement permit, CA nearshore south fishery permit, CA nearshore south trap endorsement permit,



- Groundfish revenue as a percentage of total community fisheries revenue.
- Groundfish revenue as a percentage of total groundfish revenue coastwide.

Port/city and county level data was available for each of the above indicators. Region level data was available for California. Data for 2005 is used for the reasons given above.

These sets of indicators were chosen based largely on: 1) the kind indicators seen in the literature and 2) data availability. Most of the data was obtained from PacFIN and state fishery management agencies. Other data, not included in this analysis, was available on a port group level (income from commercial and recreational groundfish fishing as a share of total personal income, number of persons employed by entities involved in commercial and recreational groundfish and other fishing or groundfish and other processing operations as a percentage of the total number of employed persons). This data has been included and discussed in other parts of the environmental impact statement (EIS).

To describe the relative community engagement in and dependence on the Pacific fishery resource, first, indicators represented by values were assigned to each community (port/city/county/region) within each category (Overall Community Engagement in the Pacific Coast Commercial Fishery, Overall Community Engagement and Dependence in the Pacific Coast Recreational Fishery, Community Dependence on the Pacific Coast Groundfish Fishery). Second, the communities were ranked from highest indicator value to lowest indicator value for each indicator. Third, the top one-third of communities was identified for each indicator. Fourth, the number of times a community was listed in the top one-third for each indicator was tallied. The communities that were tallied one or more times in the category of overall community engagement and/or dependence in the Pacific coast commercial fishery and/or overall community engagement and dependence in the Pacific coast recreational fishery were labeled as relatively “highly engaged” or “highly dependent” for each category.

### ***Methodology for determining resilience***

The purpose of gauging resiliency by community is to determine which communities are least able to adapt to a decrease in harvest as a result of a change in regulations. In some of the papers reviewed, the authors assume that the relationship between diversity and resiliency in social and economic systems is similar to that in the ecological literature. That is, a system with higher diversity is less affected by change than a system with lower diversity and the more diverse system therefore has higher resiliency. Socioeconomic systems (communities in this case) with higher resiliency are defined here as those that adapt quickly as indicated by rebounding measures of socioeconomic well-being. We assume that communities with high resiliency have access to diverse employment opportunities, higher employment rates, lower numbers of people living below the poverty line, are not located in isolated cities, and have the necessary municipal/county infrastructure to enable a rebound from a decrease in catch limits. That is, it is assumed that if the local fishing sector within a community with high resiliency experiences a major downturn, unemployment rates will rise only briefly until displaced people find other employment.

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OR rockfish nearshore endorsement permit, OR rockfish permit, WA coastal hagfish permit, WA Puget Sound whiting trawl permit.

It is assumed that communities with low resiliency have more lingering negative impacts, such as unemployment or out-migration rates that remain high for many years.

The theoretical basis for gauging resiliency rests on the concept of social well-being, which is sometimes defined as a composite of four factors: economic resiliency, social and cultural diversity (population size, mix of skills), civic infrastructure (leadership, preparedness for change), and amenity infrastructure (attractiveness of the area) (McCool and others 1997). For this analysis, indicators were chosen with these factors in mind. The following indicators were used as proxies for describing resiliency:

- Industry diversity index.<sup>11</sup>
- Unemployment rate.
- Percentage of the population living below the poverty line.
- Isolated cities.<sup>12</sup>
- Population density.<sup>13</sup>

City and county level data was available for each of the above indicators except isolated city which was only analyzed on the city level. The most recent data available was used (2002 and 2003).

The above indicators were chosen based on: 1) similar indicators used in the literature and 2) data availability. Almost all of the indicator data was gathered from U.S. Census data. While several other indicators, such as educational attainment and income, could have been added to the analysis, the indicators used were deemed most relevant. Theoretically, many of the indicators used are likely correlated with educational attainment and income.

To describe relative community resilience, first, indicators represented by values were assigned to each community (port/city/county). Second, the communities were ranked from least resilient to most resilient based on the value for each indicator. Third, the top one-third of communities was listed for each indicator. Fourth, the number of times a community was listed in the top one-third for each indicator was tallied. The communities that were tallied one or more times were labeled as relatively “low resilience,” for purposes of this analysis.

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<sup>11</sup> The industry diversity index was used to attempt to characterize the diversity of employment in the community. It was assumed that a community with more types of industries, the more resilient the community may be to negative impacts to the fishing industry. The index was used to identify communities with very little employment in industries other than fishing. The index was calculated using all nineteen major industry categories used in the Census. Numbers of persons employed in each industry category was gathered for each port and for each coastal county. The Shannon-Weiner index was used to measure industry diversification. This index was originally used to measure species diversity in an ecosystem. However, it has also been used in socioeconomic analyses to measure industry diversification. The greater number of employees and the more even the distribution of employees across industries both increase the index (see Tables A.4-18 and A.4-19 for diversity index results).

<sup>12</sup> Identification of isolated cities was made by Langdon-Pollack (2004). The analysis defined geographically isolated cities as those cities located in coastal counties with a population of 1,900 or less, were not located on a major highway and fell outside of the 35-mile buffer of cities over 20,000. The isolated cities in Washington include: Neah Bay, La Push, Tahola, Moclips, Copalis Beach, Ocean City, Markham, Junction City, Cohasset Beach, Grayland, Tokeland, Ocean Park, and Naselle. The isolated cities in Oregon include: Oceanside, Cape Mears, Netarts, and Powers. California did not have any geographically isolated cities.

<sup>13</sup> A proxy for municipal infrastructure.

### ***Methodology for identifying “vulnerable areas”***

“Vulnerable areas” are defined in this analysis as those communities that are both “highly engaged” or “highly dependent” and have relatively “low resilience”. If a community appears in the “highly engaged” or “highly dependent” list and the “low resilience” list, then the community is listed as a “vulnerable area” for the purposes of this analysis. However, it is important to note that various deficiencies in the data make the analysis results somewhat unreliable for the purposes of definitively identifying communities that are most highly engaged, most dependent, and least resilient. For example, the analysis does not incorporate measures of employment and income to supply industries (shipyards, cold storage, processing). Therefore, the results of this analysis must be considered with other information provided in the chapter and appendices.

**\$ million ex-vessel revenue**

	IO_AREA	SECTOR_NAME	2009	No Action
0010	Northern Puget Sound	Non-whiting trawl	1.10	0.96
		Limited entry fixed gear	1.73	1.68
		Tribal non-groundfish	15.48	15.48
		Non-tribal non-groundfish	24.16	24.16
Northern Puget Sound Total			42.48	42.29
0011	Southern Puget Sound	Tribal non-groundfish	14.54	14.54
		Non-tribal non-groundfish	7.46	7.46
Southern Puget Sound Total			22.00	22.00
0020	North Washington Coast	Non-whiting trawl	0.07	0.03
		Limited entry fixed gear	0.96	0.93
		Open access non-nearshore	0.08	0.08
		Tribal groundfish	3.43	3.42
		Tribal non-groundfish	5.61	5.61
		Non-tribal non-groundfish	2.26	2.26
North Washington Coast Total			12.41	12.34
0030	South and Central Washington Coast	Shoreside whiting trawl	1.41	1.33
		Non-whiting trawl	1.12	0.83
		Limited entry fixed gear	1.30	1.26
		Open access non-nearshore	0.24	0.24
		Incidental open access	0.00	0.00
		Tribal groundfish	1.05	1.05
		Tribal non-groundfish	1.21	1.21
		Non-tribal non-groundfish	32.70	32.70
South and Central Washington Coast Total			39.03	38.61
0040	Unidentified Washington	Tribal groundfish	1.45	1.44
		Tribal non-groundfish	8.75	8.75
		Non-tribal non-groundfish	0.00	0.00
Unidentified Washington Total			10.19	10.19
0050	Astoria	Shoreside whiting trawl	2.01	2.03
		Non-whiting trawl	7.99	7.74
		Limited entry fixed gear	0.84	0.81
		Open access nearshore	0.01	0.01
		Open access non-nearshore	0.21	0.21
		Tribal non-groundfish	0.78	0.78
		Non-tribal non-groundfish	25.18	25.18
Astoria Total			37.02	36.77
0060	Tillamook	Non-whiting trawl	0.03	0.03
		Open access nearshore	0.14	0.15
		Open access non-nearshore	0.01	0.01
		Non-tribal non-groundfish	2.60	2.60
Tillamook Total			2.79	2.79
0070	Newport	Shoreside whiting trawl	1.57	1.55

		Non-whiting trawl	5.05	4.57
		Limited entry fixed gear	3.14	3.05
		Open access nearshore	0.08	0.11
		Open access non-nearshore	0.21	0.20
		Non-tribal non-groundfish	19.39	19.39
Newport Total			29.45	28.88
0080	Coos Bay	Shoreside whiting trawl	0.26	0.26
		Non-whiting trawl	4.14	4.53
		Limited entry fixed gear	1.13	1.10
		Open access nearshore	0.04	0.05
		Open access non-nearshore	0.37	0.36
		Non-tribal non-groundfish	18.82	18.82
Coos Bay Total			24.77	25.11
0090	Brookings	Non-whiting trawl	1.62	1.82
		Limited entry fixed gear	1.48	1.44
		Open access nearshore	0.89	0.92
		Open access non-nearshore	0.59	0.57
		Non-tribal non-groundfish	7.99	7.99
Brookings Total			12.56	12.73
0100	Crescent City	Shoreside whiting trawl	0.17	0.16
		Non-whiting trawl	1.32	1.27
		Limited entry fixed gear	0.54	0.53
		Open access nearshore	0.35	0.36
		Open access non-nearshore	0.02	0.02
		Non-tribal non-groundfish	13.60	13.60
Crescent City Total			16.00	15.94
0110	Eureka	Shoreside whiting trawl	0.03	0.03
		Non-whiting trawl	3.50	3.67
		Limited entry fixed gear	0.43	0.42
		Open access nearshore	0.06	0.07
		Open access non-nearshore	0.26	0.25
		Non-tribal non-groundfish	11.07	11.07
Eureka Total			15.35	15.51
0120	Fort Bragg	Non-whiting trawl	2.63	2.19
		Limited entry fixed gear	0.88	0.86
		Open access nearshore	0.18	0.21
		Open access non-nearshore	0.42	0.40
		Non-tribal non-groundfish	3.74	3.74
Fort Bragg Total			7.84	7.40
0130	Bodega Bay	Non-whiting trawl	0.09	0.08
		Limited entry fixed gear	0.06	0.06
		Open access nearshore	0.04	0.04
		Open access non-nearshore	0.08	0.08
		Non-tribal non-groundfish	1.95	1.95
Bodega Bay Total			2.23	2.21
0140	San Francisco	Non-whiting trawl	0.92	1.01
		Limited entry fixed gear	0.30	0.30

		Open access nearshore	0.13	0.13
		Open access non-nearshore	0.20	0.19
		Incidental open access	0.01	0.01
		Non-tribal non-groundfish	8.66	8.66
San Francisco Total			10.21	10.30
0150	Monterey	Non-whiting trawl	0.51	0.40
		Limited entry fixed gear	0.38	0.37
		Open access nearshore	0.18	0.20
		Open access non-nearshore	0.28	0.27
		Non-tribal non-groundfish	5.31	5.31
Monterey Total			6.65	6.55
0160	Morro Bay	Non-whiting trawl	0.21	0.17
		Limited entry fixed gear	0.73	0.71
		Open access nearshore	0.90	0.98
		Open access non-nearshore	1.58	1.53
		Incidental open access	0.01	0.01
		Non-tribal non-groundfish	2.04	2.04
Morro Bay Total			5.47	5.44
0170	Santa Barbara	Limited entry fixed gear	0.26	0.26
		Open access nearshore	0.26	0.29
		Open access non-nearshore	0.20	0.19
		Incidental open access	0.01	0.01
		Non-tribal non-groundfish	48.36	48.36
Santa Barbara Total			49.09	49.12
0180	Los Angeles	Limited entry fixed gear	0.86	0.85
		Open access nearshore	0.03	0.03
		Open access non-nearshore	0.07	0.07
		Incidental open access	0.01	0.01
		Non-tribal non-groundfish	31.25	31.25
Los Angeles Total			32.22	32.21
0190	San Diego	Limited entry fixed gear	0.64	0.63
		Open access nearshore	0.02	0.02
		Open access non-nearshore	0.03	0.03
		Non-tribal non-groundfish	5.20	5.20
San Diego Total			5.89	5.89
<b>Coastwide</b>		Shoreside whiting trawl	5.46	5.38
		Non-whiting trawl	30.30	29.30
		Limited entry fixed gear	15.66	15.25
		Open access nearshore	3.31	3.57
		Open access non-nearshore	4.85	4.71
		Incidental open access	0.03	0.03
		Tribal groundfish	5.93	5.91
		Tribal non-groundfish	46.36	46.36
		Non-tribal non-groundfish	271.75	271.75
<b>Coastwide Total</b>			383.65	382.26

**Total Estimated Ex-vessel Revenue in 2011 under each Alternative Scenario (\$ million)**

[illegible]

[illegible]



0.13	0.14	0.13	0.13	0.13	0.13	0.10	0.10	0.10
0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.12
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
8.66	8.66	8.66	8.66	8.66	8.66	8.66	8.66	8.66
10.08	10.08	10.08	10.08	9.98	9.98	9.96	9.96	9.83
0.35	0.35	0.35	0.35	0.31	0.31	0.31	0.31	0.31
0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.23
0.26	0.27	0.26	0.26	0.26	0.26	0.24	0.24	0.24
0.22	0.22	0.22	0.22	0.22	0.22	0.23	0.23	0.18
5.31	5.31	5.31	5.31	5.31	5.31	5.31	5.31	5.31
6.45	6.46	6.45	6.45	6.42	6.42	6.41	6.41	6.27
0.15	0.15	0.15	0.15	0.13	0.13	0.13	0.13	0.13
0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
1.22	1.23	1.22	1.22	1.22	1.22	1.17	1.17	1.17
1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.38
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.04
5.49	5.50	5.49	5.49	5.48	5.48	5.42	5.42	5.39
0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
0.41	0.41	0.41	0.41	0.41	0.41	0.40	0.40	0.40
0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
48.36	48.36	48.36	48.36	48.36	48.36	48.36	48.36	48.36
49.22	49.23	49.22	49.22	49.22	49.22	49.21	49.21	49.21
0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
31.25	31.25	31.25	31.25	31.25	31.25	31.25	31.25	31.25
32.19	32.19	32.19	32.19	32.19	32.19	32.19	32.19	32.19
0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20
5.88	5.88	5.88	5.88	5.88	5.88	5.88	5.88	5.88
5.36	5.36	5.36	5.36	5.35	5.35	5.35	5.35	5.35
24.81	24.81	24.82	24.82	21.10	21.10	21.10	21.10	21.10
12.57	12.57	12.57	12.57	12.57	12.57	12.52	12.52	9.19
3.75	4.04	3.72	3.75	3.72	3.75	3.25	3.28	3.25
4.01	4.01	4.01	4.01	4.01	4.01	4.06	4.06	3.30
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08
46.36	46.36	46.36	46.36	46.36	46.36	46.36	46.36	46.36
271.75	271.75	271.75	271.75	271.75	271.75	271.75	271.75	271.75
373.72	374.01	373.70	373.72	369.98	370.01	369.51	369.53	365.41

[illegible]

[illegible]

0.10		+ 0.0						- 0.0	- 0.0	- 0.0	- 0.0	--
0.12	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.1	- 0.1	-17.5%
0.01												--
8.66												--
9.83	- 0.2	- 0.2	- 0.2	- 0.2	- 0.3	- 0.3	- 0.3	- 0.3	- 0.3	- 0.5	- 0.5	-2.1%
0.31	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	-13.3%
0.23	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	-16.3%
0.24	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.0	+ 0.0	+ 0.0	+ 0.0	30.9%
0.18	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.1	- 0.1	-16.2%
5.31												--
6.27	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.3	- 0.3	-1.4%
0.13	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-13.7%
0.67	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-5.9%
1.17	+ 0.2	+ 0.2	+ 0.2	+ 0.2	+ 0.2	+ 0.2	+ 0.2	+ 0.2	+ 0.2	+ 0.2	+ 0.2	24.9%
1.38	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.2	- 0.2	-8.2%
0.01												--
2.04												--
5.39	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.0	+ 0.0	- 0.0	- 0.0	- 0.0	- 0.1	- 0.1	1.0%
0.26	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-0.3%
0.40	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	39.8%
0.18	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-6.5%
0.01												--
48.36												--
49.21	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	0.2%
0.84	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-1.8%
0.03		+ 0.0						- 0.0	- 0.0	- 0.0	- 0.0	--
0.06	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-7.6%
0.01												--
31.25												--
32.19	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-0.1%
0.63	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-1.2%
0.02		+ 0.0						- 0.0	- 0.0	- 0.0	- 0.0	--
0.03	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-1.6%
5.20												--
5.88	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-0.1%
5.35	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-0.4%
21.10	- 4.5	- 4.5	- 4.5	- 4.5	- 8.2	- 8.2	- 8.2	- 8.2	- 8.2	- 8.2	- 8.2	-15.3%
9.19	- 2.7	- 2.7	- 2.7	- 2.7	- 2.7	- 2.7	- 2.7	- 2.7	- 2.7	- 6.1	- 6.1	-17.6%
3.28	+ 0.2	+ 0.5	+ 0.2	+ 0.2	+ 0.2	+ 0.2	+ 0.2	- 0.3	- 0.3	- 0.3	- 0.3	5.1%
3.30	- 0.7	- 0.7	- 0.7	- 0.7	- 0.7	- 0.7	- 0.7	- 0.6	- 0.6	- 1.4	- 1.4	-14.8%
0.03												--
5.08	- 0.8	- 0.8	- 0.8	- 0.8	- 0.8	- 0.8	- 0.8	- 0.8	- 0.8	- 0.8	- 0.8	-14.1%
46.36												--
271.75												--
365.44	- 8.5	- 8.3	- 8.6	- 8.5	- 12.3	- 12.3	- 12.8	- 12.7	- 16.8	- 16.8	- 16.8	-2.2%

[illegible]

-16.4%	-16.4%	-16.4%	-29.7%	-29.7%	-29.7%	-29.7%	-29.7%	-29.7%
-21.1%	-21.1%	-21.1%	-21.1%	-21.1%	-18.6%	-18.6%	-48.3%	-48.3%
-23.9%	-40.8%	-38.0%	-40.8%	-38.0%	-72.0%	-70.4%	-72.0%	-70.4%
-17.6%	-17.6%	-17.6%	-17.6%	-17.6%	-13.9%	-13.9%	-37.6%	-37.6%
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-5.0%	-5.1%	-5.1%	-7.2%	-7.2%	-7.0%	-7.0%	-10.3%	-10.3%
0.0%	0.0%	0.0%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
-16.3%	-16.3%	-16.3%	-28.5%	-28.5%	-28.5%	-28.5%	-28.5%	-28.5%
-21.1%	-21.1%	-21.1%	-21.1%	-21.1%	-18.7%	-18.7%	-48.4%	-48.4%
-22.8%	-38.2%	-36.4%	-38.2%	-36.4%	-64.2%	-62.2%	-64.2%	-62.2%
-21.0%	-21.0%	-21.0%	-21.0%	-21.0%	-18.5%	-18.5%	-48.1%	-48.1%
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-4.2%	-4.2%	-4.2%	-6.4%	-6.4%	-6.3%	-6.3%	-8.1%	-8.1%
-16.2%	-16.1%	-16.1%	-26.2%	-26.2%	-26.2%	-26.2%	-26.2%	-26.2%
-19.0%	-19.0%	-19.0%	-19.0%	-19.0%	-16.8%	-16.8%	-43.6%	-43.6%
-4.5%	-20.2%	-19.0%	-20.2%	-19.0%	-36.5%	-35.1%	-36.5%	-35.1%
-21.0%	-21.0%	-21.0%	-21.0%	-21.0%	-18.6%	-18.6%	-48.1%	-48.1%
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-5.7%	-6.9%	-6.8%	-8.3%	-8.2%	-9.1%	-9.0%	-13.5%	-13.4%
0.1%	0.1%	0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
-13.2%	-13.2%	-13.2%	-24.6%	-24.6%	-24.6%	-24.6%	-24.6%	-24.6%
-18.0%	-18.0%	-18.0%	-18.0%	-18.0%	-15.9%	-15.9%	-41.0%	-41.0%
3.4%	-19.2%	-17.5%	-19.2%	-17.5%	-38.1%	-36.7%	-38.1%	-36.7%
-21.1%	-21.1%	-21.1%	-21.1%	-21.1%	-18.7%	-18.7%	-48.5%	-48.5%
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-1.6%	-2.1%	-2.1%	-3.0%	-3.0%	-3.4%	-3.3%	-4.2%	-4.2%
-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%
-14.1%	-14.1%	-14.1%	-24.6%	-24.6%	-24.6%	-24.6%	-24.6%	-24.6%
-20.9%	-20.9%	-20.9%	-20.9%	-20.9%	-18.5%	-18.5%	-47.9%	-47.9%
2.4%	-15.9%	-14.4%	-15.9%	-14.4%	-57.8%	-56.8%	-57.8%	-56.8%
-20.4%	-20.4%	-20.4%	-20.4%	-20.4%	-17.9%	-17.9%	-46.2%	-46.2%
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-4.2%	-4.3%	-4.3%	-6.8%	-6.8%	-6.8%	-6.8%	-8.1%	-8.1%
-15.6%	-15.6%	-15.6%	-19.8%	-19.8%	-19.8%	-19.8%	-19.8%	-19.8%
-20.6%	-20.6%	-20.6%	-20.6%	-20.6%	-18.2%	-18.2%	-47.2%	-47.2%
50.2%	49.7%	49.7%	49.7%	49.7%	42.9%	42.9%	42.9%	42.9%
-20.2%	-20.2%	-20.2%	-20.2%	-20.2%	-17.4%	-17.4%	-45.5%	-45.5%
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-6.7%	-6.7%	-6.7%	-7.9%	-7.9%	-7.7%	-7.7%	-12.6%	-12.6%
-27.3%	-27.3%	-27.3%	-46.2%	-46.2%	-46.2%	-46.2%	-46.2%	-46.2%
-20.9%	-20.9%	-20.9%	-20.9%	-20.9%	-18.4%	-18.4%	-47.8%	-47.8%
7.6%	7.4%	7.4%	7.4%	7.4%	0.3%	0.3%	0.3%	0.3%
-17.7%	-17.7%	-17.7%	-17.7%	-17.7%	-15.0%	-15.0%	-37.9%	-37.9%
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-2.0%	-2.0%	-2.0%	-2.7%	-2.7%	-2.7%	-2.7%	-4.3%	-4.3%
-12.6%	-12.6%	-12.6%	-22.0%	-22.0%	-22.0%	-22.0%	-22.0%	-22.0%
-20.0%	-20.0%	-20.0%	-20.0%	-20.0%	-17.7%	-17.7%	-45.8%	-45.8%

3.0%	--	--	--	--	-25.8%	-25.8%	-25.8%	-25.8%
-17.5%	-17.5%	-17.5%	-17.5%	-17.5%	-14.2%	-14.2%	-37.7%	-37.7%
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-2.1%	-2.1%	-2.1%	-3.1%	-3.1%	-3.3%	-3.3%	-4.5%	-4.5%
-13.3%	-13.3%	-13.3%	-21.7%	-21.7%	-21.7%	-21.7%	-21.7%	-21.7%
-16.3%	-16.3%	-16.3%	-16.3%	-16.3%	-14.4%	-14.4%	-37.3%	-37.3%
33.0%	30.9%	30.9%	30.9%	30.9%	19.8%	19.8%	19.8%	19.8%
-16.2%	-16.2%	-16.2%	-16.2%	-16.2%	-13.5%	-13.5%	-33.9%	-33.9%
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-1.4%	-1.4%	-1.4%	-2.0%	-2.0%	-2.1%	-2.1%	-4.2%	-4.2%
-13.7%	-13.7%	-13.7%	-23.2%	-23.2%	-23.2%	-23.2%	-23.2%	-23.2%
-5.9%	-5.9%	-5.9%	-5.9%	-5.9%	-5.9%	-5.9%	-6.0%	-6.0%
25.3%	24.9%	24.9%	24.9%	24.9%	19.3%	19.3%	19.3%	19.3%
-8.2%	-8.2%	-8.2%	-8.2%	-8.2%	-8.2%	-8.2%	-10.4%	-10.4%
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1.0%	1.0%	1.0%	0.7%	0.7%	-0.3%	-0.3%	-1.0%	-1.0%
-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%
40.4%	39.8%	39.8%	39.8%	39.8%	36.4%	36.4%	36.4%	36.4%
-6.5%	-6.5%	-6.5%	-6.5%	-6.5%	-6.5%	-6.5%	-6.5%	-6.5%
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0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
-1.8%	-1.8%	-1.8%	-1.8%	-1.8%	-1.8%	-1.8%	-1.8%	-1.8%
0.1%	--	--	--	--	-2.8%	-2.8%	-2.8%	-2.8%
-7.6%	-7.6%	-7.6%	-7.6%	-7.6%	-7.6%	-7.6%	-12.0%	-12.0%
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-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
-1.2%	-1.2%	-1.2%	-1.2%	-1.2%	-1.2%	-1.2%	-1.2%	-1.2%
0.1%	--	--	--	--	-3.7%	-3.7%	-3.7%	-3.7%
-1.6%	-1.6%	-1.6%	-1.6%	-1.6%	-1.6%	-1.6%	-1.6%	-1.6%
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-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
-0.4%	-0.4%	-0.4%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%
-15.3%	-15.3%	-15.3%	-28.0%	-28.0%	-28.0%	-28.0%	-28.0%	-28.0%
-17.6%	-17.6%	-17.6%	-17.6%	-17.6%	-17.9%	-17.9%	-39.8%	-39.8%
13.1%	4.3%	5.0%	4.3%	5.0%	-8.9%	-8.2%	-8.9%	-8.2%
-14.8%	-14.9%	-14.9%	-14.9%	-14.9%	-13.8%	-13.8%	-30.1%	-30.1%
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-14.1%	-14.1%	-14.1%	-14.1%	-14.1%	-14.1%	-14.1%	-14.1%	-14.1%
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-2.2%	-2.2%	-2.2%	-3.2%	-3.2%	-3.3%	-3.3%	-4.4%	-4.4%

From: IO\_VCM\_MOD\_09\_IDN-SPID\_TOT\_3.xlsx

**\$ million ex-vessel revenue**

			<b>Total Esti</b>	
	<u>IO_AREA</u>	<u>SECTOR_NAME</u>	<b>2009</b>	<b>No Action</b>
0010	Northern Puget Sound	Non-whiting trawl	1.10	0.96
		Limited entry fixed gear	1.73	1.68
		Tribal non-groundfish	15.48	15.48
		Non-tribal non-groundfish	24.16	24.16
Northern Puget Sound Total			42.48	42.29
0011	Southern Puget Sound	Tribal non-groundfish	14.54	14.54
		Non-tribal non-groundfish	7.46	7.46
Southern Puget Sound Total			22.00	22.00
0020	North Washington Coast	Non-whiting trawl	0.07	0.03
		Limited entry fixed gear	0.96	0.93
		Open access non-nearshore	0.08	0.08
		Tribal groundfish	3.43	3.42
		Tribal non-groundfish	5.61	5.61
		Non-tribal non-groundfish	2.26	2.26
North Washington Coast Total			12.41	12.34
0030	South and Central Washington Coast	Shoreside whiting trawl	1.41	1.33
		Non-whiting trawl	1.12	0.83
		Limited entry fixed gear	1.30	1.26
		Open access non-nearshore	0.24	0.24
		Incidental open access	0.00	0.00
		Tribal groundfish	1.05	1.05
		Tribal non-groundfish	1.21	1.21
		Non-tribal non-groundfish	32.70	32.70
South and Central Washington Coast Total			39.03	38.61
0040	Unidentified Washington	Tribal groundfish	1.45	1.44
		Tribal non-groundfish	8.75	8.75
		Non-tribal non-groundfish	0.00	0.00
Unidentified Washington Total			10.19	10.19
0050	Astoria	Shoreside whiting trawl	2.01	2.03
		Non-whiting trawl	7.99	7.74
		Limited entry fixed gear	0.84	0.81
		Open access nearshore	0.01	0.01
		Open access non-nearshore	0.21	0.21
		Tribal non-groundfish	0.78	0.78
		Non-tribal non-groundfish	25.18	25.18
Astoria Total			37.02	36.77
0060	Tillamook	Non-whiting trawl	0.03	0.03
		Open access nearshore	0.14	0.15
		Open access non-nearshore	0.01	0.01
		Non-tribal non-groundfish	2.60	2.60
Tillamook Total			2.79	2.79
0070	Newport	Shoreside whiting trawl	1.57	1.55



		Non-whiting trawl	5.05	4.57
		Limited entry fixed gear	3.14	3.05
		Open access nearshore	0.08	0.11
		Open access non-nearshore	0.21	0.20
		Non-tribal non-groundfish	19.39	19.39
Newport Total			29.45	28.88
0080	Coos Bay	Shoreside whiting trawl	0.26	0.26
		Non-whiting trawl	4.14	4.53
		Limited entry fixed gear	1.13	1.10
		Open access nearshore	0.04	0.05
		Open access non-nearshore	0.37	0.36
		Non-tribal non-groundfish	18.82	18.82
Coos Bay Total			24.77	25.11
0090	Brookings	Non-whiting trawl	1.62	1.82
		Limited entry fixed gear	1.48	1.44
		Open access nearshore	0.89	0.92
		Open access non-nearshore	0.59	0.57
		Non-tribal non-groundfish	7.99	7.99
Brookings Total			12.56	12.73
0100	Crescent City	Shoreside whiting trawl	0.17	0.16
		Non-whiting trawl	1.32	1.27
		Limited entry fixed gear	0.54	0.53
		Open access nearshore	0.35	0.36
		Open access non-nearshore	0.02	0.02
		Non-tribal non-groundfish	13.60	13.60
Crescent City Total			16.00	15.94
0110	Eureka	Shoreside whiting trawl	0.03	0.03
		Non-whiting trawl	3.50	3.67
		Limited entry fixed gear	0.43	0.42
		Open access nearshore	0.06	0.07
		Open access non-nearshore	0.26	0.25
		Non-tribal non-groundfish	11.07	11.07
Eureka Total			15.35	15.51
0120	Fort Bragg	Non-whiting trawl	2.63	2.19
		Limited entry fixed gear	0.88	0.86
		Open access nearshore	0.18	0.21
		Open access non-nearshore	0.42	0.40
		Non-tribal non-groundfish	3.74	3.74
Fort Bragg Total			7.84	7.40
0130	Bodega Bay	Non-whiting trawl	0.09	0.08
		Limited entry fixed gear	0.06	0.06
		Open access nearshore	0.04	0.04
		Open access non-nearshore	0.08	0.08
		Non-tribal non-groundfish	1.95	1.95
Bodega Bay Total			2.23	2.21
0140	San Francisco	Non-whiting trawl	0.92	1.01
		Limited entry fixed gear	0.30	0.30

		Open access nearshore	0.13	0.13
		Open access non-nearshore	0.20	0.19
		Incidental open access	0.01	0.01
		Non-tribal non-groundfish	8.66	8.66
San Francisco Total			10.21	10.30
0150	Monterey	Non-whiting trawl	0.51	0.40
		Limited entry fixed gear	0.38	0.37
		Open access nearshore	0.18	0.20
		Open access non-nearshore	0.28	0.27
		Non-tribal non-groundfish	5.31	5.31
Monterey Total			6.65	6.55
0160	Morro Bay	Non-whiting trawl	0.21	0.17
		Limited entry fixed gear	0.73	0.71
		Open access nearshore	0.90	0.98
		Open access non-nearshore	1.58	1.53
		Incidental open access	0.01	0.01
		Non-tribal non-groundfish	2.04	2.04
Morro Bay Total			5.47	5.44
0170	Santa Barbara	Limited entry fixed gear	0.26	0.26
		Open access nearshore	0.26	0.29
		Open access non-nearshore	0.20	0.19
		Incidental open access	0.01	0.01
		Non-tribal non-groundfish	48.36	48.36
Santa Barbara Total			49.09	49.12
0180	Los Angeles	Limited entry fixed gear	0.86	0.85
		Open access nearshore	0.03	0.03
		Open access non-nearshore	0.07	0.07
		Incidental open access	0.01	0.01
		Non-tribal non-groundfish	31.25	31.25
Los Angeles Total			32.22	32.21
0190	San Diego	Limited entry fixed gear	0.64	0.63
		Open access nearshore	0.02	0.02
		Open access non-nearshore	0.03	0.03
		Non-tribal non-groundfish	5.20	5.20
San Diego Total			5.89	5.89
<b>Coastwide</b>		Shoreside whiting trawl	5.46	5.38
		Non-whiting trawl	30.30	29.30
		Limited entry fixed gear	15.66	15.25
		Open access nearshore	3.31	3.57
		Open access non-nearshore	4.85	4.71
		Incidental open access	0.03	0.03
		Tribal groundfish	5.93	5.91
		Tribal non-groundfish	46.36	46.36
		Non-tribal non-groundfish	271.75	271.75
<b>Coastwide Total</b>			383.65	382.26

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Alt 1a	Alt 1b	Alt 2a	Alt 2b	Alt 3a	Alt 3b	Alt 3c	Alt 3d	Alt 1a	Alt 1b
0.81	0.81	0.66	0.66	0.77	0.77	0.77	0.77	- 0.2	- 0.2
1.26	1.26	1.26	1.26	1.15	1.15	0.97	0.97	- 0.4	- 0.4
15.48	15.48	15.48	15.48	15.48	15.48	15.48	15.48		
24.16	24.16	24.16	24.16	24.16	24.16	24.16	24.16		
41.71	41.71	41.56	41.56	41.56	41.56	41.39	41.39	- 0.6	- 0.6
14.54	14.54	14.54	14.54	14.54	14.54	14.54	14.54		
7.46	7.46	7.46	7.46	7.46	7.46	7.46	7.46		
22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00		
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	- 0.0	- 0.0
0.70	0.70	0.70	0.70	0.64	0.64	0.55	0.55	- 0.2	- 0.2
0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	- 0.0	- 0.0
2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	- 0.6	- 0.6
5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61		
2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26		
11.50	11.50	11.50	11.50	11.44	11.44	11.34	11.34	- 0.8	- 0.8
1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	- 0.0	- 0.0
0.67	0.67	0.50	0.50	0.63	0.63	0.63	0.63	- 0.2	- 0.2
0.94	0.94	0.94	0.94	0.86	0.86	0.73	0.73	- 0.3	- 0.3
0.18	0.18	0.18	0.18	0.16	0.16	0.14	0.14	- 0.1	- 0.1
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	- 0.0	- 0.0
1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21		
32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70		
38.08	38.08	37.91	37.91	37.94	37.94	37.79	37.79	- 0.5	- 0.5
1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	- 0.4	- 0.4
8.75	8.75	8.75	8.75	8.75	8.75	8.75	8.75		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
9.79	9.79	9.79	9.79	9.79	9.79	9.79	9.79	- 0.4	- 0.4
2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	- 0.0	- 0.0
6.61	6.61	5.35	5.35	6.27	6.27	6.27	6.27	- 1.1	- 1.1
0.60	0.60	0.60	0.60	0.62	0.62	0.47	0.47	- 0.2	- 0.2
0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	- 0.0	- 0.0
0.17	0.17	0.17	0.17	0.17	0.17	0.15	0.15	- 0.0	- 0.0
0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78		
25.18	25.18	25.18	25.18	25.18	25.18	25.18	25.18		
35.36	35.36	34.10	34.10	35.05	35.05	34.87	34.87	- 1.4	- 1.4
0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	- 0.0	- 0.0
0.14	0.14	0.12	0.12	0.07	0.08	0.07	0.08	- 0.0	- 0.0
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	- 0.0	- 0.0
2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60		
2.77	2.77	2.74	2.74	2.70	2.70	2.70	2.70	- 0.0	- 0.0
1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	- 0.0	- 0.0

3.82	3.82	3.21	3.21	3.79	3.79	3.79	3.79	- 0.7	- 0.7
2.28	2.28	2.28	2.28	2.35	2.35	1.76	1.76	- 0.8	- 0.8
0.08	0.08	0.07	0.07	0.03	0.03	0.03	0.03	- 0.0	- 0.0
0.16	0.16	0.16	0.16	0.17	0.17	0.13	0.13	- 0.0	- 0.0
19.39	19.39	19.39	19.39	19.39	19.39	19.39	19.39		
27.28	27.28	26.66	26.66	27.28	27.29	26.67	26.67	- 1.6	- 1.6
0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	- 0.0	- 0.0
3.79	3.79	3.24	3.24	3.69	3.69	3.69	3.69	- 0.7	- 0.7
0.82	0.82	0.82	0.82	0.84	0.84	0.63	0.63	- 0.3	- 0.3
0.03	0.04	0.03	0.03	0.02	0.02	0.02	0.02	- 0.0	- 0.0
0.27	0.27	0.27	0.27	0.28	0.28	0.21	0.21	- 0.1	- 0.1
18.82	18.82	18.82	18.82	18.82	18.82	18.82	18.82		
23.99	24.00	23.43	23.43	23.91	23.91	23.63	23.63	- 1.1	- 1.1
1.53	1.53	1.34	1.34	1.49	1.49	1.49	1.49	- 0.3	- 0.3
1.11	1.11	1.11	1.11	1.14	1.14	0.89	0.89	- 0.3	- 0.3
0.86	0.88	0.76	0.77	0.58	0.60	0.58	0.60	- 0.1	- 0.0
0.43	0.43	0.43	0.43	0.44	0.44	0.33	0.33	- 0.1	- 0.1
7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99		
11.91	11.92	11.62	11.64	11.64	11.65	11.28	11.30	- 0.8	- 0.8
0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	+ 0.0	+ 0.0
1.10	1.10	0.96	0.96	1.07	1.07	1.07	1.07	- 0.2	- 0.2
0.41	0.41	0.41	0.41	0.42	0.42	0.34	0.34	- 0.1	- 0.1
0.37	0.37	0.31	0.31	0.22	0.23	0.22	0.23	+ 0.0	+ 0.0
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	- 0.0	- 0.0
13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60		
15.66	15.66	15.46	15.46	15.49	15.49	15.40	15.40	- 0.3	- 0.3
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	- 0.0	- 0.0
3.16	3.16	2.77	2.77	3.09	3.09	3.09	3.09	- 0.5	- 0.5
0.31	0.31	0.31	0.31	0.32	0.32	0.24	0.24	- 0.1	- 0.1
0.07	0.07	0.06	0.06	0.03	0.03	0.03	0.03	- 0.0	+ 0.0
0.19	0.19	0.19	0.19	0.20	0.20	0.15	0.15	- 0.1	- 0.1
11.07	11.07	11.07	11.07	11.07	11.07	11.07	11.07		
14.83	14.83	14.43	14.43	14.74	14.74	14.61	14.61	- 0.7	- 0.7
1.85	1.85	1.75	1.75	1.80	1.80	1.80	1.80	- 0.3	- 0.3
0.64	0.64	0.64	0.64	0.66	0.66	0.50	0.50	- 0.2	- 0.2
0.31	0.31	0.31	0.31	0.29	0.29	0.29	0.29	+ 0.1	+ 0.1
0.30	0.30	0.30	0.30	0.31	0.31	0.24	0.24	- 0.1	- 0.1
3.74	3.74	3.74	3.74	3.74	3.74	3.74	3.74		
6.85	6.85	6.76	6.76	6.82	6.82	6.59	6.59	- 0.5	- 0.5
0.06	0.06	0.04	0.04	0.05	0.05	0.05	0.05	- 0.0	- 0.0
0.04	0.04	0.04	0.04	0.05	0.05	0.03	0.03	- 0.0	- 0.0
0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	+ 0.0	+ 0.0
0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	- 0.0	- 0.0
1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95		
2.16	2.16	2.14	2.14	2.15	2.15	2.13	2.13	- 0.1	- 0.1
0.88	0.88	0.79	0.79	0.84	0.84	0.84	0.84	- 0.1	- 0.1
0.22	0.22	0.22	0.22	0.23	0.23	0.18	0.18	- 0.1	- 0.1

0.13	0.14	0.13	0.13	0.10	0.10	0.10	0.10		+ 0.0
0.15	0.15	0.15	0.15	0.15	0.15	0.12	0.12	- 0.0	- 0.0
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
8.66	8.66	8.66	8.66	8.66	8.66	8.66	8.66		
10.06	10.06	9.96	9.96	10.00	10.00	9.92	9.92	- 0.2	- 0.2
0.35	0.35	0.31	0.31	0.33	0.33	0.33	0.33	- 0.1	- 0.1
0.30	0.30	0.30	0.30	0.30	0.30	0.25	0.25	- 0.1	- 0.1
0.26	0.27	0.26	0.26	0.24	0.24	0.24	0.24	+ 0.1	+ 0.1
0.21	0.21	0.21	0.21	0.22	0.22	0.18	0.18	- 0.1	- 0.1
5.31	5.31	5.31	5.31	5.31	5.31	5.31	5.31		
6.43	6.43	6.39	6.39	6.41	6.41	6.32	6.32	- 0.1	- 0.1
0.15	0.15	0.13	0.13	0.14	0.14	0.14	0.14	- 0.0	- 0.0
0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	- 0.1	- 0.1
1.22	1.23	1.22	1.22	1.17	1.17	1.17	1.17	+ 0.2	+ 0.2
1.33	1.33	1.33	1.33	1.33	1.33	1.31	1.31	- 0.2	- 0.2
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.04		
5.39	5.39	5.37	5.37	5.33	5.33	5.30	5.30	- 0.1	- 0.0
0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	- 0.0	- 0.0
0.41	0.41	0.41	0.41	0.40	0.40	0.40	0.40	+ 0.1	+ 0.1
0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	- 0.0	- 0.0
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
48.36	48.36	48.36	48.36	48.36	48.36	48.36	48.36		
49.22	49.22	49.22	49.22	49.21	49.21	49.21	49.21	+ 0.1	+ 0.1
0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	- 0.0	- 0.0
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03		+ 0.0
0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	- 0.0	- 0.0
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
31.25	31.25	31.25	31.25	31.25	31.25	31.25	31.25		
32.18	32.18	32.18	32.18	32.17	32.17	32.17	32.17	- 0.0	- 0.0
0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	- 0.0	- 0.0
0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02		+ 0.0
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	- 0.0	- 0.0
5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20		
5.88	5.88	5.88	5.88	5.88	5.88	5.88	5.88	- 0.0	- 0.0
5.36	5.36	5.35	5.35	5.36	5.36	5.36	5.36	- 0.0	- 0.0
24.81	24.81	21.10	21.10	24.03	24.03	24.03	24.03	- 4.5	- 4.5
11.99	11.99	11.99	11.99	11.94	11.94	9.89	9.89	- 3.3	- 3.3
4.00	4.04	3.78	3.81	3.25	3.28	3.25	3.28	+ 0.4	+ 0.5
3.80	3.80	3.80	3.80	3.85	3.85	3.35	3.35	- 0.9	- 0.9
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03		
4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	- 1.0	- 1.0
46.36	46.36	46.36	46.36	46.36	46.36	46.36	46.36		
271.75	271.75	271.75	271.75	271.75	271.75	271.75	271.75		
373.03	373.07	369.10	369.12	371.50	371.52	368.96	368.98	- 9.2	- 9.2

Change from No Action (\$ million)						% Change from No Action						
Alt 2a	Alt 2b	Alt 3a	Alt 3b	Alt 3c	Alt 3d	Alt 1a	Alt 1b	Alt 2a	Alt 2b	Alt 3a	Alt 3b	Alt 3c
- 0.3	- 0.3	- 0.2	- 0.2	- 0.2	- 0.2	-15.9%	-15.9%	-31.5%	-31.5%	-19.6%	-19.6%	-19.6%
- 0.4	- 0.4	- 0.5	- 0.5	- 0.7	- 0.7	-25.3%	-25.3%	-25.3%	-25.3%	-31.8%	-31.8%	-42.2%
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- 0.7	- 0.7	- 0.7	- 0.7	- 0.9	- 0.9	-1.4%	-1.4%	-1.7%	-1.7%	-1.7%	-1.7%	-2.1%
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- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-3.7%	-3.7%	-15.8%	-15.8%	-7.3%	-7.3%	-7.3%
- 0.2	- 0.2	- 0.3	- 0.3	- 0.4	- 0.4	-24.6%	-24.6%	-24.6%	-24.6%	-30.8%	-30.8%	-40.9%
- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-25.2%	-25.1%	-25.6%	-25.5%	-33.0%	-33.0%	-42.7%
- 0.6	- 0.6	- 0.6	- 0.6	- 0.6	- 0.6	-17.1%	-17.1%	-17.1%	-17.1%	-17.1%	-17.1%	-17.1%
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- 0.8	- 0.8	- 0.9	- 0.9	- 1.0	- 1.0	-6.8%	-6.8%	-6.8%	-6.8%	-7.3%	-7.3%	-8.1%
- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
- 0.3	- 0.3	- 0.2	- 0.2	- 0.2	- 0.2	-19.2%	-19.2%	-38.9%	-38.9%	-24.4%	-24.4%	-24.4%
- 0.3	- 0.3	- 0.4	- 0.4	- 0.5	- 0.5	-25.3%	-25.3%	-25.3%	-25.3%	-31.7%	-31.7%	-42.1%
- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	-24.8%	-24.8%	-24.8%	-24.8%	-30.6%	-30.6%	-40.8%
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- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
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- 0.7	- 0.7	- 0.7	- 0.7	- 0.8	- 0.8	-1.4%	-1.4%	-1.8%	-1.8%	-1.7%	-1.7%	-2.1%
- 0.4	- 0.4	- 0.4	- 0.4	- 0.4	- 0.4	-27.4%	-27.4%	-27.4%	-27.4%	-27.4%	-27.4%	-27.4%
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- 0.4	- 0.4	- 0.4	- 0.4	- 0.4	- 0.4	-3.9%	-3.9%	-3.9%	-3.9%	-3.9%	-3.9%	-3.9%
- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-1.0%	-1.0%	-1.2%	-1.2%	-1.0%	-1.0%	-1.0%
- 2.4	- 2.4	- 1.5	- 1.5	- 1.5	- 1.5	-14.7%	-14.7%	-30.9%	-30.9%	-19.0%	-19.0%	-19.0%
- 0.2	- 0.2	- 0.2	- 0.2	- 0.3	- 0.3	-25.4%	-25.4%	-25.4%	-25.4%	-23.1%	-23.1%	-42.3%
- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-36.2%	-33.0%	-46.6%	-43.6%	-80.8%	-79.3%	-80.8%
- 0.0	- 0.0	- 0.0	- 0.0	- 0.1	- 0.1	-18.7%	-18.7%	-18.7%	-18.7%	-15.1%	-15.1%	-26.7%
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- 2.7	- 2.7	- 1.7	- 1.7	- 1.9	- 1.9	-3.8%	-3.8%	-7.3%	-7.3%	-4.7%	-4.7%	-5.2%
- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-17.5%	-17.5%	-38.5%	-38.5%	-23.6%	-23.6%	-23.6%
- 0.0	- 0.0	- 0.1	- 0.1	- 0.1	- 0.1	-6.9%	-5.3%	-23.3%	-21.4%	-51.6%	-49.8%	-51.6%
- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-25.6%	-25.6%	-25.6%	-25.6%	-23.3%	-23.3%	-42.7%
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- 0.0	- 0.0	- 0.1	- 0.1	- 0.1	- 0.1	-0.7%	-0.6%	-1.8%	-1.6%	-3.1%	-3.0%	-3.2%
- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%

- 1.4	- 1.4	- 0.8	- 0.8	- 0.8	- 0.8	-16.4%	-16.4%	-29.7%	-29.7%	-16.9%	-16.9%	-16.9%
- 0.8	- 0.8	- 0.7	- 0.7	- 1.3	- 1.3	-25.4%	-25.4%	-25.4%	-25.4%	-23.0%	-23.0%	-42.2%
- 0.0	- 0.0	- 0.1	- 0.1	- 0.1	- 0.1	-26.6%	-23.9%	-39.1%	-36.4%	-72.0%	-70.4%	-72.0%
- 0.0	- 0.0	- 0.0	- 0.0	- 0.1	- 0.1	-22.1%	-22.1%	-22.1%	-22.1%	-18.7%	-18.7%	-34.6%
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- 2.2	- 2.2	- 1.6	- 1.6	- 2.2	- 2.2	-5.5%	-5.5%	-7.7%	-7.7%	-5.5%	-5.5%	-7.7%
- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	0.0%	0.0%	-0.1%	-0.1%	0.0%	0.0%	0.0%
- 1.3	- 1.3	- 0.8	- 0.8	- 0.8	- 0.8	-16.3%	-16.3%	-28.5%	-28.5%	-18.6%	-18.6%	-18.6%
- 0.3	- 0.3	- 0.3	- 0.3	- 0.5	- 0.5	-25.4%	-25.4%	-25.4%	-25.4%	-23.1%	-23.1%	-42.4%
- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-25.6%	-22.8%	-37.1%	-35.2%	-64.2%	-62.2%	-64.2%
- 0.1	- 0.1	- 0.1	- 0.1	- 0.2	- 0.2	-25.3%	-25.3%	-25.3%	-25.3%	-23.0%	-23.0%	-42.1%
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- 1.7	- 1.7	- 1.2	- 1.2	- 1.5	- 1.5	-4.5%	-4.5%	-6.7%	-6.7%	-4.8%	-4.8%	-5.9%
- 0.5	- 0.5	- 0.3	- 0.3	- 0.3	- 0.3	-16.2%	-16.2%	-26.2%	-26.2%	-18.0%	-18.0%	-18.0%
- 0.3	- 0.3	- 0.3	- 0.3	- 0.5	- 0.5	-22.9%	-22.9%	-22.9%	-22.9%	-20.8%	-20.8%	-38.2%
- 0.2	- 0.1	- 0.3	- 0.3	- 0.3	- 0.3	-5.7%	-4.5%	-17.1%	-15.9%	-36.5%	-35.1%	-36.5%
- 0.1	- 0.1	- 0.1	- 0.1	- 0.2	- 0.2	-25.3%	-25.3%	-25.3%	-25.3%	-23.0%	-23.0%	-42.1%
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- 1.1	- 1.1	- 1.1	- 1.1	- 1.5	- 1.4	-6.4%	-6.4%	-8.7%	-8.6%	-8.6%	-8.5%	-11.4%
- 0.0	- 0.0	+ 0.0	+ 0.0	+ 0.0	+ 0.0	0.1%	0.1%	-0.1%	-0.1%	0.1%	0.1%	0.1%
- 0.3	- 0.3	- 0.2	- 0.2	- 0.2	- 0.2	-13.2%	-13.2%	-24.6%	-24.6%	-15.9%	-15.9%	-15.9%
- 0.1	- 0.1	- 0.1	- 0.1	- 0.2	- 0.2	-21.7%	-21.7%	-21.7%	-21.7%	-19.7%	-19.7%	-36.0%
- 0.0	- 0.0	- 0.1	- 0.1	- 0.1	- 0.1	2.7%	3.4%	-13.6%	-11.9%	-38.1%	-36.7%	-38.1%
- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-25.5%	-25.5%	-25.5%	-25.5%	-23.1%	-23.1%	-42.4%
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- 0.5	- 0.5	- 0.4	- 0.4	- 0.5	- 0.5	-1.7%	-1.7%	-3.0%	-3.0%	-2.8%	-2.8%	-3.4%
- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%
- 0.9	- 0.9	- 0.6	- 0.6	- 0.6	- 0.6	-14.1%	-14.1%	-24.6%	-24.6%	-15.9%	-15.9%	-15.9%
- 0.1	- 0.1	- 0.1	- 0.1	- 0.2	- 0.2	-25.1%	-25.1%	-25.1%	-25.1%	-22.8%	-22.8%	-41.9%
- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-0.3%	2.4%	-12.0%	-10.5%	-57.8%	-56.8%	-57.8%
- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	-24.8%	-24.8%	-24.8%	-24.8%	-22.4%	-22.4%	-40.8%
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- 1.1	- 1.1	- 0.8	- 0.8	- 0.9	- 0.9	-4.4%	-4.4%	-6.9%	-6.9%	-5.0%	-5.0%	-5.8%
- 0.4	- 0.4	- 0.4	- 0.4	- 0.4	- 0.4	-15.6%	-15.6%	-19.8%	-19.8%	-17.5%	-17.5%	-17.5%
- 0.2	- 0.2	- 0.2	- 0.2	- 0.4	- 0.4	-24.8%	-24.8%	-24.8%	-24.8%	-22.5%	-22.5%	-41.3%
+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	49.7%	50.2%	49.7%	49.7%	42.9%	42.9%	42.9%
- 0.1	- 0.1	- 0.1	- 0.1	- 0.2	- 0.2	-24.6%	-24.6%	-24.6%	-24.6%	-22.0%	-22.0%	-40.3%
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- 0.6	- 0.6	- 0.6	- 0.6	- 0.8	- 0.8	-7.4%	-7.4%	-8.7%	-8.7%	-7.8%	-7.8%	-10.9%
- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-27.3%	-27.3%	-46.2%	-46.2%	-35.2%	-35.2%	-35.2%
- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-25.1%	-25.1%	-25.1%	-25.1%	-22.8%	-22.8%	-41.9%
+ 0.0	+ 0.0	+ 0.0	+ 0.0	+ 0.0	+ 0.0	7.4%	7.6%	7.4%	7.4%	0.3%	0.3%	0.3%
- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	-22.2%	-22.2%	-22.2%	-22.2%	-19.8%	-19.8%	-34.8%
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- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	-2.3%	-2.3%	-3.0%	-3.0%	-2.6%	-2.6%	-3.6%
- 0.2	- 0.2	- 0.2	- 0.2	- 0.2	- 0.2	-12.6%	-12.6%	-22.0%	-22.0%	-16.3%	-16.3%	-16.3%
- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	-24.2%	-24.2%	-24.2%	-24.2%	-22.0%	-22.0%	-40.2%

		-0.0	-0.0	-0.0	-0.0	--	3.0%	--	--	-25.8%	-25.8%	-25.8%
-0.0	-0.0	-0.0	-0.0	-0.1	-0.1	-21.9%	-21.9%	-21.9%	-21.9%	-18.8%	-18.8%	-34.5%
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-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-2.3%	-2.3%	-3.3%	-3.3%	-2.9%	-2.9%	-3.7%
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-13.3%	-13.3%	-21.7%	-21.7%	-16.5%	-16.5%	-16.5%
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-19.6%	-19.6%	-19.6%	-19.6%	-17.8%	-17.8%	-32.6%
+0.1	+0.1	+0.0	+0.0	+0.0	+0.0	30.9%	33.0%	30.9%	30.9%	19.8%	19.8%	19.8%
-0.1	-0.1	-0.0	-0.0	-0.1	-0.1	-20.7%	-20.7%	-20.7%	-20.7%	-18.2%	-18.2%	-31.7%
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-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-1.8%	-1.7%	-2.3%	-2.3%	-2.1%	-2.1%	-3.5%
-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-13.7%	-13.7%	-23.2%	-23.2%	-17.3%	-17.3%	-17.3%
-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-10.0%	-10.0%	-10.0%	-10.0%	-10.0%	-10.0%	-10.0%
+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	24.9%	25.3%	24.9%	24.9%	19.3%	19.3%	19.3%
-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-13.1%	-13.1%	-13.1%	-13.1%	-13.1%	-13.1%	-14.5%
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-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-1.0%	-0.9%	-1.2%	-1.2%	-2.1%	-2.1%	-2.5%
-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%
+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	39.8%	40.4%	39.8%	39.8%	36.4%	36.4%	36.4%
-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-11.0%	-11.0%	-11.0%	-11.0%	-11.0%	-11.0%	-11.0%
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+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-3.1%	-3.1%	-3.1%	-3.1%	-3.1%	-3.1%	-3.1%
		-0.0	-0.0	-0.0	-0.0	--	0.1%	--	--	-2.8%	-2.8%	-2.8%
-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-11.2%	-11.2%	-11.2%	-11.2%	-11.2%	-11.2%	-14.0%
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-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%
		-0.0	-0.0	-0.0	-0.0	--	0.1%	--	--	-3.7%	-3.7%	-3.7%
-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-2.7%	-2.7%	-2.7%	-2.7%	-2.7%	-2.7%	-2.7%
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-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%
-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.4%	-0.4%	-0.6%	-0.6%	-0.4%	-0.4%	-0.4%
-8.2	-8.2	-5.3	-5.3	-5.3	-5.3	-15.3%	-15.3%	-28.0%	-28.0%	-18.0%	-18.0%	-18.0%
-3.3	-3.3	-3.3	-3.3	-5.4	-5.4	-21.4%	-21.4%	-21.4%	-21.4%	-21.7%	-21.7%	-35.1%
+0.2	+0.2	-0.3	-0.3	-0.3	-0.3	12.0%	13.1%	6.0%	6.7%	-8.9%	-8.2%	-8.9%
-0.9	-0.9	-0.9	-0.9	-1.4	-1.4	-19.4%	-19.4%	-19.4%	-19.4%	-18.4%	-18.4%	-28.8%
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-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-16.6%	-16.6%	-16.6%	-16.6%	-16.6%	-16.6%	-16.6%
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-13.2	-13.1	-10.8	-10.7	-13.3	-13.3	-2.4%	-2.4%	-3.4%	-3.4%	-2.8%	-2.8%	-3.5%



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**Alt 3d**

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**MT landings**

	IO_AREA	SECTOR_NAME	2009
0010	Northern Puget Sound	Non-whiting trawl	1,229.7
		Limited entry fixed gear	305.7
		Tribal non-groundfish	5,490.1
		Non-tribal non-groundfish	8,166.5
	Northern Puget Sound Total		15,191.9
0011	Southern Puget Sound	Tribal non-groundfish	4,410.5
		Non-tribal non-groundfish	2,962.8
	Southern Puget Sound Total		7,373.3
0020	North Washington Coast	Non-whiting trawl	48.4
		Limited entry fixed gear	209.5
		Open access non-nearshore	20.7
		Tribal groundfish	1,488.4
		Tribal non-groundfish	1,570.8
		Non-tribal non-groundfish	785.7
	North Washington Coast Total		4,123.6
0030	South and Central Washington Coast	Shoreside whiting trawl	10,090.8
		Non-whiting trawl	1,278.4
		Limited entry fixed gear	264.3
		Open access non-nearshore	52.8
		Incidental open access	0.3
		Tribal groundfish	9,039.4
		Tribal non-groundfish	441.0
		Non-tribal non-groundfish	21,487.8
	South and Central Washington Coast Total		42,654.8
0040	Unidentified Washington	Tribal groundfish	276.2
		Tribal non-groundfish	2,137.1
		Non-tribal non-groundfish	0.1
	Unidentified Washington Total		2,413.3
0050	Astoria	Shoreside whiting trawl	14,085.8
		Non-whiting trawl	8,251.8
		Limited entry fixed gear	150.0
		Open access nearshore	3.7
		Open access non-nearshore	46.8
		Tribal non-groundfish	271.2
		Non-tribal non-groundfish	29,104.2
	Astoria Total		51,913.5
0060	Tillamook	Non-whiting trawl	26.8
		Open access nearshore	32.5
		Open access non-nearshore	2.0
		Non-tribal non-groundfish	736.7
	Tillamook Total		798.0
0070	Newport	Shoreside whiting trawl	12,993.0

		Non-whiting trawl	3,660.6
		Limited entry fixed gear	529.3
		Open access nearshore	18.4
		Open access non-nearshore	42.4
		Non-tribal non-groundfish	8,225.1
Newport Total			25,468.8
0080	Coos Bay	Shoreside whiting trawl	1,612.5
		Non-whiting trawl	3,559.2
		Limited entry fixed gear	177.5
		Open access nearshore	10.1
		Open access non-nearshore	73.2
		Non-tribal non-groundfish	9,018.9
Coos Bay Total			14,451.3
0090	Brookings	Non-whiting trawl	1,195.7
		Limited entry fixed gear	270.4
		Open access nearshore	163.1
		Open access non-nearshore	112.1
		Non-tribal non-groundfish	2,566.0
Brookings Total			4,307.3
0100	Crescent City	Shoreside whiting trawl	1,489.4
		Non-whiting trawl	982.6
		Limited entry fixed gear	109.9
		Open access nearshore	77.8
		Open access non-nearshore	4.2
		Non-tribal non-groundfish	4,198.1
Crescent City Total			6,861.9
0110	Eureka	Shoreside whiting trawl	308.4
		Non-whiting trawl	2,678.7
		Limited entry fixed gear	101.6
		Open access nearshore	16.5
		Open access non-nearshore	59.1
		Non-tribal non-groundfish	2,997.7
Eureka Total			6,162.1
0120	Fort Bragg	Non-whiting trawl	1,684.1
		Limited entry fixed gear	155.1
		Open access nearshore	15.3
		Open access non-nearshore	84.4
		Non-tribal non-groundfish	1,901.2
Fort Bragg Total			3,840.2
0130	Bodega Bay	Non-whiting trawl	54.6
		Limited entry fixed gear	9.3
		Open access nearshore	2.6
		Open access non-nearshore	19.1
		Non-tribal non-groundfish	547.2
Bodega Bay Total			632.7
0140	San Francisco	Non-whiting trawl	661.5
		Limited entry fixed gear	70.8

		Open access nearshore	15.5
		Open access non-nearshore	45.6
		Incidental open access	5.1
		Non-tribal non-groundfish	2,953.2
San Francisco Total			3,751.8
0150	Monterey	Non-whiting trawl	295.9
		Limited entry fixed gear	98.7
		Open access nearshore	18.1
		Open access non-nearshore	72.3
		Non-tribal non-groundfish	25,907.9
Monterey Total			26,393.0
0160	Morro Bay	Non-whiting trawl	99.8
		Limited entry fixed gear	206.7
		Open access nearshore	68.9
		Open access non-nearshore	410.4
		Incidental open access	2.8
		Non-tribal non-groundfish	1,646.5
Morro Bay Total			2,435.1
0170	Santa Barbara	Limited entry fixed gear	35.7
		Open access nearshore	22.5
		Open access non-nearshore	53.8
		Incidental open access	9.4
		Non-tribal non-groundfish	64,996.0
Santa Barbara Total			65,117.4
0180	Los Angeles	Limited entry fixed gear	117.3
		Open access nearshore	5.6
		Open access non-nearshore	10.5
		Incidental open access	2.7
		Non-tribal non-groundfish	53,341.6
Los Angeles Total			53,477.7
0190	San Diego	Limited entry fixed gear	80.6
		Open access nearshore	5.3
		Open access non-nearshore	11.7
		Non-tribal non-groundfish	996.7
San Diego Total			1,094.2
<b>Coastwide</b>		Shoreside whiting trawl	40,579.9
		Non-whiting trawl	25,707.9
		Limited entry fixed gear	2,892.1
		Open access nearshore	475.9
		Open access non-nearshore	1,121.4
		Incidental open access	20.4
		Tribal groundfish	10,804.0
		Tribal non-groundfish	14,320.7
		Non-tribal non-groundfish	242,539.7
<b>Coastwide Total</b>			338,461.9

**Total Estimated Landings in 2011 under each Alternative Scenario (MT)**

<b>No Action</b>	<b>Alt 1a</b>	<b>Alt 1b</b>	<b>Alt 2a</b>	<b>Alt 2b</b>	<b>Alt 2g</b>	<b>Alt 2h</b>	<b>Alt 3a</b>	<b>Alt 3b</b>
1,030.4	904.7	904.7	696.7	696.7	904.8	904.8	696.7	696.7
296.5	237.9	237.9	237.9	237.9	237.9	237.9	218.8	218.8
5,490.1	5,490.1	5,490.1	5,490.1	5,490.1	5,490.1	5,490.1	5,490.1	5,490.1
8,166.5	8,166.5	8,166.5	8,166.5	8,166.5	8,166.5	8,166.5	8,166.5	8,166.5
14,983.5	14,799.1	14,799.1	14,591.1	14,591.1	14,799.2	14,799.2	14,572.0	14,572.0
4,410.5	4,410.5	4,410.5	4,410.5	4,410.5	4,410.5	4,410.5	4,410.5	4,410.5
2,962.8	2,962.8	2,962.8	2,962.8	2,962.8	2,962.8	2,962.8	2,962.8	2,962.8
7,373.3	7,373.3	7,373.3	7,373.3	7,373.3	7,373.3	7,373.3	7,373.3	7,373.3
27.1	26.4	26.4	24.0	24.0	26.4	26.4	24.0	24.0
201.7	169.7	169.7	169.7	169.7	169.7	169.7	159.3	159.3
20.9	17.5	17.5	17.3	17.3	17.3	17.3	15.8	15.8
1,486.8	1,400.8	1,400.8	1,400.8	1,400.8	1,400.8	1,400.8	1,400.8	1,400.8
1,570.8	1,570.8	1,570.8	1,570.8	1,570.8	1,570.8	1,570.8	1,570.8	1,570.8
785.7	785.7	785.7	785.7	785.7	785.7	785.7	785.7	785.7
4,093.1	3,970.8	3,970.9	3,968.3	3,968.4	3,970.7	3,970.7	3,956.4	3,956.4
9,967.5	9,962.7	9,962.7	9,960.2	9,960.2	9,962.7	9,962.7	9,960.2	9,960.2
900.9	722.2	722.2	506.5	506.5	722.3	722.3	506.5	506.5
255.8	205.3	205.3	205.3	205.3	205.3	205.3	188.8	188.8
51.4	41.6	41.6	41.5	41.5	41.5	41.5	37.8	37.8
0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
9,039.4	9,039.4	9,039.4	9,039.4	9,039.4	9,039.4	9,039.4	9,039.4	9,039.4
441.0	441.0	441.0	441.0	441.0	441.0	441.0	441.0	441.0
21,487.8	21,487.8	21,487.8	21,487.8	21,487.8	21,487.8	21,487.8	21,487.8	21,487.8
42,144.2	41,900.2	41,900.2	41,682.0	41,682.0	41,900.3	41,900.3	41,661.9	41,661.9
275.0	212.5	212.5	212.5	212.5	212.5	212.5	212.5	212.5
2,137.1	2,137.1	2,137.1	2,137.1	2,137.1	2,137.1	2,137.1	2,137.1	2,137.1
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2,412.2	2,349.7	2,349.7	2,349.7	2,349.7	2,349.7	2,349.7	2,349.7	2,349.7
14,068.9	14,046.0	14,046.0	14,037.7	14,037.7	14,046.1	14,046.1	14,037.7	14,037.7
8,262.7	7,069.8	7,069.8	5,498.8	5,498.8	7,070.8	7,070.8	5,498.8	5,498.8
145.8	116.3	116.3	116.3	116.3	116.3	116.3	119.7	119.7
4.4	3.6	3.6	3.3	3.4	3.3	3.4	2.5	2.5
45.4	39.7	39.7	39.7	39.7	39.7	39.7	40.9	40.9
271.2	271.2	271.2	271.2	271.2	271.2	271.2	271.2	271.2
29,104.2	29,104.2	29,104.2	29,104.2	29,104.2	29,104.2	29,104.2	29,104.2	29,104.2
51,902.7	50,650.8	50,650.9	49,071.2	49,071.3	50,651.6	50,651.6	49,075.1	49,075.1
27.9	24.2	24.2	20.2	20.2	24.2	24.2	20.2	20.2
33.2	24.8	32.8	24.8	25.4	24.8	25.4	16.8	17.4
2.0	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
736.7	736.7	736.7	736.7	736.7	736.7	736.7	736.7	736.7
799.9	787.3	795.3	783.2	783.9	787.2	787.9	775.3	775.9
12,965.2	12,962.4	12,962.4	12,961.2	12,961.2	12,962.4	12,962.4	12,961.2	12,961.2

3,408.0	3,036.1	3,036.1	2,530.4	2,530.4	3,036.1	3,036.1	2,530.4	2,530.4
514.4	409.5	409.5	409.5	409.5	409.5	409.5	421.7	421.7
22.8	15.7	18.4	14.3	14.9	14.3	14.9	7.6	8.0
41.2	34.4	34.4	34.4	34.4	34.4	34.4	35.4	35.4
8,225.1	8,225.1	8,225.1	8,225.1	8,225.1	8,225.1	8,225.1	8,225.1	8,225.1
25,176.7	24,683.2	24,685.9	24,174.8	24,175.4	24,681.9	24,682.5	24,181.4	24,181.8
1,612.1	1,612.0	1,612.0	1,611.9	1,611.9	1,612.0	1,612.0	1,611.9	1,611.9
3,988.8	3,522.6	3,522.6	2,987.5	2,987.5	3,522.8	3,522.8	2,987.5	2,987.5
172.4	136.9	136.9	136.9	136.9	136.9	136.9	141.1	141.1
11.9	9.1	9.8	8.4	8.6	8.4	8.6	5.9	6.1
71.1	56.4	56.4	56.4	56.4	56.4	56.4	58.1	58.1
9,018.9	9,018.9	9,018.9	9,018.9	9,018.9	9,018.9	9,018.9	9,018.9	9,018.9
14,875.2	14,355.8	14,356.5	13,820.0	13,820.2	14,355.3	14,355.5	13,823.3	13,823.5
1,489.5	1,331.5	1,331.5	1,145.8	1,145.8	1,331.5	1,331.5	1,145.8	1,145.8
263.5	215.3	215.3	215.3	215.3	215.3	215.3	220.9	220.9
167.5	131.6	162.9	130.2	132.9	130.2	132.9	97.4	100.0
109.0	86.9	86.9	86.9	86.9	86.9	86.9	89.5	89.5
2,566.0	2,566.0	2,566.0	2,566.0	2,566.0	2,566.0	2,566.0	2,566.0	2,566.0
4,595.5	4,331.3	4,362.6	4,144.2	4,146.9	4,329.9	4,332.6	4,119.6	4,122.2
1,484.8	1,485.0	1,485.0	1,484.7	1,484.7	1,485.0	1,485.0	1,484.7	1,484.7
1,090.7	984.4	984.4	828.3	828.3	984.5	984.5	828.3	828.3
107.2	88.4	88.4	88.4	88.4	88.4	88.4	90.6	90.6
79.4	62.9	82.9	64.0	65.4	64.0	65.4	48.5	49.6
4.1	3.3	3.3	3.3	3.3	3.3	3.3	3.4	3.4
4,198.1	4,198.1	4,198.1	4,198.1	4,198.1	4,198.1	4,198.1	4,198.1	4,198.1
6,964.3	6,822.0	6,842.0	6,666.8	6,668.2	6,823.2	6,824.6	6,653.5	6,654.6
308.0	307.9	307.9	307.9	307.9	308.0	308.0	307.9	307.9
3,157.9	2,855.5	2,855.5	2,478.7	2,478.7	2,855.5	2,855.5	2,478.7	2,478.7
98.8	79.2	79.2	79.2	79.2	79.2	79.2	81.5	81.5
17.0	13.9	17.3	13.9	14.2	13.9	14.2	7.7	7.9
57.4	45.9	45.9	45.9	45.9	45.9	45.9	47.3	47.3
2,997.7	2,997.7	2,997.7	2,997.7	2,997.7	2,997.7	2,997.7	2,997.7	2,997.7
6,636.8	6,300.0	6,303.5	5,923.3	5,923.6	6,300.1	6,300.4	5,920.8	5,921.0
1,544.3	1,398.0	1,398.0	1,343.7	1,343.7	1,398.7	1,398.7	1,343.7	1,343.7
150.8	120.6	120.6	120.6	120.6	120.6	120.6	124.1	124.1
18.3	26.8	27.1	26.8	26.8	26.8	26.8	23.4	23.4
81.9	65.6	65.6	65.6	65.6	65.6	65.6	67.6	67.6
1,901.2	1,901.2	1,901.2	1,901.2	1,901.2	1,901.2	1,901.2	1,901.2	1,901.2
3,696.6	3,512.2	3,512.4	3,457.9	3,457.9	3,512.9	3,512.9	3,460.1	3,460.1
51.0	41.5	41.5	34.8	34.8	41.5	41.5	34.8	34.8
9.0	7.2	7.2	7.2	7.2	7.2	7.2	7.4	7.4
2.7	2.9	3.0	2.9	2.9	2.9	2.9	2.4	2.4
18.5	15.2	15.2	15.2	15.2	15.2	15.2	15.7	15.7
547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2
628.4	614.0	614.1	607.4	607.4	614.0	614.0	607.5	607.5
702.7	634.5	634.5	588.3	588.3	634.6	634.6	588.3	588.3
68.8	54.6	54.6	54.6	54.6	54.6	54.6	56.3	56.3



16.6	16.6	17.1	16.6	16.6	16.6	16.6	12.1	12.1
44.4	37.5	37.5	37.5	37.5	37.5	37.5	38.6	38.6
5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
2,953.2	2,953.2	2,953.2	2,953.2	2,953.2	2,953.2	2,953.2	2,953.2	2,953.2
3,790.8	3,701.6	3,702.0	3,655.4	3,655.4	3,701.6	3,701.6	3,653.6	3,653.6
264.3	236.9	236.9	221.9	221.9	237.1	237.1	221.9	221.9
96.6	81.7	81.7	81.7	81.7	81.7	81.7	83.4	83.4
21.3	25.5	26.6	25.5	25.5	25.5	25.5	20.1	20.1
70.3	59.8	59.8	59.8	59.8	59.8	59.8	61.5	61.5
25,907.9	25,907.9	25,907.9	25,907.9	25,907.9	25,907.9	25,907.9	25,907.9	25,907.9
26,360.5	26,311.8	26,312.9	26,296.8	26,296.8	26,312.0	26,312.0	26,294.8	26,294.8
100.6	91.3	91.3	84.1	84.1	91.3	91.3	84.1	84.1
201.8	190.3	190.3	190.3	190.3	190.3	190.3	190.3	190.3
77.2	96.6	97.5	96.6	96.6	96.6	96.6	84.6	84.6
398.3	366.5	366.5	366.5	366.5	366.5	366.5	366.5	366.5
2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
1,646.5	1,646.5	1,646.5	1,646.5	1,646.5	1,646.5	1,646.5	1,646.5	1,646.5
2,427.1	2,394.0	2,394.9	2,386.8	2,386.8	2,394.0	2,394.0	2,374.8	2,374.8
35.6	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5
25.0	32.8	33.0	32.8	32.8	32.8	32.8	31.3	31.3
52.5	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4
9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4
64,996.0	64,996.0	64,996.0	64,996.0	64,996.0	64,996.0	64,996.0	64,996.0	64,996.0
65,118.5	65,123.0	65,123.3	65,123.0	65,123.0	65,123.0	65,123.0	65,121.6	65,121.6
116.1	113.3	113.3	113.3	113.3	113.3	113.3	113.3	113.3
5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.5	5.5
10.2	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3
2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
53,341.6	53,341.6	53,341.6	53,341.6	53,341.6	53,341.6	53,341.6	53,341.6	53,341.6
53,476.3	53,472.6	53,472.6	53,472.6	53,472.6	53,472.6	53,472.6	53,472.5	53,472.5
80.1	79.0	79.0	79.0	79.0	79.0	79.0	79.0	79.0
5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.2	5.2
11.6	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
996.7	996.7	996.7	996.7	996.7	996.7	996.7	996.7	996.7
1,093.7	1,092.5	1,092.5	1,092.5	1,092.5	1,092.5	1,092.5	1,092.4	1,092.4
40,406.5	40,376.0	40,376.0	40,363.6	40,363.6	40,376.1	40,376.1	40,363.6	40,363.6
26,047.0	22,879.5	22,879.5	18,989.8	18,989.8	22,882.2	22,882.2	18,989.8	18,989.8
2,815.0	2,340.6	2,340.6	2,340.6	2,340.6	2,340.6	2,340.6	2,331.6	2,331.6
508.2	473.6	543.0	470.9	476.9	470.9	476.9	370.9	375.9
1,090.4	942.0	942.1	941.8	941.8	941.8	941.8	949.9	950.0
20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4
10,801.3	10,652.7	10,652.7	10,652.7	10,652.7	10,652.7	10,652.7	10,652.7	10,652.7
14,320.7	14,320.7	14,320.7	14,320.7	14,320.7	14,320.7	14,320.7	14,320.7	14,320.7
242,539.7	242,539.7	242,539.7	242,539.7	242,539.7	242,539.7	242,539.7	242,539.7	242,539.7
338,549.3	334,545.2	334,614.7	330,640.3	330,646.3	334,545.1	334,551.1	330,539.4	330,544.4

		Change from No Action (MT)						
Alt 3c	Alt 3d	Alt 1a	Alt 1b	Alt 2a	Alt 2b	Alt 2g	Alt 2h	Alt 3a
696.7	696.7	- 125.7	- 125.7	- 333.8	- 333.8	- 125.6	- 125.6	- 333.8
162.2	162.2	- 58.6	- 58.6	- 58.6	- 58.6	- 58.6	- 58.6	- 77.7
5,490.1	5,490.1							
8,166.5	8,166.5							
14,515.4	14,515.4	- 184.3	- 184.3	- 392.4	- 392.4	- 184.2	- 184.2	- 411.4
4,410.5	4,410.5							
2,962.8	2,962.8							
7,373.3	7,373.3							
24.0	24.0	- 0.7	- 0.7	- 3.1	- 3.1	- 0.7	- 0.7	- 3.1
128.3	128.3	- 32.0	- 32.0	- 32.0	- 32.0	- 32.0	- 32.0	- 42.5
13.1	13.1	- 3.4	- 3.4	- 3.6	- 3.6	- 3.6	- 3.6	- 5.2
1,400.8	1,400.8	- 86.0	- 86.0	- 86.0	- 86.0	- 86.0	- 86.0	- 86.0
1,570.8	1,570.8							
785.7	785.7							
3,922.7	3,922.7	- 122.2	- 122.2	- 124.8	- 124.7	- 122.4	- 122.4	- 136.7
9,960.2	9,960.2	- 4.8	- 4.8	- 7.3	- 7.3	- 4.8	- 4.8	- 7.3
506.5	506.5	- 178.7	- 178.7	- 394.3	- 394.3	- 178.6	- 178.6	- 394.3
140.0	140.0	- 50.6	- 50.6	- 50.6	- 50.6	- 50.6	- 50.6	- 67.0
29.5	29.5	- 9.9	- 9.8	- 9.9	- 9.9	- 9.9	- 9.9	- 13.6
0.3	0.3							
9,039.4	9,039.4	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
441.0	441.0							
21,487.8	21,487.8							
41,604.7	41,604.7	- 244.0	- 243.9	- 462.1	- 462.1	- 243.9	- 243.9	- 482.3
212.5	212.5	- 62.5	- 62.5	- 62.5	- 62.5	- 62.5	- 62.5	- 62.5
2,137.1	2,137.1							
0.1	0.1							
2,349.7	2,349.7	- 62.5	- 62.5	- 62.5	- 62.5	- 62.5	- 62.5	- 62.5
14,037.7	14,037.7	- 22.8	- 22.8	- 31.1	- 31.1	- 22.8	- 22.8	- 31.1
5,498.8	5,498.8	- 1,192.9	- 1,192.9	- 2,764.0	- 2,764.0	- 1,192.0	- 1,192.0	- 2,764.0
78.1	78.1	- 29.5	- 29.5	- 29.5	- 29.5	- 29.5	- 29.5	- 26.1
2.5	2.5	- 0.9	- 0.8	- 1.1	- 1.0	- 1.1	- 1.0	- 1.9
34.9	34.9	- 5.7	- 5.7	- 5.7	- 5.7	- 5.7	- 5.7	- 4.5
271.2	271.2							
29,104.2	29,104.2							
49,027.5	49,027.5	- 1,251.9	- 1,251.8	- 2,831.5	- 2,831.4	- 1,251.1	- 1,251.1	- 2,827.6
20.2	20.2	- 3.7	- 3.7	- 7.7	- 7.7	- 3.7	- 3.7	- 7.7
16.8	17.4	- 8.4	- 0.4	- 8.5	- 7.8	- 8.5	- 7.8	- 16.4
1.0	1.0	- 0.4	- 0.4	- 0.4	- 0.4	- 0.4	- 0.4	- 0.4
736.7	736.7							
774.7	775.3	- 12.6	- 4.6	- 16.7	- 16.0	- 12.6	- 11.9	- 24.5
12,961.2	12,961.2	- 2.8	- 2.8	- 4.0	- 4.0	- 2.8	- 2.8	- 4.0

2,530.4	2,530.4	- 371.9	- 371.9	- 877.6	- 877.6	- 371.9	- 371.9	- 877.6
274.0	274.0	- 104.9	- 104.9	- 104.9	- 104.9	- 104.9	- 104.9	- 92.7
7.6	8.0	- 7.1	- 4.4	- 8.5	- 7.9	- 8.5	- 7.9	- 15.1
27.0	27.0	- 6.8	- 6.8	- 6.8	- 6.8	- 6.8	- 6.8	- 5.7
8,225.1	8,225.1							
24,025.3	24,025.6	- 493.5	- 490.8	- 1,001.8	- 1,001.2	- 494.8	- 494.2	- 995.2
1,611.9	1,611.9	- 0.1	- 0.1	- 0.2	- 0.2	- 0.1	- 0.1	- 0.2
2,987.5	2,987.5	- 466.2	- 466.2	- 1,001.3	- 1,001.3	- 466.0	- 466.0	- 1,001.3
91.1	91.1	- 35.5	- 35.5	- 35.5	- 35.5	- 35.5	- 35.5	- 31.4
5.9	6.1	- 2.8	- 2.1	- 3.5	- 3.4	- 3.5	- 3.4	- 6.0
37.3	37.3	- 14.8	- 14.8	- 14.8	- 14.8	- 14.8	- 14.8	- 13.0
9,018.9	9,018.9							
13,752.6	13,752.8	- 519.4	- 518.7	- 1,055.3	- 1,055.1	- 519.9	- 519.7	- 1,051.9
1,145.8	1,145.8	- 158.0	- 158.0	- 343.7	- 343.7	- 158.0	- 158.0	- 343.7
152.9	152.9	- 48.3	- 48.3	- 48.3	- 48.3	- 48.3	- 48.3	- 42.7
97.4	100.0	- 35.8	- 4.5	- 37.3	- 34.6	- 37.3	- 34.6	- 70.1
58.4	58.4	- 22.1	- 22.1	- 22.1	- 22.1	- 22.1	- 22.1	- 19.5
2,566.0	2,566.0							
4,020.5	4,023.1	- 264.2	- 232.9	- 451.3	- 448.7	- 265.6	- 262.9	- 475.9
1,484.7	1,484.7	+ 0.2	+ 0.2	- 0.1	- 0.1	+ 0.2	+ 0.2	- 0.1
828.3	828.3	- 106.3	- 106.3	- 262.5	- 262.5	- 106.3	- 106.3	- 262.5
64.3	64.3	- 18.8	- 18.8	- 18.8	- 18.8	- 18.8	- 18.8	- 16.5
48.5	49.6	- 16.5	+ 3.5	- 15.4	- 14.0	- 15.4	- 14.0	- 30.9
2.2	2.2	- 0.9	- 0.9	- 0.9	- 0.9	- 0.9	- 0.9	- 0.8
4,198.1	4,198.1							
6,626.0	6,627.1	- 142.3	- 122.3	- 297.6	- 296.1	- 141.1	- 139.7	- 310.8
307.9	307.9	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1
2,478.7	2,478.7	- 302.4	- 302.4	- 679.1	- 679.1	- 302.4	- 302.4	- 679.1
53.8	53.8	- 19.7	- 19.7	- 19.7	- 19.7	- 19.7	- 19.7	- 17.4
7.7	7.9	- 3.1	+ 0.4	- 3.0	- 2.7	- 3.0	- 2.7	- 9.3
31.2	31.2	- 11.6	- 11.6	- 11.6	- 11.6	- 11.6	- 11.6	- 10.2
2,997.7	2,997.7							
5,877.0	5,877.2	- 336.8	- 333.4	- 713.5	- 713.2	- 336.7	- 336.4	- 716.1
1,343.7	1,343.7	- 146.3	- 146.3	- 200.6	- 200.6	- 145.6	- 145.6	- 200.6
81.5	81.5	- 30.3	- 30.3	- 30.3	- 30.3	- 30.3	- 30.3	- 26.7
23.4	23.4	+ 8.5	+ 8.8	+ 8.5	+ 8.5	+ 8.5	+ 8.5	+ 5.1
45.2	45.2	- 16.3	- 16.3	- 16.3	- 16.3	- 16.3	- 16.3	- 14.3
1,901.2	1,901.2							
3,395.1	3,395.1	- 184.4	- 184.1	- 238.7	- 238.7	- 183.7	- 183.7	- 236.5
34.8	34.8	- 9.5	- 9.5	- 16.1	- 16.1	- 9.5	- 9.5	- 16.1
4.8	4.8	- 1.9	- 1.9	- 1.9	- 1.9	- 1.9	- 1.9	- 1.7
2.4	2.4	+ 0.2	+ 0.2	+ 0.2	+ 0.2	+ 0.2	+ 0.2	- 0.4
11.5	11.5	- 3.3	- 3.3	- 3.3	- 3.3	- 3.3	- 3.3	- 2.8
547.2	547.2							
600.6	600.6	- 14.4	- 14.4	- 21.1	- 21.1	- 14.4	- 14.4	- 20.9
588.3	588.3	- 68.2	- 68.2	- 114.4	- 114.4	- 68.2	- 68.2	- 114.4
36.4	36.4	- 14.1	- 14.1	- 14.1	- 14.1	- 14.1	- 14.1	- 12.5

12.1	12.1		+ 0.4					- 4.5
29.8	29.8	- 6.9	- 6.9	- 6.9	- 6.9	- 6.9	- 6.9	- 5.8
5.1	5.1							
2,953.2	2,953.2							
3,624.9	3,624.9	- 89.2	- 88.7	- 135.4	- 135.4	- 89.2	- 89.2	- 137.2
221.9	221.9	- 27.5	- 27.5	- 42.4	- 42.4	- 27.2	- 27.2	- 42.4
62.4	62.4	- 14.9	- 14.9	- 14.9	- 14.9	- 14.9	- 14.9	- 13.2
20.1	20.1	+ 4.2	+ 5.3	+ 4.2	+ 4.2	+ 4.2	+ 4.2	- 1.2
48.3	48.3	- 10.5	- 10.5	- 10.5	- 10.5	- 10.5	- 10.5	- 8.9
25,907.9	25,907.9							
26,260.7	26,260.7	- 48.7	- 47.6	- 63.6	- 63.6	- 48.4	- 48.4	- 65.6
84.1	84.1	- 9.3	- 9.3	- 16.5	- 16.5	- 9.3	- 9.3	- 16.5
190.1	190.1	- 11.5	- 11.5	- 11.5	- 11.5	- 11.5	- 11.5	- 11.5
84.6	84.6	+ 19.4	+ 20.3	+ 19.4	+ 19.4	+ 19.4	+ 19.4	+ 7.4
359.7	359.7	- 31.8	- 31.8	- 31.8	- 31.8	- 31.8	- 31.8	- 31.8
2.8	2.8							
1,646.5	1,646.5							
2,367.7	2,367.7	- 33.2	- 32.2	- 40.4	- 40.4	- 33.2	- 33.2	- 52.3
35.5	35.5	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1
31.3	31.3	+ 7.7	+ 8.0	+ 7.7	+ 7.7	+ 7.7	+ 7.7	+ 6.3
49.4	49.4	- 3.1	- 3.1	- 3.1	- 3.1	- 3.1	- 3.1	- 3.1
9.4	9.4							
64,996.0	64,996.0							
65,121.6	65,121.6	+ 4.5	+ 4.8	+ 4.5	+ 4.5	+ 4.5	+ 4.5	+ 3.0
113.3	113.3	- 2.7	- 2.7	- 2.7	- 2.7	- 2.7	- 2.7	- 2.7
5.5	5.5		+ 0.0					- 0.2
8.7	8.7	- 0.9	- 0.9	- 0.9	- 0.9	- 0.9	- 0.9	- 0.9
2.7	2.7							
53,341.6	53,341.6							
53,471.9	53,471.9	- 3.7	- 3.7	- 3.7	- 3.7	- 3.7	- 3.7	- 3.8
79.0	79.0	- 1.1	- 1.1	- 1.1	- 1.1	- 1.1	- 1.1	- 1.1
5.2	5.2		+ 0.0					- 0.1
11.5	11.5	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1
996.7	996.7							
1,092.4	1,092.4	- 1.2	- 1.2	- 1.2	- 1.2	- 1.2	- 1.2	- 1.3
40,363.6	40,363.6	- 30.5	- 30.5	- 42.8	- 42.8	- 30.4	- 30.4	- 42.8
18,989.8	18,989.8	- 3,167.5	- 3,167.5	- 7,057.2	- 7,057.2	- 3,164.8	- 3,164.8	- 7,057.2
1,747.7	1,747.7	- 474.4	- 474.4	- 474.4	- 474.4	- 474.4	- 474.4	- 483.4
370.9	375.9	- 34.7	+ 34.7	- 37.3	- 31.4	- 37.3	- 31.4	- 137.4
798.8	798.8	- 148.4	- 148.3	- 148.6	- 148.6	- 148.6	- 148.6	- 140.5
20.4	20.4							
10,652.7	10,652.7	- 148.6	- 148.6	- 148.6	- 148.6	- 148.6	- 148.6	- 148.6
14,320.7	14,320.7							
242,539.7	242,539.7							
329,804.3	329,809.4	- 4,004.0	- 3,934.5	- 7,909.0	- 7,903.0	- 4,004.2	- 3,998.2	- 8,009.9

[illegible]

- 877.6	- 877.6	- 877.6	-10.9%	-10.9%	-25.8%	-25.8%	-10.9%	-10.9%	-25.8%	-25.8%
- 92.7	- 240.4	- 240.4	-20.4%	-20.4%	-20.4%	-20.4%	-20.4%	-20.4%	-18.0%	-18.0%
- 14.8	- 15.1	- 14.8	-31.1%	-19.2%	-37.1%	-34.6%	-37.1%	-34.6%	-66.4%	-64.9%
- 5.7	- 14.2	- 14.2	-16.5%	-16.5%	-16.5%	-16.5%	-16.5%	-16.5%	-13.9%	-13.9%
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- 994.9	- 1,151.4	- 1,151.1	-2.0%	-1.9%	-4.0%	-4.0%	-2.0%	-2.0%	-4.0%	-4.0%
- 0.2	- 0.2	- 0.2	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
- 1,001.3	- 1,001.3	- 1,001.3	-11.7%	-11.7%	-25.1%	-25.1%	-11.7%	-11.7%	-25.1%	-25.1%
- 31.4	- 81.3	- 81.3	-20.6%	-20.6%	-20.6%	-20.6%	-20.6%	-20.6%	-18.2%	-18.2%
- 5.9	- 6.0	- 5.9	-23.7%	-17.6%	-29.7%	-28.1%	-29.7%	-28.1%	-50.7%	-49.2%
- 13.0	- 33.8	- 33.8	-20.7%	-20.7%	-20.7%	-20.7%	-20.7%	-20.7%	-18.3%	-18.3%
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- 1,051.7	- 1,122.7	- 1,122.5	-3.5%	-3.5%	-7.1%	-7.1%	-3.5%	-3.5%	-7.1%	-7.1%
- 343.7	- 343.7	- 343.7	-10.6%	-10.6%	-23.1%	-23.1%	-10.6%	-10.6%	-23.1%	-23.1%
- 42.7	- 110.6	- 110.6	-18.3%	-18.3%	-18.3%	-18.3%	-18.3%	-18.3%	-16.2%	-16.2%
- 67.5	- 70.1	- 67.5	-21.4%	-2.7%	-22.3%	-20.7%	-22.3%	-20.7%	-41.8%	-40.3%
- 19.5	- 50.6	- 50.6	-20.2%	-20.2%	-20.2%	-20.2%	-20.2%	-20.2%	-17.9%	-17.9%
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- 473.3	- 575.0	- 572.4	-5.7%	-5.1%	-9.8%	-9.8%	-5.8%	-5.7%	-10.4%	-10.3%
- 0.1	- 0.1	- 0.1	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
- 262.5	- 262.5	- 262.5	-9.7%	-9.7%	-24.1%	-24.1%	-9.7%	-9.7%	-24.1%	-24.1%
- 16.5	- 42.8	- 42.8	-17.5%	-17.5%	-17.5%	-17.5%	-17.5%	-17.5%	-15.4%	-15.4%
- 29.8	- 30.9	- 29.8	-20.8%	4.4%	-19.4%	-17.6%	-19.4%	-17.6%	-39.0%	-37.6%
- 0.8	- 2.0	- 2.0	-20.8%	-20.8%	-20.8%	-20.8%	-20.8%	-20.8%	-18.4%	-18.4%
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- 309.7	- 338.3	- 337.2	-2.0%	-1.8%	-4.3%	-4.3%	-2.0%	-2.0%	-4.5%	-4.4%
- 0.1	- 0.1	- 0.1	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
- 679.1	- 679.1	- 679.1	-9.6%	-9.6%	-21.5%	-21.5%	-9.6%	-9.6%	-21.5%	-21.5%
- 17.4	- 45.1	- 45.1	-19.9%	-19.9%	-19.9%	-19.9%	-19.9%	-19.9%	-17.6%	-17.6%
- 9.1	- 9.3	- 9.1	-18.3%	2.2%	-17.9%	-16.2%	-17.9%	-16.2%	-54.8%	-53.7%
- 10.2	- 26.2	- 26.2	-20.2%	-20.2%	-20.2%	-20.2%	-20.2%	-20.2%	-17.7%	-17.7%
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- 715.9	- 759.8	- 759.6	-5.1%	-5.0%	-10.8%	-10.7%	-5.1%	-5.1%	-10.8%	-10.8%
- 200.6	- 200.6	- 200.6	-9.5%	-9.5%	-13.0%	-13.0%	-9.4%	-9.4%	-13.0%	-13.0%
- 26.7	- 69.3	- 69.3	-20.1%	-20.1%	-20.1%	-20.1%	-20.1%	-20.1%	-17.7%	-17.7%
+ 5.1	+ 5.1	+ 5.1	46.5%	48.1%	46.5%	46.5%	46.5%	46.5%	28.1%	28.1%
- 14.3	- 36.7	- 36.7	-19.9%	-19.9%	-19.9%	-19.9%	-19.9%	-19.9%	-17.4%	-17.4%
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- 236.5	- 301.5	- 301.5	-5.0%	-5.0%	-6.5%	-6.5%	-5.0%	-5.0%	-6.4%	-6.4%
- 16.1	- 16.1	- 16.1	-18.6%	-18.6%	-31.7%	-31.7%	-18.6%	-18.6%	-31.7%	-31.7%
- 1.7	- 4.3	- 4.3	-20.7%	-20.7%	-20.7%	-20.7%	-20.7%	-20.7%	-18.3%	-18.3%
- 0.4	- 0.4	- 0.4	8.4%	8.9%	8.4%	8.4%	8.4%	8.4%	-13.2%	-13.2%

- 4.5	- 4.5	- 4.5	--	2.7%	--	--	--	--	-27.2%	-27.2%
- 5.8	- 14.6	- 14.6	-15.5%	-15.5%	-15.5%	-15.5%	-15.5%	-15.5%	-13.1%	-13.1%
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- 137.2	- 165.9	- 165.9	-2.4%	-2.3%	-3.6%	-3.6%	-2.4%	-2.4%	-3.6%	-3.6%
- 42.4	- 42.4	- 42.4	-10.4%	-10.4%	-16.0%	-16.0%	-10.3%	-10.3%	-16.0%	-16.0%
- 13.2	- 34.2	- 34.2	-15.4%	-15.4%	-15.4%	-15.4%	-15.4%	-15.4%	-13.6%	-13.6%
- 1.2	- 1.2	- 1.2	19.7%	25.1%	19.7%	19.7%	19.7%	19.7%	-5.7%	-5.7%
- 8.9	- 22.0	- 22.0	-15.0%	-15.0%	-15.0%	-15.0%	-15.0%	-15.0%	-12.6%	-12.6%
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- 65.6	- 99.7	- 99.7	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%
- 16.5	- 16.5	- 16.5	-9.2%	-9.2%	-16.4%	-16.4%	-9.2%	-9.2%	-16.4%	-16.4%
- 11.5	- 11.7	- 11.7	-5.7%	-5.7%	-5.7%	-5.7%	-5.7%	-5.7%	-5.7%	-5.7%
+ 7.4	+ 7.4	+ 7.4	25.1%	26.3%	25.1%	25.1%	25.1%	25.1%	9.5%	9.5%
- 31.8	- 38.6	- 38.6	-8.0%	-8.0%	-8.0%	-8.0%	-8.0%	-8.0%	-8.0%	-8.0%
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- 52.3	- 59.4	- 59.4	-1.4%	-1.3%	-1.7%	-1.7%	-1.4%	-1.4%	-2.2%	-2.2%
- 0.1	- 0.1	- 0.1	-0.4%	-0.4%	-0.4%	-0.4%	-0.4%	-0.4%	-0.4%	-0.4%
+ 6.3	+ 6.3	+ 6.3	30.9%	32.0%	30.9%	30.9%	30.9%	30.9%	25.0%	25.0%
- 3.1	- 3.1	- 3.1	-5.9%	-5.9%	-5.9%	-5.9%	-5.9%	-5.9%	-5.9%	-5.9%
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+ 3.0	+ 3.0	+ 3.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
- 2.7	- 2.7	- 2.7	-2.4%	-2.4%	-2.4%	-2.4%	-2.4%	-2.4%	-2.4%	-2.4%
- 0.2	- 0.2	- 0.2	--	0.1%	--	--	--	--	-2.9%	-2.9%
- 0.9	- 1.5	- 1.5	-9.0%	-9.0%	-9.0%	-9.0%	-9.0%	-9.0%	-9.0%	-9.0%
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- 3.8	- 4.4	- 4.4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
- 1.1	- 1.1	- 1.1	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%
- 0.1	- 0.1	- 0.1	--	0.0%	--	--	--	--	-2.2%	-2.2%
- 0.1	- 0.1	- 0.1	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%
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- 1.3	- 1.3	- 1.3	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
- 42.8	- 42.8	- 42.8	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
- 7,057.2	- 7,057.2	- 7,057.2	-12.2%	-12.2%	-27.1%	-27.1%	-12.2%	-12.2%	-27.1%	-27.1%
- 483.4	- 1,067.3	- 1,067.3	-16.9%	-16.9%	-16.9%	-16.9%	-16.9%	-16.9%	-17.2%	-17.2%
- 132.4	- 137.4	- 132.4	-6.8%	6.8%	-7.3%	-6.2%	-7.3%	-6.2%	-27.0%	-26.0%
- 140.4	- 291.6	- 291.6	-13.6%	-13.6%	-13.6%	-13.6%	-13.6%	-13.6%	-12.9%	-12.9%
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- 148.6	- 148.6	- 148.6	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%
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			--	--	--	--	--	--	--	--
- 8,004.8	- 8,744.9	- 8,739.9	-1.2%	-1.2%	-2.3%	-2.3%	-1.2%	-1.2%	-2.4%	-2.4%

Alt 3c	Alt 3d
-32.4%	-32.4%
-45.3%	-45.3%
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-3.1%	-3.1%
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--	--
-11.3%	-11.3%
-36.4%	-36.4%
-37.5%	-37.4%
-5.8%	-5.8%
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-4.2%	-4.2%
-0.1%	-0.1%
-43.8%	-43.8%
-45.3%	-45.3%
-42.7%	-42.7%
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0.0%	0.0%
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--	--
-1.3%	-1.3%
-22.7%	-22.7%
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--	--
-2.6%	-2.6%
-0.2%	-0.2%
-33.5%	-33.5%
-46.4%	-46.4%
-43.3%	-42.5%
-23.1%	-23.1%
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-5.5%	-5.5%
-27.7%	-27.7%
-49.4%	-47.7%
-48.9%	-48.9%
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-3.1%	-3.1%
0.0%	0.0%



-25.8%	-25.8%
-46.7%	-46.7%
-66.4%	-64.9%
-34.5%	-34.5%
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-4.6%	-4.6%
0.0%	0.0%
-25.1%	-25.1%
-47.2%	-47.2%
-50.7%	-49.2%
-47.5%	-47.5%
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-7.5%	-7.5%
-23.1%	-23.1%
-42.0%	-42.0%
-41.8%	-40.3%
-46.4%	-46.4%
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-12.5%	-12.5%
0.0%	0.0%
-24.1%	-24.1%
-40.0%	-40.0%
-39.0%	-37.6%
-47.6%	-47.6%
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-4.9%	-4.8%
0.0%	0.0%
-21.5%	-21.5%
-45.6%	-45.6%
-54.8%	-53.7%
-45.6%	-45.6%
--	--
-11.4%	-11.4%
-13.0%	-13.0%
-46.0%	-46.0%
28.1%	28.1%
-44.8%	-44.8%
--	--
-8.2%	-8.2%
-31.7%	-31.7%
-47.4%	-47.4%
-13.2%	-13.2%
-37.8%	-37.8%
--	--
-4.4%	-4.4%
-16.3%	-16.3%
-47.0%	-47.0%

-27.2%	-27.2%
-32.8%	-32.8%
--	--
--	--
-4.4%	-4.4%
-16.0%	-16.0%
-35.4%	-35.4%
-5.7%	-5.7%
-31.3%	-31.3%
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-0.4%	-0.4%
-16.4%	-16.4%
-5.8%	-5.8%
9.5%	9.5%
-9.7%	-9.7%
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--	--
-2.4%	-2.4%
-0.4%	-0.4%
25.0%	25.0%
-5.9%	-5.9%
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--	--
0.0%	0.0%
-2.4%	-2.4%
-2.9%	-2.9%
-14.5%	-14.5%
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--	--
0.0%	0.0%
-1.4%	-1.4%
-2.2%	-2.2%
-0.9%	-0.9%
--	--
-0.1%	-0.1%
-0.1%	-0.1%
-27.1%	-27.1%
-37.9%	-37.9%
-27.0%	-26.0%
-26.7%	-26.7%
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-1.4%	-1.4%
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-2.6%	-2.6%

**MT landings**

	IO_AREA	SECTOR_NAME	2009
0010	Northern Puget Sound	Non-whiting trawl	1,229.7
		Limited entry fixed gear	305.7
		Tribal non-groundfish	5,490.1
		Non-tribal non-groundfish	8,166.5
	Northern Puget Sound Total		15,191.9
0011	Southern Puget Sound	Tribal non-groundfish	4,410.5
		Non-tribal non-groundfish	2,962.8
	Southern Puget Sound Total		7,373.3
0020	North Washington Coast	Non-whiting trawl	48.4
		Limited entry fixed gear	209.5
		Open access non-nearshore	20.7
		Tribal groundfish	1,488.4
		Tribal non-groundfish	1,570.8
		Non-tribal non-groundfish	785.7
	North Washington Coast Total		4,123.6
0030	South and Central Washington Coast	Shoreside whiting trawl	10,090.8
		Non-whiting trawl	1,278.4
		Limited entry fixed gear	264.3
		Open access non-nearshore	52.8
		Incidental open access	0.3
		Tribal groundfish	9,039.4
		Tribal non-groundfish	441.0
		Non-tribal non-groundfish	21,487.8
	South and Central Washington Coast Total		42,654.8
0040	Unidentified Washington	Tribal groundfish	276.2
		Tribal non-groundfish	2,137.1
		Non-tribal non-groundfish	0.1
	Unidentified Washington Total		2,413.3
0050	Astoria	Shoreside whiting trawl	14,085.8
		Non-whiting trawl	8,251.8
		Limited entry fixed gear	150.0
		Open access nearshore	3.7
		Open access non-nearshore	46.8
		Tribal non-groundfish	271.2
		Non-tribal non-groundfish	29,104.2
	Astoria Total		51,913.5
0060	Tillamook	Non-whiting trawl	26.8
		Open access nearshore	32.5
		Open access non-nearshore	2.0
		Non-tribal non-groundfish	736.7
	Tillamook Total		798.0
0070	Newport	Shoreside whiting trawl	12,993.0

		Non-whiting trawl	3,660.6
		Limited entry fixed gear	529.3
		Open access nearshore	18.4
		Open access non-nearshore	42.4
		Non-tribal non-groundfish	8,225.1
Newport Total			25,468.8
0080	Coos Bay	Shoreside whiting trawl	1,612.5
		Non-whiting trawl	3,559.2
		Limited entry fixed gear	177.5
		Open access nearshore	10.1
		Open access non-nearshore	73.2
		Non-tribal non-groundfish	9,018.9
Coos Bay Total			14,451.3
0090	Brookings	Non-whiting trawl	1,195.7
		Limited entry fixed gear	270.4
		Open access nearshore	163.1
		Open access non-nearshore	112.1
		Non-tribal non-groundfish	2,566.0
Brookings Total			4,307.3
0100	Crescent City	Shoreside whiting trawl	1,489.4
		Non-whiting trawl	982.6
		Limited entry fixed gear	109.9
		Open access nearshore	77.8
		Open access non-nearshore	4.2
		Non-tribal non-groundfish	4,198.1
Crescent City Total			6,861.9
0110	Eureka	Shoreside whiting trawl	308.4
		Non-whiting trawl	2,678.7
		Limited entry fixed gear	101.6
		Open access nearshore	16.5
		Open access non-nearshore	59.1
		Non-tribal non-groundfish	2,997.7
Eureka Total			6,162.1
0120	Fort Bragg	Non-whiting trawl	1,684.1
		Limited entry fixed gear	155.1
		Open access nearshore	15.3
		Open access non-nearshore	84.4
		Non-tribal non-groundfish	1,901.2
Fort Bragg Total			3,840.2
0130	Bodega Bay	Non-whiting trawl	54.6
		Limited entry fixed gear	9.3
		Open access nearshore	2.6
		Open access non-nearshore	19.1
		Non-tribal non-groundfish	547.2
Bodega Bay Total			632.7
0140	San Francisco	Non-whiting trawl	661.5
		Limited entry fixed gear	70.8

		Open access nearshore	15.5
		Open access non-nearshore	45.6
		Incidental open access	5.1
		Non-tribal non-groundfish	2,953.2
San Francisco Total			3,751.8
0150	Monterey	Non-whiting trawl	295.9
		Limited entry fixed gear	98.7
		Open access nearshore	18.1
		Open access non-nearshore	72.3
		Non-tribal non-groundfish	25,907.9
Monterey Total			26,393.0
0160	Morro Bay	Non-whiting trawl	99.8
		Limited entry fixed gear	206.7
		Open access nearshore	68.9
		Open access non-nearshore	410.4
		Incidental open access	2.8
		Non-tribal non-groundfish	1,646.5
Morro Bay Total			2,435.1
0170	Santa Barbara	Limited entry fixed gear	35.7
		Open access nearshore	22.5
		Open access non-nearshore	53.8
		Incidental open access	9.4
		Non-tribal non-groundfish	64,996.0
Santa Barbara Total			65,117.4
0180	Los Angeles	Limited entry fixed gear	117.3
		Open access nearshore	5.6
		Open access non-nearshore	10.5
		Incidental open access	2.7
		Non-tribal non-groundfish	53,341.6
Los Angeles Total			53,477.7
0190	San Diego	Limited entry fixed gear	80.6
		Open access nearshore	5.3
		Open access non-nearshore	11.7
		Non-tribal non-groundfish	996.7
San Diego Total			1,094.2
<b>Coastwide</b>		Shoreside whiting trawl	40,579.9
		Non-whiting trawl	25,707.9
		Limited entry fixed gear	2,892.1
		Open access nearshore	475.9
		Open access non-nearshore	1,121.4
		Incidental open access	20.4
		Tribal groundfish	10,804.0
		Tribal non-groundfish	14,320.7
		Non-tribal non-groundfish	242,539.7
<b>Coastwide Total</b>			338,461.9

**Total Estimated Landings in 2012 under each Alternative Scenario (MT)**

<b>No Action</b>	<b>Alt 1a</b>	<b>Alt 1b</b>	<b>Alt 2a</b>	<b>Alt 2b</b>	<b>Alt 3a</b>	<b>Alt 3b</b>	<b>Alt 3c</b>	<b>Alt 3d</b>
1,030.4	904.7	904.7	696.7	696.7	859.6	859.6	864.6	864.6
296.5	225.9	225.9	225.9	225.9	207.9	207.9	179.0	179.0
5,490.1	5,490.1	5,490.1	5,490.1	5,490.1	5,490.1	5,490.1	5,490.1	5,490.1
8,166.5	8,166.5	8,166.5	8,166.5	8,166.5	8,166.5	8,166.5	8,166.5	8,166.5
14,983.5	14,787.2	14,787.2	14,579.2	14,579.2	14,724.0	14,724.0	14,700.2	14,700.2
4,410.5	4,410.5	4,410.5	4,410.5	4,410.5	4,410.5	4,410.5	4,410.5	4,410.5
2,962.8	2,962.8	2,962.8	2,962.8	2,962.8	2,962.8	2,962.8	2,962.8	2,962.8
7,373.3	7,373.3	7,373.3	7,373.3	7,373.3	7,373.3	7,373.3	7,373.3	7,373.3
27.1	26.4	26.4	24.0	24.0	25.7	25.7	25.7	25.7
201.7	163.2	163.2	163.2	163.2	153.3	153.3	137.5	137.5
20.9	16.9	17.0	16.7	16.8	15.2	15.3	13.9	13.9
1,486.8	1,385.3	1,385.3	1,385.3	1,385.3	1,400.8	1,400.8	1,385.3	1,385.3
1,570.8	1,570.8	1,570.8	1,570.8	1,570.8	1,570.8	1,570.8	1,570.8	1,570.8
785.7	785.7	785.7	785.7	785.7	785.7	785.7	785.7	785.7
4,093.1	3,948.2	3,948.3	3,945.7	3,945.7	3,951.5	3,951.5	3,918.8	3,918.8
9,967.5	9,962.7	9,962.7	9,960.2	9,960.2	9,962.4	9,962.4	9,962.6	9,962.6
900.9	722.2	722.2	506.5	506.5	667.6	667.6	671.3	671.3
255.8	195.0	195.0	195.0	195.0	179.4	179.4	154.4	154.4
51.4	39.4	39.4	39.3	39.3	35.8	35.8	31.8	31.8
0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
9,039.4	9,039.4	9,039.4	9,039.4	9,039.4	9,039.4	9,039.4	9,039.4	9,039.4
441.0	441.0	441.0	441.0	441.0	441.0	441.0	441.0	441.0
21,487.8	21,487.8	21,487.8	21,487.8	21,487.8	21,487.8	21,487.8	21,487.8	21,487.8
42,144.2	41,887.7	41,887.7	41,669.5	41,669.5	41,813.7	41,813.7	41,788.6	41,788.6
275.0	201.2	201.2	201.2	201.2	212.5	212.5	201.2	201.2
2,137.1	2,137.1	2,137.1	2,137.1	2,137.1	2,137.1	2,137.1	2,137.1	2,137.1
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2,412.2	2,338.4	2,338.4	2,338.4	2,338.4	2,349.7	2,349.7	2,338.4	2,338.4
14,068.9	14,046.0	14,046.0	14,037.7	14,037.7	14,044.9	14,044.9	14,046.0	14,046.0
8,262.7	7,069.8	7,069.8	5,498.8	5,498.8	6,664.3	6,664.3	6,698.6	6,698.6
145.8	110.3	110.3	110.3	110.3	113.5	113.5	86.6	86.6
4.4	3.6	3.6	3.3	3.4	2.5	2.5	2.5	2.5
45.4	37.6	37.6	37.6	37.6	38.7	38.7	34.6	34.6
271.2	271.2	271.2	271.2	271.2	271.2	271.2	271.2	271.2
29,104.2	29,104.2	29,104.2	29,104.2	29,104.2	29,104.2	29,104.2	29,104.2	29,104.2
51,902.7	50,642.6	50,642.7	49,063.0	49,063.1	50,239.3	50,239.3	50,243.7	50,243.8
27.9	24.2	24.2	20.2	20.2	23.0	23.0	23.1	23.1
33.2	32.4	32.8	26.6	27.3	16.8	17.4	16.8	17.4
2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.1	1.1
736.7	736.7	736.7	736.7	736.7	736.7	736.7	736.7	736.7
799.9	794.8	795.2	784.9	785.6	778.0	778.6	777.8	778.4
12,965.2	12,962.4	12,962.4	12,961.2	12,961.2	12,962.1	12,962.1	12,962.4	12,962.4

3,408.0	3,036.1	3,036.1	2,530.4	2,530.4	2,964.1	2,964.1	3,019.7	3,019.7
514.4	388.1	388.1	388.1	388.1	399.7	399.7	304.1	304.1
22.8	17.9	18.4	14.9	15.4	7.6	8.0	7.6	8.0
41.2	32.5	32.5	32.5	32.5	33.5	33.5	27.9	27.9
8,225.1	8,225.1	8,225.1	8,225.1	8,225.1	8,225.1	8,225.1	8,225.1	8,225.1
25,176.7	24,662.1	24,662.6	24,152.1	24,152.7	24,592.0	24,592.3	24,546.8	24,547.2
1,612.1	1,612.0	1,612.0	1,611.9	1,611.9	1,612.0	1,612.0	1,612.0	1,612.0
3,988.8	3,522.6	3,522.6	2,987.5	2,987.5	3,398.6	3,398.6	3,428.7	3,428.7
172.4	129.7	129.7	129.7	129.7	133.6	133.6	101.3	101.3
11.9	9.6	9.8	8.5	8.7	5.9	6.1	5.9	6.1
71.1	53.3	53.3	53.3	53.3	55.0	55.0	41.5	41.5
9,018.9	9,018.9	9,018.9	9,018.9	9,018.9	9,018.9	9,018.9	9,018.9	9,018.9
14,875.2	14,346.0	14,346.3	13,809.8	13,810.0	14,223.9	14,224.1	14,208.3	14,208.4
1,489.5	1,331.5	1,331.5	1,145.8	1,145.8	1,291.3	1,291.3	1,300.2	1,300.2
263.5	205.4	205.4	205.4	205.4	210.7	210.7	166.7	166.7
167.5	160.8	162.9	137.3	139.9	97.4	100.0	97.4	100.0
109.0	82.4	82.4	82.4	82.4	84.8	84.8	64.7	64.7
2,566.0	2,566.0	2,566.0	2,566.0	2,566.0	2,566.0	2,566.0	2,566.0	2,566.0
4,595.5	4,346.1	4,348.3	4,136.9	4,139.6	4,250.3	4,252.9	4,195.1	4,197.7
1,484.8	1,485.0	1,485.0	1,484.7	1,484.7	1,485.0	1,485.0	1,485.0	1,485.0
1,090.7	984.4	984.4	828.3	828.3	936.7	936.7	942.1	942.1
107.2	84.5	84.5	84.5	84.5	86.6	86.6	69.6	69.6
79.4	82.4	82.9	68.7	70.2	48.5	49.6	48.5	49.6
4.1	3.1	3.1	3.1	3.1	3.2	3.2	2.4	2.4
4,198.1	4,198.1	4,198.1	4,198.1	4,198.1	4,198.1	4,198.1	4,198.1	4,198.1
6,964.3	6,837.4	6,838.0	6,667.4	6,668.8	6,758.0	6,759.1	6,745.6	6,746.7
308.0	307.9	307.9	307.9	307.9	307.9	307.9	307.9	307.9
3,157.9	2,855.5	2,855.5	2,478.7	2,478.7	2,786.4	2,786.4	2,801.7	2,801.7
98.8	75.2	75.2	75.2	75.2	77.3	77.3	59.4	59.4
17.0	16.9	17.3	14.7	14.9	7.7	7.9	7.7	7.9
57.4	43.4	43.4	43.4	43.4	44.7	44.7	34.3	34.3
2,997.7	2,997.7	2,997.7	2,997.7	2,997.7	2,997.7	2,997.7	2,997.7	2,997.7
6,636.8	6,296.6	6,297.0	5,917.6	5,917.9	6,221.8	6,222.0	6,208.7	6,208.9
1,544.3	1,398.0	1,398.0	1,343.7	1,343.7	1,383.6	1,383.6	1,377.0	1,377.0
150.8	114.4	114.4	114.4	114.4	117.7	117.7	90.1	90.1
18.3	26.8	27.1	26.8	26.8	23.4	23.4	23.4	23.4
81.9	62.0	62.0	62.0	62.0	63.9	63.9	49.3	49.3
1,901.2	1,901.2	1,901.2	1,901.2	1,901.2	1,901.2	1,901.2	1,901.2	1,901.2
3,696.6	3,502.4	3,502.7	3,448.1	3,448.1	3,489.9	3,489.9	3,441.1	3,441.1
51.0	41.5	41.5	34.8	34.8	38.9	38.9	38.8	38.8
9.0	6.8	6.8	6.8	6.8	7.0	7.0	5.3	5.3
2.7	2.9	3.0	2.9	2.9	2.4	2.4	2.4	2.4
18.5	14.4	14.4	14.4	14.4	14.8	14.8	12.1	12.1
547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2
628.4	612.8	612.8	606.2	606.2	610.4	610.4	605.7	605.7
702.7	634.5	634.5	588.3	588.3	618.2	618.2	617.4	617.4
68.8	51.7	51.7	51.7	51.7	53.3	53.3	40.4	40.4

16.6	16.6	17.1	16.6	16.6	12.1	12.1	12.1	12.1
44.4	35.7	35.7	35.7	35.7	36.7	36.7	30.9	30.9
5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
2,953.2	2,953.2	2,953.2	2,953.2	2,953.2	2,953.2	2,953.2	2,953.2	2,953.2
3,790.8	3,696.9	3,697.3	3,650.6	3,650.6	3,678.6	3,678.6	3,659.1	3,659.1
264.3	236.9	236.9	221.9	221.9	231.2	231.2	231.3	231.3
96.6	78.6	78.6	78.6	78.6	80.3	80.3	66.7	66.7
21.3	25.5	26.6	25.5	25.5	20.1	20.1	20.1	20.1
70.3	56.8	56.8	56.8	56.8	58.4	58.4	49.7	49.7
25,907.9	25,907.9	25,907.9	25,907.9	25,907.9	25,907.9	25,907.9	25,907.9	25,907.9
26,360.5	26,305.7	26,306.9	26,290.8	26,290.8	26,297.9	26,297.9	26,275.7	26,275.7
100.6	91.3	91.3	84.1	84.1	88.5	88.5	88.6	88.6
201.8	182.4	182.4	182.4	182.4	190.3	190.3	182.2	182.2
77.2	96.6	97.5	96.6	96.6	84.6	84.6	84.6	84.6
398.3	346.9	346.9	346.9	346.9	366.5	366.5	342.7	342.7
2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
1,646.5	1,646.5	1,646.5	1,646.5	1,646.5	1,646.5	1,646.5	1,646.5	1,646.5
2,427.1	2,366.5	2,367.4	2,359.3	2,359.3	2,379.1	2,379.1	2,347.4	2,347.4
35.6	35.4	35.4	35.4	35.4	35.5	35.5	35.4	35.4
25.0	32.8	33.0	32.8	32.8	31.3	31.3	31.3	31.3
52.5	47.2	47.2	47.2	47.2	49.4	49.4	47.2	47.2
9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4
64,996.0	64,996.0	64,996.0	64,996.0	64,996.0	64,996.0	64,996.0	64,996.0	64,996.0
65,118.5	65,120.8	65,121.0	65,120.8	65,120.8	65,121.6	65,121.6	65,119.3	65,119.3
116.1	111.4	111.4	111.4	111.4	113.3	113.3	111.4	111.4
5.6	5.6	5.6	5.6	5.6	5.5	5.5	5.5	5.5
10.2	8.9	8.9	8.9	8.9	9.3	9.3	8.5	8.5
2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
53,341.6	53,341.6	53,341.6	53,341.6	53,341.6	53,341.6	53,341.6	53,341.6	53,341.6
53,476.3	53,470.3	53,470.3	53,470.3	53,470.3	53,472.5	53,472.5	53,469.8	53,469.8
80.1	78.3	78.3	78.3	78.3	79.0	79.0	78.3	78.3
5.3	5.3	5.3	5.3	5.3	5.2	5.2	5.2	5.2
11.6	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
996.7	996.7	996.7	996.7	996.7	996.7	996.7	996.7	996.7
1,093.7	1,091.7	1,091.7	1,091.7	1,091.7	1,092.4	1,092.4	1,091.5	1,091.5
40,406.5	40,376.0	40,376.0	40,363.6	40,363.6	40,375.9	40,375.9	40,375.9	40,375.9
26,047.0	22,879.5	22,879.5	18,989.8	18,989.8	22,128.8	22,128.8	22,128.8	22,128.8
2,815.0	2,236.2	2,236.2	2,236.2	2,236.2	2,238.5	2,238.5	1,868.4	1,868.4
508.2	535.5	543.0	485.9	491.8	370.9	375.9	370.9	375.9
1,090.4	893.4	893.4	893.1	893.2	923.0	923.1	804.1	804.2
20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4
10,801.3	10,625.9	10,625.9	10,625.9	10,625.9	10,625.9	10,625.9	10,625.9	10,625.9
14,320.7	14,320.7	14,320.7	14,320.7	14,320.7	14,320.7	14,320.7	14,320.7	14,320.7
242,539.7	242,539.7	242,539.7	242,539.7	242,539.7	242,539.7	242,539.7	242,539.7	242,539.7
338,549.3	334,427.3	334,434.9	330,475.5	330,481.4	333,543.8	333,548.8	333,054.8	333,059.8



**Change from No Action (MT)**

<b>Alt 1a</b>	<b>Alt 1b</b>	<b>Alt 2a</b>	<b>Alt 2b</b>	<b>Alt 3a</b>	<b>Alt 3b</b>	<b>Alt 3c</b>	<b>Alt 3d</b>	<b>Alt 1a</b>	<b>Alt 1b</b>
- 125.7	- 125.7	- 333.8	- 333.8	- 170.8	- 170.8	- 165.8	- 165.8	-12.2%	-12.2%
- 70.6	- 70.6	- 70.6	- 70.6	- 88.6	- 88.6	- 117.5	- 117.5	-23.8%	-23.8%
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- 196.3	- 196.3	- 404.3	- 404.3	- 259.4	- 259.4	- 283.3	- 283.3	-1.3%	-1.3%
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- 0.7	- 0.7	- 3.1	- 3.1	- 1.5	- 1.5	- 1.4	- 1.4	-2.7%	-2.7%
- 38.6	- 38.6	- 38.6	- 38.6	- 48.4	- 48.4	- 64.3	- 64.3	-19.1%	-19.1%
- 4.0	- 4.0	- 4.2	- 4.1	- 5.7	- 5.6	- 7.0	- 7.0	-19.2%	-18.9%
- 101.5	- 101.5	- 101.5	- 101.5	- 86.0	- 86.0	- 101.5	- 101.5	-6.8%	-6.8%
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- 144.8	- 144.8	- 147.4	- 147.3	- 141.6	- 141.6	- 174.3	- 174.3	-3.5%	-3.5%
- 4.8	- 4.8	- 7.3	- 7.3	- 5.1	- 5.1	- 4.9	- 4.9	0.0%	0.0%
- 178.7	- 178.7	- 394.3	- 394.3	- 233.3	- 233.3	- 229.6	- 229.6	-19.8%	-19.8%
- 60.9	- 60.9	- 60.9	- 60.9	- 76.4	- 76.4	- 101.4	- 101.4	-23.8%	-23.8%
- 12.1	- 12.1	- 12.1	- 12.1	- 15.6	- 15.6	- 19.7	- 19.7	-23.5%	-23.4%
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- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	0.0%	0.0%
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- 256.5	- 256.5	- 474.7	- 474.7	- 330.5	- 330.5	- 355.5	- 355.5	-0.6%	-0.6%
- 73.8	- 73.8	- 73.8	- 73.8	- 62.5	- 62.5	- 73.8	- 73.8	-26.8%	-26.8%
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- 73.8	- 73.8	- 73.8	- 73.8	- 62.5	- 62.5	- 73.8	- 73.8	-3.1%	-3.1%
- 22.8	- 22.8	- 31.1	- 31.1	- 24.0	- 24.0	- 22.9	- 22.9	-0.2%	-0.2%
- 1,192.9	- 1,192.9	- 2,764.0	- 2,764.0	- 1,598.4	- 1,598.4	- 1,564.1	- 1,564.1	-14.4%	-14.4%
- 35.5	- 35.5	- 35.5	- 35.5	- 32.3	- 32.3	- 59.2	- 59.2	-24.4%	-24.4%
- 0.9	- 0.8	- 1.1	- 1.0	- 1.9	- 1.9	- 1.9	- 1.9	-19.3%	-17.7%
- 7.9	- 7.9	- 7.9	- 7.9	- 6.7	- 6.7	- 10.8	- 10.8	-17.3%	-17.3%
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- 1,260.1	- 1,260.0	- 2,839.6	- 2,839.6	- 1,663.4	- 1,663.3	- 1,659.0	- 1,658.9	-2.4%	-2.4%
- 3.7	- 3.7	- 7.7	- 7.7	- 5.0	- 5.0	- 4.8	- 4.8	-13.3%	-13.3%
- 0.9	- 0.4	- 6.7	- 6.0	- 16.4	- 15.8	- 16.4	- 15.8	-2.6%	-1.3%
- 0.5	- 0.5	- 0.5	- 0.5	- 0.5	- 0.5	- 0.9	- 0.9	-25.7%	-25.7%
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- 5.1	- 4.6	- 14.9	- 14.2	- 21.8	- 21.3	- 22.1	- 21.5	-0.6%	-0.6%
- 2.8	- 2.8	- 4.0	- 4.0	- 3.1	- 3.1	- 2.8	- 2.8	0.0%	0.0%

- 371.9	- 371.9	- 877.6	- 877.6	- 444.0	- 444.0	- 388.3	- 388.3	-10.9%	-10.9%
- 126.3	- 126.3	- 126.3	- 126.3	- 114.8	- 114.8	- 210.4	- 210.4	-24.5%	-24.5%
- 4.9	- 4.4	- 7.9	- 7.3	- 15.1	- 14.8	- 15.1	- 14.8	-21.6%	-19.2%
- 8.7	- 8.7	- 8.7	- 8.7	- 7.7	- 7.7	- 13.3	- 13.3	-21.1%	-21.1%
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- 514.6	- 514.1	- 1,024.6	- 1,024.0	- 584.7	- 584.3	- 629.9	- 629.5	-2.0%	-2.0%
- 0.1	- 0.1	- 0.2	- 0.2	- 0.1	- 0.1	- 0.1	- 0.1	0.0%	0.0%
- 466.2	- 466.2	- 1,001.3	- 1,001.3	- 590.2	- 590.2	- 560.1	- 560.1	-11.7%	-11.7%
- 42.7	- 42.7	- 42.7	- 42.7	- 38.8	- 38.8	- 71.2	- 71.2	-24.8%	-24.8%
- 2.3	- 2.1	- 3.4	- 3.2	- 6.0	- 5.9	- 6.0	- 5.9	-19.7%	-17.6%
- 17.8	- 17.8	- 17.8	- 17.8	- 16.2	- 16.2	- 29.6	- 29.6	-25.0%	-25.0%
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- 529.2	- 529.0	- 1,065.4	- 1,065.2	- 651.3	- 651.1	- 667.0	- 666.8	-3.6%	-3.6%
- 158.0	- 158.0	- 343.7	- 343.7	- 198.2	- 198.2	- 189.3	- 189.3	-10.6%	-10.6%
- 58.1	- 58.1	- 58.1	- 58.1	- 52.8	- 52.8	- 96.8	- 96.8	-22.1%	-22.1%
- 6.7	- 4.5	- 30.2	- 27.6	- 70.1	- 67.5	- 70.1	- 67.5	-4.0%	-2.7%
- 26.6	- 26.6	- 26.6	- 26.6	- 24.2	- 24.2	- 44.3	- 44.3	-24.4%	-24.4%
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- 249.4	- 247.3	- 458.6	- 456.0	- 345.2	- 342.6	- 400.5	- 397.9	-5.4%	-5.4%
+ 0.2	+ 0.2	- 0.1	- 0.1	+ 0.2	+ 0.2	+ 0.2	+ 0.2	0.0%	0.0%
- 106.3	- 106.3	- 262.5	- 262.5	- 154.0	- 154.0	- 148.6	- 148.6	-9.7%	-9.7%
- 22.6	- 22.6	- 22.6	- 22.6	- 20.5	- 20.5	- 37.6	- 37.6	-21.1%	-21.1%
+ 2.9	+ 3.5	- 10.7	- 9.3	- 30.9	- 29.8	- 30.9	- 29.8	3.7%	4.4%
- 1.0	- 1.0	- 1.0	- 1.0	- 0.9	- 0.9	- 1.7	- 1.7	-25.0%	-25.0%
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- 126.9	- 126.3	- 296.9	- 295.5	- 206.3	- 205.2	- 218.7	- 217.6	-1.8%	-1.8%
- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	0.0%	0.0%
- 302.4	- 302.4	- 679.1	- 679.1	- 371.5	- 371.5	- 356.2	- 356.2	-9.6%	-9.6%
- 23.7	- 23.7	- 23.7	- 23.7	- 21.5	- 21.5	- 39.4	- 39.4	-24.0%	-24.0%
- 0.1	+ 0.4	- 2.3	- 2.0	- 9.3	- 9.1	- 9.3	- 9.1	-0.4%	2.2%
- 14.1	- 14.1	- 14.1	- 14.1	- 12.7	- 12.7	- 23.1	- 23.1	-24.5%	-24.5%
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- 340.3	- 339.9	- 719.3	- 719.0	- 415.0	- 414.9	- 428.1	- 427.9	-5.1%	-5.1%
- 146.3	- 146.3	- 200.6	- 200.6	- 160.7	- 160.7	- 167.4	- 167.4	-9.5%	-9.5%
- 36.4	- 36.4	- 36.4	- 36.4	- 33.1	- 33.1	- 60.7	- 60.7	-24.2%	-24.2%
+ 8.5	+ 8.8	+ 8.5	+ 8.5	+ 5.1	+ 5.1	+ 5.1	+ 5.1	46.5%	48.1%
- 19.9	- 19.9	- 19.9	- 19.9	- 18.0	- 18.0	- 32.6	- 32.6	-24.3%	-24.3%
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- 194.2	- 193.9	- 248.5	- 248.5	- 206.7	- 206.7	- 255.5	- 255.5	-5.3%	-5.2%
- 9.5	- 9.5	- 16.1	- 16.1	- 12.0	- 12.0	- 12.2	- 12.2	-18.6%	-18.6%
- 2.3	- 2.3	- 2.3	- 2.3	- 2.0	- 2.0	- 3.7	- 3.7	-24.9%	-24.9%
+ 0.2	+ 0.2	+ 0.2	+ 0.2	- 0.4	- 0.4	- 0.4	- 0.4	8.4%	8.9%
- 4.1	- 4.1	- 4.1	- 4.1	- 3.7	- 3.7	- 6.4	- 6.4	-22.2%	-22.2%
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- 15.6	- 15.6	- 22.3	- 22.3	- 18.1	- 18.1	- 22.7	- 22.7	-2.5%	-2.5%
- 68.2	- 68.2	- 114.4	- 114.4	- 84.5	- 84.5	- 85.3	- 85.3	-9.7%	-9.7%
- 17.0	- 17.0	- 17.0	- 17.0	- 15.5	- 15.5	- 28.3	- 28.3	-24.8%	-24.8%

	+ 0.4			- 4.5	- 4.5	- 4.5	- 4.5	--	2.7%
- 8.7	- 8.7	- 8.7	- 8.7	- 7.7	- 7.7	- 13.5	- 13.5	-19.6%	-19.6%
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- 93.9	- 93.5	- 140.2	- 140.2	- 112.2	- 112.2	- 131.7	- 131.7	-2.5%	-2.5%
- 27.5	- 27.5	- 42.4	- 42.4	- 33.2	- 33.2	- 33.0	- 33.0	-10.4%	-10.4%
- 17.9	- 17.9	- 17.9	- 17.9	- 16.3	- 16.3	- 29.9	- 29.9	-18.6%	-18.6%
+ 4.2	+ 5.3	+ 4.2	+ 4.2	- 1.2	- 1.2	- 1.2	- 1.2	19.7%	25.1%
- 13.5	- 13.5	- 13.5	- 13.5	- 11.9	- 11.9	- 20.6	- 20.6	-19.2%	-19.2%
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- 54.7	- 53.6	- 69.6	- 69.6	- 62.6	- 62.6	- 84.8	- 84.8	-0.2%	-0.2%
- 9.3	- 9.3	- 16.5	- 16.5	- 12.1	- 12.1	- 12.0	- 12.0	-9.2%	-9.2%
- 19.4	- 19.4	- 19.4	- 19.4	- 11.5	- 11.5	- 19.5	- 19.5	-9.6%	-9.6%
+ 19.4	+ 20.3	+ 19.4	+ 19.4	+ 7.4	+ 7.4	+ 7.4	+ 7.4	25.1%	26.3%
- 51.4	- 51.4	- 51.4	- 51.4	- 31.8	- 31.8	- 55.6	- 55.6	-12.9%	-12.9%
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- 60.7	- 59.7	- 67.9	- 67.9	- 48.0	- 48.0	- 79.7	- 79.7	-2.5%	-2.5%
- 0.2	- 0.2	- 0.2	- 0.2	- 0.1	- 0.1	- 0.2	- 0.2	-0.7%	-0.7%
+ 7.7	+ 8.0	+ 7.7	+ 7.7	+ 6.3	+ 6.3	+ 6.3	+ 6.3	30.9%	32.0%
- 5.3	- 5.3	- 5.3	- 5.3	- 3.1	- 3.1	- 5.3	- 5.3	-10.0%	-10.0%
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+ 2.2	+ 2.5	+ 2.2	+ 2.2	+ 3.0	+ 3.0	+ 0.7	+ 0.7	0.0%	0.0%
- 4.7	- 4.7	- 4.7	- 4.7	- 2.7	- 2.7	- 4.7	- 4.7	-4.0%	-4.0%
	+ 0.0			- 0.2	- 0.2	- 0.2	- 0.2	--	0.1%
- 1.3	- 1.3	- 1.3	- 1.3	- 0.9	- 0.9	- 1.7	- 1.7	-13.2%	-13.2%
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- 6.0	- 6.0	- 6.0	- 6.0	- 3.8	- 3.8	- 6.5	- 6.5	0.0%	0.0%
- 1.9	- 1.9	- 1.9	- 1.9	- 1.1	- 1.1	- 1.9	- 1.9	-2.4%	-2.4%
	+ 0.0			- 0.1	- 0.1	- 0.1	- 0.1	--	0.0%
- 0.2	- 0.2	- 0.2	- 0.2	- 0.1	- 0.1	- 0.2	- 0.2	-1.5%	-1.5%
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- 2.1	- 2.1	- 2.1	- 2.1	- 1.3	- 1.3	- 2.2	- 2.2	-0.2%	-0.2%
- 30.5	- 30.5	- 42.8	- 42.8	- 30.6	- 30.6	- 30.6	- 30.6	-0.1%	-0.1%
- 3,167.5	- 3,167.5	- 7,057.2	- 7,057.2	- 3,918.2	- 3,918.2	- 3,918.2	- 3,918.2	-12.2%	-12.2%
- 578.8	- 578.8	- 578.8	- 578.8	- 576.6	- 576.6	- 946.6	- 946.6	-20.6%	-20.6%
+ 27.2	+ 34.7	- 22.3	- 16.4	- 137.4	- 132.4	- 137.4	- 132.4	5.4%	6.8%
- 197.1	- 197.0	- 197.3	- 197.2	- 167.4	- 167.3	- 286.3	- 286.2	-18.1%	-18.1%
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- 175.4	- 175.4	- 175.4	- 175.4	- 175.4	- 175.4	- 175.4	- 175.4	-1.6%	-1.6%
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- 4,122.0	- 4,114.4	- 8,073.8	- 8,067.8	- 5,005.5	- 5,000.5	- 5,494.5	- 5,489.4	-1.2%	-1.2%

**% Change from No Action**

<b>Alt 2a</b>	<b>Alt 2b</b>	<b>Alt 3a</b>	<b>Alt 3b</b>	<b>Alt 3c</b>	<b>Alt 3d</b>
-32.4%	-32.4%	-16.6%	-16.6%	-16.1%	-16.1%
-23.8%	-23.8%	-29.9%	-29.9%	-39.6%	-39.6%
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-2.7%	-2.7%	-1.7%	-1.7%	-1.9%	-1.9%
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-11.3%	-11.3%	-5.4%	-5.4%	-5.3%	-5.3%
-19.1%	-19.1%	-24.0%	-24.0%	-31.9%	-31.9%
-20.1%	-19.8%	-27.1%	-27.0%	-33.7%	-33.6%
-6.8%	-6.8%	-5.8%	-5.8%	-6.8%	-6.8%
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-3.6%	-3.6%	-3.5%	-3.5%	-4.3%	-4.3%
-0.1%	-0.1%	-0.1%	-0.1%	0.0%	0.0%
-43.8%	-43.8%	-25.9%	-25.9%	-25.5%	-25.5%
-23.8%	-23.8%	-29.9%	-29.9%	-39.6%	-39.6%
-23.6%	-23.6%	-30.4%	-30.4%	-38.2%	-38.2%
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-1.1%	-1.1%	-0.8%	-0.8%	-0.8%	-0.8%
-26.8%	-26.8%	-22.7%	-22.7%	-26.8%	-26.8%
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-3.1%	-3.1%	-2.6%	-2.6%	-3.1%	-3.1%
-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%
-33.5%	-33.5%	-19.3%	-19.3%	-18.9%	-18.9%
-24.4%	-24.4%	-22.1%	-22.1%	-40.6%	-40.6%
-25.0%	-23.4%	-43.3%	-42.5%	-43.3%	-42.5%
-17.3%	-17.3%	-14.8%	-14.8%	-23.9%	-23.9%
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-5.5%	-5.5%	-3.2%	-3.2%	-3.2%	-3.2%
-27.7%	-27.7%	-17.7%	-17.7%	-17.2%	-17.2%
-20.0%	-18.0%	-49.4%	-47.7%	-49.4%	-47.7%
-25.7%	-25.7%	-23.4%	-23.4%	-42.8%	-42.8%
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-34.8%	-32.3%	-66.4%	-64.9%	-66.4%	-64.9%
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-28.7%	-27.2%	-50.7%	-49.2%	-50.7%	-49.2%
-25.0%	-25.0%	-22.7%	-22.7%	-41.6%	-41.6%
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-7.2%	-7.2%	-4.4%	-4.4%	-4.5%	-4.5%
-23.1%	-23.1%	-13.3%	-13.3%	-12.7%	-12.7%
-22.1%	-22.1%	-20.0%	-20.0%	-36.7%	-36.7%
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-24.1%	-24.1%	-14.1%	-14.1%	-13.6%	-13.6%
-21.1%	-21.1%	-19.2%	-19.2%	-35.1%	-35.1%
-13.5%	-11.7%	-39.0%	-37.6%	-39.0%	-37.6%
-25.0%	-25.0%	-22.8%	-22.8%	-41.7%	-41.7%
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-4.3%	-4.2%	-3.0%	-2.9%	-3.1%	-3.1%
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-21.5%	-21.5%	-11.8%	-11.8%	-11.3%	-11.3%
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-13.5%	-11.9%	-54.8%	-53.7%	-54.8%	-53.7%
-24.5%	-24.5%	-22.1%	-22.1%	-40.3%	-40.3%
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-24.2%	-24.2%	-21.9%	-21.9%	-40.2%	-40.2%
46.5%	46.5%	28.1%	28.1%	28.1%	28.1%
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-31.7%	-31.7%	-23.6%	-23.6%	-23.9%	-23.9%
-24.9%	-24.9%	-22.6%	-22.6%	-41.4%	-41.4%
8.4%	8.4%	-13.2%	-13.2%	-13.2%	-13.2%
-22.2%	-22.2%	-19.8%	-19.8%	-34.7%	-34.7%
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-24.8%	-24.8%	-22.5%	-22.5%	-41.2%	-41.2%

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-19.6%	-19.6%	-17.4%	-17.4%	-30.4%	-30.4%
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-16.0%	-16.0%	-12.5%	-12.5%	-12.5%	-12.5%
-18.6%	-18.6%	-16.9%	-16.9%	-30.9%	-30.9%
19.7%	19.7%	-5.7%	-5.7%	-5.7%	-5.7%
-19.2%	-19.2%	-16.9%	-16.9%	-29.3%	-29.3%
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-0.3%	-0.3%	-0.2%	-0.2%	-0.3%	-0.3%
-16.4%	-16.4%	-12.0%	-12.0%	-11.9%	-11.9%
-9.6%	-9.6%	-5.7%	-5.7%	-9.7%	-9.7%
25.1%	25.1%	9.5%	9.5%	9.5%	9.5%
-12.9%	-12.9%	-8.0%	-8.0%	-14.0%	-14.0%
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-2.8%	-2.8%	-2.0%	-2.0%	-3.3%	-3.3%
-0.7%	-0.7%	-0.4%	-0.4%	-0.7%	-0.7%
30.9%	30.9%	25.0%	25.0%	25.0%	25.0%
-10.0%	-10.0%	-5.9%	-5.9%	-10.0%	-10.0%
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-4.0%	-4.0%	-2.4%	-2.4%	-4.0%	-4.0%
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-13.2%	-13.2%	-9.0%	-9.0%	-16.6%	-16.6%
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-2.4%	-2.4%	-1.4%	-1.4%	-2.4%	-2.4%
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-1.5%	-1.5%	-0.9%	-0.9%	-1.5%	-1.5%
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-0.2%	-0.2%	-0.1%	-0.1%	-0.2%	-0.2%
-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
-27.1%	-27.1%	-15.0%	-15.0%	-15.0%	-15.0%
-20.6%	-20.6%	-20.5%	-20.5%	-33.6%	-33.6%
-4.4%	-3.2%	-27.0%	-26.0%	-27.0%	-26.0%
-18.1%	-18.1%	-15.4%	-15.3%	-26.3%	-26.3%
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## Appendix C DESCRIPTION OF CATCH PROJECTION MODELS

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*[NOTE: All of the model structures, except for the Open Access Nearshore Model, remain structurally unchanged from the 2009-2010 Harvest Specifications and Management Measures EIS. Those descriptions will be included in the FEIS, however since the Open Access Nearshore Model structure has changed since 2009-2010 the model description is provided here. ]*

### **Open Access: Nearshore Fishery Model**

Nearshore commercial fisheries in waters off Oregon and California are modeled separately from offshore efforts targeting sablefish. The nearshore commercial model incorporates fleet-wide discard estimates by depth from West Coast Groundfish Observer Program (WCGOP) data, landings data from PacFIN, and depth-specific discard mortality rates derived by the Groundfish Management Team (GMT). The WCGOP began pilot coverage of vessels targeting nearshore rockfish and associated species, such as cabezon and kelp greenling, in January 2003 for the California nearshore fishery and in May 2004 for the Oregon nearshore/rockfish fisheries. Data from these vessels from January 2003 – December 2006 were averaged for analyses (refer to [2009/2010 Harvest Specifications and Management Measures FEIS](#) for full description of model).

In 2009-10, projected overfished species impacts were estimated based on the previous years landings data in two areas (north and south of 40°10' N lat). Unlike other fisheries, nearshore overfished species impacts is not modeled based on full attainment of the target species harvest guidelines. Low target landings in a previous year (due to weather or management action) decrease the estimate of overfished species impacts and opportunity for target species for the following year, creating a use-it or lose-it fishery.

In 2009-10, any management action taken to stay within projected overfished species impacts had to be applied to an entire area (north or south of 40°10' N lat) regardless of the location of impact within a particular area. As such, the GMT was unable to incorporate fine scale management actions (i.e., closing just part of an area) and some areas which may have not had high overfished species impacts were affected because they fell within the larger management area.

For 2011-12, the GMT is proposing to modify the structure of the nearshore model to include finer area stratifications and modify landings data used to project overfished species impacts. These proposed modifications would facilitate management, provide

greater protection to stocks while minimizing adverse impacts to communities, and provide the best estimate of fishery needs.

The GMT received WCGOP data (2003-2008) stratified into three areas: (1) north of 42° N lat; (2) between 42° and 40°10' N lat; and (3) south of 40°10' N lat. The GMT is proposing to modify the nearshore model to facilitate overfished species impact projections based on these finer area stratifications. The additional area stratification would allow the GMT to estimate and react to overfished species impacts on a smaller scale, reducing adverse actions to non-problem areas. The finer area stratification will also allow the GMT to incorporate more state specific management measures. In 2009-10, a 20 fm depth restriction was applied to the area between 43° N lat and 40°10' N lat to reduce yelloweye impacts. Had finer area stratification been available at that time, Oregon could have chosen to reduce yelloweye impacts by reducing trip limits instead of modifying the 20 fm depth contour. Under the proposed new modifications, these types of management actions could be accommodated.

Instead of using a single previous year landings data to project overfished species impacts, the GMT proposes to use an average as the best estimate of fishery needs. As a starting point, Oregon is proposing to use average landings from 2007-2009. California is proposing to use average landings from 2006-2008 since catches in 2009 were anomalously low and not likely representative of future needs. Landings data can be adjusted from this starting point based on new information (i.e., higher black rockfish and cabezon ACLs) or based on increased availability in overfished species (i.e., higher nearshore allocation of yelloweye). Opportunities will be maximized for this fishery where available while staying within available overfished species impacts.

#### Allocation of Overfished Species (Canary and Yelloweye Rockfish) between States

Currently, WCGOP provides aggregated data for the entire area north of 40°10' N lat and as such, the GMT was unable to attribute overfished species impacts to an individual state. Therefore, California and Oregon “co-manage” this area to ensure that the fishery stays within the allowable overfished species impacts.

The finer area stratification of the proposed nearshore model would provide an opportunity for California and Oregon to independently manage their nearshore fisheries since overfished species impacts could be estimated for each state. To facilitate modeling, it would be beneficial to provide an informal or formal split of the allowable overfished species (canary and yelloweye) between California and Oregon for the nearshore fishery.

To inform any formal or informal catch sharing agreements of canary and yelloweye rockfish between the two states, the GMT examined WCGOP Total Mortality Reports, WCGOP Data Report of the Nearshore Fixed Gear Groundfish Fishery, and individual stock assessments. Since data are not reported in the WCGOP reports on the same scale as the proposed new model, the GMT was unable to use this information to inform potential catch sharing.



### Yelloweye Rockfish

Although the yelloweye stock assessment (Stewart et al. 2009) did provide data to inform catch sharing, the SSC cautioned against making use of these trends as the sole basis for the spatial allocation of harvest guidelines because the trend in abundance at the coastwide level was much more robust than those at the regional level (Agenda Item E.2.c, Supplemental SSC Report, September 2009). Data provided by Stewart et al. (2009) suggest a 53% - 61% allocation for Oregon and 39% - 47% allocation for California (Table 1). This range is supported by Wallace et al (2006) which estimated that the 2005 yelloweye rockfish biomass was 581 mt (Oregon) and 484 mt (California; Table 1).

Table 1. State-specific contributions of spawning output, commercial and recreational catch, and biomass for yelloweye rockfish. The Oregon: California contribution (percentage) is shown in the right-hand column.

Source	Description	State		Percent Contribution (OR:CA)
		OR	CA	
Stewart et al. (2009)	Yelloweye Spawning Output (million eggs)	93	75	55:45
	Total Commercial Catch (mt) 2000 – 2008	22.1	17.5	56:46
	Total Commercial Catch (mt) 1990 – 1998	1,048	667	61:39
	Total Recreational Catch (mt) 2000 – 2008	38.6	34.0	53:47
	Total Recreational Catch (mt) 1990 – 1998	174	147	54:46
Wallace et al. (2006)	Yelloweye Rockfish biomass (mt) of Age 3+	581	484	55:45

In addition to any potential catch sharing informed by the stock assessment, the Council could also consider an equal sharing (50:50) between the states for 2011-12 only. The GMT could continue to work with the SSC to examine data which may be used for future catch sharing arrangements.

### Canary Rockfish

Canary rockfish has typically been modeled on a coastwide basis; hence, information on distribution of biomass and catch is not available by state. Similar to yelloweye rockfish, the Council could consider an equal sharing (50:50) between the states for 2011-12 and

the GMT could continue to work with the SSC to examine data to inform future catch sharing arrangements.

**Estimating Yield for Unassessed Species in the  
Pacific Coast Groundfish Fishery Management Plan**

*REVISED Draft for SSC Review  
March 2010*

*This information is distributed solely for the purpose of pre-dissemination peer review under applicable information quality guidelines. It has not been formally disseminated by NOAA Fisheries. It does not represent and should not be construed to represent any agency determination or policy.*

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NOAA / NMFS / SWFSC  
Fisheries Ecology Division  
Santa Cruz, CA

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Rosethorn Rockfish	33
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## **Introduction**

This report describes the results of applying two methods for estimating sustainable yields from unassessed stocks in the Pacific Coast Groundfish Fisheries Management Plan (FMP). Overfishing limits (OFLs) for these stocks are currently derived from a variety of methods, including adjustments to average catch (Restrepo et al., 1998) or survey biomass (Rogers, 1996). Two new methodologies for determining yields from data-poor stocks were evaluated at a joint meeting of the PFMC Scientific and Statistical Committee's (SSC) Groundfish Subcommittee and the Groundfish Management Team (GMT), held January 26-28, 2010, in Seattle, WA. Yield estimates from Depletion-Corrected Average Catch (MacCall, 2009) and Depletion-Based Stock Reduction Analysis (Dick and MacCall, in prep.), were compared to 31 stock assessments of species in the groundfish FMP. The SSC Groundfish Subcommittee endorsed application of DCAC and DB-SRA to unassessed stocks in the groundfish FMP. This report summarizes the results of applying both methods to 35 unassessed stocks in the groundfish FMP.

DCAC and DB-SRA estimate yield by incorporating catch history information and distributions describing our uncertainty about life history parameters and stock status. As such, neither method is a substitute for a traditional stock assessment, but both provide information that can be used to inform decisions regarding sustainable yield.

## **Depletion-Corrected Average Catch (DCAC)**

DCAC (MacCall, 2009) is an estimate of sustainable yield for data-poor stocks of uncertain status. DCAC adjusts historical average catch to account for one-time “windfall” catches that are the result of stock depletion, producing an estimate of yield that was likely to be sustainable over the same time period. Advantages of the DCAC approach to determining sustainable yield for data-poor stocks include: 1) minimal data requirements, 2) biologically-based adjustment to catch-based yield proxies with transparent assumptions about relative changes in abundance, and 3) simple to compute.

DCAC, as described by MacCall (2009), incorporates uncertainty in natural mortality ( $M$ ), the ratio  $F_{MSY}/M$ , and relative change in abundance ( $\Delta$ ) by using Monte Carlo simulation. We also account for uncertainty in the ratio of  $B_{MSY}$  to unfished biomass ( $K$ ), setting the expected value of this ratio to 0.4 for rockfishes (genera *Sebastes* and *Sebastolobus*) and roundfishes. For flatfishes we set the expected value to 0.25 following target biomass proxies recently adopted by the Pacific Fishery Management Council. We assume an expected value of 0.8 for the ratio  $F_{MSY}/M$ , as suggested for demersal species in the northeastern Pacific by Walters and Martell (2004). Parameters of these distributions are provided in Table 1.

For each species we sum catches from the first year in which catches increased dramatically through 1999, after which yield for many species declines due to implementation of significant management measures off the U.S. west coast. Final DCAC distributions were calculated as

$$DCAC = \frac{\sum C_t}{n + \frac{\Delta}{\left(\frac{B_{MSY}}{K}\right)\left(\frac{F_{MSY}}{M}\right)^{(M)}}} \quad (1)$$

where  $n$  is the length of the catch time series in years, and  $C_t$  is the catch in year  $t$ .

## **Depletion-Based Stock Reduction Analysis (DB-SRA)**

DB-SRA (Dick and MacCall, in prep.; draft MS submitted to SSC Groundfish Committee 1/22/10) extends DCAC by 1) restoring the temporal link between production and biomass and 2) evaluating and integrating alternative hypotheses regarding changes in abundance during the historical catch period. This method combines DCAC's distributional assumptions regarding life history characteristics and stock status with the dynamic models and simulation approach of stochastic stock reduction analysis (Walters et al., 2006).

In DB-SRA, draws from the input distributions are used to fully specify a delay-difference production model of the form

$$B_t = B_{t-1} + P(B_{t-a}) - C_{t-1} \quad (2)$$

where  $B$  is biomass,  $P$  is latent production based on a preceding biomass,  $C$  is catch, and  $a$  is age at reproductive maturity. For a given time series of catch, the methods solves for unfished biomass using each draw from the input distributions, producing distributions of biomass and production trajectories, unfished biomass, maximum sustainable yield, and other management reference points. Biologically credible trajectories (e.g. those with non-negative biomass) are retained, from which distributions of OFL over time are calculated.

### *Development of bias correction distributions using stock assessment comparisons and productivity-susceptibility analysis (PSA)*

The comparison of yield estimates from DB-SRA to recent stock assessments (Dick and MacCall, in prep.) assumed that unassessed stocks are, on average, at 40% of their unfished biomass. Results suggest that life history characteristics affect the direction and magnitude of bias in DB-SRA results relative to the age-structured stock assessment models. It is possible to use distributions of relative OFL (the ratio of OFL from DB-SRA to the stock assessment's point estimates) as empirical bias-correction distributions for unassessed stocks. This requires that the assumptions used in the stock assessment comparison regarding stock status remain consistent with the assumptions used for unassessed stocks.

Results from the stock assessment comparison (Dick and MacCall, in prep.) suggest that life history characteristics affect the direction and magnitude of bias in DB-SRA results relative to previous stock assessment models. However, many unassessed stocks in the FMP are data-poor, making comparisons difficult. The recent productivity-susceptibility analysis (PSA) for west-coast groundfish (agenda item E.2.b) provides guidance with respect to life history characteristics as well as the relative influence of fisheries on data-poor stocks. Susceptibility to fisheries may change over time, so we focused our comparisons on productivity scores alone. Flatfish species are typically productive stocks and were treated separately from rockfish and roundfish. Among non-flatfish species, we define "low productivity" stocks as those with scores from the PSA below the median score (1.365), and the remaining species are combined into a high-productivity category (Table 2). Using the results of the stock assessment comparison, we estimated life-history based bias correction distributions for three groups: flatfish, low-productivity non-flatfish, and high-productivity non-flatfish (Figure 1). Drawing

random samples from the ratio of each unassessed species' OFL distribution (from DB-SRA) to the appropriate bias-correction distribution provides a distribution of OFL for each unassessed stock.

## **Data Sources**

### *Life history data*

Observed maximum age was used to inform natural mortality ( $M$ ). We used Hoenig's (1983) method for estimating total mortality as the expectation of the distribution for  $M$ . If fishing mortality is large relative to natural mortality, this assumption may overestimate the productivity of stocks. Sources and estimates of maximum age and age at maturity for each species are provided in Table 3. Species-specific productivity parameters (e.g.  $F_{MSY}/M$  and  $B_{MSY}/K$ ) used in DCAC and DB-SRA are in Table 1. Whenever possible, estimates of maximum age and age at maturity were taken from sources based on stocks in U.S. waters off the west-coast.

Age at maturity information was not available for some rockfish species (flag, pink, and shortraker). For these species, we approximated age at maturity using the product of maximum age and the mean of the ratio of age at maturity to maximum age across all rockfish species (0.14).

### *Historical Catch Reconstructions*

#### *Commercial fisheries*

DB-SRA results in this report are based on estimates of landings by species and year, aggregated across other strata (e.g. area and gear type). When available, estimates of discard (described below) have been applied to landings data so yield estimates could be treated as total mortality (landings plus discard mortality). For ongoing data sources we project landings in 2010 using the average of landings in 2008-2009. Therefore, forecasted estimates of OFLs in 2011 are based on the assumption that catches in 2010 will not differ greatly from the previous two years.

The CALCOM database was queried for California's commercial landings estimates from 1969 – 2009 (SQL code provided in Appendix A). Since multiple species are often landed within a single market category, it is necessary to "expand" landings estimates from fish tickets using species composition data obtained by port samplers. CALCOM is the source of this expansion for California's landings, and generates estimates of species compositions by year, quarter, market category, gear group, port complex, and live/nonlive fishery. These compositions are applied to fish ticket data, and the resulting "expanded" species compositions are uploaded to PacFIN on a monthly basis. A final annual expansion is also uploaded to PacFIN when the landing receipts for that year have been submitted.

We queried CALCOM, rather than PacFIN, for estimates of California's commercial landings because 1) CALCOM is the original source of California's landings estimates, 2) a final expansion of the 2008 landings for California was completed in CALCOM but final species compositions had not yet been uploaded to PacFIN for that year, and 3) a preliminary expansion for 2009 was completed for this analysis because final landing receipts were not yet available. At the time of writing this report, final



landings estimates for the fourth quarter of 2009 were not available. We estimate fourth quarter landings in 2009 by species using a ratio of statewide landings in quarters 1-3 from 2007 and 2008 to landings in quarter 4 of those same years. We apply that ratio to the first three quarters of 2009 to obtain estimates of fourth-quarter 2009 landings. To estimate OFL in 2011, we project 2010 landings using the average landings, by species, over the years 2008 and 2009.

Pacific Fisheries Information Network (PacFIN) database was the primary source of commercial landings data from Oregon and Washington. Oregon landings from 1987-2009 and Washington landings from 1981-2009 were queried from the PacFIN database (see Appendix A). Landings in nominal codes in PacFIN were pooled with corresponding market categories (e.g. nominal category VRM1 was added to category VRML). ODFW staff (M. Karnowski, pers. comm.) provided revised estimates of rockfish landings from 1981-1986 due to uncertainty regarding the source of species compositions previously applied to that time period. The revised Oregon rockfish estimates replaced PacFIN estimates of rockfish landings from 1981-86. Non-rockfish Oregon landings of groundfish species from 1981-1986 were based on the PacFIN query.

Historical estimates of commercial landings in California from 1916-1968 were available from the CALCOM database. A description of these estimates is given by Ralston et al. (2009). We adopt their reconstruction without modification. Historical rockfish landings from the Oregon trawl fishery were estimated by NMFS and ODFW staff (V. Gertseva, pers. comm.) as part of Oregon's commercial catch reconstruction effort. These landings represent the majority of commercial catch, because the trawl fishery dominated Oregon landings from the early 1940s through the mid-1960s (Figure 2). Even in the late 1960s and '70s, the trawl fishery typically accounted for greater than 70% of total landings. Although the Oregon trawl fishery prior to 1942 was minor relative to other gear types, the total landings during this time period were small relative to total historical removals (Figure 2). Efforts to estimate historical catch (pre-1981) of non-rockfish species are underway and should be available in the near future (V. Gertseva, pers. comm.).

Washington Department of Fish and Wildlife (WDFW) is in the process of preparing historical catch reconstructions of Washington landings (T. Tsou and G. Lippert, pers. comm.). WDFW provided numerous data sets and background documents that will be considered during the state's reconstruction efforts. It was not possible to develop a detailed catch reconstruction from these sources in time for this analysis. We used readily available data sources to reconstruct a time series of catch (described below). We consider this reconstruction to be a placeholder until a more thorough reconstruction is completed.

Tagart (1985) reports on trawl-caught rockfish by year, species, PMFC area, and reporting agency (CDFG, ODFW, WDFW, and DFO Canada) for the years 1963-1980. The number of species broken out in the early years of the report (8 species reported in 1963 plus one category for unidentified rockfish) is less than in later years. We calculated species compositions from the 1969-1976 data (prior to the widow rockfish fishery) and applied them to aggregated rockfish landings from 1963-1968.

A comparison of total rockfish landings from the Tagart (1985) data and the commercial rockfish landings in the PMFC Data Series (areas 2D, 3A, 3B, and 3C) showed strong agreement between the two sources (Table 4). We estimated the fraction of rockfish landed in Washington and originating in U.S. waters by PMFC area using the Tagart data over the years 1963-1967 (Table 5). The estimated fractions of Washington rockfish landings of U.S. origin were 1.9% for area 3A, 85.2% for area 3B, and

43.9% for area 3C. We applied the area-specific fractions to the total rockfish landings by area from the PMFC Data Series, generating estimates of Washington rockfish landings from U.S. waters for the period 1956-1962. Finally, we applied the 1969-1976 species composition data from Tagart (1985) to estimate rockfish landings by species from 1956-1962 (Table 6). Landings may be over- or under-estimated for a given species if the composition of catch changed dramatically between the periods 1956-1962 and 1969-1976.

Pacific Fisherman yearbooks provide a record of total rockfish landings in Washington from the 1930s to 1956 (I. Stewart, pers. comm.). Their reported catch is partitioned into POP and other rockfish categories after 1952. Stewart (2007) found this source to be similar to Fish and Wildlife statistics from the same time period, with the exception of one year (1945) in which the Pacific Fisherman data estimated 7,300 mt and the Fish and Wildlife data showed 11,552 mt. We retained the estimate from the Pacific Fisherman yearbooks. These data include landings originating from Canadian waters, so it is necessary to identify the fraction of catch originating in U.S. waters. Alverson (1957) reports the fraction of landed rockfish that originated from U.S. waters during 1953 (14.9% for other rockfish and 9.7% for POP). We applied these proportions to the Pacific Fisherman estimates (using the average proportion in years reporting only total rockfish) to get Washington landings from U.S. waters. We then applied the 1969-1976 species composition data from Tagart (1985) (Table 7) to estimate rockfish landings by species from 1942-1955, as these composition data are the best available information at this time (Table 8). As with the PMFC Data Series, this application of the Tagart composition data makes a strong assumption that rockfish species compositions do not vary over time.

In summary, estimates of total rockfish for years prior to 1981 are derived from a total of 3 sources: Pacific Fisherman yearbooks, PMFC Data Series Reports, and Tagart (1985). After adjusting each source to remove catches from outside U.S. waters, the scale of total rockfish does not change dramatically between sources (Figure 8).

### *Recreational fisheries*

Recreational landings and discard estimates were obtained from RecFIN for the period 1980-2009. A time series of recreational catch in California was provided by CDFG (J. Budrick, pers. comm.) that incorporated estimates of discard mortality. These estimates are derived from the combined weights of catch types A and B1, plus 42% (7% for non-rockfish spp.) of the number of B2 fish multiplied by average weights of discarded fish from 2004-2009, by species. Recreational landings and discard estimates for Oregon and Washington are based on reported values from RecFIN (weights of A+B1 fish). We interpolate catch for the years 1990-1992 (unavailable in RecFIN) as a linear trend between the average catch taken over the 3-year periods bracketing the missing time period (87-89 and 93-95).

Estimates of recreational rockfish catch in Washington's coastal waters prior to 1980 were not readily available. Washington Sport Catch Reports from 1975-1980 report rockfish landings, but show that the majority of sport-caught rockfish were not recorded to species (c.f. Nye et al., 1975). Recreational catch in Oregon and Washington prior to 1980 is not included in our reconstructions. Ralston et al. (2009) prepared historical recreational catch reconstructions of rockfish mortality (landings + discard) in California for the period 1928-1980. We use these estimates without modification. Due to irregularities in RecFIN's reported recreational catch in 1980 (Ralston et al., 2009), we replaced 1980

RecFIN estimates of rockfish mortality with the estimates from California's historical recreational catch reconstruction.

Estimated bycatch of groundfish species from the at-sea whiting fleet is available for the years 1991-2009 from the NORPAC database. We queried NORPAC for estimates of total weight by species, area, and year (Appendix A). Annual estimates of total bycatch by species from this fishery were included in our catch reconstructions without modification. Rogers (2003) provides estimates of rockfish catch by foreign vessels occurring off the West Coast of the United States (U.S.) from 1965-76.

When possible, catch reconstruction for some species were augmented with readily available information, including catch reconstructions available in the literature. Due to the availability of historical rockfish reconstructions from California and Oregon, most of this additional data was compiled for non-rockfish species. The following species accounts describe these sources in greater detail.

### Spiny dogfish

A reconstruction of historical catches in U.S. coastal waters was completed by Taylor (2008) for landings prior to 1980 and the PacFIN database from 1981-2006. Data since 2006 was obtained from CALCOM, PacFIN, and NORPAC databases.

### Kelp greenling

An assessment of the kelp greenling substock in Oregon was adopted in 2005. An assessment of the California substock was also completed, but the stock assessment review (STAR) panel rejected the California model for issues not related to the catch time series.(PFMC, 2005). Cope and MacCall (2005) completed a reconstruction of California landings back to 1916, and we apply DB-SRA to their catch estimates. Discard and associated mortality are assumed to be negligible because of the desirability of this species and its lack of an air bladder.

### Rex Sole

Cleaver (1951) reported rex sole landings for 1942-49 in Oregon, noting "The peak landing in 1943 of 569,737 pounds represents a heavy demand for food fish, while the peak of 223,667 pounds in 1949 represents an increasing demand for mink food." Smith (1956) provided Oregon landings from 1950-53, and also reported the composition of the growing mink food landings, noting that 53% of the mink food landings was a mixture of arrowtooth flounder, Bellingham (butter) sole, and rex sole. We assume that 20% of total mink food landings were rex sole during this time period. This assumption is consistent with an increase in landings that matches reported landings of over 1000 mt in 1956 (fish caught for both animal food and human consumption, per the PMFC Data Series) (Figure 3). CA landing receipt data matched Data Series landings from Areas 1A-1C very well (Figure 4), and were used without modification. PMFC Data Series landings for areas 2A-3B are therefore interpreted as landings by other agencies (ODFW, WDFW, DFO) from these areas (Figure 5).

## Rock Sole

The PMFC Data Series reports catch of rock sole as early as 1956. Historical CA landings were taken from landing receipts. We approximate landings in Oregon and Washington using Data Series reports from areas 2A-3B (Figure 6). Visual inspection of WDFW Data Reports showed that the majority of rock sole landings from area 3C originated in what are now Canadian waters (WA state statistical areas 7-11). Alverson (1955) reported on the 1954 trawl fishery and noted that almost all rock sole landed in Washington were caught in the Hecate Strait, Goose Island, and Cape Scott fishing grounds. Cleaver (1951) reports that rock sole were not an important component of the Oregon trawl fishery, with landings recorded in only 2 years between 1942 and 1949.

## Sand Sole

Sand sole landings were not differentiated from the unspecified rockfish category in the PFMC Data Series. This species was consistently reported in WDFW Data Reports and Progress Reports since 1963, and these were used to reconstruct sand sole landings in Washington from U.S. Coastal Waters (PMFC areas 2C, 3A, and 3B) (Figure 7). Landings in area 3C were rare and relatively small. Statewide sand sole landings averaged 29 tons per year from 1951-1954. It is unclear how much was caught in inland versus coastal waters. In 1963 and 1964, 90% of sand sole caught in U.S. waters were from Puget Sound (Pattie, 1973). Cleaver (1951) refers to sand sole as a minor component of the Oregon trawl fishery prior to 1950, noting that this species was often landed with petrale sole.

## Pacific Sanddab

Pacific sanddabs were historically landed as unspecified flatfish. While early markets existed in California, this species was generally discarded or landed for animal food in Oregon and Washington. In California the unspecified sanddab market category is greater than 96% Pacific sanddab (Pearson et al., 2008). Following Pearson et al., we combined the unspecified sanddab market category (SDAB) in CALCOM with the Pacific sanddab market category (PDAB). We also assume that all Washington and Oregon landings in the unspecified sanddab market category (category UDAB in PacFIN) are Pacific sanddab. Historical landings may be underestimated if sanddab were landed in any of the ‘unspecified’ or ‘other’ flatfish market categories.

## *Discard assumption*

Two data sources were consulted for information on discard in the commercial fisheries. Trawl reports from the West Coast Groundfish Observer Program in 2007 and 2008 were used to estimate discard for several species and species groups. Estimates were based on the ratio of discarded catch to retained catch (total catch minus discarded catch). When species-specific rates were not supplied, ratios were developed using aggregated categories (e.g. shelf rockfish). An analysis of data from Pikitch et al. (1988) was supplied by D. Erickson (ODFW) for the mid-1980s. We developed a matrix of discard ratios (discard / retained) by species and year using these two data sources. Discard ratios in years between sources was assigned using linear interpolation. We assume that discard ratios from the earliest source remain constant for all previous years (Table 9). A 50% discard mortality rate was applied to all species as a placeholder value until more detailed information can be developed.

Discard in recreational fisheries from 1980 to the present is based on RecFIN (B1 fish for Oregon and Washington, and as described above for California).

## **Results**

### *Depletion-Corrected Average Catch (DCAC)*

Distributions of DCAC for the 35 unassessed groundfish species are based on 10,000 independent draws from each distribution (Table 10; Figure 9). This quantity represents a yield that is likely to have been sustainable during the time period over which the catch was aggregated. Reductions from average catch are based on life history characteristics of the species and the assumed distribution of current status (Equation 1).

### *Depletion-Based Stock Reduction Analysis (DB-SRA)*

For each unassessed stock, we summarize the DB-SRA results in a figure with four panels (Figures 10-44). The panels include 1) time series of catch and assumed commercial discard by data source, 2) time series of the bias-corrected distribution of OFL, 3) probability that catch exceeded the OFL over time, and 4) the bias-corrected distribution of forecasted OFL in 2011. Summary statistics of OFL in 2011 are also provided (Table 11), with the fraction of retained runs reported as Table 12.

The results of both DB-SRA and DCAC are conditional on the assumed status of the stock. Application of the bias correction distributions to the DB-SRA estimates of OFL is an attempt to correct for potential bias, taking into account differences in productivity characteristics among stocks. For any species, the OFL and the probability that catch exceeded the OFL in any given year are both conditional on the assumed distribution of current stock status and the assumed bias-correction distribution.

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## Tables

Table 1. Input parameters for Depletion-Corrected Average Catch and Depletion-Based Stock Reduction Analysis

		Species	Maximum	Natural	Age at	DCAC	DCAC	Std. Dev.	FMSY/	Std. Dev. Of
Species Group	Common Name	Code	Age	Mortality	Maturity	start yr.	end year	of ln(M)	M	FMSY / M
Elasmobranch	Leopard shark	LSRK	25	0.191	10	1976	1999	0.4	0.8	0.2
Elasmobranch	Spiny dogfish	DSRK	80	0.054	35	1938	1999	0.4	0.8	0.2
Flatfish	Pacific sanddab	PDAB	11	0.465	2	1981	1999	0.4	0.8	0.2
Flatfish	Rex sole	REX	24	0.2	5	1941	1999	0.4	0.8	0.2
Flatfish	Rock sole	RSOL	22	0.219	5	1965	1999	0.4	0.8	0.2
Flatfish	Sand sole	SSOL	10	0.516	2	1941	1999	0.4	0.8	0.2
Rockfish	Aurora rockfish	ARRA	75	0.058	5	1970	1999	0.4	0.8	0.2
Rockfish	Black-and-Yellow Rockfish	BYEL	30	0.157	4	1947	1999	0.4	0.8	0.2
Rockfish	Brown Rockfish	BRWN	34	0.137	4	1945	1999	0.4	0.8	0.2
Rockfish	China Rockfish	CHNA	79	0.055	5	1916	1999	0.4	0.8	0.2
Rockfish	Copper Rockfish	COPP	50	0.09	6	1945	1999	0.4	0.8	0.2
Rockfish	Flag Rockfish	FLAG	38	0.121	5	1916	1999	0.4	0.8	0.2
Rockfish	Grass Rockfish	GRAS	23	0.209	4	1947	1999	0.4	0.8	0.2
Rockfish	Greenblotched Rockfish	GBLC	50	0.09	10	1916	1999	0.4	0.8	0.2
Rockfish	Greenspotted Rockfish	GSPT	51	0.088	10	1916	1999	0.4	0.8	0.2
Rockfish	Kelp Rockfish	KLPR	25	0.191	4	1945	1999	0.4	0.8	0.2
Rockfish	Olive Rockfish	OLVE	30	0.157	5	1942	1999	0.4	0.8	0.2
Rockfish	Pink Rockfish	PNKR	66	0.067	9	1941	1999	0.4	0.8	0.2
Rockfish	Quillback Rockfish	QLBK	76	0.057	9	1941	1999	0.4	0.8	0.2
Rockfish	Redbanded Rockfish	RDBD	106	0.04	4	1941	1999	0.4	0.8	0.2
Rockfish	Redstripe Rockfish	REDS	55	0.081	7	1965	1999	0.4	0.8	0.2
Rockfish	Rosethorn Rockfish	RSTN	87	0.049	10	1950	1999	0.4	0.8	0.2
Rockfish	Rosy Rockfish	ROSY	18	0.273	4	1931	1999	0.4	0.8	0.2
Rockfish	Rougheye Rockfish	REYE	170	0.024	20	1963	1999	0.4	0.8	0.2
Rockfish	Sharpchin Rockfish	SHRP	58	0.077	6	1963	1999	0.4	0.8	0.2
Rockfish	Shortraker Rockfish	SRKR	157	0.026	22	1970	1999	0.4	0.8	0.2
Rockfish	Silvergray Rockfish	SLGR	82	0.053	9	1963	1999	0.4	0.8	0.2
Rockfish	Speckled Rockfish	SPKL	37	0.125	4	1941	1999	0.4	0.8	0.2
Rockfish	Starry Rockfish	STAR	32	0.146	7	1916	1999	0.4	0.8	0.2
Rockfish	Stripetail Rockfish	STRK	38	0.121	4	1941	1999	0.4	0.8	0.2
Rockfish	Swordspine Rockfish	SWSP	43	0.106	3	1950	1999	0.4	0.8	0.2
Rockfish	Treefish	TREE	25	0.191	5	1946	1999	0.4	0.8	0.2
Rockfish	Vermillion Rockfish	VRML	60	0.074	5	1921	1999	0.4	0.8	0.2
Rockfish	Yellowmouth Rockfish	YMTH	99	0.043	6	1963	1999	0.4	0.8	0.2
Roundfish	Kelp greenling (CA)	KLPG_CA	25	0.191	4	1916	1999	0.4	0.8	0.2



Table 1. (Continued) Input parameters for Depletion-Corrected Average Catch and Depletion-Based Stock Reduction Analysis

		Species			Delta	Delta			BMSY / B0	BMSY / B0
Species Group	Common Name	Code	Delta	SD(Delta)	Lower Bound	Upper Bound	BMSY / B0	SD (BMSY/B0)	Lower Bound	Upper Bound
Elasmobranch	Leopard shark	LSRK	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Elasmobranch	Spiny dogfish	DSRK	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Flatfish	Pacific sanddab	PDAB	0.6	0.1	0.01	0.99	0.25	0.05	0.05	0.95
Flatfish	Rex sole	REX	0.6	0.1	0.01	0.99	0.25	0.05	0.05	0.95
Flatfish	Rock sole	RSOL	0.6	0.1	0.01	0.99	0.25	0.05	0.05	0.95
Flatfish	Sand sole	SSOL	0.6	0.1	0.01	0.99	0.25	0.05	0.05	0.95
Rockfish	Aurora rockfish	ARRA	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Black-and-Yellow Rockfish	BYEL	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Brown Rockfish	BRWN	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	China Rockfish	CHNA	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Copper Rockfish	COPP	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Flag Rockfish	FLAG	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Grass Rockfish	GRAS	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Greenblotched Rockfish	GBLC	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Greenspotted Rockfish	GSPT	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Kelp Rockfish	KLPR	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Olive Rockfish	OLVE	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Pink Rockfish	PNKR	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Quillback Rockfish	QLBK	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Redbanded Rockfish	RDBD	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Redstripe Rockfish	REDS	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Rosethorn Rockfish	RSTN	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Rosy Rockfish	ROSY	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Roughey Rockfish	REYE	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Sharpchin Rockfish	SHRP	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Shortraker Rockfish	SRKR	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Silvergray Rockfish	SLGR	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Speckled Rockfish	SPKL	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Starry Rockfish	STAR	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Stripetail Rockfish	STRK	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Swordspine Rockfish	SWSP	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Treefish	TREE	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Vermillion Rockfish	VRML	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Rockfish	Yellowmouth Rockfish	YMTH	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95
Roundfish	Kelp greenling (CA)	KLPG_CA	0.6	0.1	0.01	0.99	0.4	0.05	0.05	0.95

Table 2. Productivity scores from productivity-susceptibility analysis (Agenda item E.2.b). See text for category descriptions. In each category, species with available stock assessments (bold text) were used to generate empirical bias correction distributions applied to OFL distributions for unassessed stocks.

Low-productivity Rockfish and Roundfish		High-productivity Rockfish and Roundfish		Flatfish	
Species	P score	Species	P score	Species	P score
<b>Cowcod</b>	1.06	Big skate	1.37	<b>Petrale sole</b>	1.70
Spiny dogfish	1.11	<b>Darkblotched rockfish</b>	1.39	<b>Dover sole</b>	1.80
Soupin shark	1.11	Chameleon rockfish	1.39	Rock sole	1.95
Rougeye rockfish	1.17	<b>Blue rockfish</b>	1.39	<b>Arrowtooth flounder</b>	1.95
Blackspotted rockfish	1.17	Greenspotted rockfish	1.39	Rex sole	2.05
Rosethorn rockfish	1.19	Pacific rattail/grenadier	1.39	<b>Starry flounder</b>	2.15
California skate	1.21	Stripetail rockfish	1.39	<b>English sole</b>	2.25
<b>Yelloweye rockfish</b>	1.22	<b>Pacific ocean perch</b>	1.44	Flathead sole	2.30
Bronzespotted rockfish	1.22	<b>Longspine thornyhead</b>	1.47	Sand sole	2.35
<b>Blackgill rockfish</b>	1.22	Mexican rockfish	1.50	Pacific sanddab	2.40
<b>Vermilion rockfish</b>	1.22	<b>Longnose skate</b>	1.53	Curlfin sole	2.45
Silvergrey rockfish	1.22	<b>Gopher rockfish</b>	1.56	Butter sole	2.45
Shortraker rockfish	1.22	Brown rockfish	1.61		
Starry rockfish	1.25	Yellowmouth rockfish	1.61		
Tiger rockfish	1.25	Grass rockfish	1.61		
Bank rockfish	1.25	Rosy rockfish	1.61		
Leopard shark	1.26	Squarespot rockfish	1.61		
<b>Canary rockfish</b>	1.28	<b>Sablefish</b>	1.61		
<b>Bocaccio</b>	1.28	Ratfish	1.63		
Greenblotched rockfish	1.28	Monkface prickelback	1.67		
Redbanded rockfish	1.28	Treefish rockfish	1.67		
Dusky rockfish	1.28	Olive rockfish	1.69		
Greenstriped rockfish	1.28	Finescale codling	1.72		
<b>Splitnose rockfish</b>	1.28	Calico rockfish	1.75		
Quillback rockfish	1.31	<b>Lingcod</b>	1.75		
Redstripe rockfish	1.31	Rock greenling	1.78		
<b>Widow rockfish</b>	1.31	California sheephead	1.78		
Harlequin rockfish	1.31	Freckled rockfish	1.78		
Pinkrose rockfish	1.31	Pygmy rockfish	1.78		
China rockfish	1.33	<b>Cabazon</b>	1.78		
Aurora rockfish	1.33	Kelp greenling	1.83		
Speckled rockfish	1.33	Dwarf-red rockfish	1.83		
Pink rockfish	1.33	California scorpionfish	1.83		
Flag rockfish	1.33	<b>Chilipepper</b>	1.83		
<b>Black rockfish</b>	1.33	Black-and-yellow rockfish	1.89		
Swordspine rockfish	1.33	Puget Sound rockfish	1.89		
Yellowtail rockfish	1.33	Kelp rockfish	1.94		
<b>Shortspine thornyhead</b>	1.33	Shortbelly rockfish	1.94		
Copper rockfish	1.36	Pacific whiting	2.00		
Sharpchin rockfish	1.36	Halfbanded rockfish	2.00		
Honeycomb rockfish	1.36	Pacific cod	2.11		

Table 3. Maximum age and age at 50% maturity estimates with source information.

Common Name	Scientific Name	Group	Max. Age	Hoenig Z	Amat	Source for maximum age	Source for age at maturity
Aurora rockfish	<i>Sebastes aurora</i>	Rockfish	75	0.058	5	Love et al. 2002	Love et al. 2002
Brown Rockfish	<i>Sebastes auriculatus</i>	Rockfish	34	0.137	4	Love et al. 2002	Love et al. 2002
Black-and-Yellow Rockfish	<i>Sebastes chrysomelas</i>	Rockfish	30	0.157	4	Love et al. 2002	Love et al. 2002
China Rockfish	<i>Sebastes nebulosus</i>	Rockfish	79	0.055	5	Love et al. 2002	Love et al. 2002
Copper Rockfish	<i>Sebastes caurinus</i>	Rockfish	50	0.090	6	Love et al. 2002	Love et al. 2002
Spiny dogfish	<i>Squalus acanthias</i>	Elasmobranch	80	0.054	35	McFarlane and King 2003	McFarlane and King 2003
Flag Rockfish	<i>Sebastes rubrivinctus</i>	Rockfish	38	0.121	5	Love et al. 2002	0.14*max age
Greenblotched Rockfish	<i>Sebastes rosenblatti</i>	Rockfish	50	0.090	10	Love et al. 2002	Love et al. 2002
Grass Rockfish	<i>Sebastes rastrelliger</i>	Rockfish	23	0.209	4	Love and Johnson 1998	Love and Johnson 1998
Greenspotted Rockfish	<i>Sebastes chlorostictus</i>	Rockfish	51	0.088	10	Benet et al. 2009	Benet et al. 2009
Kelp greenling (CA)	<i>Hexagrammos decagrammus</i>	Roundfish	25	0.191	4	Cope and MacCall 2005	Cope and MacCall 2005
Kelp Rockfish	<i>Sebastes atrovirens</i>	Rockfish	25	0.191	4	Love et al. 2002	Love et al. 2002
Leopard shark	<i>Triakis semifasciata</i>	Elasmobranch	25	0.191	10	Smith et al., 2003	Kusher et al., 1992
Olive Rockfish	<i>Sebastes serranoides</i>	Rockfish	30	0.157	5	Love et al. 2002	Love et al. 2002
Pacific sanddab	<i>Citharichthys sordidus</i>	Flatfish	11	0.465	2	Love 1996	Rackowski and Pikitch 1989
Pink Rockfish	<i>Sebastes eos</i>	Rockfish	66	0.067	9	Love et al. 2002	0.14*max age
Quillback Rockfish	<i>Sebastes maliger</i>	Rockfish	76	0.057	9	Yamanaka and Kronlund 1997	Love et al. 2002
Redbanded Rockfish	<i>Sebastes babcocki</i>	Rockfish	106	0.040	4	Love et al. 2002	Love et al. 2002
Redstripe Rockfish	<i>Sebastes proriger</i>	Rockfish	55	0.081	7	Love et al. 2002	Shaw 1999
Rex sole	<i>Glyptocephalus zachirus</i>	Flatfish	24	0.200	5	Hosie and Horton 1977	Hosie and Horton 1977
Rougheye Rockfish	<i>Sebastes aleutianus</i>	Rockfish	170	0.024	20	Munk 2001	Love et al. 2002
Rosy Rockfish	<i>Sebastes rosaceus</i>	Rockfish	18	0.273	4	Tenera Environmental Services 2000	Love et al. 2002
Rock sole	<i>Lepidopsetta bilineata</i>	Flatfish	22	0.219	5	Fishbase.org	Fargo and Wilderbuer 2000
Rosethorn Rockfish	<i>Sebastes helvomaculatus</i>	Rockfish	87	0.049	10	Love et al. 2002	Shaw 1999
Sharpchin Rockfish	<i>Sebastes zacentrus</i>	Rockfish	58	0.077	6	Love et al. 2002	Shaw 1999
Silvergray Rockfish	<i>Sebastes brevispinis</i>	Rockfish	82	0.053	9	Love et al. 2002	Stanley and Kronlund 2005
Speckled Rockfish	<i>Sebastes ovalis</i>	Rockfish	37	0.125	4	Love et al. 2002	Love et al. 2002
Shortraker Rockfish	<i>Sebastes borealis</i>	Rockfish	157	0.026	22	Love et al. 2002	0.14*max age
Sand sole	<i>Psettichthys melanostictus</i>	Flatfish	10	0.516	2	Pearson and McNally 2005	Pearson and McNally 2005
Starry Rockfish	<i>Sebastes constellatus</i>	Rockfish	32	0.146	7	Love et al. 2002	Love et al. 2002
Stripetail Rockfish	<i>Sebastes saxicola</i>	Rockfish	38	0.121	4	Love et al. 2002	Love et al. 2002
Swordspine Rockfish	<i>Sebastes ensifer</i>	Rockfish	43	0.106	3	Love et al. 2002	Love et al. 2002
Treefish	<i>Sebastes serripes</i>	Rockfish	25	0.191	5	Colton and Larson 2007	Colton and Larson 2007
Vermillion Rockfish	<i>Sebastes miniatus</i>	Rockfish	60	0.074	5	Munk 2001	Love et al. 2002
Yellowmouth Rockfish	<i>Sebastes reedi</i>	Rockfish	99	0.043	6	Schnute (DFO Canada) 1999	Love et al. 2002

Table 4. Comparison of total rockfish trawl landings reported by Tagart (1985) and the PMFC Data Series (Lynde, 1986). Data are for all reporting agencies (ODFW, WDFW, and DFO Canada). Tagart PMFC areas limited to 3A (includes 2D), 3B, 3C-S, and 3C-N. PMFC Data Series areas include 2D, 3A, 3B, and 3C (includes 3C-S and 3C-N). Deviations from 1978 onward are likely due to the expansion of the widow rockfish fishery.

Year	PMFC Data Series	Tagart 1985	PMFC / Tagart
1963	6921.4	6922.7	1.00
1964	5618.2	5618.4	1.00
1965	6013.7	6028.8	1.00
1966	5326.1	5302.9	1.00
1967	2838.6	2827.6	1.00
1968	3364.8	3387.4	0.99
1969	3740.3	3739.4	1.00
1970	3699.1	3733.0	0.99
1971	3063.1	3064.9	1.00
1972	2459.8	2464.0	1.00
1973	1839.3	1836.7	1.00
1974	1626.1	1627.1	1.00
1975	2416.3	2416.1	1.00
1976	6141.2	6144.2	1.00
1977	8922.2	8919.6	1.00
1978	13947.1	13042.1	1.07
1979	15237.1	13405.4	1.14
1980	23337.4	21724.4	1.07

Table 5. Rockfish trawl landings (mt) by year, PMFC area and reporting agency (Tagart, 1985).

YEAR	3A		3B		3C-N		3C-S		DFO	WDF
	ODFW	WDF	DFO	ODFW	WDF	DFO	WDF	ODFW		
1963	2722.0	48.6	1.4	119.0	975.3	13.5	2051.5	0.1	3.0	988.3
1964	2324.0	78.1	2.5	429.0	980.0	46.1	833.6	6.7	39.0	879.4
1965	1983.0	24.7		37.0	699.9	25.8	1978.9	4.4	91.0	1184.1
1966	1910.0	7.0		25.0	797.1		873.1		116.0	1574.7
1967	1493.0	48.4	0.3	38.0	290.0	18.4	434.5		8.0	497.0
1968	1087.0	8.6	1.6	163.0	1416.3	17.4	114.2	0.3	4.0	575.0
1969	1007.0	18.0	0.1	94.0	1662.6	28.7	214.1		24.0	690.9
1970	812.0	22.4	2.9	70.0	692.3	357.5	727.3	2.0	456.0	590.6
1971	620.0	153.7	11.2	116.0	646.8	295.3	272.9	17.6	244.0	687.4
1972	927.0	232.2		141.0	413.2	113.2	202.1	0.7	7.0	427.6
1973	942.0	50.1		29.0	296.8	47.5	124.1	0.5	13.0	333.7
1974	778.0	187.1		27.0	233.8	70.7	90.3		1.0	239.2
1975	850.0	302.3		23.0	670.0	43.8	166.2			360.8
1976	1665.0	1644.1		5.0	695.6	177.2	693.3	7.8		1256.2
1977	1853.0	2158.1	6.2		1677.4	196.1	278.0	305.2		2445.6
1978	2989.1	5225.5			1924.4	165.8	197.9	0.7		2538.7
1979	3344.0	5441.1			2098.0	205.6	26.6	45.8		2244.3
1980	8194.8	9629.9		6.4	1765.3	443.6	37.1			1647.3

Table 6. Washington rockfish landings from U.S. waters, 1956-1962, by PMFC area. Estimates are based on PMFC Data Series landings (areas 3A, 3B, and 3C) from all reporting agencies multiplied by catch-weighted fractions of Washington landings by PMFC area (1963-1967).

YEAR	3A	3B	3C	Total
1956	19.3	918.6	469.6	1407.5
1957	38.8	572.5	531.8	1143.1
1958	36.5	814.8	449.1	1300.4
1959	24.2	749.2	709.5	1482.9
1960	31.4	977.3	784.4	1793.1
1961	37.1	1102.4	803.3	1942.9
1962	68.5	1009.7	1534.2	2612.4

Table 7. Species compositions derived from total weight of rockfish catch by species reported by Tagart (1985) for the years 1969-1976.

Species	Composition
S. aleutianus	0.1%
S. alutus	21.9%
S. babcocki	0.2%
S. brevispinis	0.8%
S. crameri	1.9%
S. diploproa	0.7%
S. elongatus	0.0%
S. entomelas	0.7%
S. flavidus	45.4%
S. helvomaculatus	0.0%
S. maliger	0.0%
S. melanops	0.6%
S. paucispinis	0.2%
S. pinniger	21.8%
S. proriger	0.1%
S. reedi	0.4%
S. ruberrimus	0.0%
S. zacentrus	0.2%
Sb. alascanus	0.0%
Unidentified	4.7%

Table 8. Washington landings of rockfish (mt) from Pacific Fisherman yearbooks (I. Stewart, NMFS, pers. comm.). Alverson (1957) reported the fraction of Washington rockfish catch from U.S. waters in 1953, separately for POP and the “other rockfish” categories. Prior to 1952 the average fraction for the two categories is applied.

Year	WA Rockfish Landings			Assumed fraction of catch from U.S. waters	Estimated WA rockfish landings from U.S. waters
	Source: Pacific Fisherman				
	Rockfish - trawl	POP	Total		
1942	469.2		469.2	0.123	57.7
1943	2025.2		2025.2	0.123	249.1
1944	2327.9		2327.9	0.123	286.3
1945	7300.0		7300.0	0.123	897.9
1946	4578.7		4578.7	0.123	563.2
1947	2732.7		2732.7	0.123	336.1
1948	4655.0		4655.0	0.123	572.6
1949	5720.0		5720.0	0.123	703.6
1950	5538.6		5538.6	0.123	681.2
1951	4508.5		4508.5	0.123	554.5
1952	5120.2	768.5	5888.7	(RF=0.149, POP=0.097)	837.5
1953	3165.7	1406.8	4572.5	(RF=0.149, POP=0.097)	608.2
1954	5832.1	2835.0	8667.1	(RF=0.149, POP=0.097)	1144.0
1955	4119.6	1587.0	5706.7	(RF=0.149, POP=0.097)	767.8

Table 9. Assumed discard ratios (discard / retained). See text for sources and details.

Species Code	Pikitch et al., 1988	WCGOP Trawl Reports	Comments
ARRA	0.393	0.983	slope rockfish rate
BRWN		0.113	
BYEL		0.130	nearshore rockfish rate
CHNA		0.130	nearshore rockfish rate
COPP		0.130	nearshore rockfish rate
DSRK		0.000	discard accounted for by Taylor (2008)
FLAG		0.447	shelf rockfish rate
GBLC		0.447	shelf rockfish rate
GRAS		0.130	nearshore rockfish rate
GSPT		0.010	
KLPG_CA		0.000	Cope and MacCall, 2005
KLPR		0.130	nearshore rockfish rate
LSRK		0.000	high survival
OLVE		0.130	nearshore rockfish rate
PDAB	3.165	1.156	unspecified flatfish rate
PNKR		0.983	slope rockfish rate
QLBK		0.130	nearshore rockfish rate
RDBD	0.112	0.983	slope rockfish rate
REDS	1.393	0.447	shelf rockfish rate
REX	0.559	0.174	
REYE	0.001	0.100	slope, retained
ROSY		0.447	shelf rockfish rate
RSOL	0.379	0.256	
RSTN	2.065	0.447	shelf rockfish rate
SHRP	2.219	0.983	slope rockfish rate
SLGR	0.019	0.447	shelf rockfish rate
SPKL		0.447	shelf rockfish rate
SRKR		0.100	slope, retained
SSOL	0.104	0.261	
STAR		0.447	shelf rockfish rate
STRK		0.447	shelf rockfish rate
SWSP		0.447	shelf rockfish rate
TREE		0.130	nearshore rockfish rate
VRML	0.007	0.050	shelf, but often retained
YMTH	0.008	0.983	slope rockfish rate

Table 10. DCAC distribution summary statistics based on 10,000 Monte Carlo simulations.

Common Name	Species Code	mean	quantiles				
			2.50%	25%	50%	75%	97.50%
Aurora rockfish	ARRA	32.2	13.9	24.6	31.8	39.5	52.9
Brown Rockfish	BRWN	116.8	78.6	107.2	119.5	129.4	140.9
Black-and-Yellow Rockfish	BYEL	12.5	8.7	11.5	12.8	13.7	14.9
China Rockfish	CHNA	17.0	10.0	14.9	17.3	19.3	22.1
Copper Rockfish	COPP	132.1	78.8	116.6	134.6	149.7	169.9
Spiny dogfish	DSRK	1471.9	770.0	1243.2	1500.2	1719.4	2059.1
Flag Rockfish	FLAG	20.8	14.9	19.5	21.2	22.6	24.1
Greenblotched Rockfish	GBLC	23.0	15.5	21.1	23.5	25.4	27.7
Grass Rockfish	GRAS	32.0	23.4	30.1	32.7	34.5	36.8
Greenspotted Rockfish	GSPT	103.6	69.9	95.3	105.8	114.2	124.8
Kelp greenling (CA)	KLPG_CA	52.4	41.3	50.1	53.2	55.6	58.1
Kelp Rockfish	KLPR	13.8	10.1	13.0	14.1	15.0	16.0
Leopard shark	LSRK	113.2	64.7	98.4	115.7	130.1	149.6
Olive Rockfish	OLVE	112.8	78.9	104.9	115.2	123.4	133.3
Pacific sanddab	PDAB	1275.5	759.6	1123.7	1301.9	1451.7	1651.5
Pink Rockfish	PNKR	2.1	1.1	1.8	2.1	2.4	2.9
Quillback Rockfish	QLBK	7.5	3.9	6.3	7.6	8.7	10.4
Redbanded Rockfish	RDBD	49.4	23.4	39.3	49.5	59.5	74.7
Redstripe Rockfish	REDS	262.8	127.6	216.4	266.0	312.4	378.2
Rex sole	REX	1181.7	776.9	1072.1	1208.2	1319.0	1442.6
Rougheyeye Rockfish	REYE	36.5	12.4	25.5	35.0	46.2	68.3
Rosy Rockfish	ROSY	19.4	15.9	18.7	19.7	20.4	21.2
Rock sole	RSOL	16.3	9.3	14.3	16.7	18.6	21.3
Rosethorn Rockfish	RSTN	12.7	5.8	10.3	12.8	15.2	19.0
Sharpchin Rockfish	SHRP	205.2	101.0	169.9	207.0	243.1	296.3
Silvergray Rockfish	SLGR	153.4	68.0	120.2	152.7	186.2	240.7
Speckled Rockfish	SPKL	29.1	19.3	26.7	29.8	32.3	35.3
Shortraker Rockfish	SRKR	16.0	5.4	10.8	15.1	20.2	31.7
Sand sole	SSOL	147.0	118.8	141.5	149.6	155.1	161.2
Starry Rockfish	STAR	39.0	29.0	36.9	39.8	42.0	44.4
Stripetail Rockfish	STRK	36.5	23.6	33.3	37.3	40.6	44.8
Swordspine Rockfish	SWSP	11.5	6.8	10.2	11.8	13.0	14.7
Treefish	TREE	6.3	4.6	5.9	6.4	6.8	7.3
Vermillion Rockfish	VRML	177.5	112.0	159.1	181.1	199.6	223.8
Yellowmouth Rockfish	YMTH	148.3	61.8	112.7	146.2	181.5	247.5



Table 11. OFL distribution summary statistics from DB-SRA for 2011.

<b>Common Name</b>	<b>Mean</b>	<b>2.50%</b>	<b>25%</b>	<b>50%</b>	<b>75%</b>	<b>97.50%</b>
Aurora rockfish	74.9	2.9	18.5	47.5	97.8	303.1
Brown Rockfish	278.1	42.4	118.3	201.2	333.5	1002.5
Black-and-Yellow Rockfish	37.8	5.6	15.8	27.0	45.7	138.7
China Rockfish	48.0	2.1	12.3	31.5	64.1	189.0
Copper Rockfish	271.6	12.8	74.6	187.0	368.1	1037.6
Spiny dogfish	3393.0	145.8	857.1	2229.8	4610.4	13328.6
Flag Rockfish	37.5	1.8	10.1	26.6	51.4	136.7
Greenblotched Rockfish	40.4	1.8	10.5	27.7	52.6	150.0
Grass Rockfish	75.2	12.1	32.6	55.3	91.8	273.3
Greenspotted Rockfish	306.9	45.3	124.4	217.5	372.8	1136.4
Kelp greenling (CA)	148.0	24.8	64.1	107.4	179.3	548.7
Kelp Rockfish	36.4	5.8	15.4	26.1	43.1	129.2
Leopard shark	245.4	10.8	66.3	164.6	331.5	944.9
Olive Rockfish	264.2	40.9	110.0	189.1	315.0	970.0
Pacific sanddab	6227.7	1123.1	2881.5	4966.9	8112.3	18939.7
Pink Rockfish	4.2	0.2	1.1	2.8	5.8	16.4
Quillback Rockfish	22.8	1.0	5.6	14.2	30.4	92.8
Redbanded Rockfish	86.7	3.8	22.8	57.8	118.6	335.3
Redstripe Rockfish	442.9	19.2	112.7	292.0	609.2	1761.2
Rex sole	5455.3	942.4	2498.0	4307.2	7068.7	16749.4
Rougheye Rockfish	96.3	3.0	20.7	53.8	120.2	429.7
Rosy Rockfish	54.4	9.0	23.7	38.9	65.3	194.9
Rock sole	86.1	14.0	38.7	66.1	111.0	273.4
Rosethorn Rockfish	25.9	1.1	6.6	16.9	35.2	102.4
Sharpchin Rockfish	375.9	16.5	99.5	251.8	509.3	1460.1
Silvergray Rockfish	278.7	11.6	70.9	181.3	376.9	1111.5
Speckled Rockfish	61.4	2.9	16.8	42.8	83.9	228.8
Shortraker Rockfish	39.3	1.2	8.0	20.9	47.6	184.8
Sand sole	939.7	170.6	437.1	756.4	1219.4	2777.9
Starry Rockfish	104.0	5.0	28.2	71.8	142.0	382.1
Stripetail Rockfish	77.1	12.3	32.5	55.9	92.7	278.2
Swordspine Rockfish	19.7	0.9	5.4	13.4	27.0	72.7
Treefish	18.6	2.9	7.8	13.4	22.1	69.9
Vermillion Rockfish	480.5	20.7	119.5	312.1	654.5	1896.0
Yellowmouth Rockfish	265.8	32.9	102.1	181.3	321.9	1052.9

Table 12. Percentage of runs retained by DB-SRA analysis

Species Code	Percent Retained
ARRA	100%
BRWN	86%
BYEL	99%
CHNA	100%
COPP	85%
DSRK	85%
FLAG	73%
GBLC	69%
GRAS	75%
GSPT	80%
KLPG_CA	67%
KLPR	75%
LSRK	55%
OLVE	48%
PDAB	88%
PNKR	78%
QLBK	100%
RDBD	99%
REDS	79%
REX	76%
REYE	100%
ROSY	35%
RSOL	94%
RSTN	97%
SHRP	85%
SLGR	91%
SPKL	69%
SRKR	100%
SSOL	43%
STAR	80%
STRK	63%
SWSP	23%
TREE	98%
VRML	99%
YMTH	95%

Table 13. Assumed catch in 2010 (the average of 2008-09 catch), median OFL in 2010, and the probability that the assumed 2010 catch exceeds the OFL. Probabilities > 50% are in bold italics.

	Assumed 2010 Catch (avg. of 2008-09 Catch)	Median OFL, 2010	Probability that Assumed Catch Exceeds the 2010 OFL
Aurora rockfish	28.7	46.4	37%
Brown Rockfish	80.9	194.1	13%
Black-and-Yellow Rockfish	22.2	26.8	40%
China Rockfish	33.4	32.0	<b>51%</b>
Copper Rockfish	65.0	179.0	23%
Spiny dogfish	839.2	2098.2	25%
Flag Rockfish	5.3	25.0	12%
Greenblotched Rockfish	0.7	26.0	0%
Grass Rockfish	24.1	53.4	16%
Greenspotted Rockfish	11.2	208.8	0%
Kelp greenling (CA)	13.7	101.4	0%
Kelp Rockfish	5.5	24.4	2%
Leopard shark	37.6	148.6	16%
Olive Rockfish	34.6	180.3	2%
Pacific sanddab	408.9	4546.2	0%
Pink Rockfish	0.0	2.7	0%
Quillback Rockfish	15.8	14.8	<b>52%</b>
Redbanded Rockfish	22.1	56.9	25%
Redstripe Rockfish	0.4	287.0	0%
Rex sole	595.1	4280.9	1%
Rougheye Rockfish	127.6	54.3	<b>76%</b>
Rosy Rockfish	6.0	37.3	1%
Rock sole	5.3	62.8	0%
Rosethorn Rockfish	0.2	17.0	0%
Sharpchin Rockfish	1.8	239.0	0%
Silvergray Rockfish	0.9	173.9	0%
Speckled Rockfish	5.1	40.9	6%
Shortraker Rockfish	18.0	21.9	44%
Sand sole	41.0	707.7	0%
Starry Rockfish	23.6	68.3	22%
Stripetail Rockfish	0.1	52.9	0%
Swordspine Rockfish	0.0	13.1	0%
Treefish	7.7	12.9	25%
Vermillion Rockfish	136.2	318.4	28%
Yellowmouth Rockfish	3.6	177.3	0%

## Figures

Figure 1. Box-and-whisker plots of distributions of OFL relative to  $MSY_{SPR}$  (point estimate) from stock assessments, used for bias-correction of OFL distributions of unassessed species. Thick black lines = medians, box = inter-quartile ranges, whiskers = 2.5% and 97.5% quantiles, circles = means. Dotted line is unity. “All.spp” is the combination of relative distributions from 31 stock assessment comparisons. Productivity-based distributions represent flatfish species, non-flatfish high-productivity species, and non-flatfish low-productivity species.

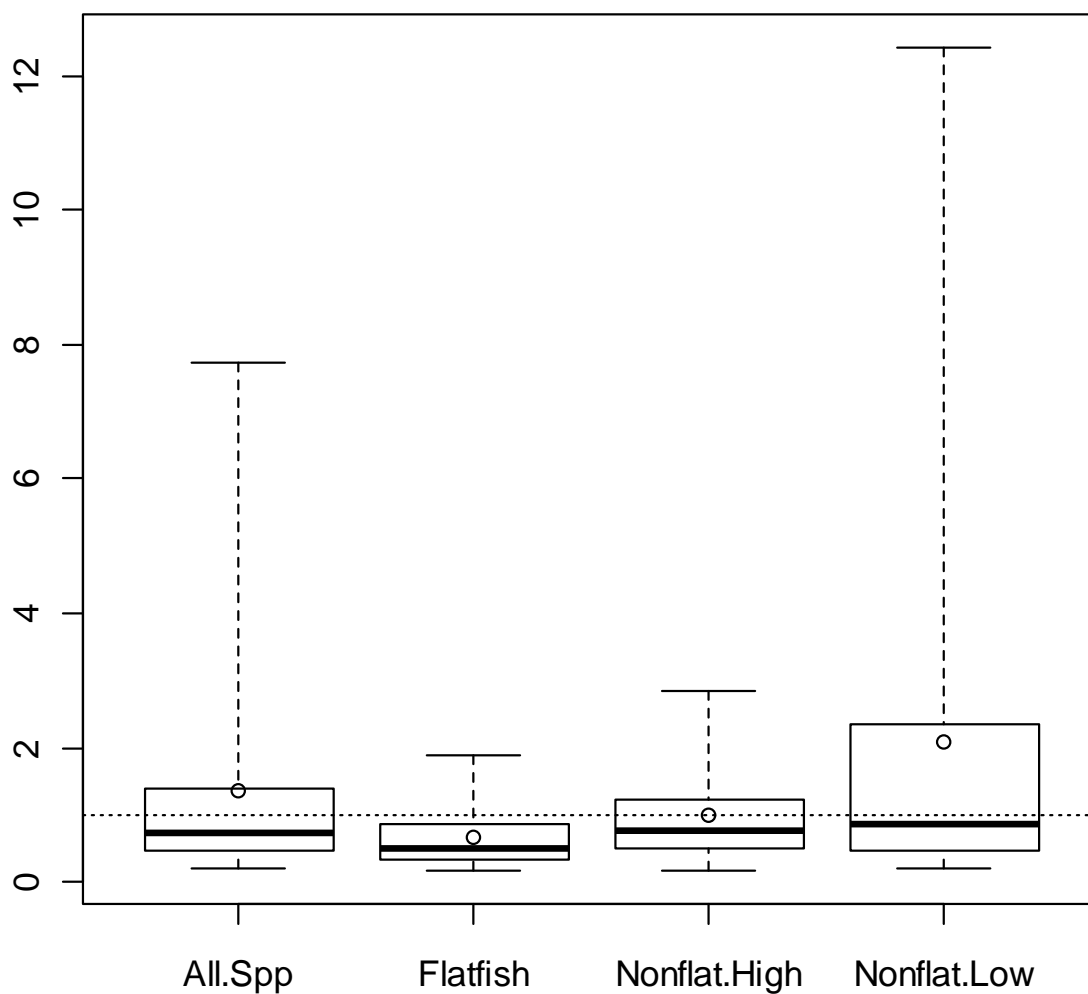


Figure 2. Oregon rockfish landings: trawl landings as a percentage of all gears (solid line) and cumulative percentage of landings from 1927-1980 (dotted line). Source: Oregon commercial catch reconstruction for rockfishes landed by trawl gears (V. Gertseva, pers. comm., February 2010).

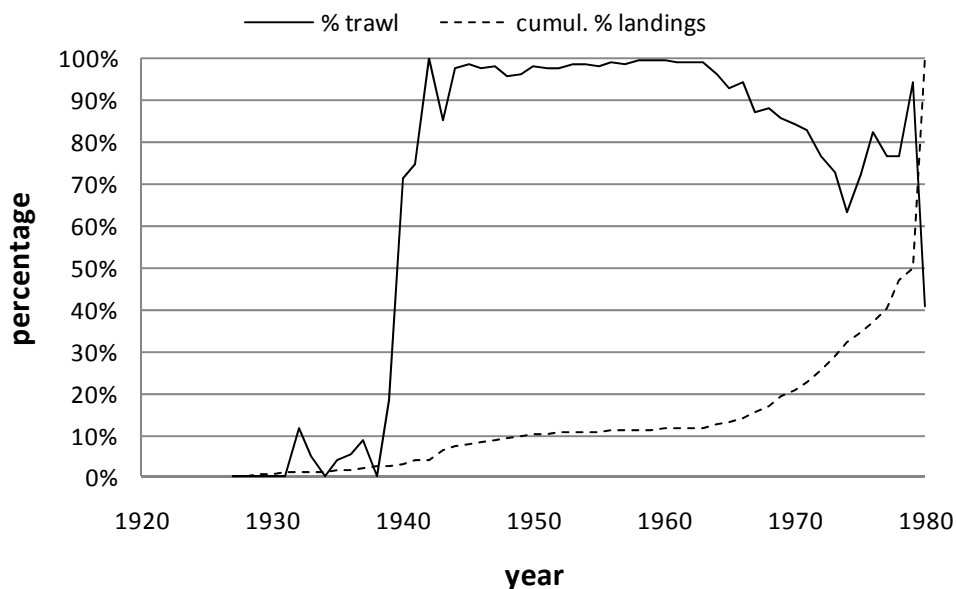


Figure 3. Estimated U.S. and Canadian landings of rex sole originating from PMFC areas 2A-3B, by use category (PMFC Data Series).

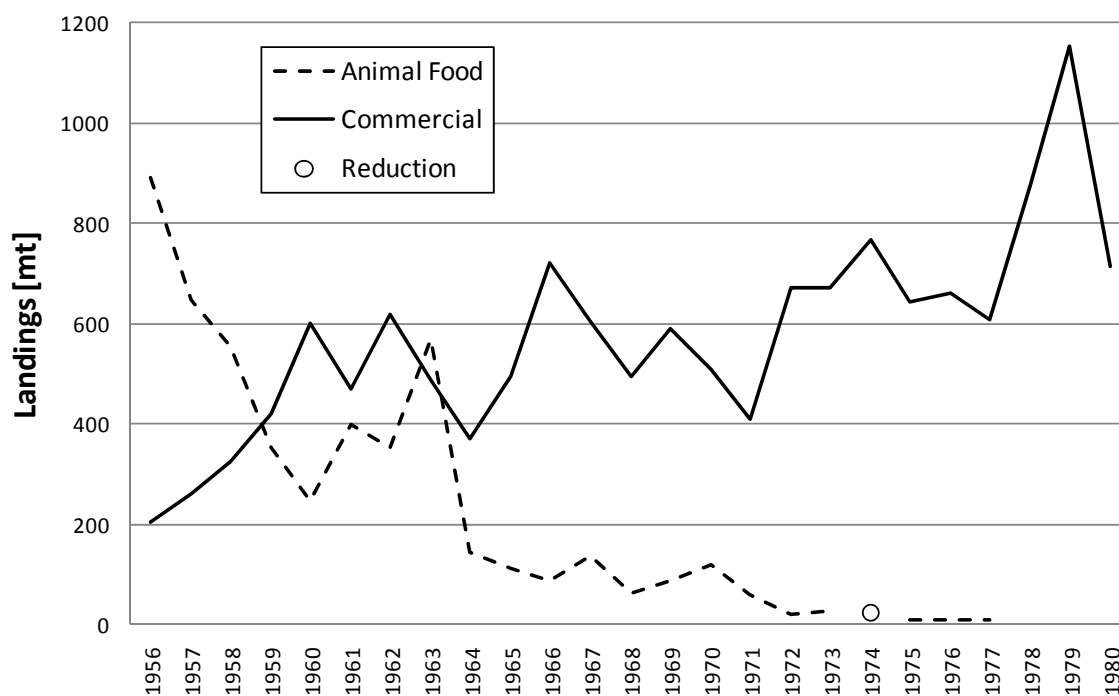


Figure 4. Comparison of landings (mt) reported as rex sole from California Landing Receipts and the Pacific Marine Fisheries Commission (PMFC) Data Series for PMFC areas 1A-1C, 1956-1968.

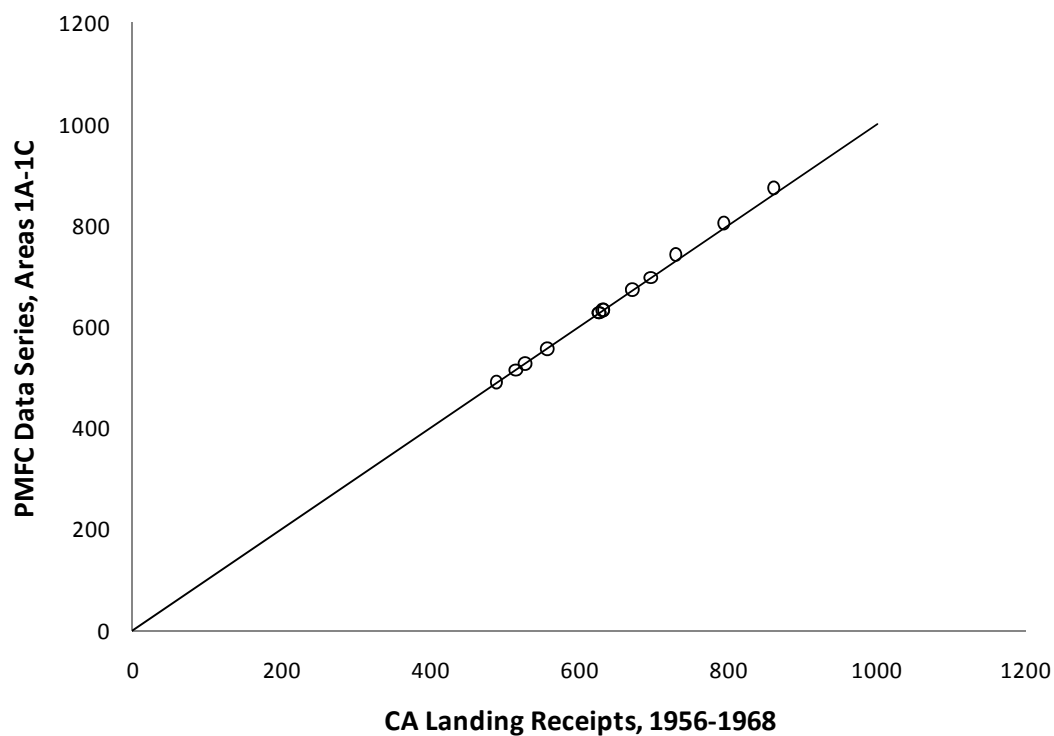


Figure 5. Estimated Oregon, Washington and Canadian landings of rex sole caught in U.S. waters, by PMFC area.

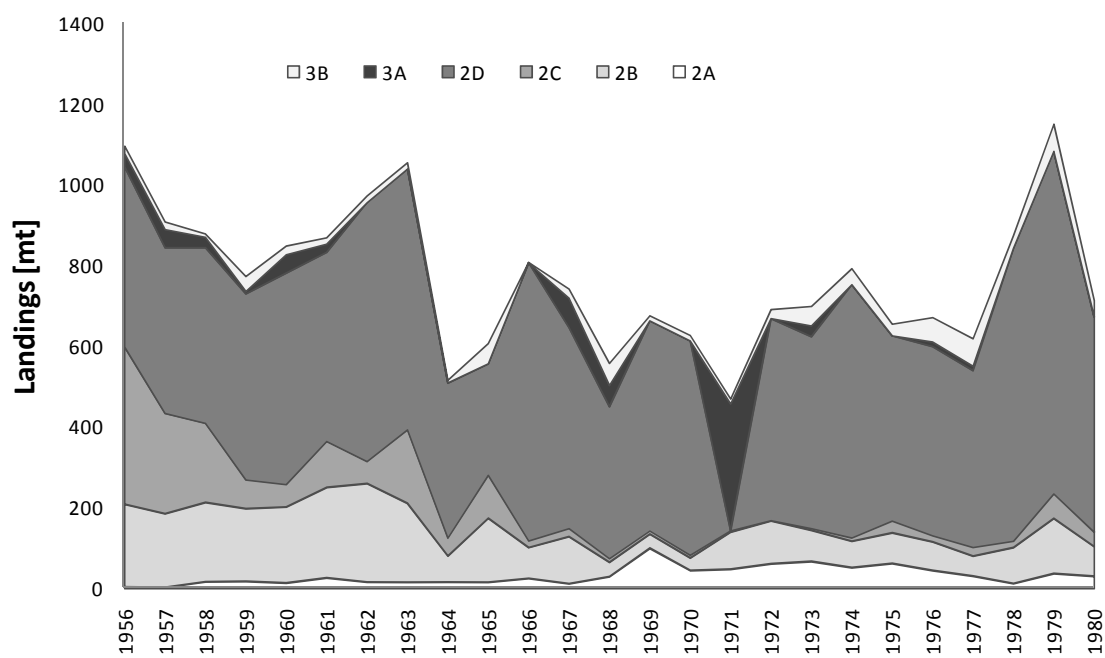


Figure 6. Estimated U.S. and Canadian landings of rock sole originating from PMFC areas 2A-3B (PMFC Data Series).

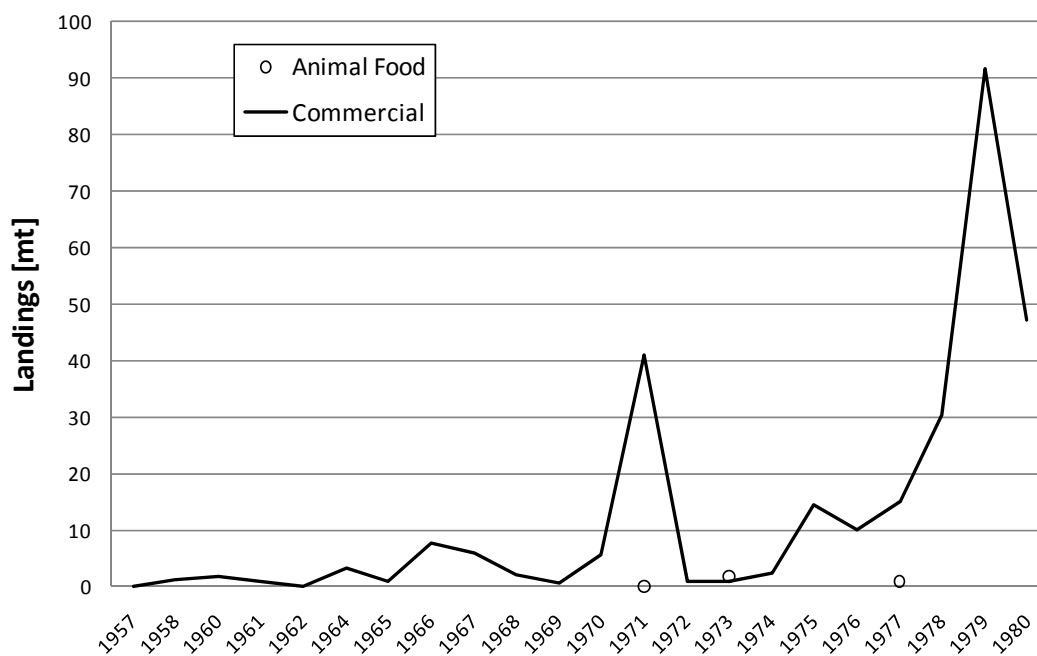


Figure 7. Estimated Washington landings of sand sole from PMFC areas 3A and 3B (Source: WDFW Data Reports and Progress Reports, 1963-1980).

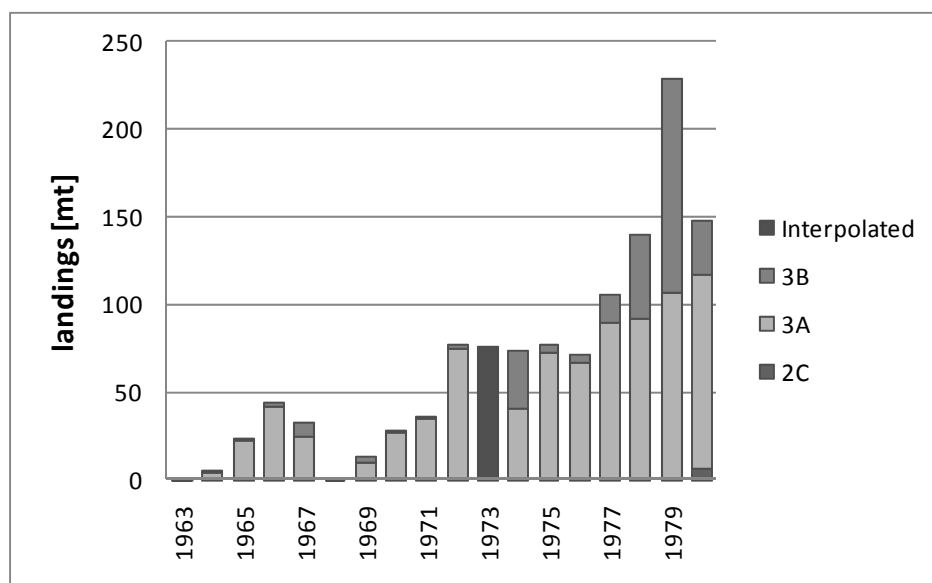


Figure 8. Estimated historical Washington landings of trawl-caught rockfish originating from U.S. waters. See text for description of methods and sources.

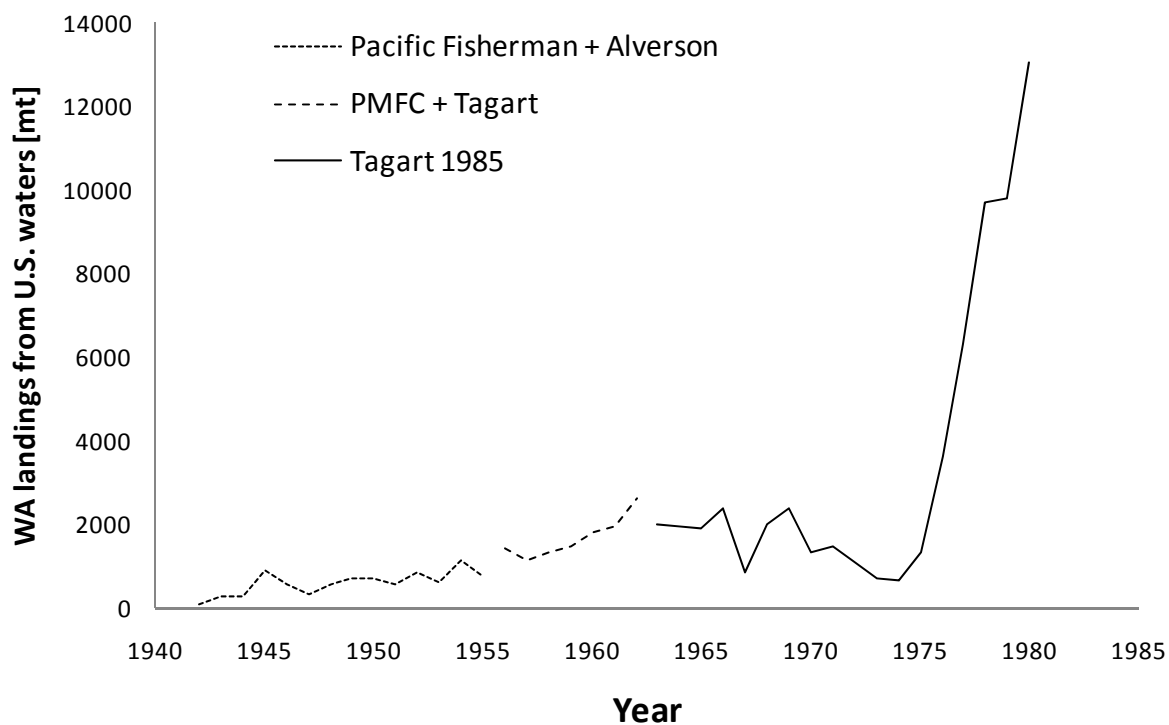




Figure 9. Distributions of DCAC [mt] for unassessed species in the Pacific Coast Groundfish FMP. Solid circles indicate median values.

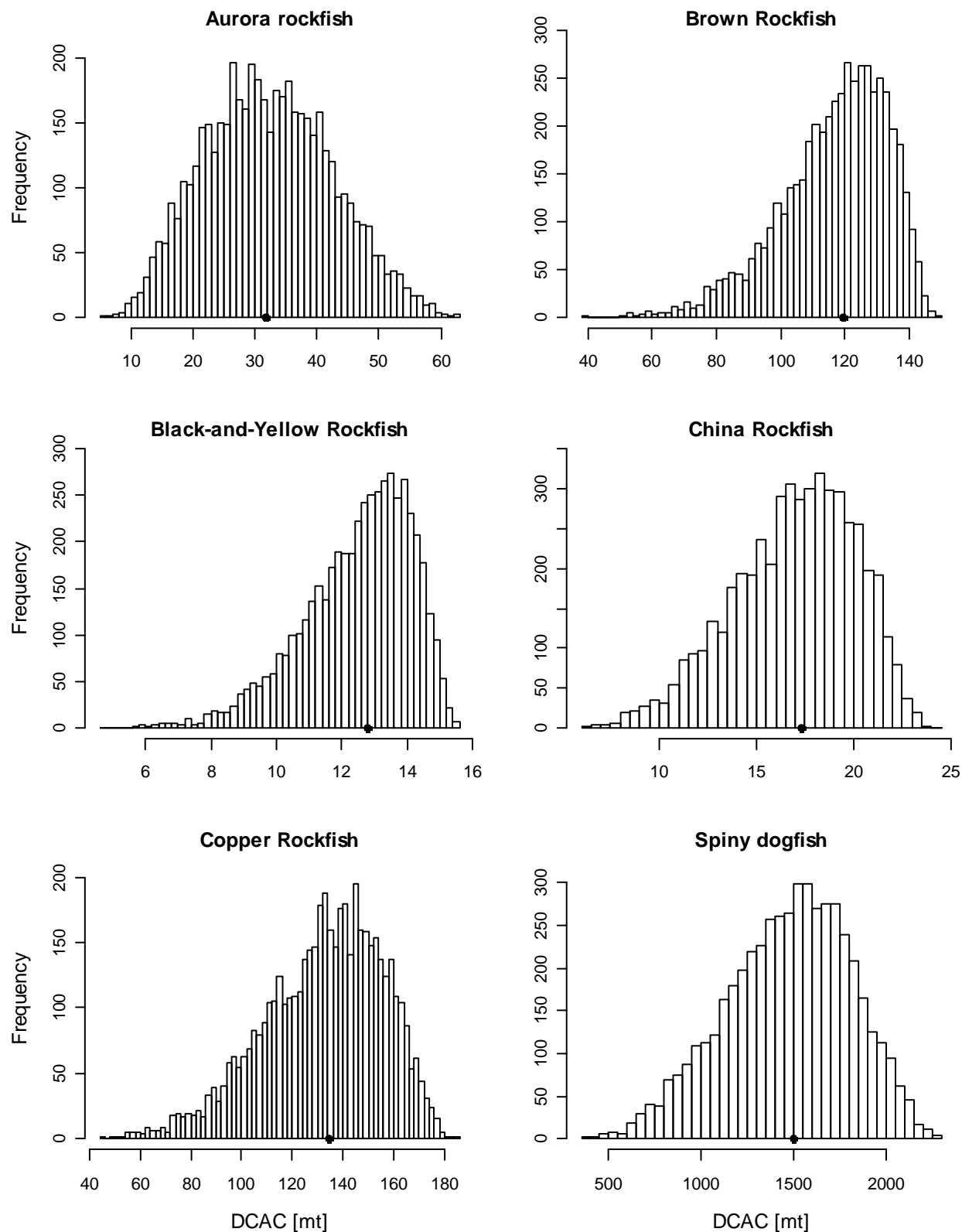


Figure 9 (Continued). Distributions of DCAC [mt] for unassessed species in the Pacific Coast Groundfish FMP. Solid circles indicate median values.

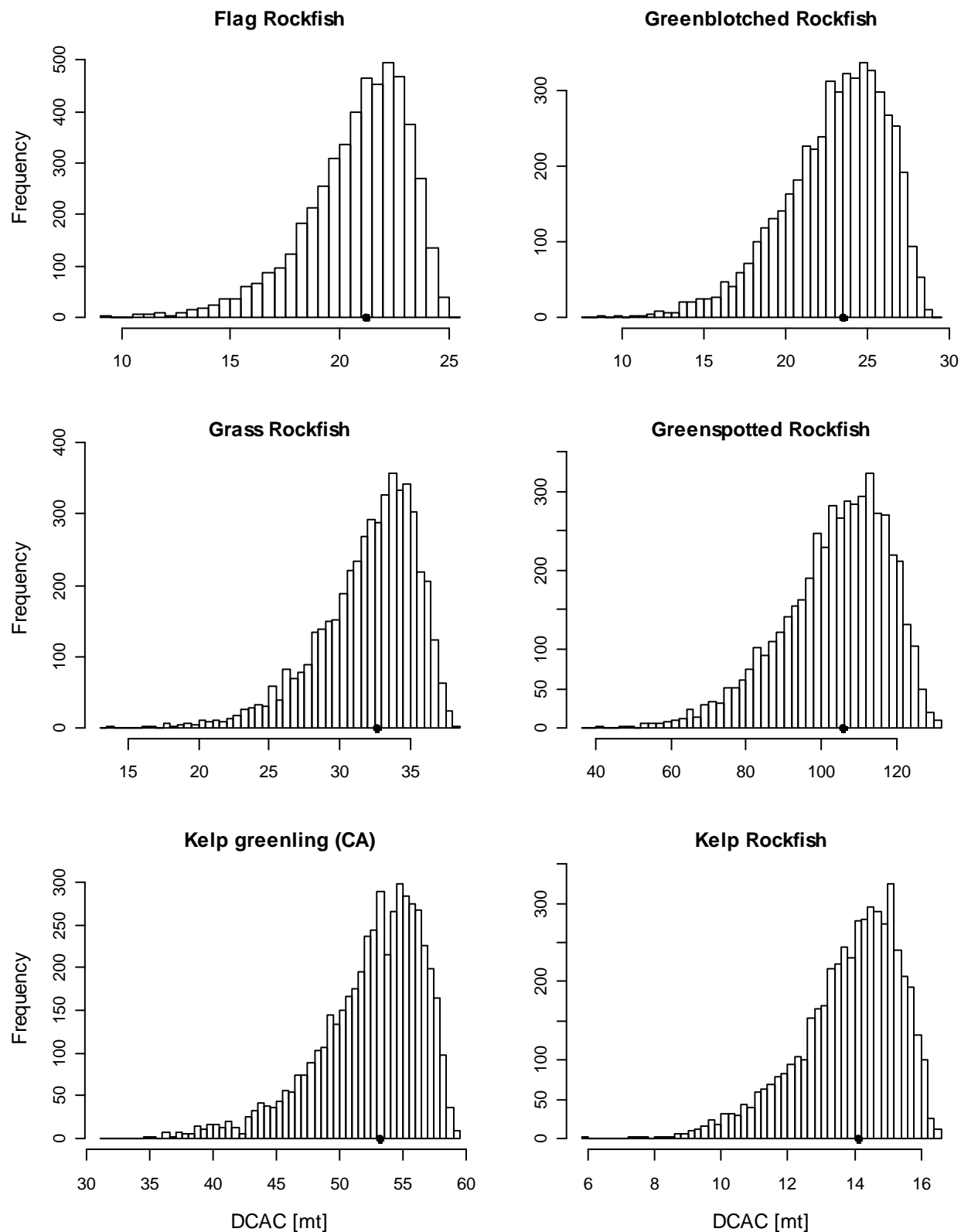


Figure 9 (Continued). Distributions of DCAC [mt] for unassessed species in the Pacific Coast Groundfish FMP. Solid circles indicate median values.

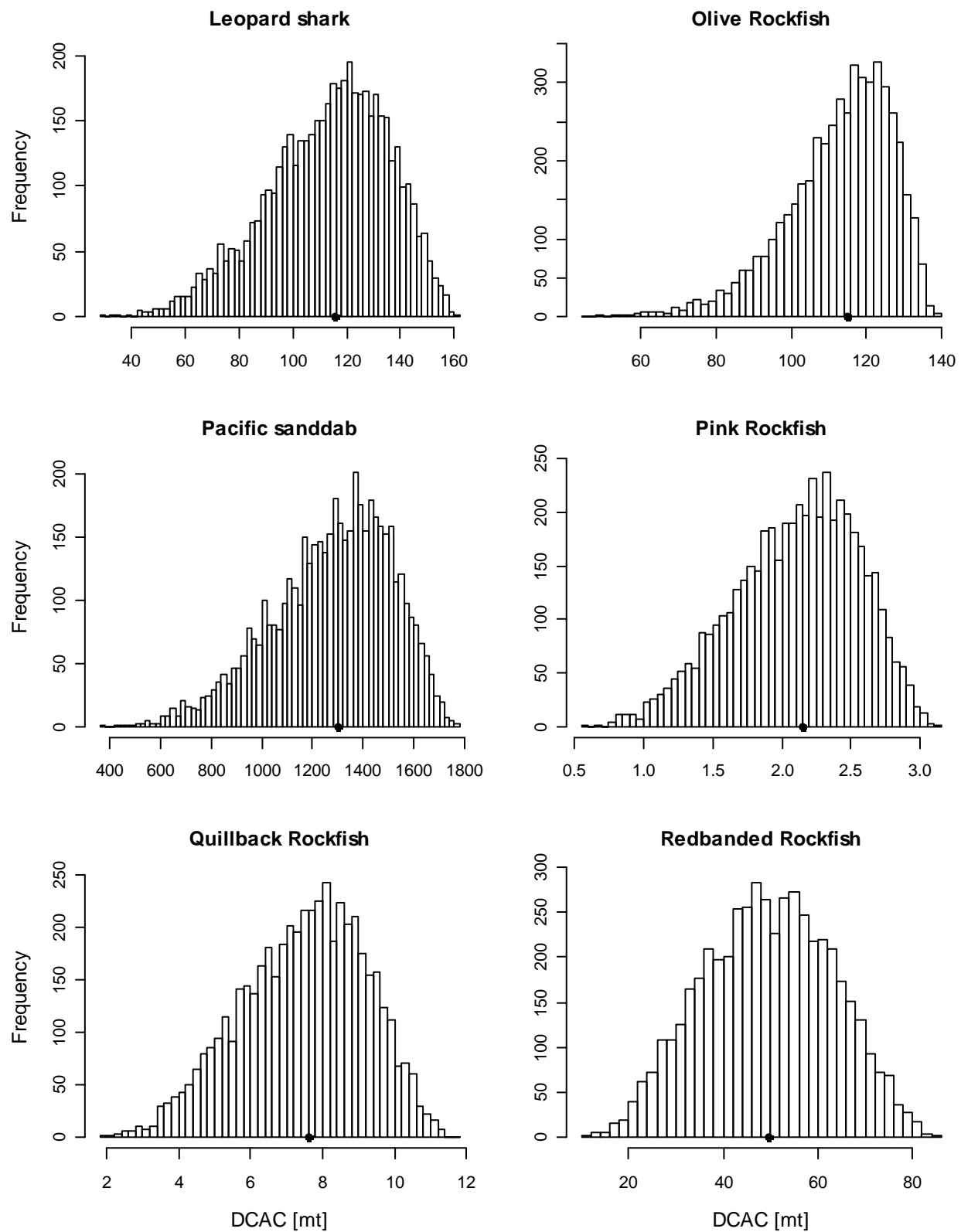


Figure 9 (Continued). Distributions of DCAC [mt] for unassessed species in the Pacific Coast Groundfish FMP. Solid circles indicate median values.

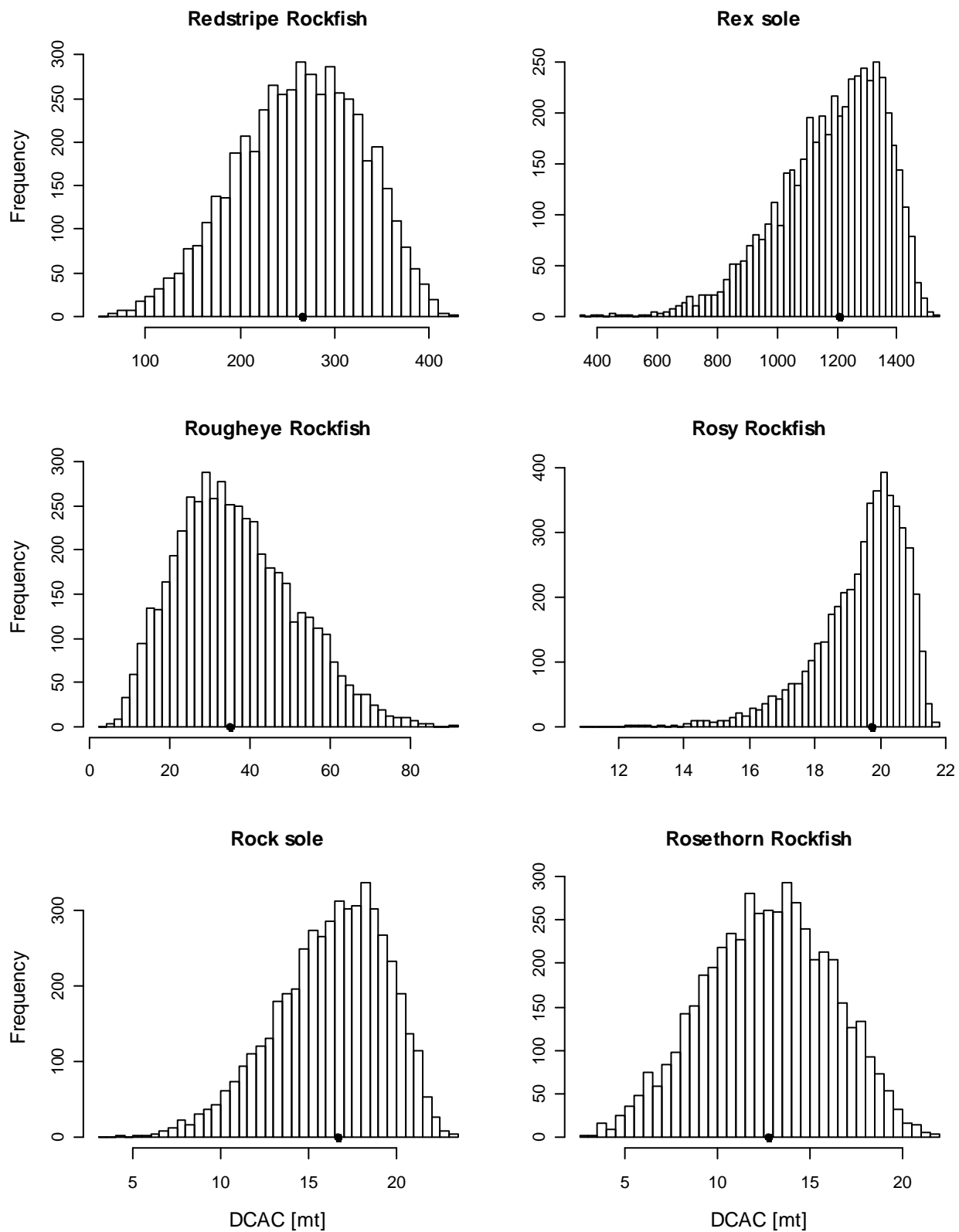


Figure 9 (Continued). Distributions of DCAC [mt] for unassessed species in the Pacific Coast Groundfish FMP. Solid circles indicate median values.

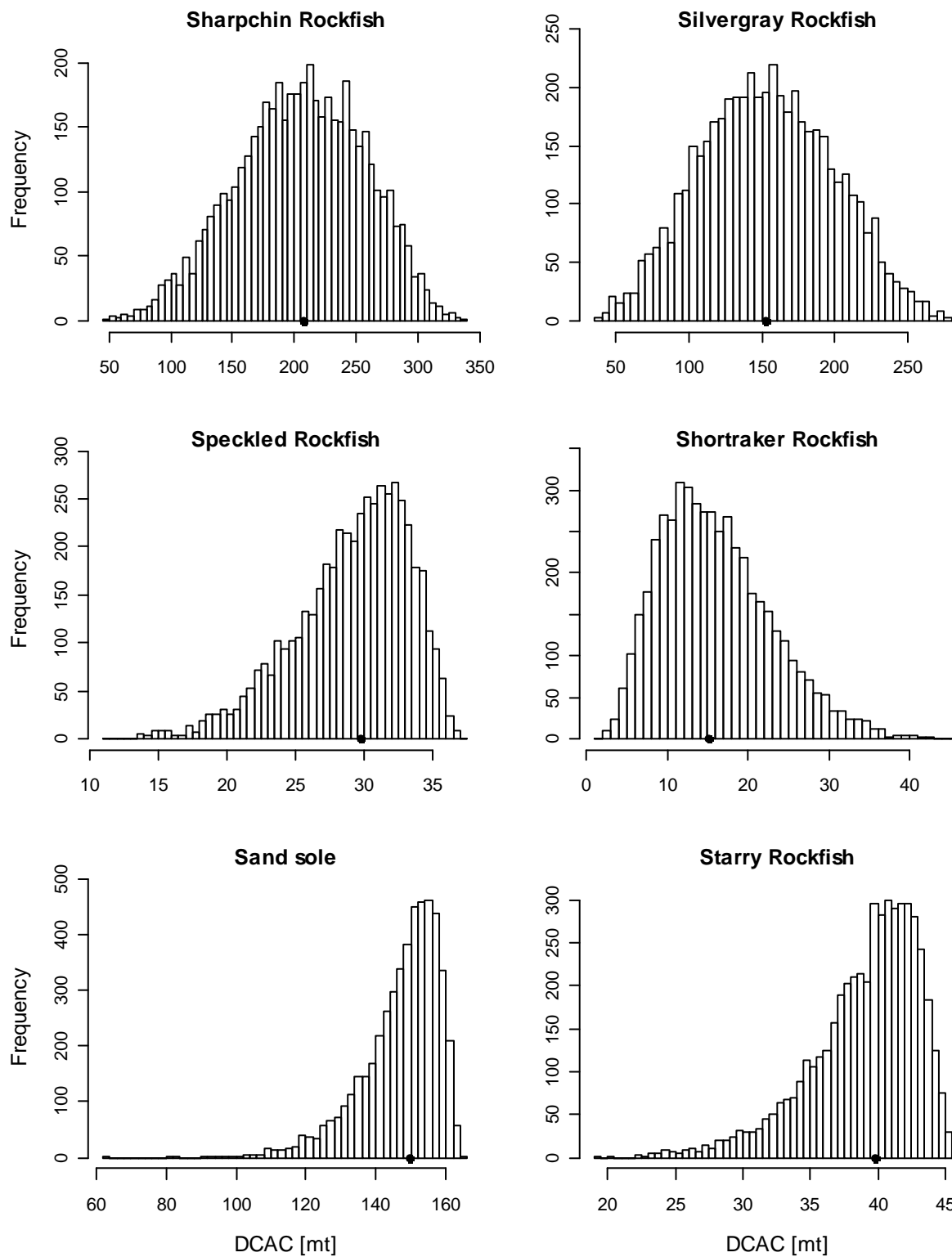


Figure 9 (Continued). Distributions of DCAC [mt] for unassessed species in the Pacific Coast Groundfish FMP. Solid circles indicate median values.

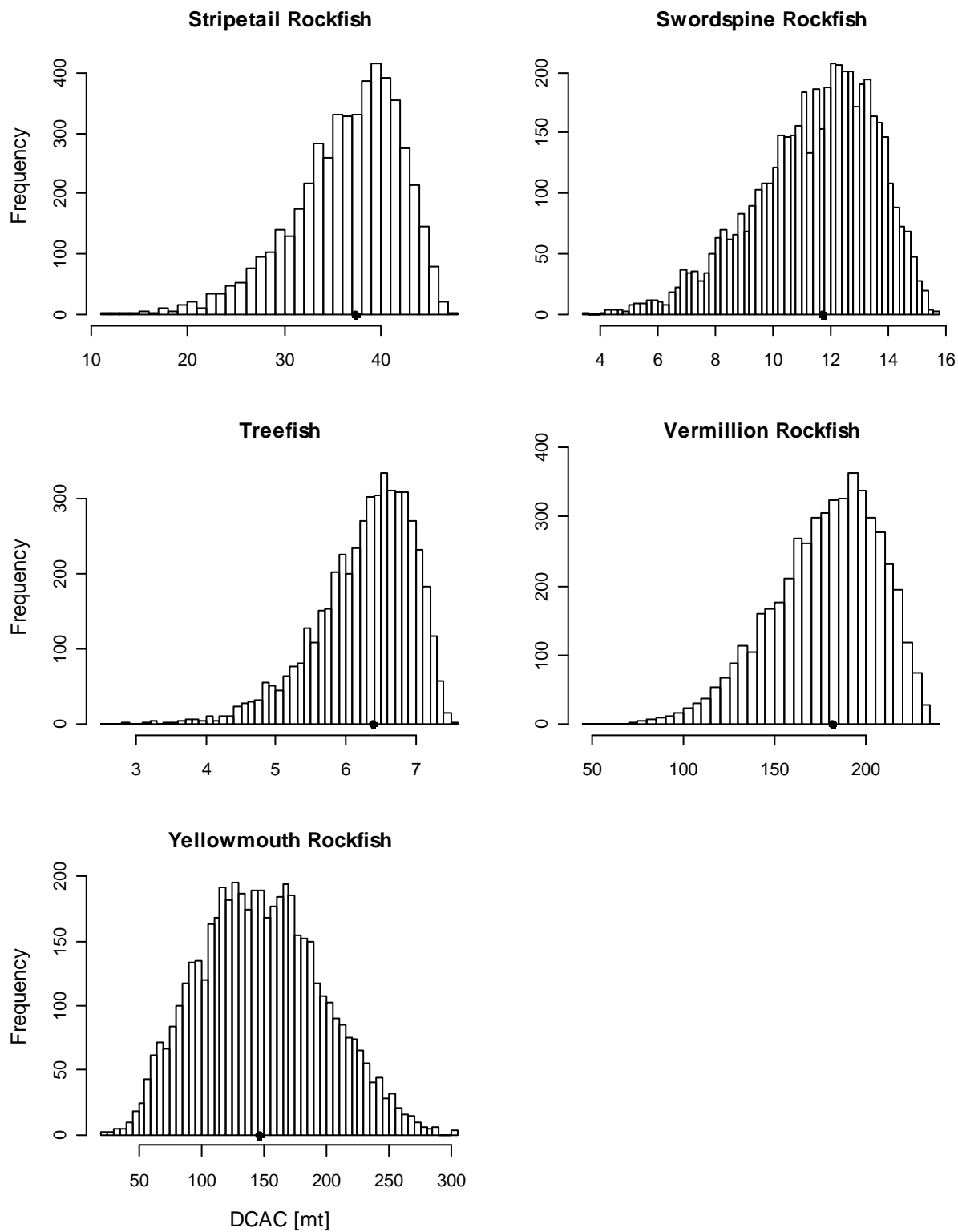


Figure 10. DB-SRA results for aurora rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

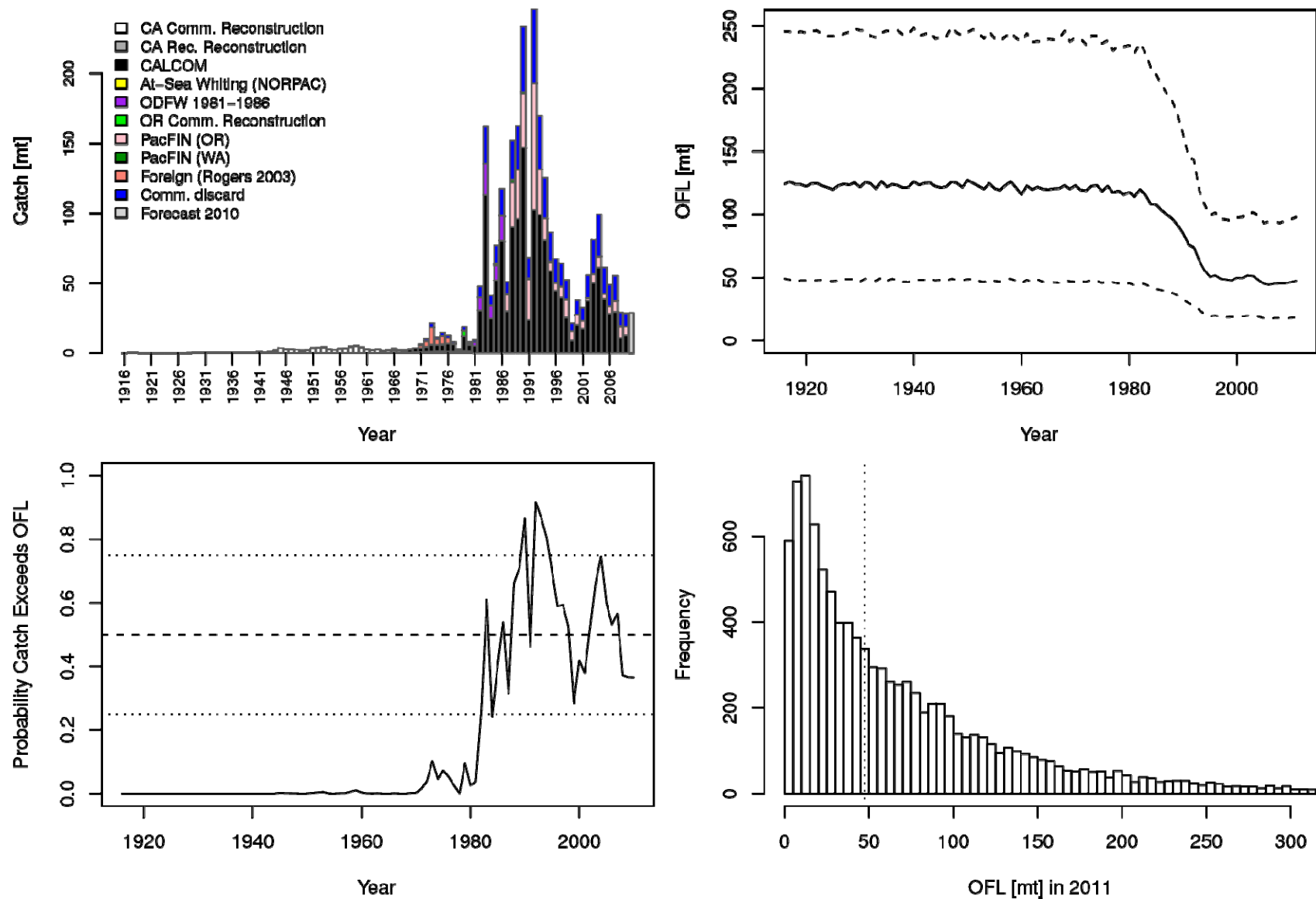


Figure 11. DB-SRA results for brown rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

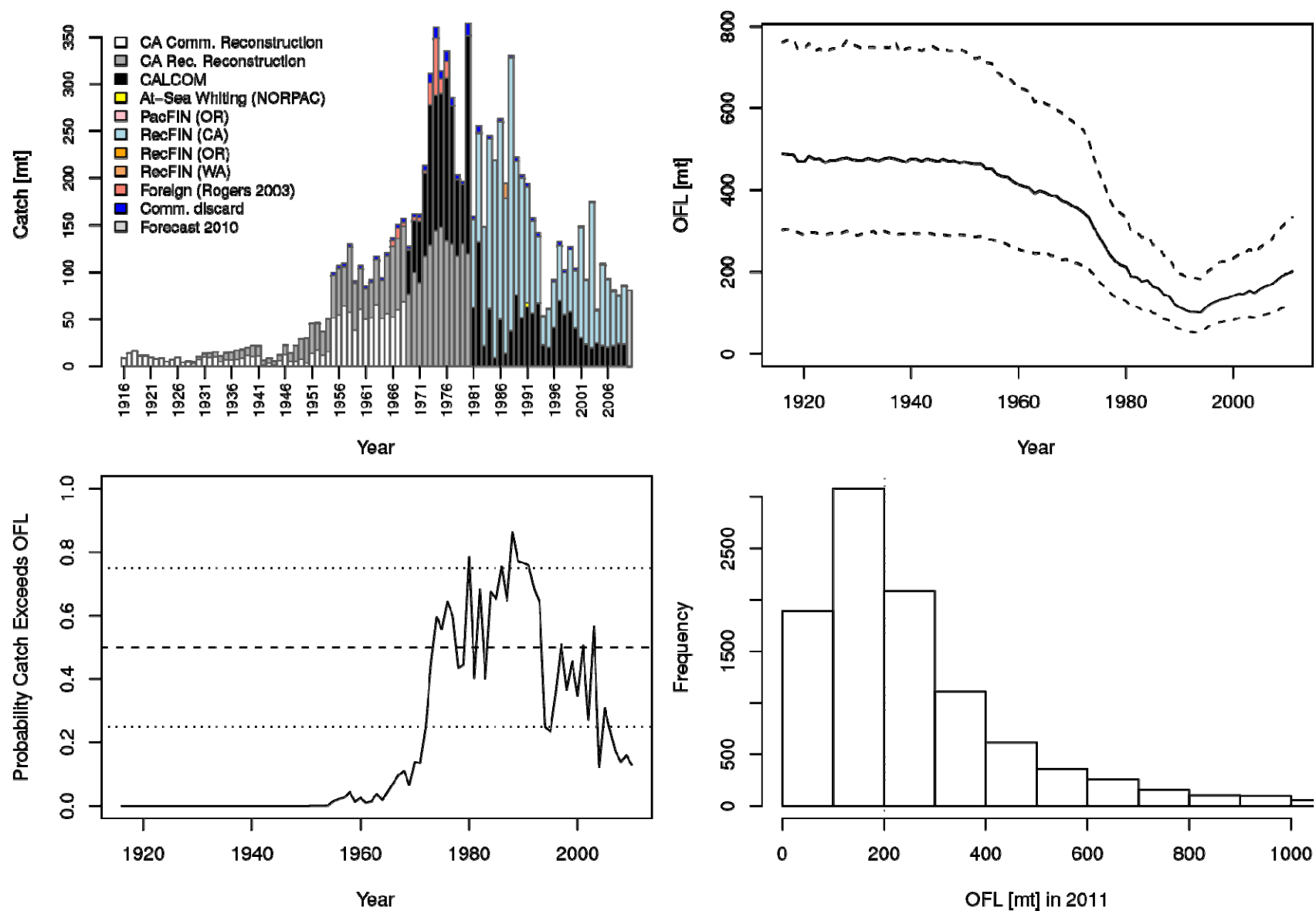




Figure 12. DB-SRA results for black-and-yellow rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

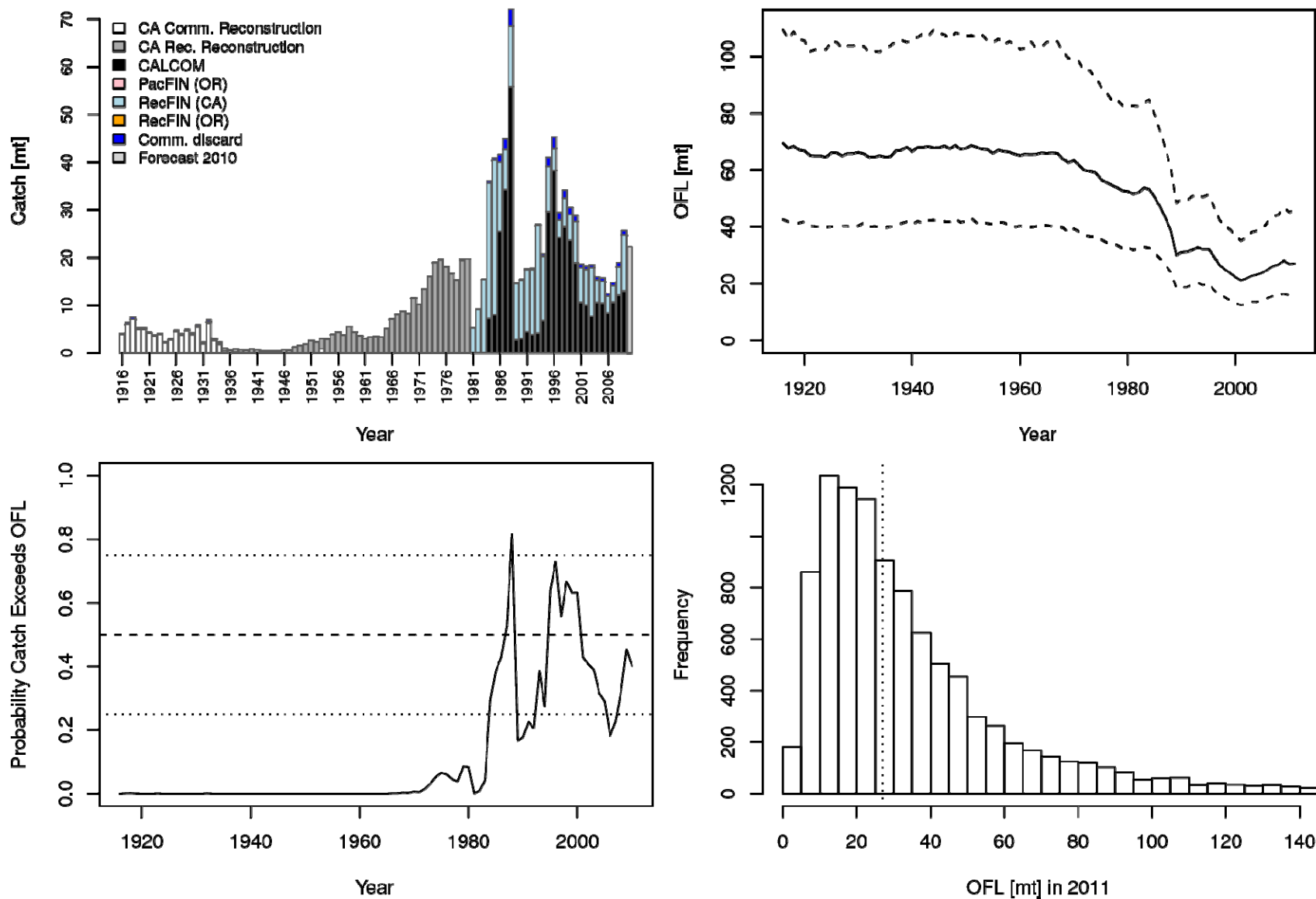


Figure 13. DB-SRA results for china rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

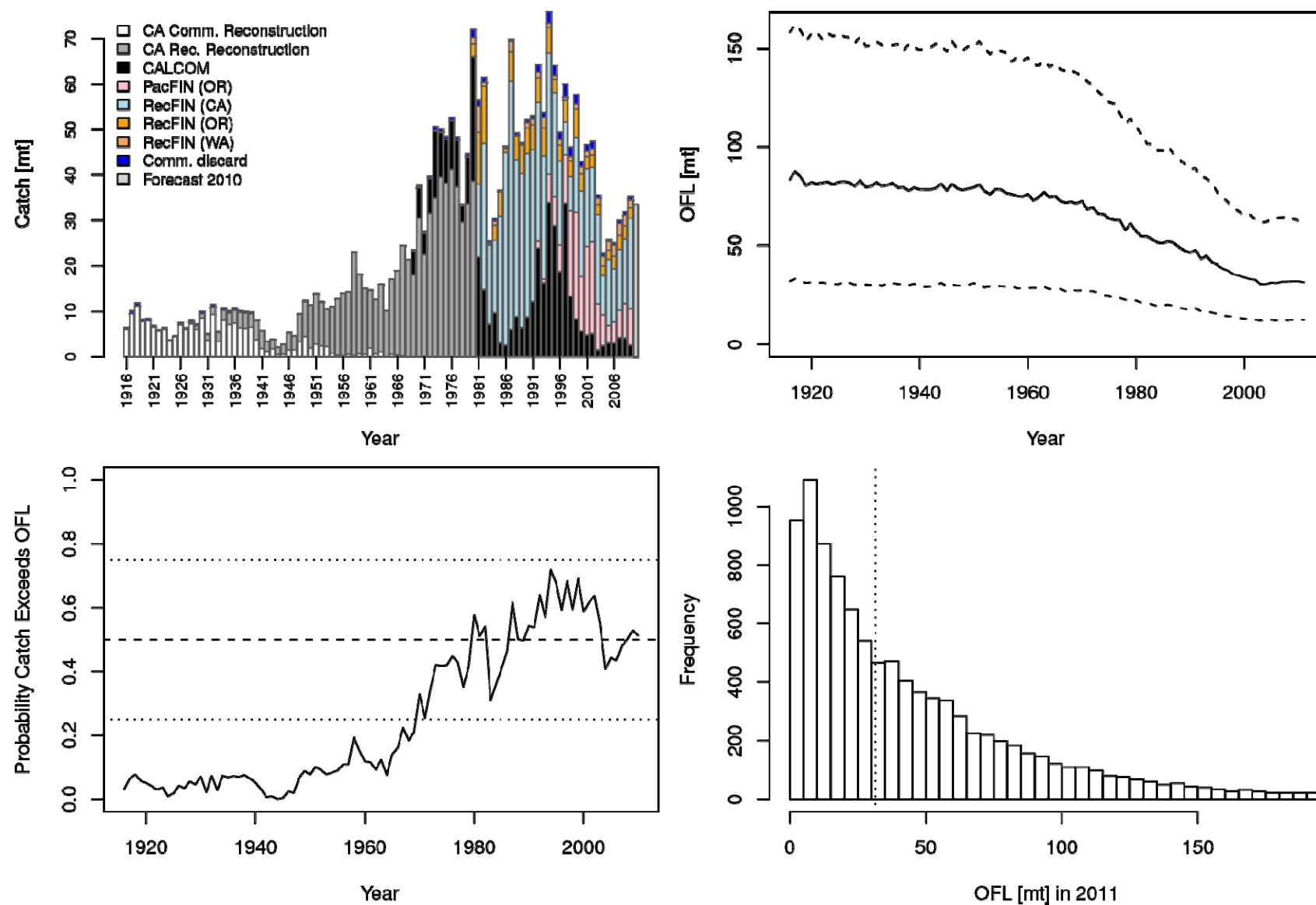


Figure 14. DB-SRA results for copper rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

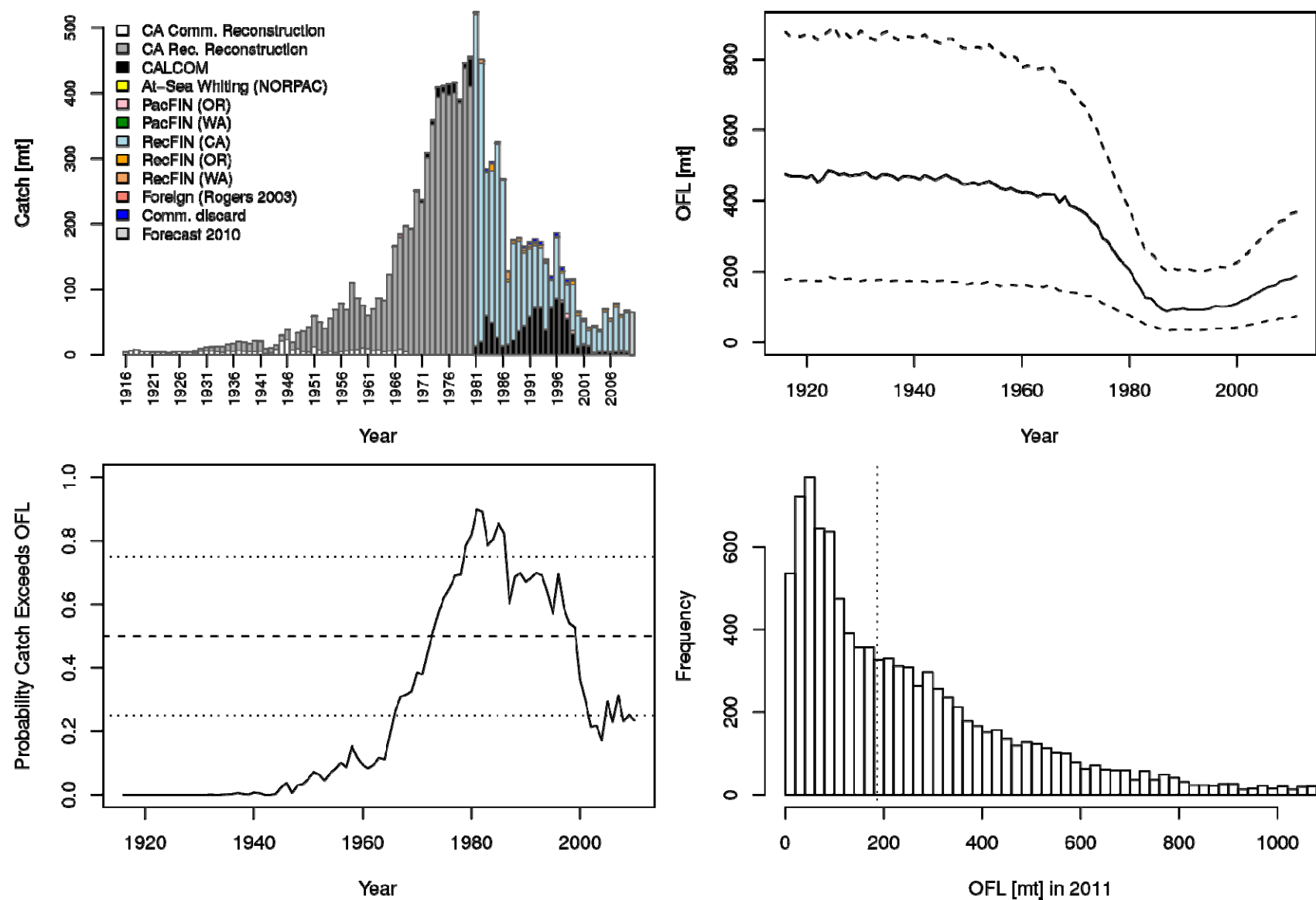


Figure 15. DB-SRA results for spiny dogfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

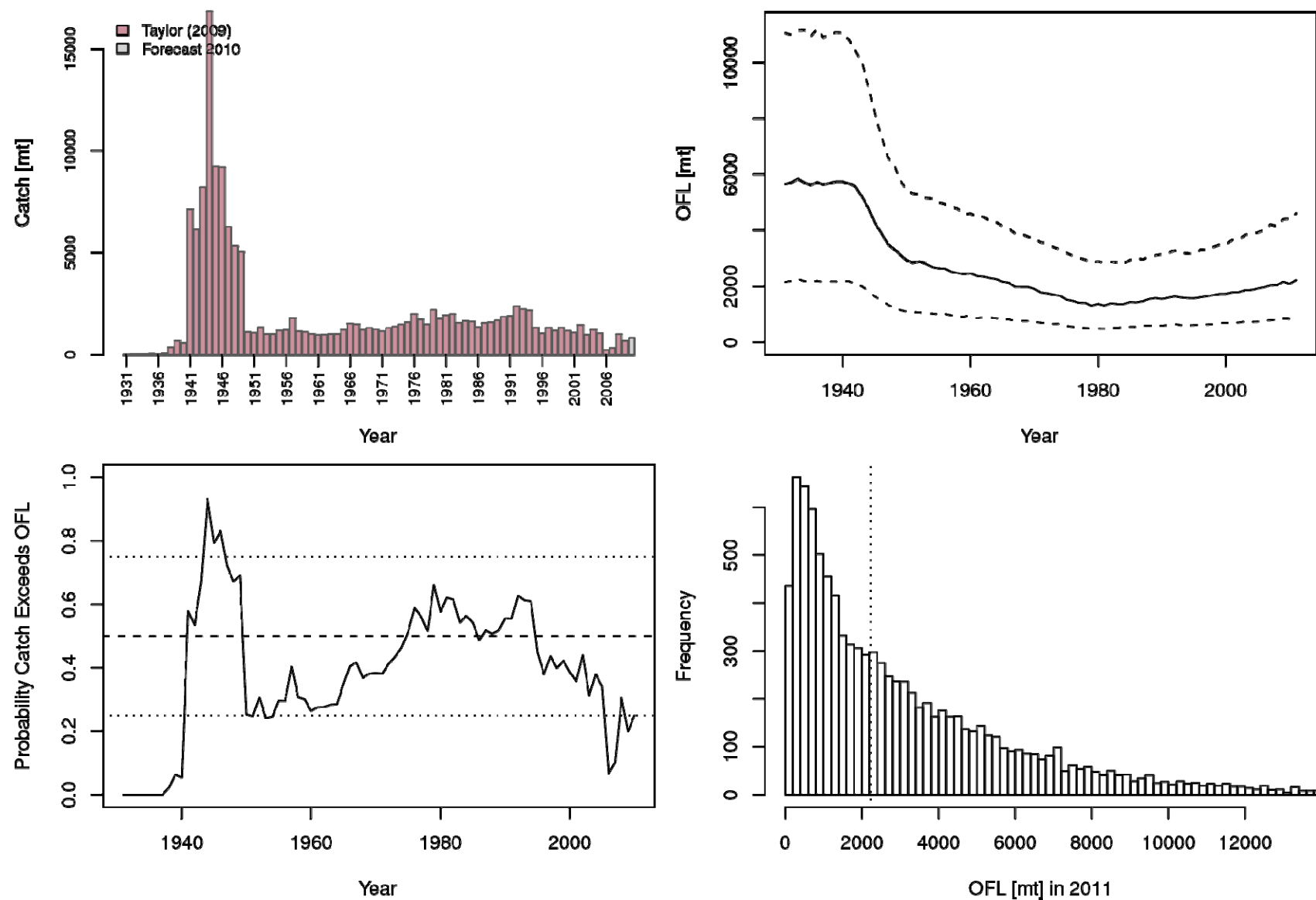


Figure 16. DB-SRA results for flag rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

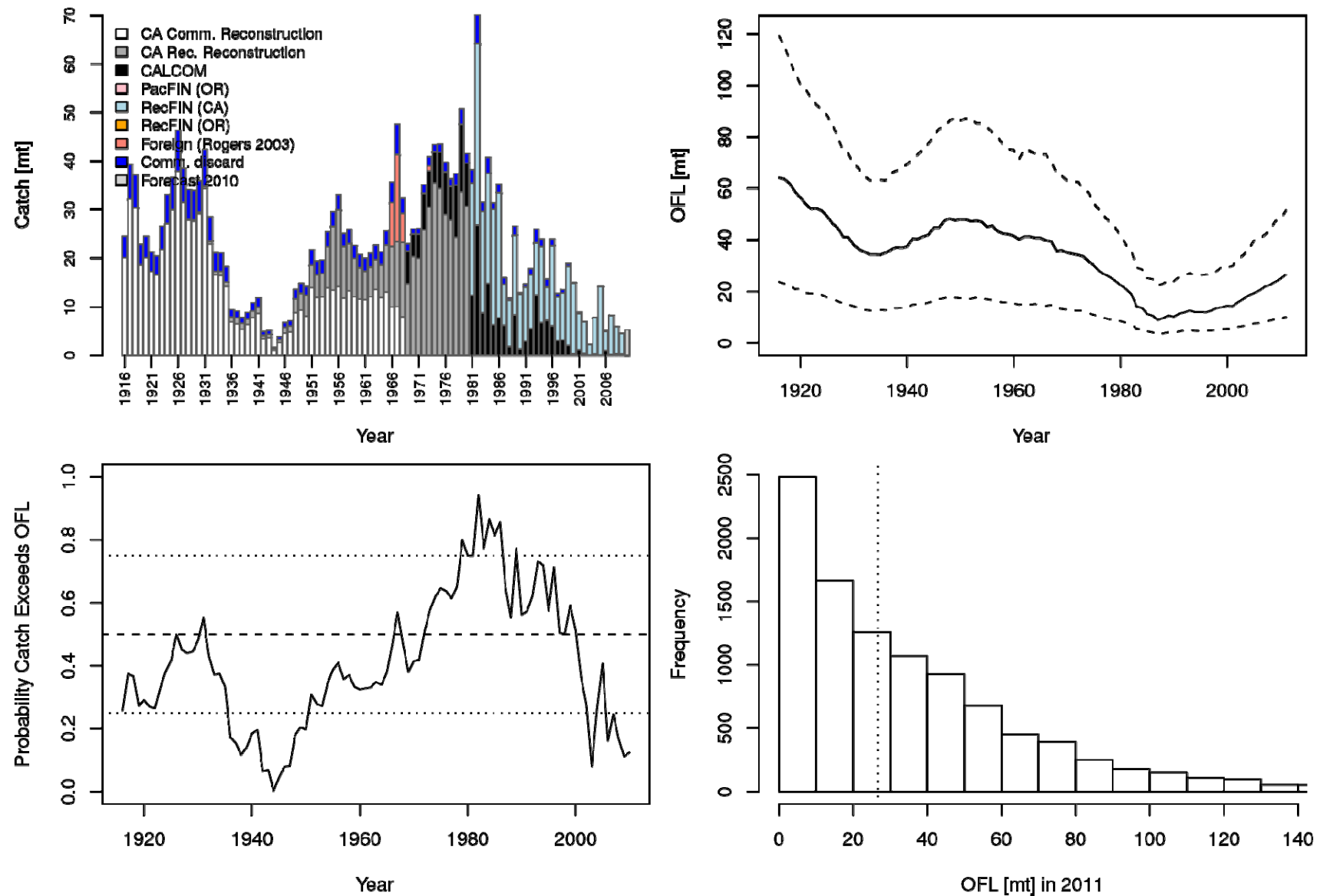


Figure 17. DB-SRA results for greenblotched rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

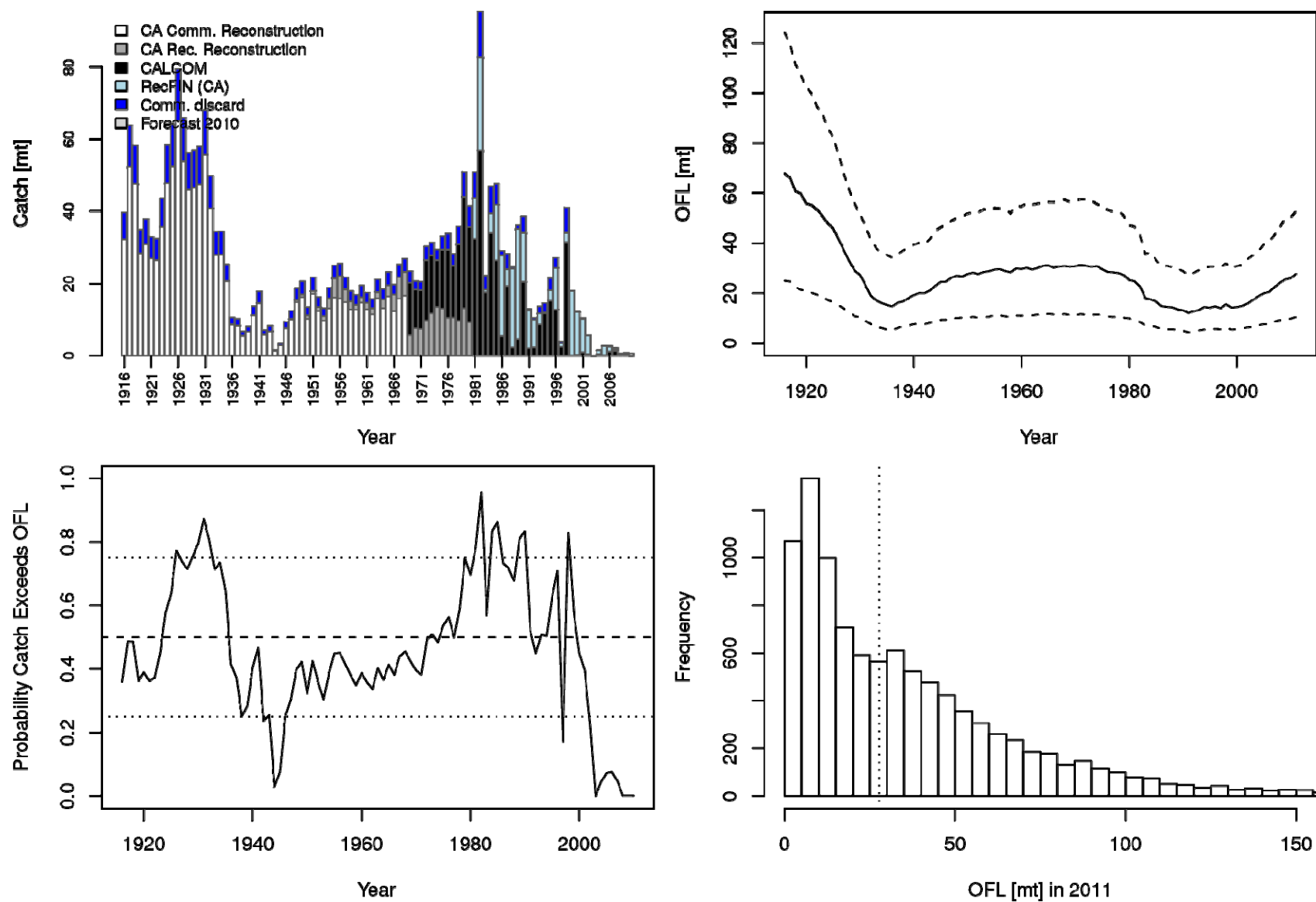


Figure 18. DB-SRA results for grass rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

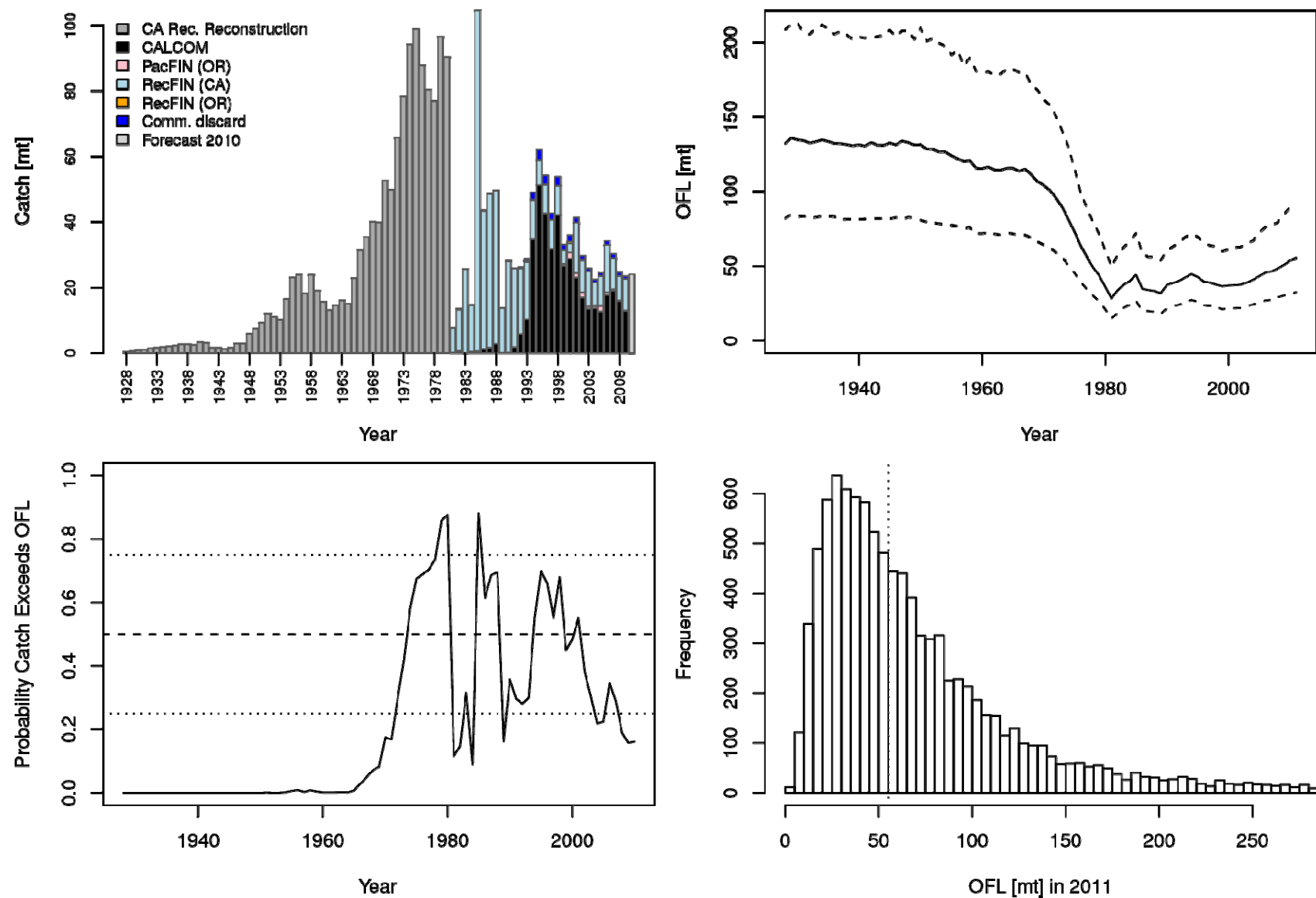


Figure 19. DB-SRA results for green spotted rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

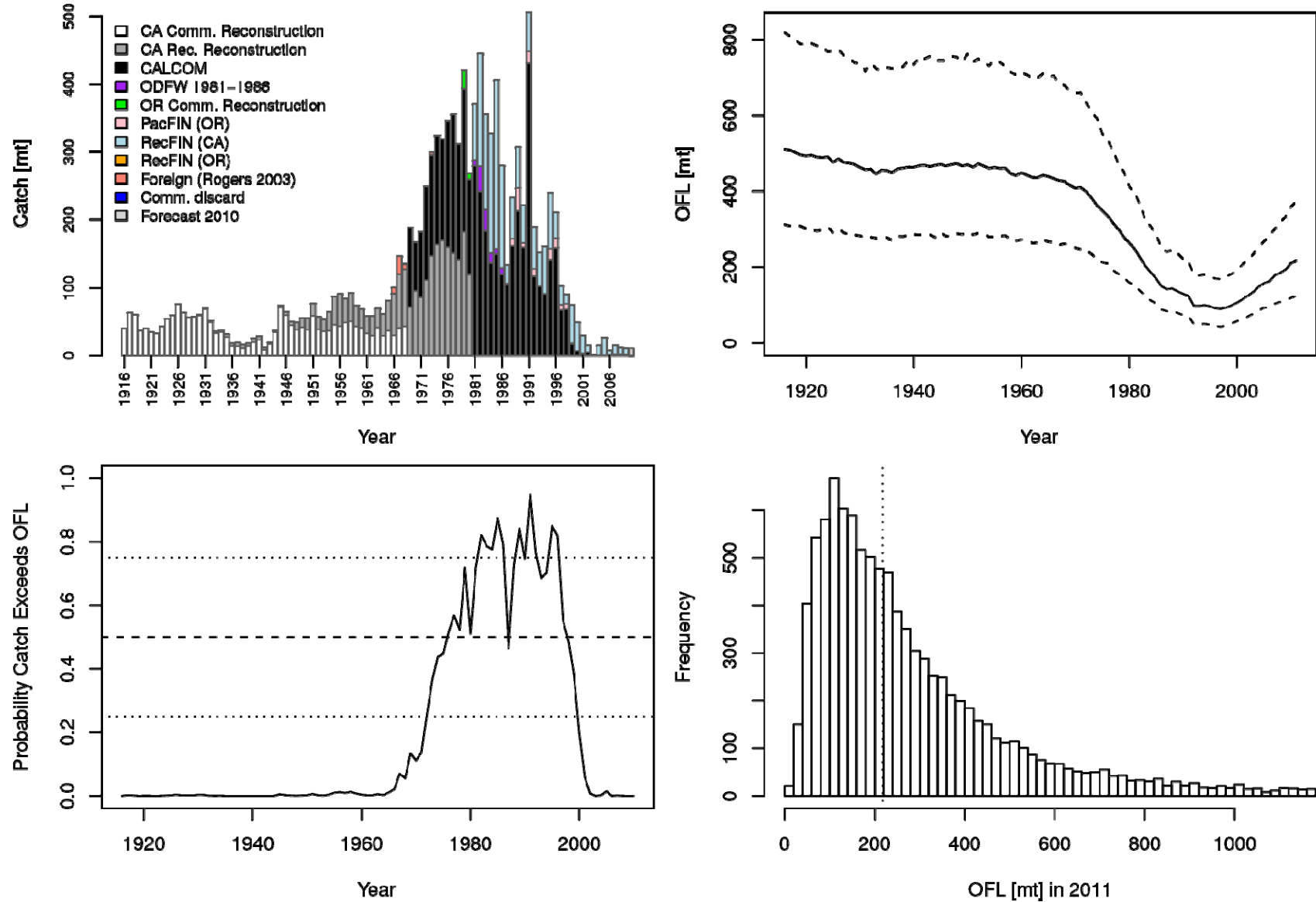




Figure 20. DB-SRA results for kelp greenling (California substock). Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

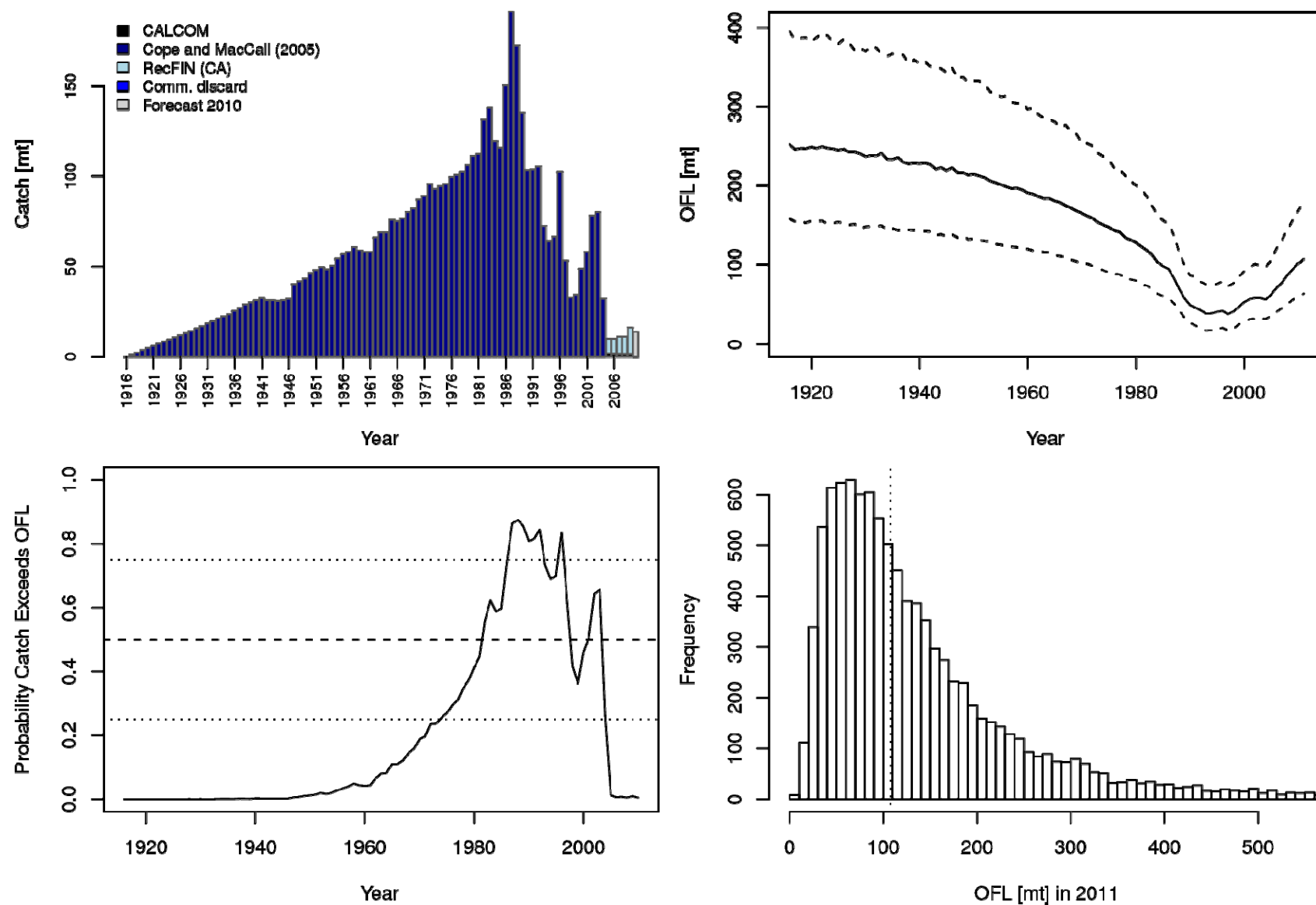


Figure 21. DB-SRA results for kelp rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

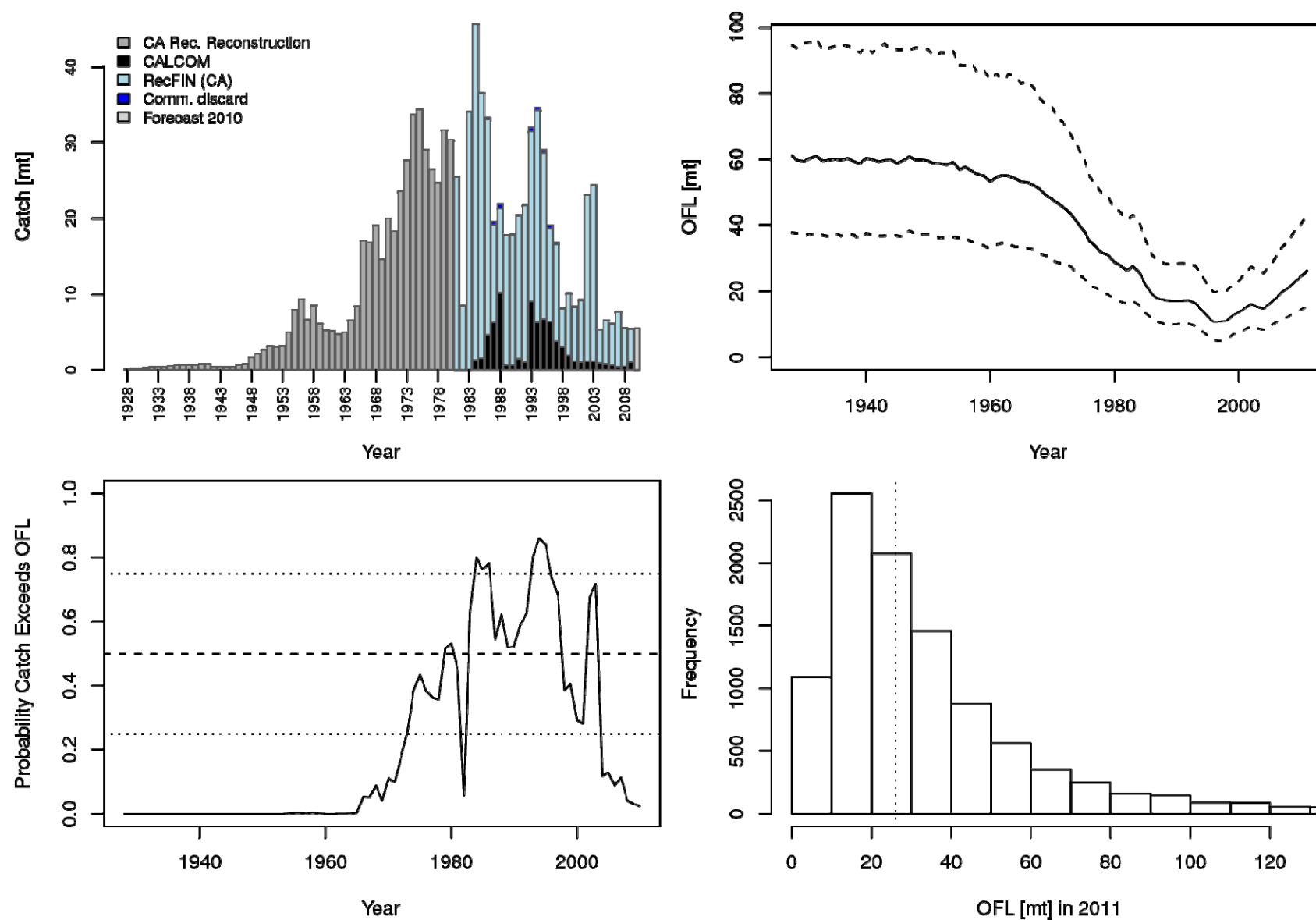


Figure 22. DB-SRA results for leopard shark. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

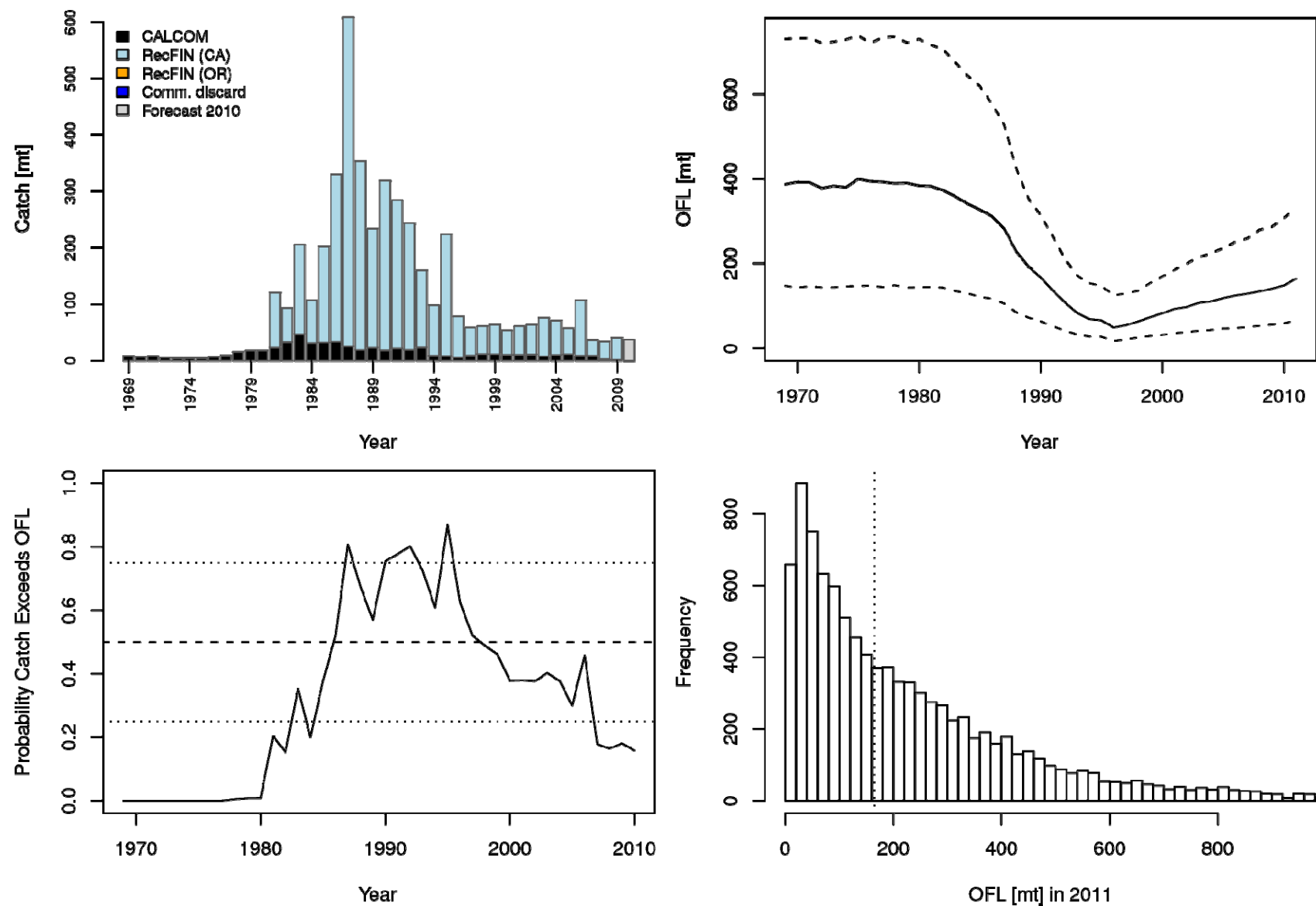


Figure 23. DB-SRA results for olive rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

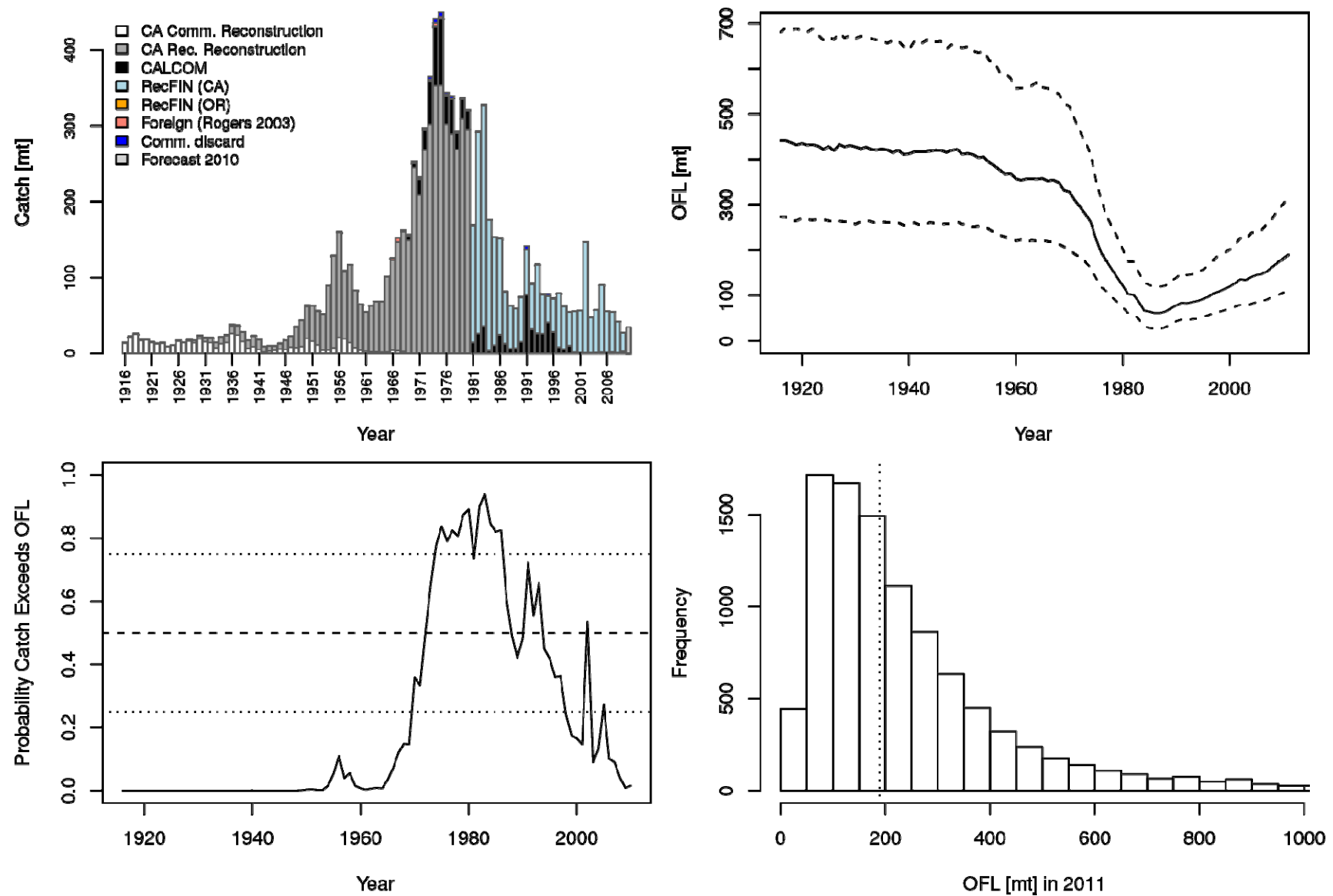


Figure 24. DB-SRA results for Pacific sanddab. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

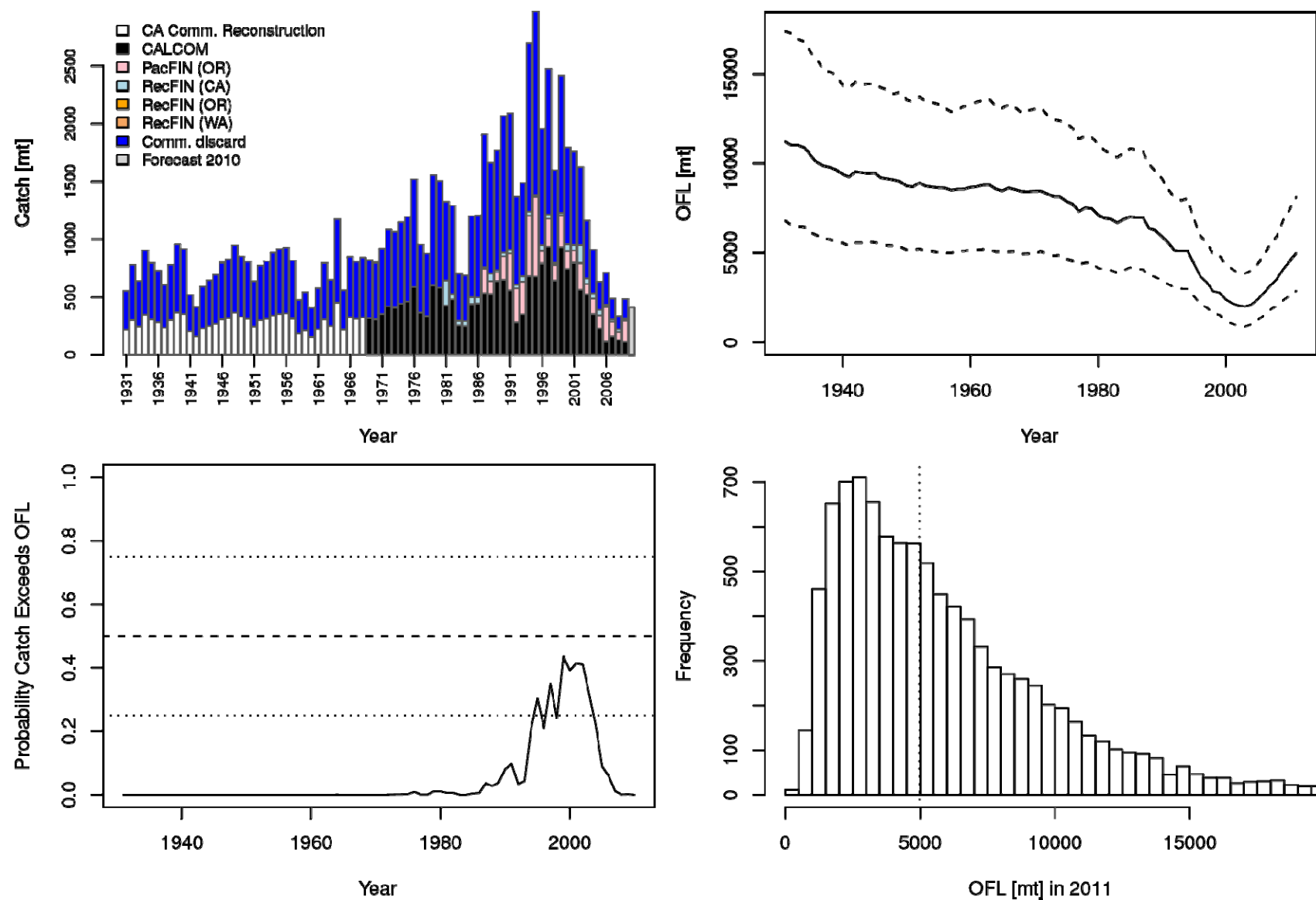


Figure 25. DB-SRA results for pink rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

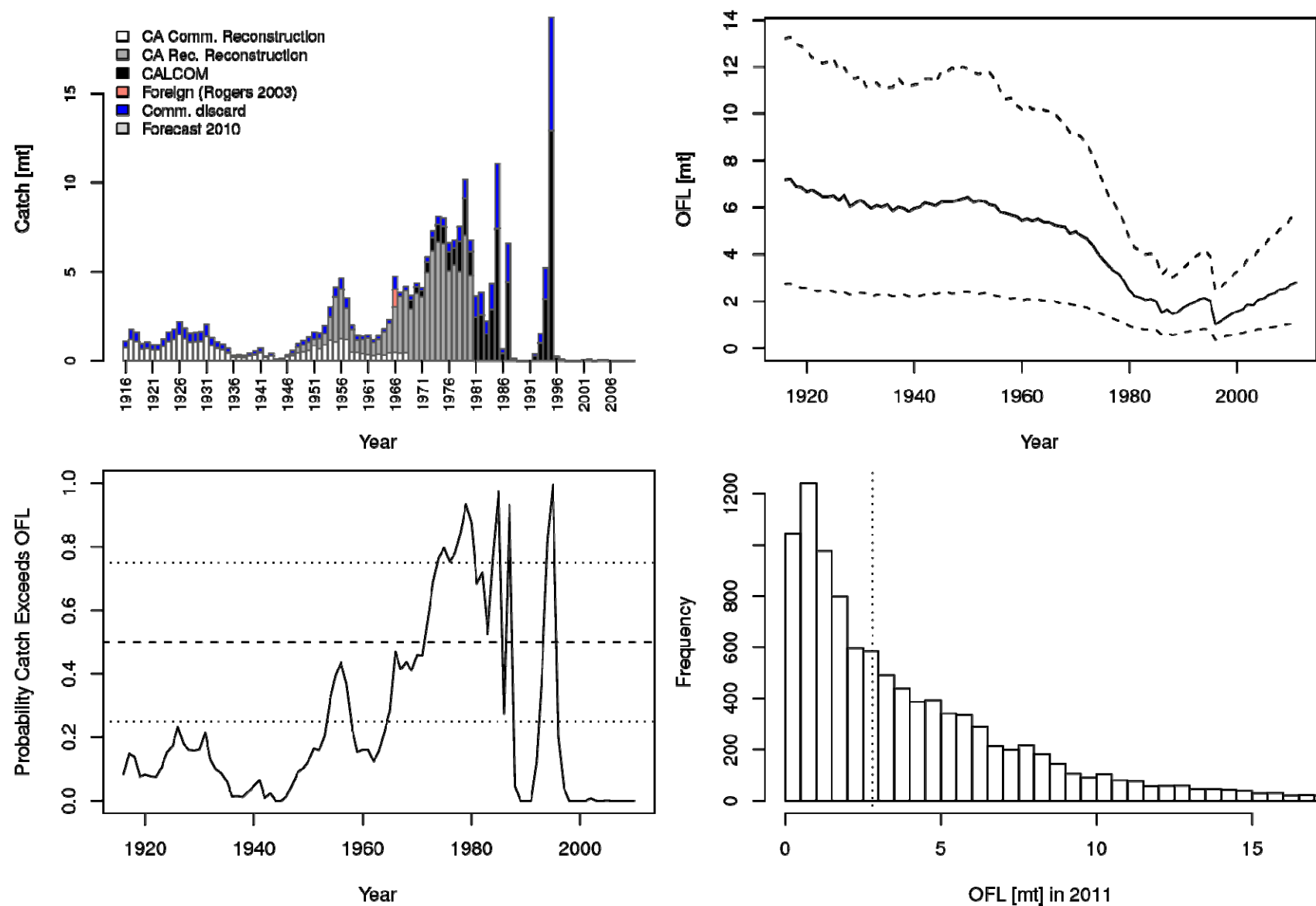


Figure 26. DB-SRA results for quillback rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

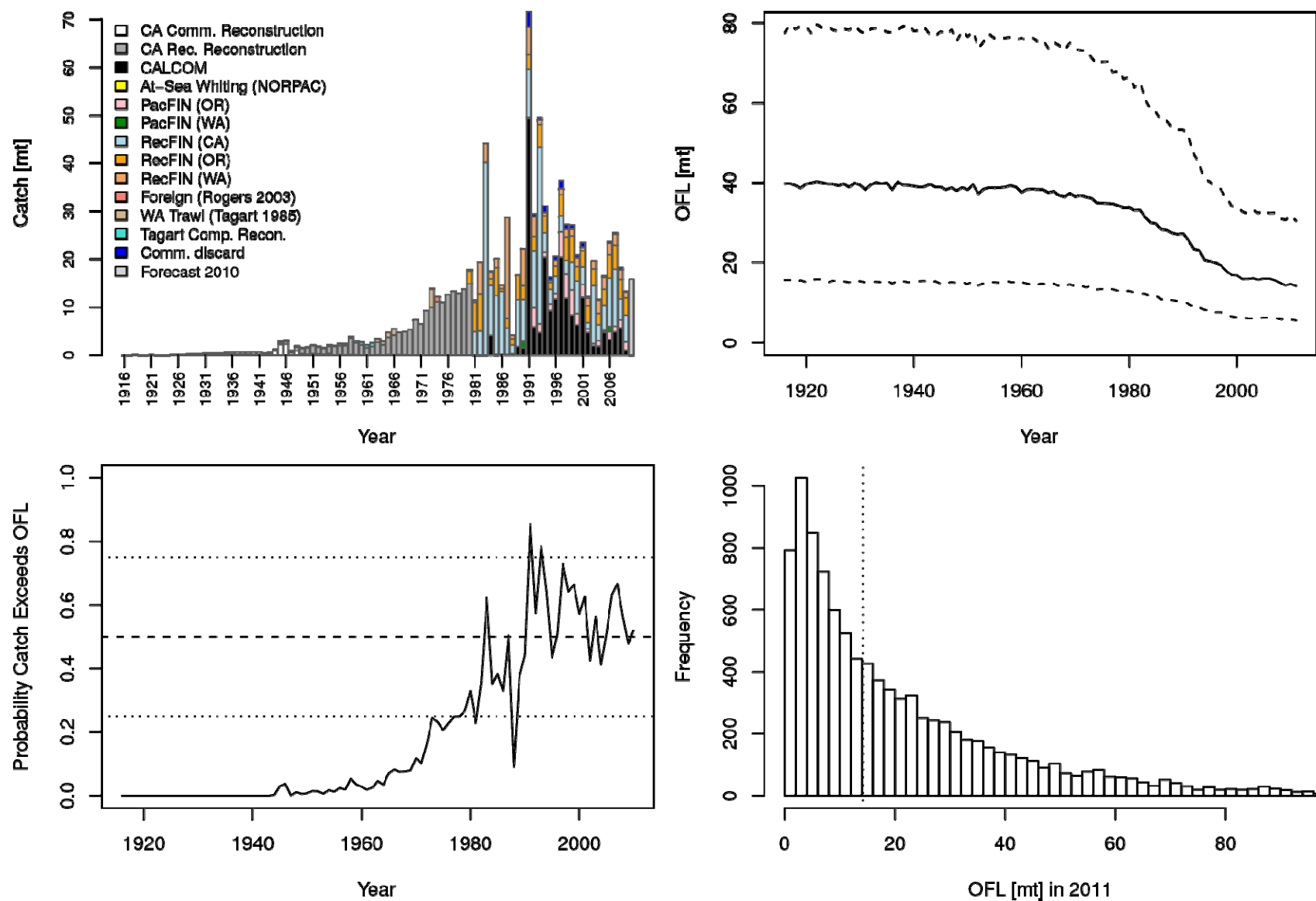


Figure 27. DB-SRA results for redbanded rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

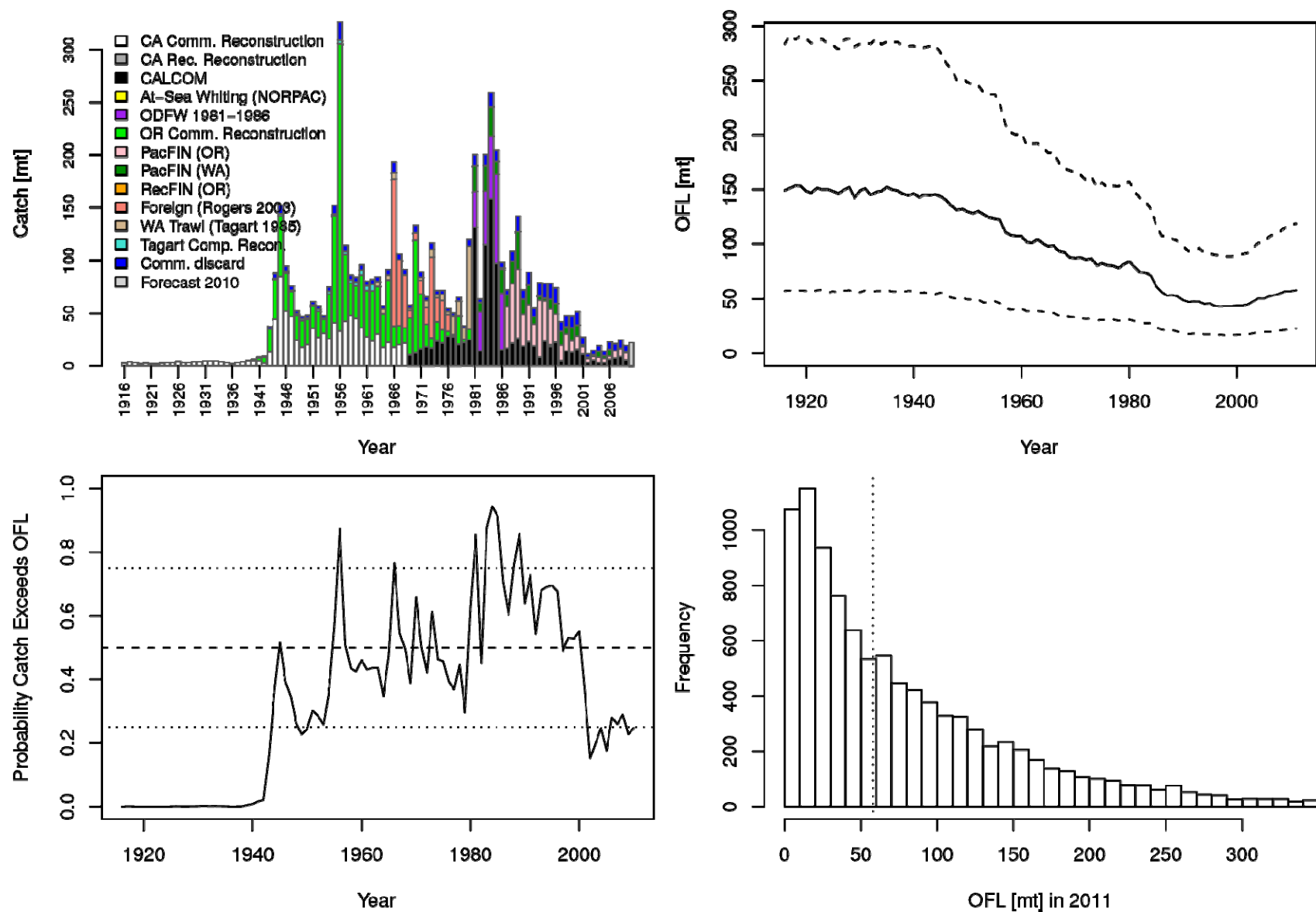




Figure 28. DB-SRA results for redstripe rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

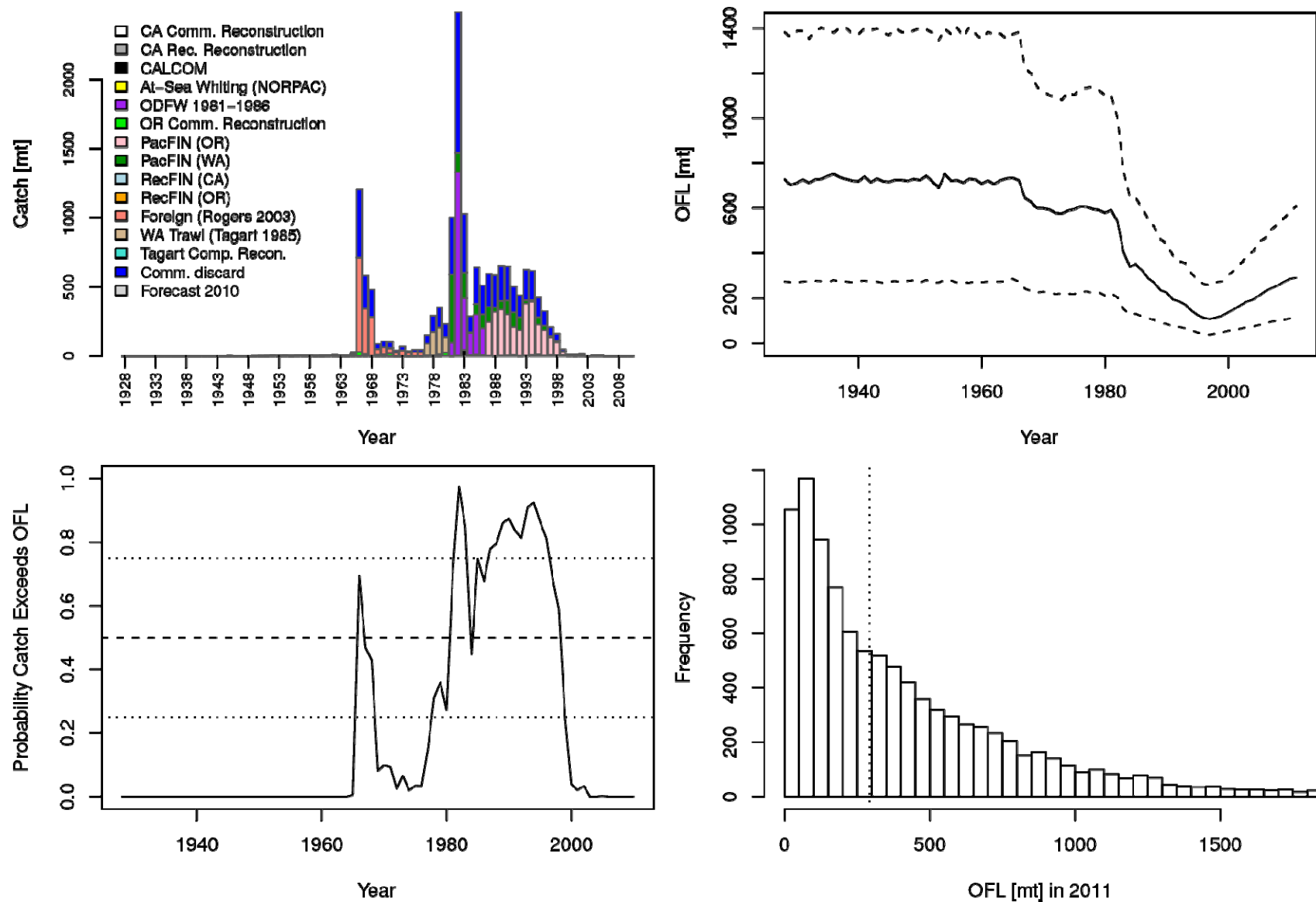


Figure 29. DB-SRA results for rex sole. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

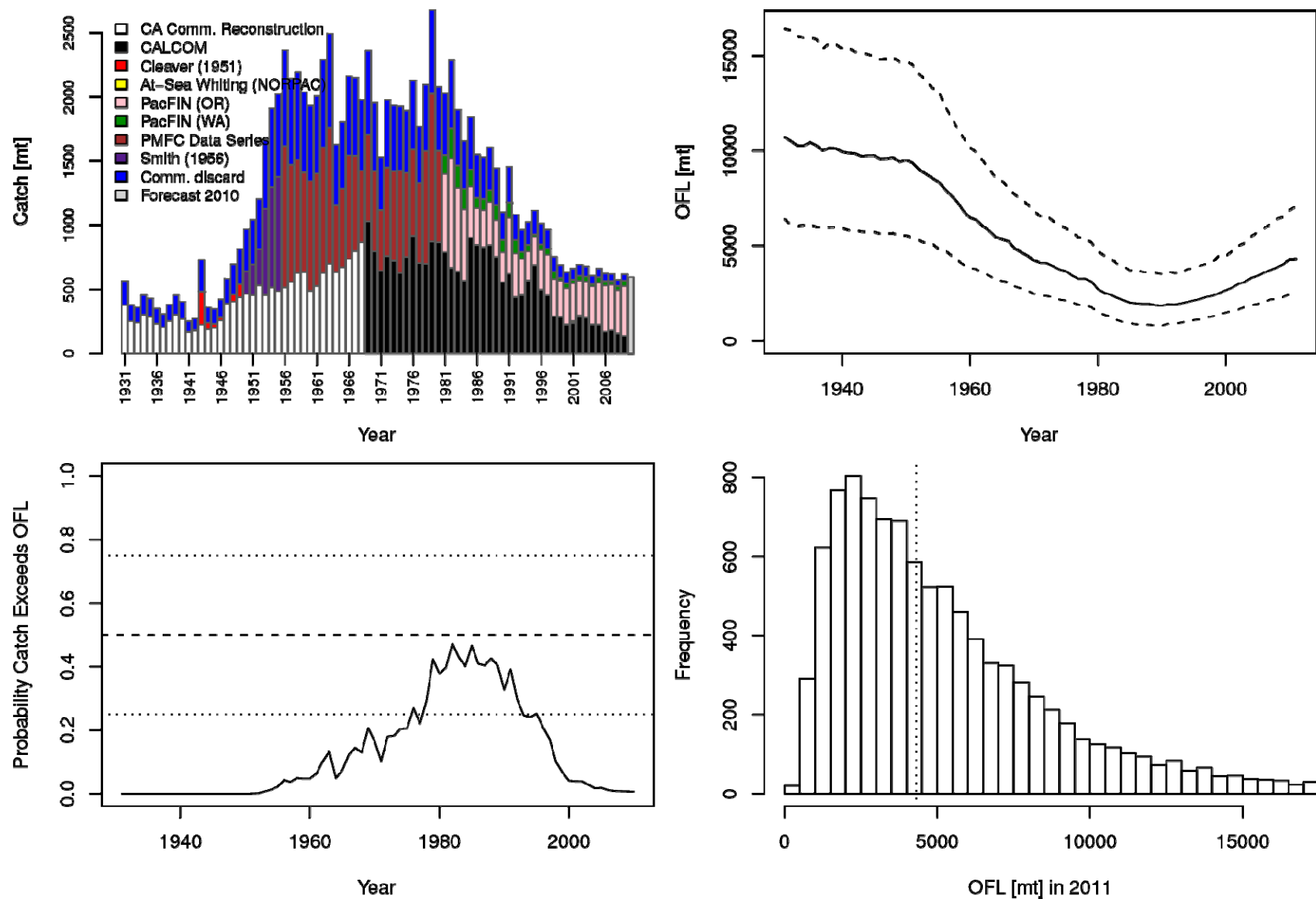


Figure 30. DB-SRA results for roughey rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

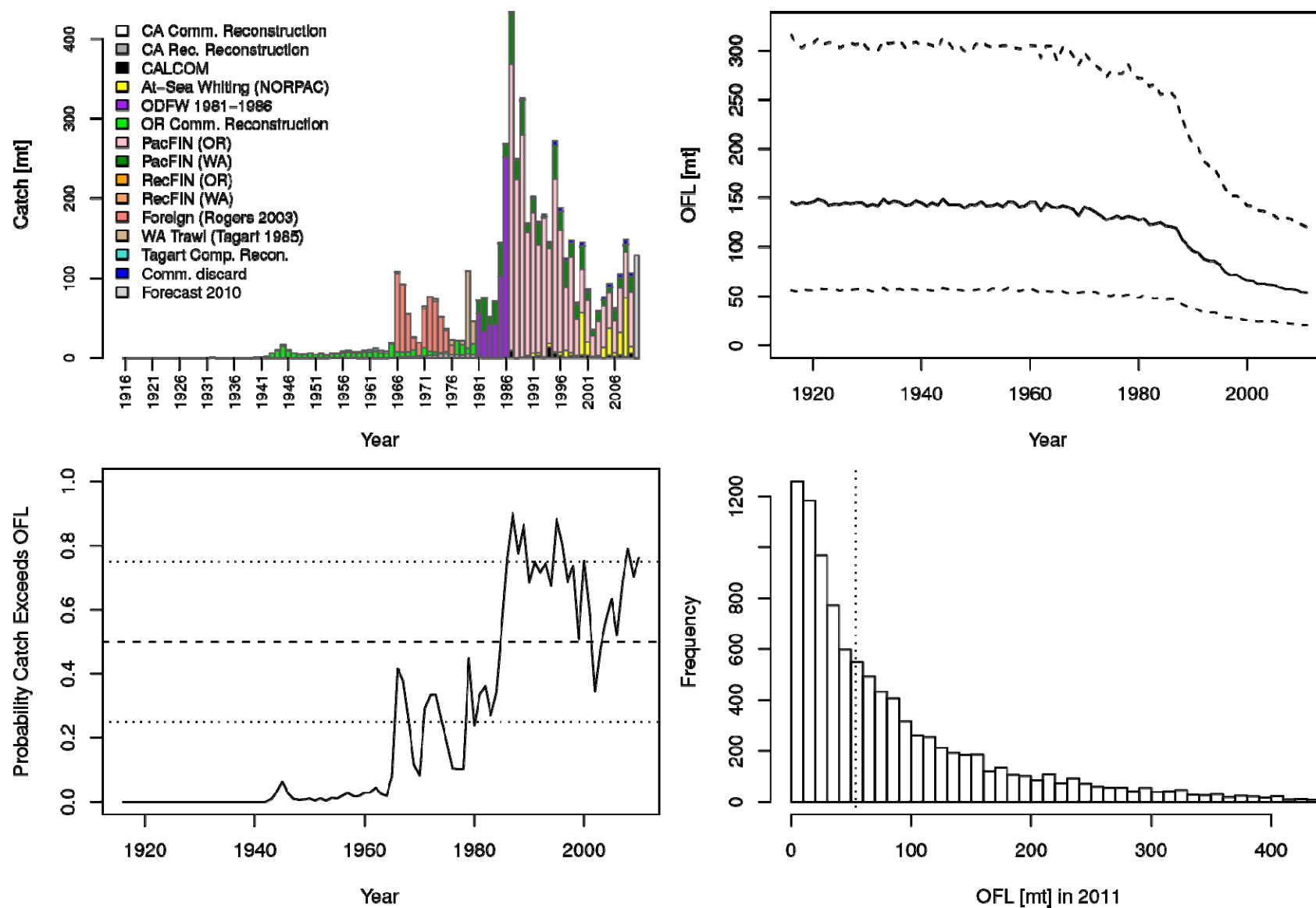


Figure 31. DB-SRA results for rosy rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

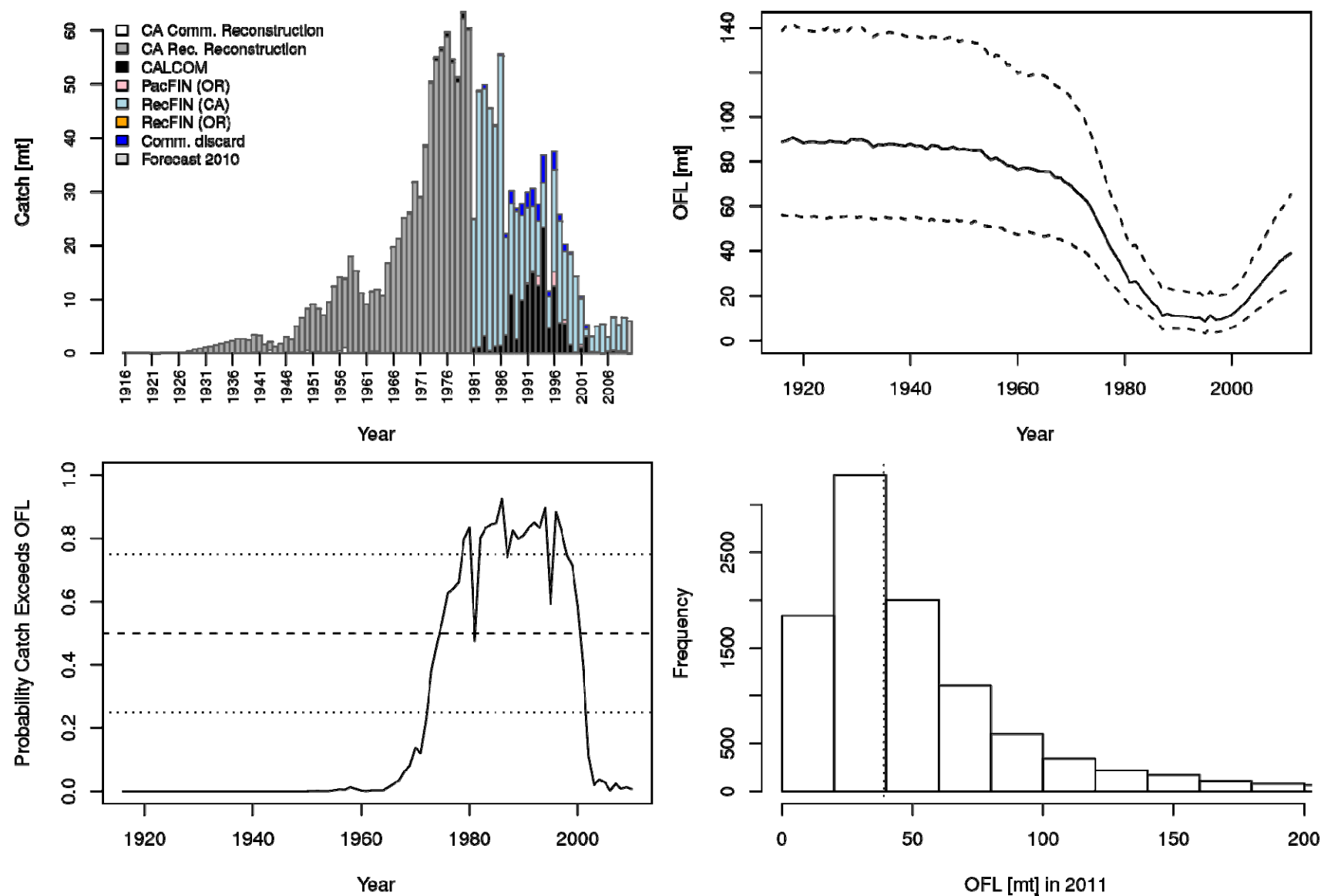


Figure 32. DB-SRA results for rock sole. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

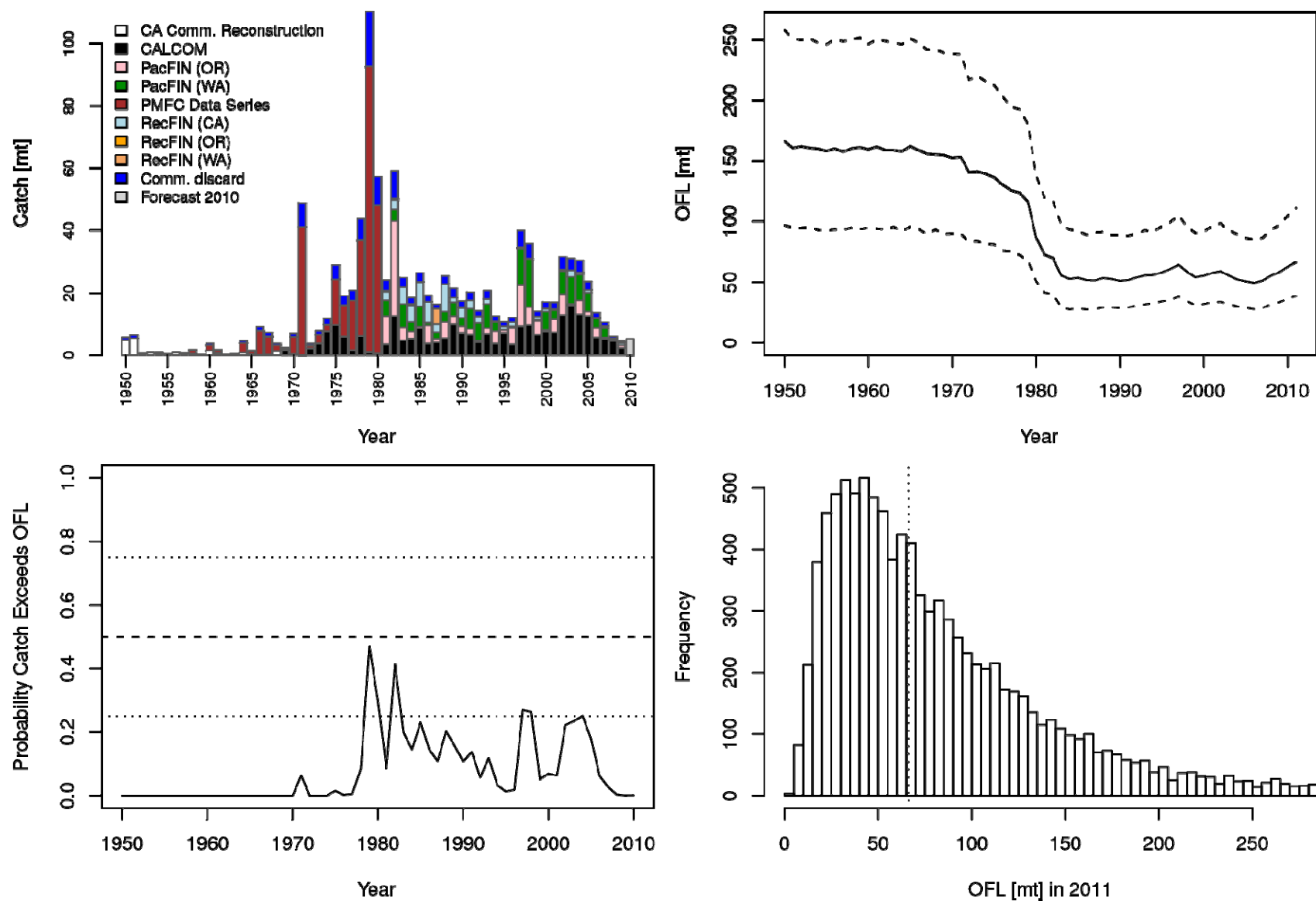


Figure 33. DB-SRA results for rosethorn rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

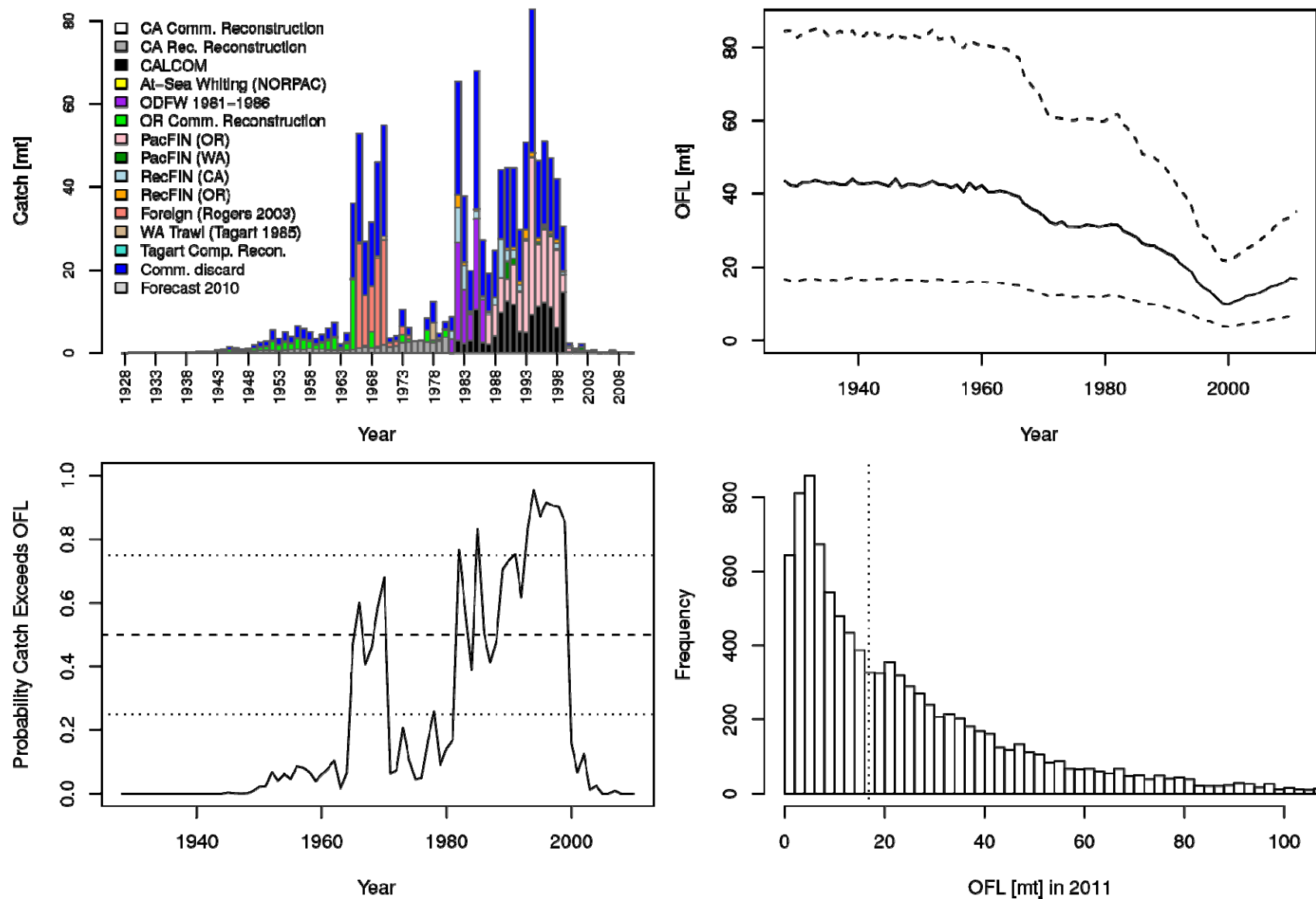


Figure 34. DB-SRA results for sharpchin rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

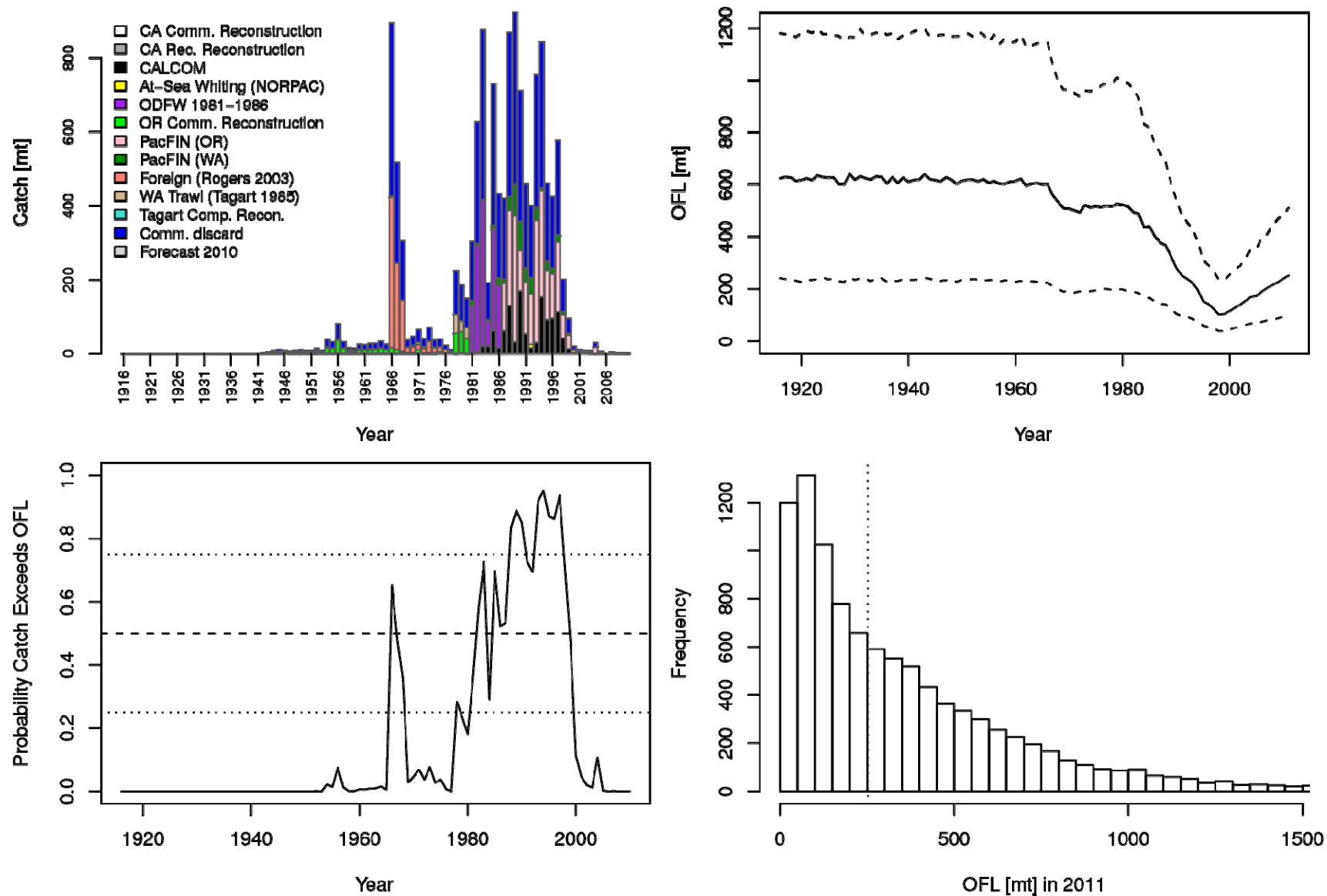


Figure 35. DB-SRA results for silvergrey rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

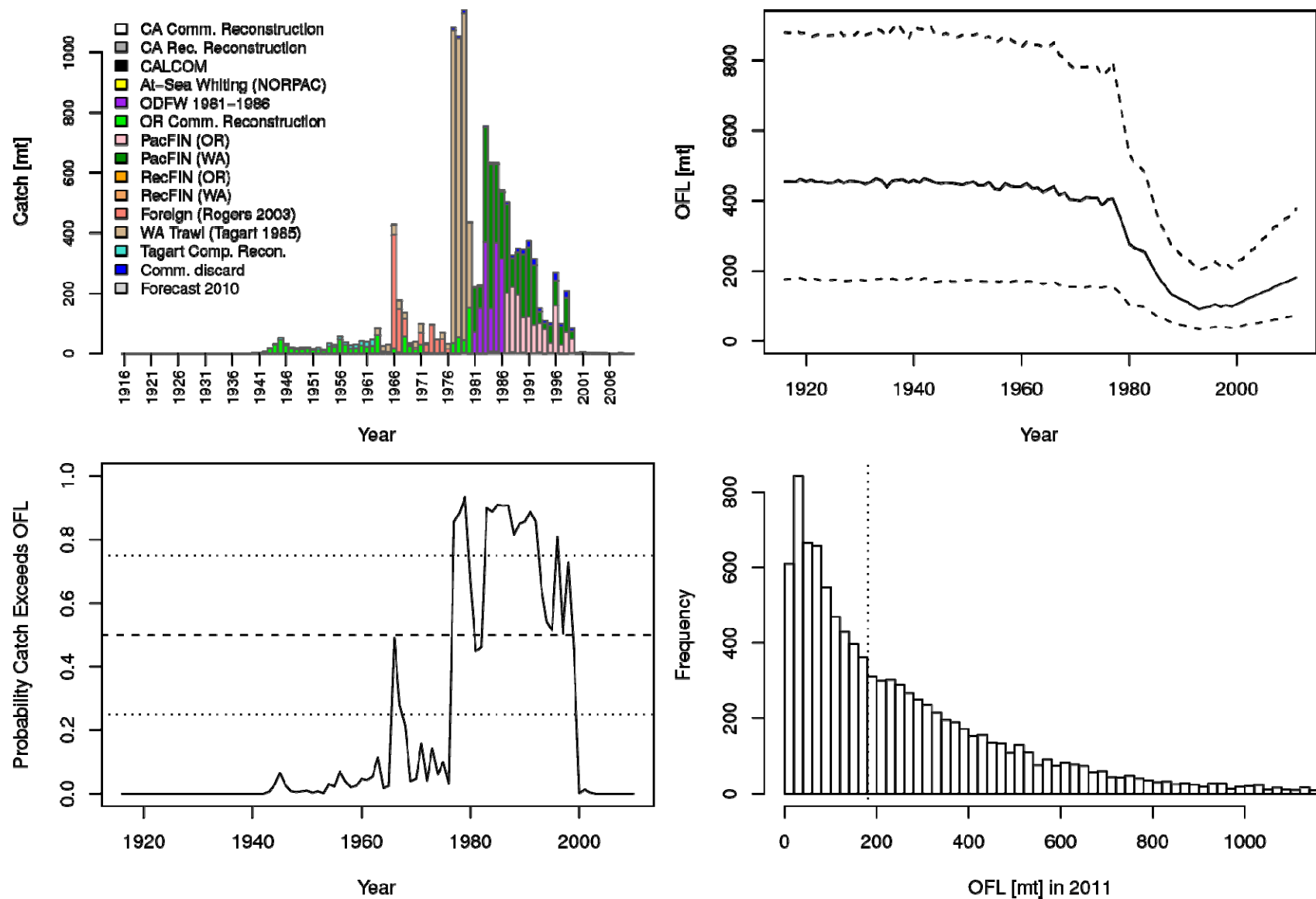




Figure 36. DB-SRA results for speckled rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

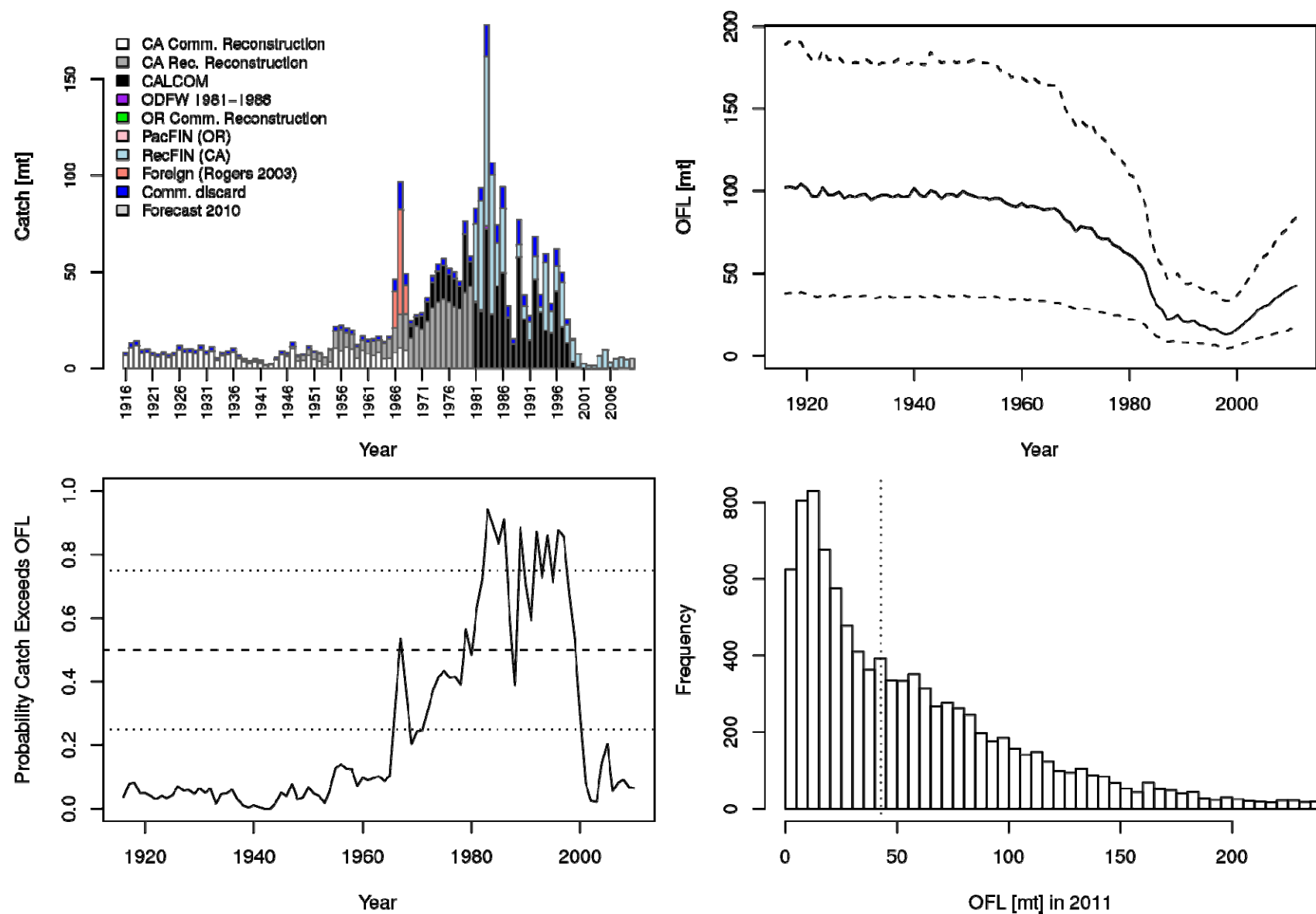


Figure 37. DB-SRA results for shorttraker rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

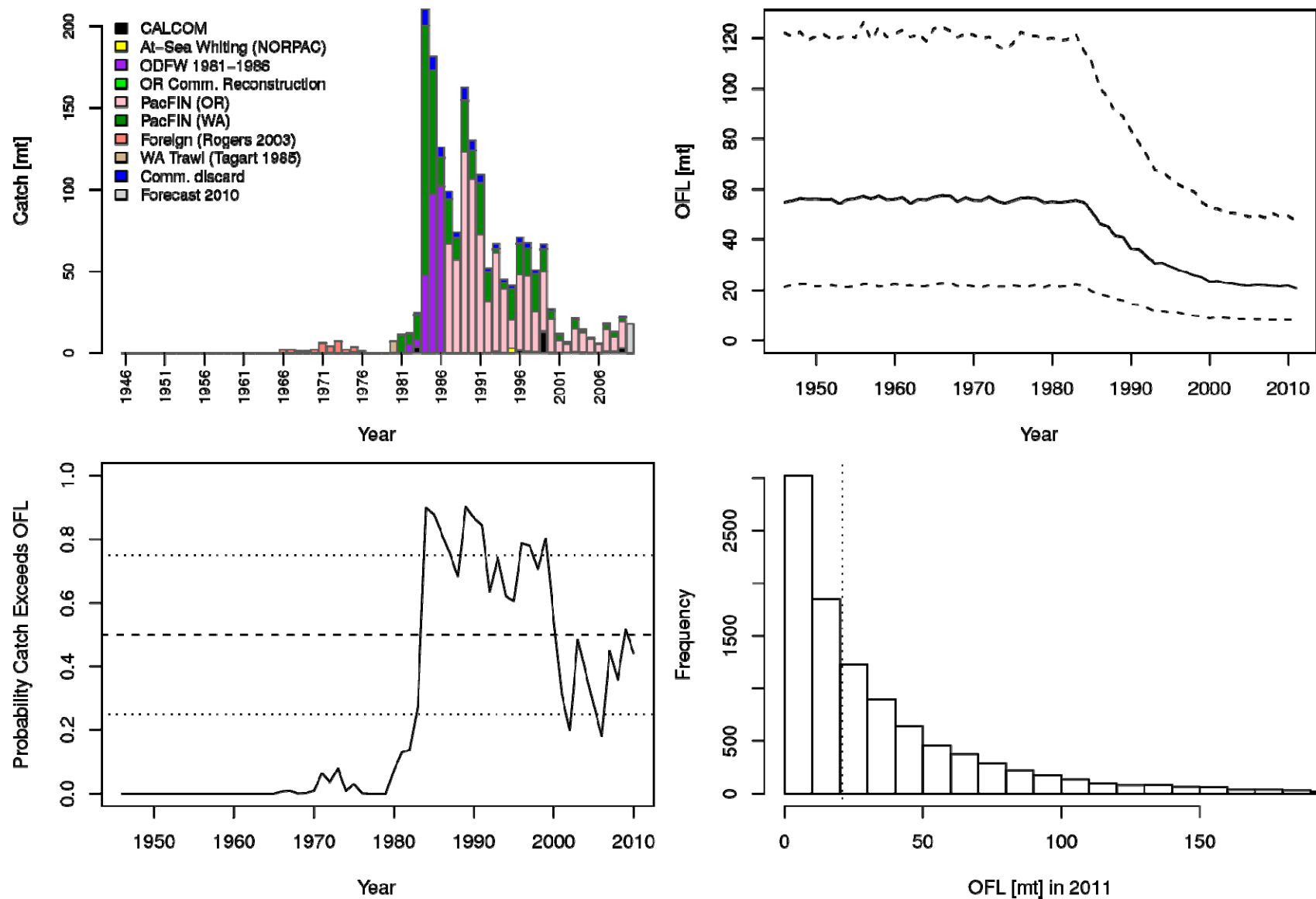


Figure 38. DB-SRA results for sand sole. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

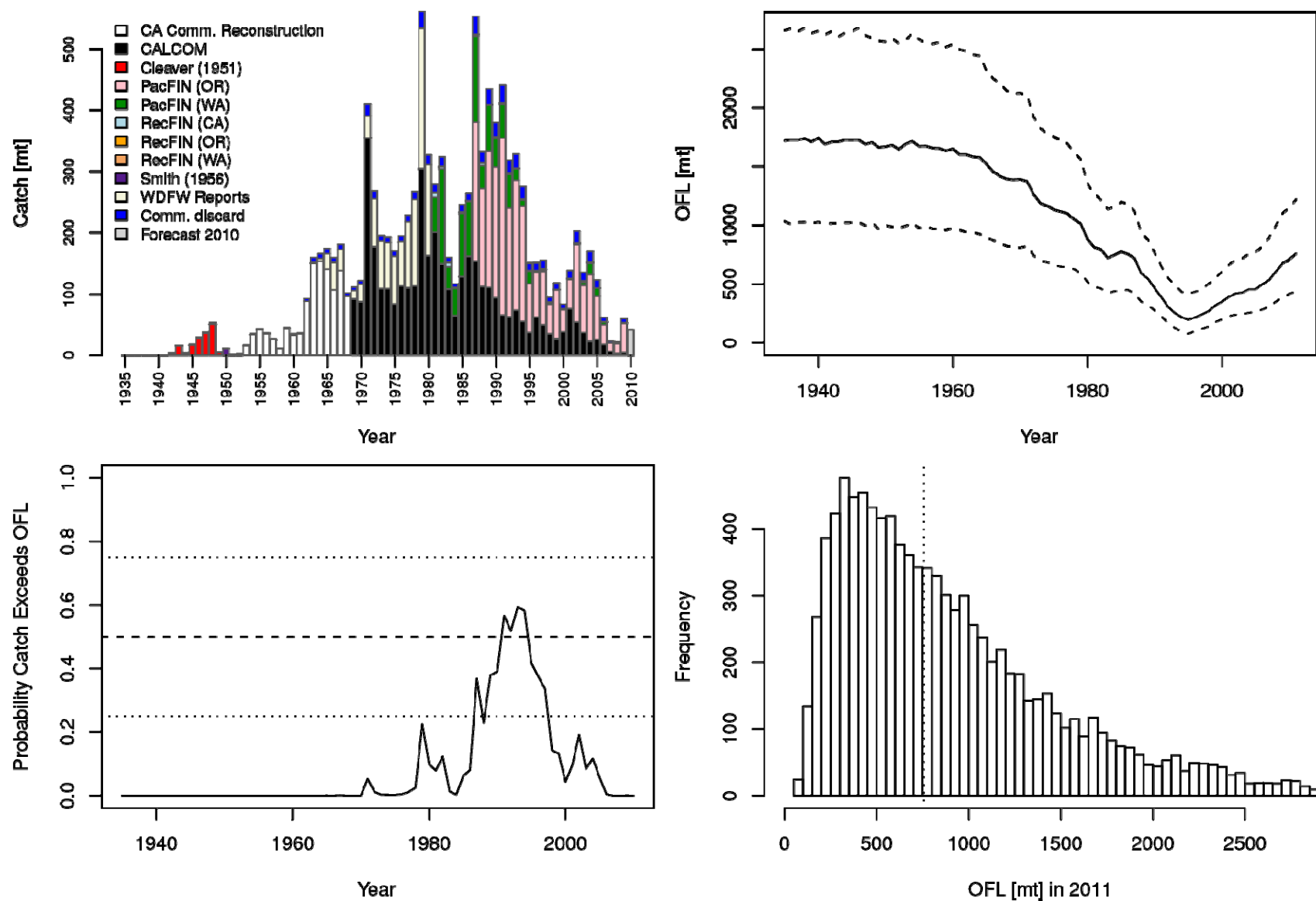


Figure 39. DB-SRA results for starry rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

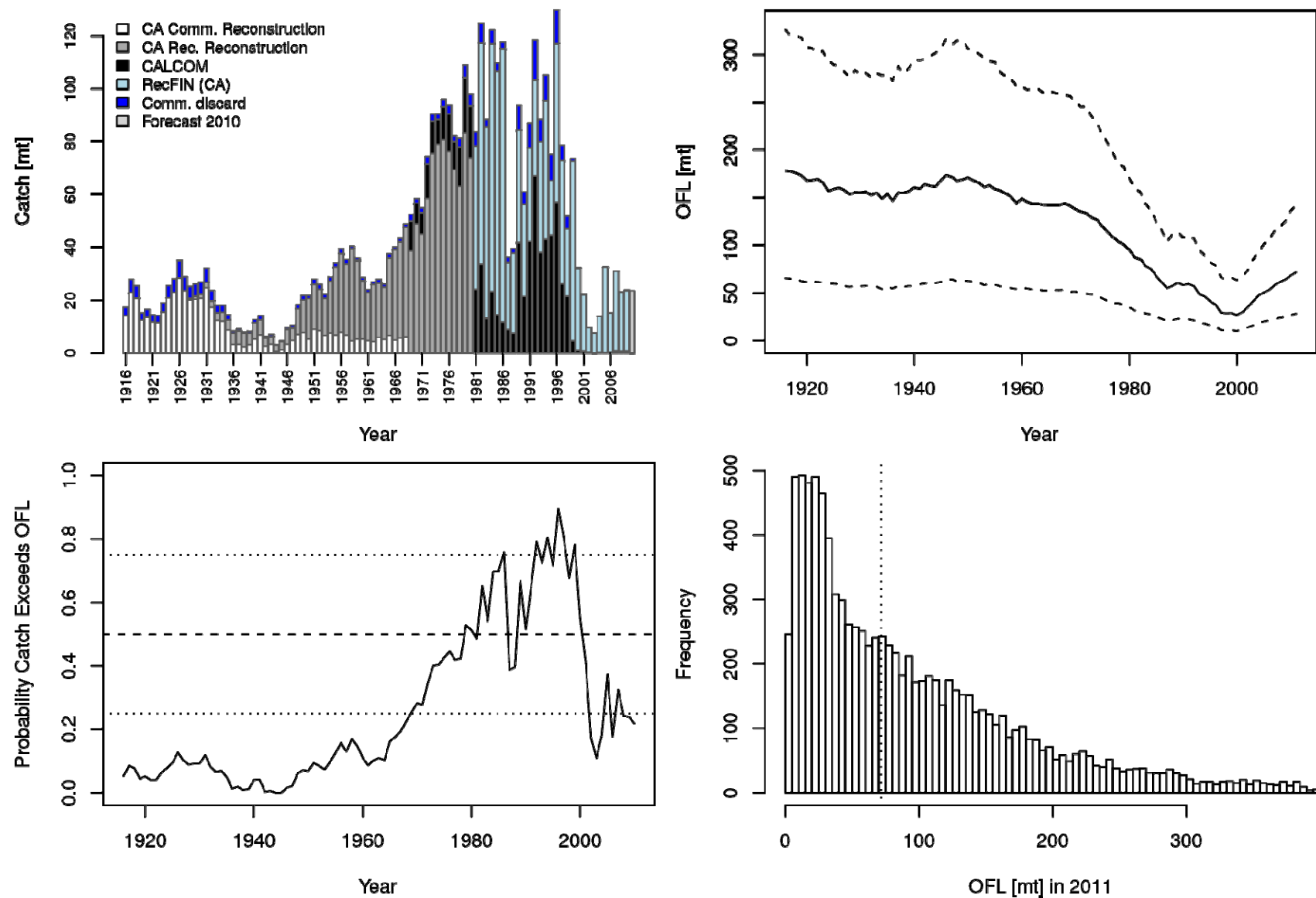


Figure 40. DB-SRA results for striptail rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

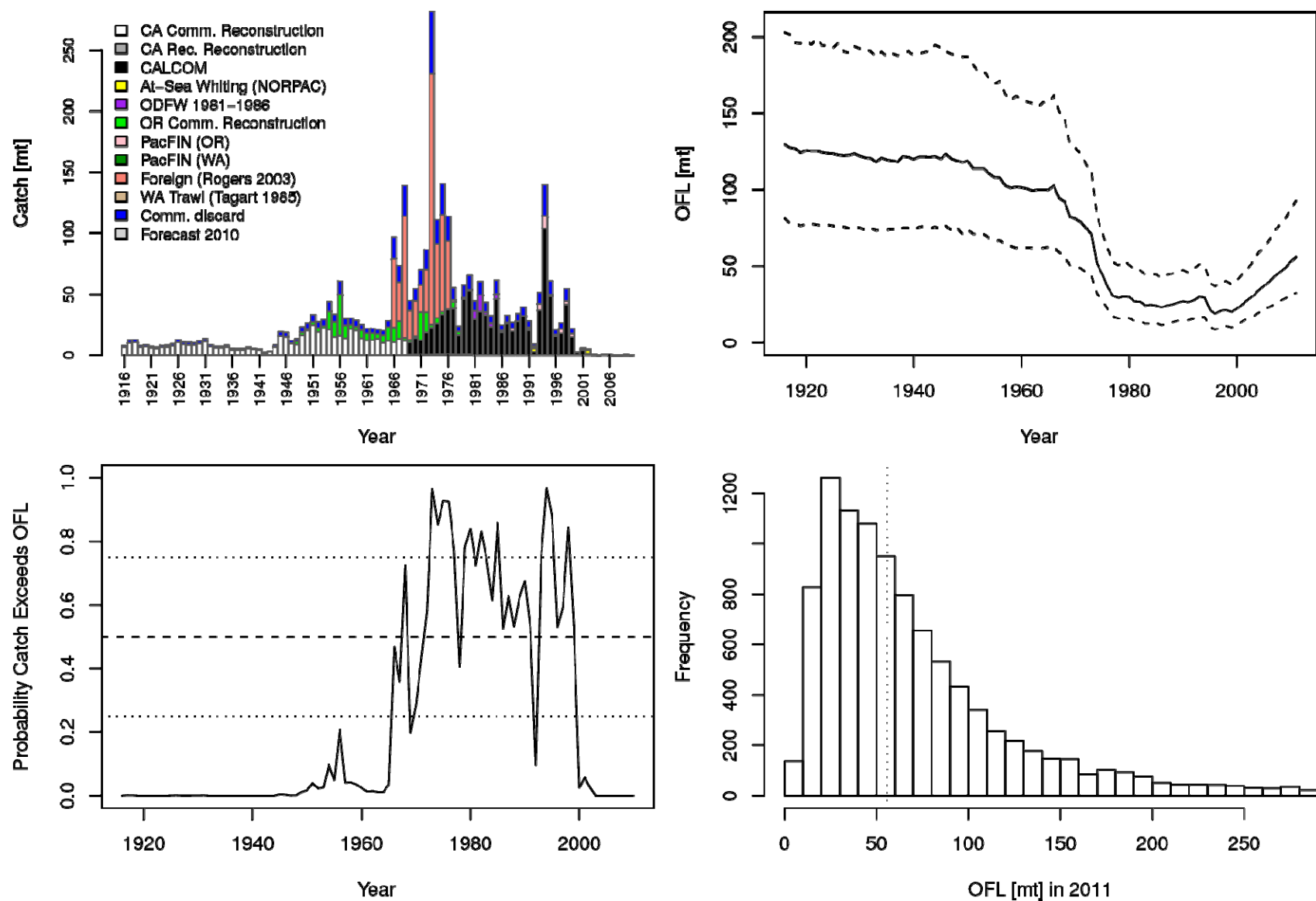


Figure 41. DB-SRA results for swordspine rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

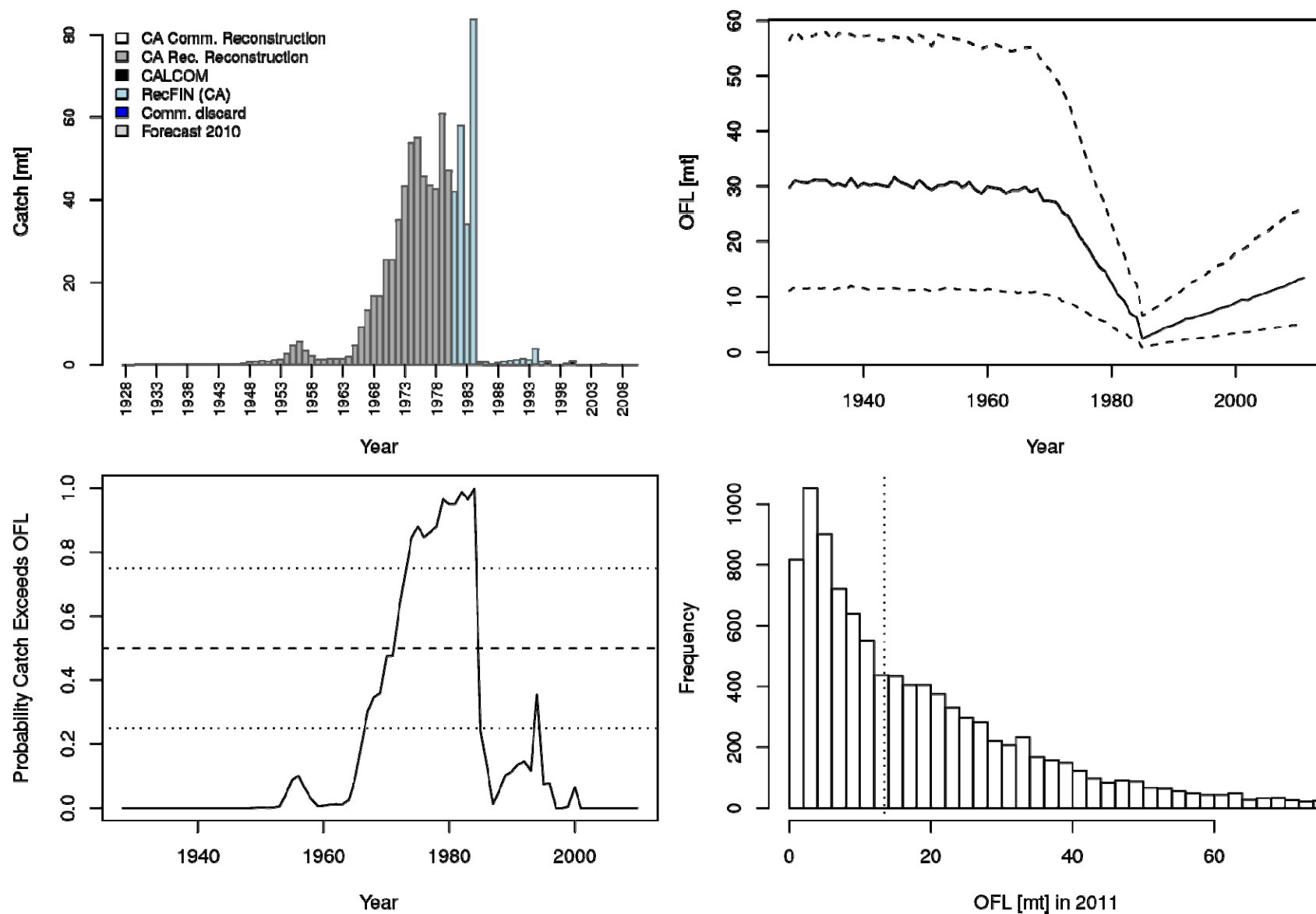


Figure 42. DB-SRA results for treefish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

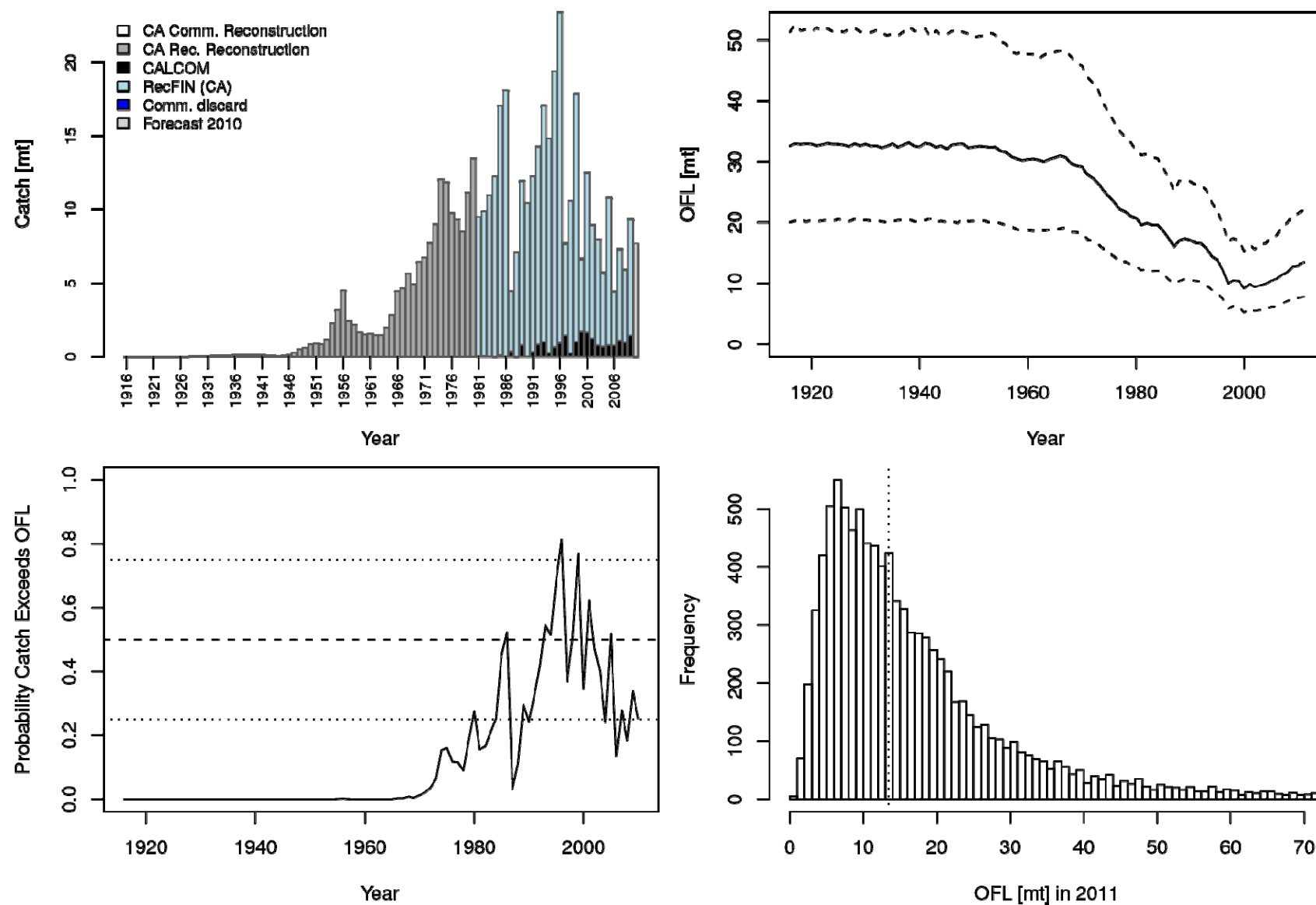


Figure 43. DB-SRA results for vermillion rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).

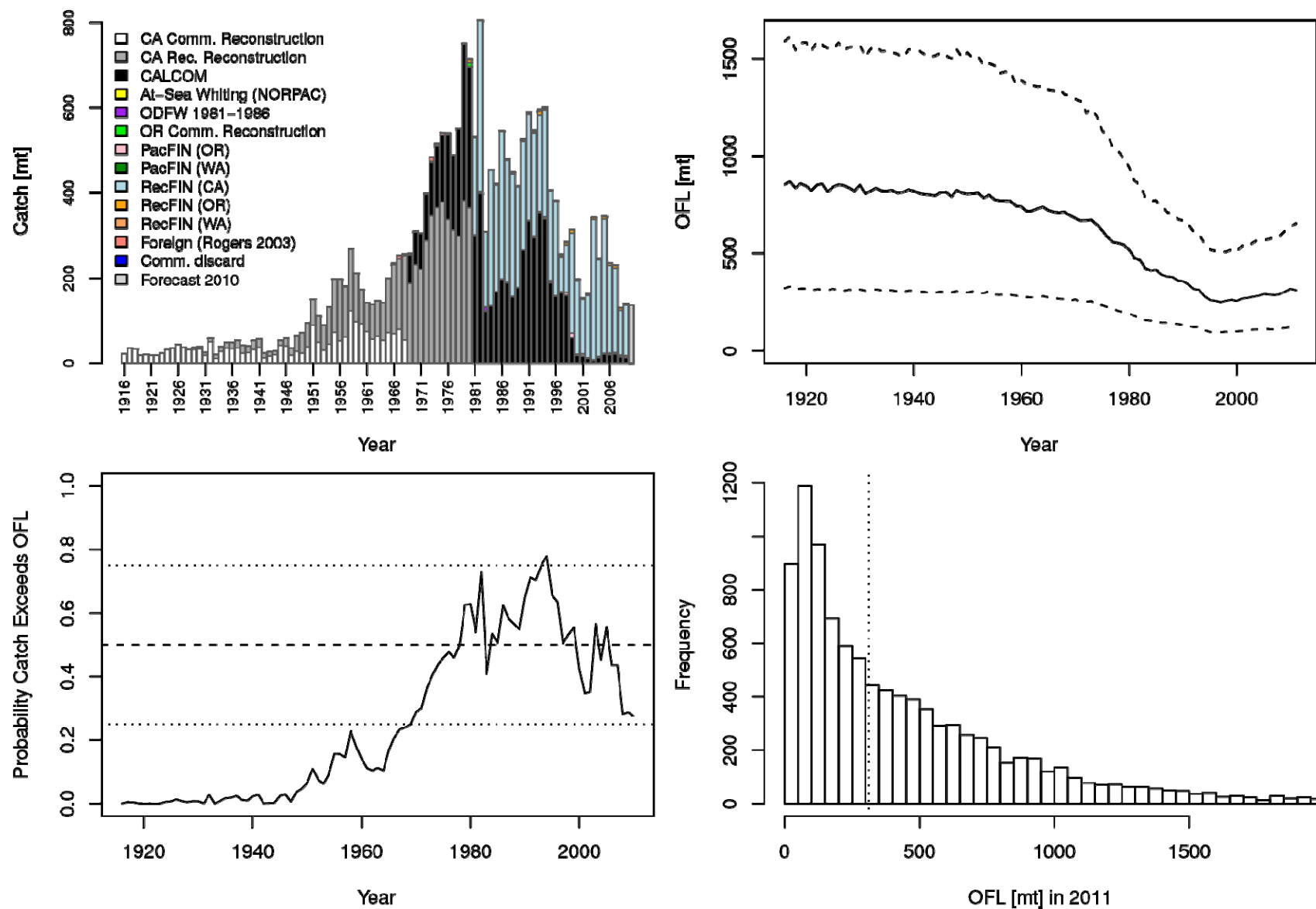
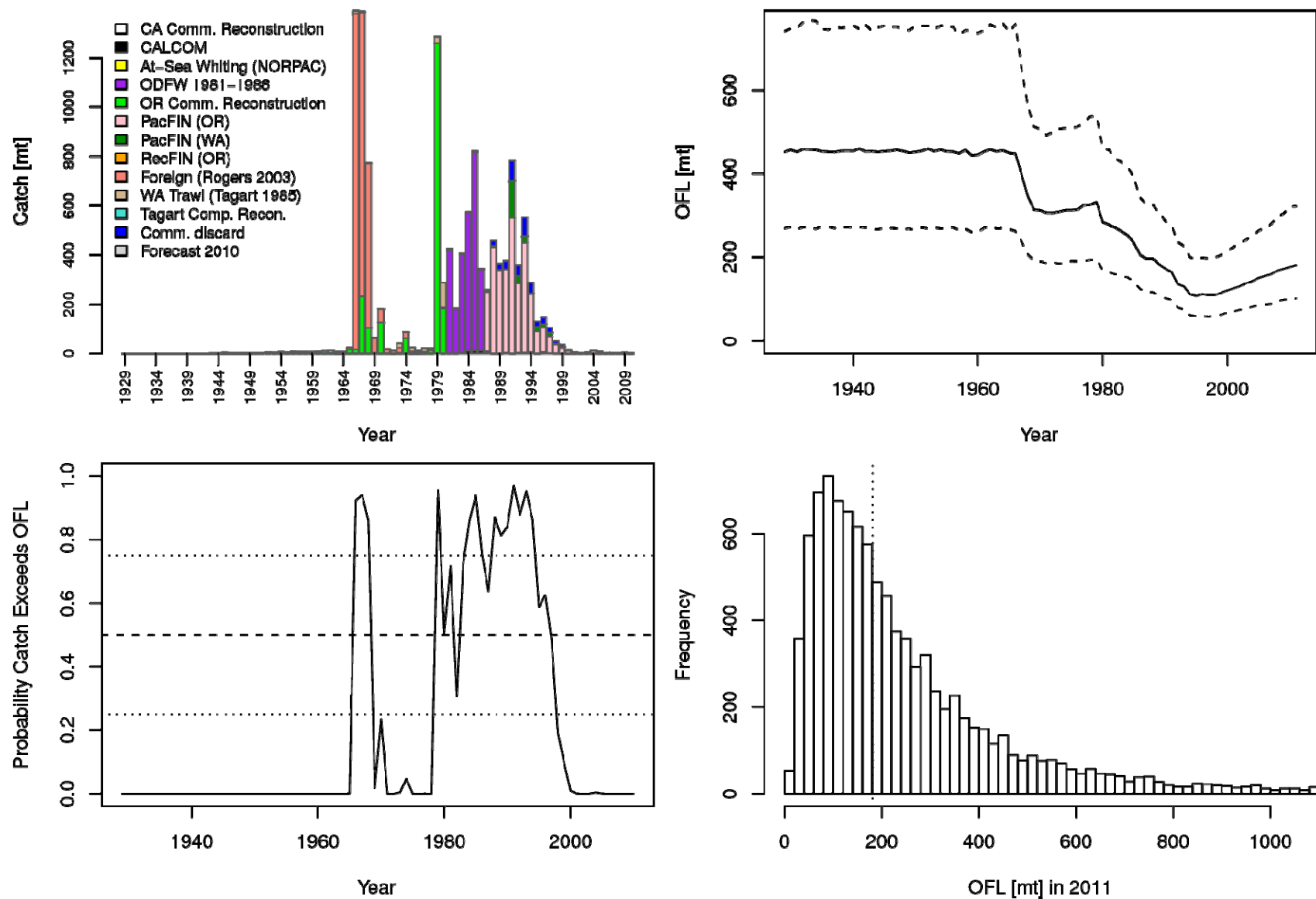




Figure 44. DB-SRA results for yellowmouth rockfish. Catch by data source (upper left), OFL time series (upper right; median = solid line, 25% and 75% quantiles = dotted lines), probability that catch exceeded the OFL by year (lower left), and OFL (mt) forecast in 2011 (lower right; median = dotted line).



## Appendix A

### Structured Query Language (SQL)

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#### **PacFIN (source of Oregon and Washington commercial landings, 1981-2009)** **[query date: 2/25/2010; see text for details regarding OR rockfish landings, 1981-86]**

```
SELECT      (sc.lbs/2204.62) "catch.mt", sc.spid, sc.year, sc.arid, sc.pcid,
            sp.cname, sc.agglvl, sc.period
FROM        sc, gr, ar, sp
WHERE       ar.arid = sc.arid and
            sp.spid = sc.spid and
            gr.grid = sc.grid and
            ar.arid in ('UP','1A','1B','1C','2A','2B','2C','3A','3B','3S') and
            pcid in ('AOR','AWA') and
            sp.mgrp = 'GRND' and
            substr(sp.cname, 1, 1)<>'_' and
            agglvl = 'Y' and
            gr.type = 3
ORDER BY    pcid, year, spid
```

#### **CALCOM (source of California commercial landings, 1969-2009)** **[query date: 2/24/2010]**

```
SELECT      Sum(com_landings.pounds)/2204.62 AS 'catch.mt',
            com_landings.species AS 'sp.code', com_landings.year AS 'year',
            com_landings.port_complex AS 'area', species_codes.species_grp
FROM        CALCOM.dbo.com_landings com_landings, CALCOM.dbo.species_codes species_codes
WHERE       (species_codes.species_grp IN ('ROCKFISH', 'FLATFISH', 'OTHER_GF',
            'SHARK', 'SKATE')) AND
            (com_landings.species=species_codes.calcom_code) OR
            (com_landings.species In ('RATF')) AND
            (com_landings.species=species_codes.calcom_code)
GROUP BY    com_landings.species, com_landings.year, com_landings.port_complex,
            species_codes.species_grp
ORDER BY    com_landings.species, com_landings.year, com_landings.port_complex
```

#### **NORPAC (source of at-sea catch by Pacific whiting fleet, 1991-2008; obtained via PacFIN)** **[query date: 2/25/2010]**

```
SELECT      NPAC4900.year, sp.spid, sp.cname, ar.arid,
            sum(NPAC4900.total_weight) as total_mt,
            sum(NPAC4900.wt_retained) as retained_mt
FROM        NPAC4900, sp, ar
WHERE       NPAC4900.spid = sp.spid
            and NPAC4900.arid = ar.arid
            and ar.arid in ('UP','1A','1B','1C','2A','2B','2C','3A','3B','3S')
            and sp.mgrp = 'GRND'
GROUP BY    NPAC4900.year, sp.spid, sp.cname, ar.arid
ORDER BY    year, spid, arid
```

**California commercial catch reconstruction (1916-1968; obtained via CALCOM)**  
**[query date: 2/25/2010]**

```
SELECT      Sum(RECON_COM_LANDS.pounds)/2204.62 AS 'catch.mt',
            RECON_COM_LANDS.species AS 'sp.code',
            RECON_COM_LANDS.year AS 'year', RECON_COM_LANDS.region_caught AS 'area',
            RECON_COM_LANDS.gear, RECON_COM_LANDS.source,
            species_codes.common_name, species_codes.species_grp
FROM        CALCOM.dbo.RECON_COM_LANDS RECON_COM_LANDS,
            CALCOM.dbo.species_codes species_codes
WHERE       RECON_COM_LANDS.species = species_codes.calcom_code AND
            (species_codes.species_grp In ('ROCKFISH','FLATFISH','OTHER_GF'))
GROUP BY    RECON_COM_LANDS.year, RECON_COM_LANDS.species,
            RECON_COM_LANDS.region_caught,
            RECON_COM_LANDS.gear, RECON_COM_LANDS.source,
            species_codes.common_name, species_codes.species_grp
ORDER BY    RECON_COM_LANDS.year, RECON_COM_LANDS.species,
            RECON_COM_LANDS.region_caught
```

**California recreational catch reconstruction (1928-1980; obtained via CALCOM)**  
**[query date: 2/25/2010]**

```
SELECT      Sum(RECON_REC_LANDS.POUNDS)/2204.62 AS 'catch.mt',
            RECON_REC_LANDS.SPECIES AS 'sp.code',
            RECON_REC_LANDS.YEAR AS 'year',
            RECON_REC_LANDS.AREA AS 'area',
            species_codes.common_name, species_codes.species_grp
FROM        CALCOM.dbo.RECON_REC_LANDS RECON_REC_LANDS,
            CALCOM.dbo.species_codes species_codes
WHERE       RECON_REC_LANDS.SPECIES = species_codes.calcom_code
GROUP BY    RECON_REC_LANDS.SPECIES, RECON_REC_LANDS.YEAR, RECON_REC_LANDS.AREA,
            species_codes.common_name, species_codes.species_grp
```

## SUMMARY OF COMMUNITY IMPACTS BASED ON CHANGES TO PROJECTED EX-VESSEL REVENUE UNDER THE GROUND FISH HARVEST SPECIFICATIONS ALTERNATIVES

This supplemental attachment contains the following tables and figures to illustrate the estimated effects of the alternatives for groundfish harvest specifications and management measures:

- Table 1 summarizes the elements of the analytical alternatives used to evaluate impacts of the 2011-2012 groundfish harvest specifications and management measures.
- Table 2 and Table 3 show the absolute (\$millions) and relative (percent) change in projected ex-vessel revenue under the action alternatives for 2011 compared to the No Action alternative. Table cells are highlighted in a color gradient to show the magnitude of changes. For the purposes of assessing the relative impact of the alternatives examining 2011 projections should be sufficient, because at this general level changes in 2012 should be very similar in direction and magnitude.
- Table 4 and Table 5 show personal income impacts by port group area for non-tribal, non-whiting sector groundfish landings in a format to the preceding tables. These estimates were produced by the Northwest Fisheries Science Center's IO-Pac model based on projected landings.
- Table 6 is a more detailed view in format similar to Table 2, showing the absolute change in ex-vessel revenue by port group area and fishery.
- Figures 1 and 2 show the year to year percent change in ex-vessel revenue, 1999-2009 for nonwhiting and whiting sectors to provide context for the changes projected under the alternatives.
- Figure 3 shows the distribution in groundfish ex-vessel revenue in 2009 by port group area.
- Table 7 shows the "primary sector" for the port group area, using PacFIN revenue data to identify which sector accounted for the largest source of ex-vessel groundfish revenue, 2005-2009 (the actual value is shown in parenthesis). It summarizes the vulnerability analysis (Agenda Item B.3.a, Attachment 4) by showing the number of counties rated vulnerable or most vulnerable within the region. It takes information from the Amendment 20 Final Environmental Impact Statement port comparative advantage model on factors related to trawl rationalization, but also relevant to the effects of 2011-2012 management measures. It also shows relative standing of port group areas with respect to "potential QP revenue."<sup>1</sup>
- Table 8 shows the importance of various sectors within port group areas from a coastwide and within port perspective. Coastwide importance is based on the rank of the port group area relative to all other port groups in terms of ex-vessel revenue from the sector. The in-port importance is based on the port's ranking in terms of landings from groundfish sectors in that port as a percentage of all landings in the port group. Values in parenthesis show the actual percent of groundfish landings from that sector relative to either coastwide or within port revenues.

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<sup>1</sup>Potential QP revenue was calculated based on an assessment of the principal port of vessels associated with trawl limited access permits and the expected initial allocation of quota shares to these permits. Based on the trawl sector allocations under the preliminary preferred alternative and recent average prices by species category, potential revenue from the quota pounds that could be assigned to vessels associated with the ports was calculated. That this is potential revenue cannot be over-emphasized because there are many factors that could cause quota pounds to be landed in other ports and regions. In addition, because of both potential bycatch and market constraints, actual landings may not take the full allocation for a given species.

- Table 9 provides additional information on the distribution of ex-vessel revenue by sector and port group area.
- Additional detailed ex-vessel revenue projections are available in an Excel workbook posted on the Council's website at <http://www.pcouncil.org/council-operations/briefing-books/>.

Projected coastwide revenues (\$millions) under the alternatives are as follows:

	No Action	Alt 1a	Alt 1b	Alt 1g	Alt 1h	Alt 2a	Alt 2b	Alt 3a	Alt 3b	Alt 3c	Alt 3d
<b>2011</b>	382.26	373.72	374.01	373.70	373.72	369.98	370.01	369.51	369.53	365.41	365.44
<b>2012</b>	382.26	373.03	373.07			369.10	369.12	371.50	371.52	368.96	368.98

Some key points indicated by the information in the tables:

- Port group areas in Oregon, particularly Astoria, Newport, and Coos Bay show the largest absolute declines in ex-vessel revenue followed by the Northern California ports of Eureka and Fort Bragg; ports in Central and Southern California show very small decreases or modest increases in projected revenue. The largest absolute declines in ex-vessel revenue are projected for Newport Oregon, ranging from -\$1.5 million under Alternative 1 to -\$3.0 million under Alternative 3.
- Projected changes in personal income show a similar distribution among port group areas as ex-vessel revenue. This is not unexpected because the distribution of projected ex-vessel revenue is the input to the IO-Pac model.
- The largest relative decline in ex-vessel revenue occurs in Brookings (-5.7% to -13.5%) and Fort Bragg (-6.7% to -12.6%).
- Looking at the more detailed data in Table 6, nonwhiting trawl in Astoria and Newport would experience the largest absolute decline in ex-vessel revenue (-30.9% and -28.5%, respectively) which would occur under Alternatives 2a and 2b and all of the Alternative 3 options. Declines in nonwhiting trawl in these ports are also accompanied by maximum declines in limited entry fixed gear revenues of up to 48 percent.
- The projected relative change in coastwide ex-vessel revenue under all the action alternatives is within the range of year to year changes seen for groundfish sectors over the past decade. For nonwhiting sectors these year-on revenue changes have ranged roughly +/- 20 percent; whiting fisheries have been more volatile in terms of year to year revenue changes.
- The Oregon and Northern California ports showing the largest declines in revenue depend on nonwhiting trawl as a significant share of groundfish revenue based on 2005-2009 data. At the high end, 79 percent of revenue came from nonwhiting trawl in Eureka; Newport has the lowest share among these ports at 41 percent. These ports are also in counties rated vulnerable or most vulnerable, with the exception of Astoria. Astoria accounted for the largest share of groundfish revenue in 2009 at 18 percent; Newport was second at 17 percent.

**Table 1. Summary of the analytical alternatives.**

Alternative	Analytical Scenario	Trawl Option	Non-Nearshore Option	Nearshore Option
“No Action”	2010	2010	2010	No Action.1
“Alt 1a”	SQ SPR for OF Spp* and PPA for Non-OF Spp	Alava Closed	1	1 a: 50-50
“Alt 1b”		Alava Closed	1	1 a: 55-45
“Alt 1g”		Alava Open	1	2 a: 50-50
“Alt 1h”		Alava Open	1	2 a: 55-45
“Alt 2a”	Intermed. OF Spp ACL and PPA for Non-OF Spp	Intermediate Petrale ACL	2	2 a: 50-50
“Alt 2b”		Intermediate Petrale ACL	2	2 a: 55-45
“Alt 3a”	Low OF Spp ACL and PPA for Non-OF SPP**	Low Petrale, Low Sablefish	3.1	3 a: 50-50
“Alt 3b”		Low Petrale, Low Sablefish	3.1	3 a: 55-45
“Alt 3c”		Low Petrale, Low Sablefish	3.2	3 a: 50-50
“Alt 3d”		Low Petrale, Low Sablefish	3.2	3 a: 55-45
* Except Widow and Yelloweye (see p. 18 B3a Att 1)				
** Low sablefish ACL				

**Table 2. Change in projected ex-vessel revenue (\$millions) by alternative and port group area.**

Port Area	Alt 1a	Alt 1b	Alt 1g	Alt 1h	Alt 2a	Alt 2b	Alt 3a	Alt 3b	Alt 3c	Alt 3d
Puget Sound	-0.5	-0.5	-0.5	-0.5	-0.7	-0.7	-0.8	-0.8	-1.1	-1.1
N. WA Coast	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.8	-0.8	-1.0	-1.0
S.& Cen. WA Coast	-0.5	-0.5	-0.5	-0.5	-0.6	-0.6	-0.7	-0.7	-1.0	-1.0
Unid. WA	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
Astoria	-1.4	-1.4	-1.4	-1.4	-2.6	-2.6	-2.6	-2.6	-2.9	-2.9
Newport	-1.5	-1.5	-1.5	-1.5	-2.1	-2.1	-2.0	-2.0	-3.0	-3.0
Coos Bay	-1.1	-1.1	-1.1	-1.1	-1.6	-1.6	-1.6	-1.6	-2.0	-2.0
Brookings	-0.9	-0.7	-0.9	-0.9	-1.1	-1.0	-1.2	-1.1	-1.7	-1.7
Crescent City	-0.3	-0.3	-0.3	-0.3	-0.5	-0.5	-0.5	-0.5	-0.7	-0.7
Eureka	-0.7	-0.7	-0.7	-0.7	-1.1	-1.1	-1.1	-1.1	-1.3	-1.3
Fort Bragg	-0.5	-0.5	-0.5	-0.5	-0.6	-0.6	-0.6	-0.6	-0.9	-0.9
Bodega Bay	-0.0	-0.0	-0.0	-0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
San Francisco	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.5	-0.5
Monterey	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.3	-0.3
Morro Bay	+0.1	+0.1	+0.1	+0.1	+0.0	+0.0	-0.0	-0.0	-0.1	-0.1
Santa Barbara	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1
Los Angeles	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
San Diego	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
Coastwide	-8.5	-8.3	-8.6	-8.5	-12.3	-12.3	-12.8	-12.7	-16.8	-16.8

**Table 3. Percent change in projected ex-vessel revenue by alternative and port group area.**

Port Area	Alt 1a	Alt 1b	Alt 1g	Alt 1h	Alt 2a	Alt 2b	Alt 3a	Alt 3b	Alt 3c	Alt 3d
Puget Sound	-1.2%	-1.2%	-1.2%	-1.2%	-1.6%	-1.6%	-1.8%	-1.8%	-2.6%	-2.6%
N. WA Coast	-5.7%	-5.7%	-5.7%	-5.7%	-5.7%	-5.7%	-6.3%	-6.3%	-7.9%	-7.9%
S.& Cen. WA Coast	-1.2%	-1.2%	-1.2%	-1.2%	-1.6%	-1.6%	-1.9%	-1.9%	-2.7%	-2.7%
Unid. WA	-3.3%	-3.3%	-3.3%	-3.3%	-3.3%	-3.3%	-3.3%	-3.3%	-3.3%	-3.3%
Astoria	-3.7%	-3.7%	-3.7%	-3.7%	-7.1%	-7.1%	-7.1%	-7.1%	-7.8%	-7.8%
Newport	-5.1%	-5.0%	-5.1%	-5.1%	-7.2%	-7.2%	-7.0%	-7.0%	-10.3%	-10.3%
Coos Bay	-4.2%	-4.2%	-4.2%	-4.2%	-6.4%	-6.4%	-6.3%	-6.3%	-8.1%	-8.1%
Brookings	-6.7%	-5.7%	-6.9%	-6.8%	-8.3%	-8.2%	-9.1%	-9.0%	-13.5%	-13.4%
Crescent City	-2.1%	-1.6%	-2.1%	-2.1%	-3.0%	-3.0%	-3.4%	-3.3%	-4.2%	-4.2%
Eureka	-4.3%	-4.2%	-4.3%	-4.3%	-6.8%	-6.8%	-6.8%	-6.8%	-8.1%	-8.1%
Fort Bragg	-6.7%	-6.7%	-6.7%	-6.7%	-7.9%	-7.9%	-7.7%	-7.7%	-12.6%	-12.6%
Bodega Bay	-2.0%	-2.0%	-2.0%	-2.0%	-2.7%	-2.7%	-2.7%	-2.7%	-4.3%	-4.3%
San Francisco	-2.1%	-2.1%	-2.1%	-2.1%	-3.1%	-3.1%	-3.3%	-3.3%	-4.5%	-4.5%
Monterey	-1.4%	-1.4%	-1.4%	-1.4%	-2.0%	-2.0%	-2.1%	-2.1%	-4.2%	-4.2%
Morro Bay	1.0%	1.0%	1.0%	1.0%	0.7%	0.7%	-0.3%	-0.3%	-1.0%	-1.0%
Santa Barbara	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
Los Angeles	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
San Diego	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
Coastwide	-2.2%	-2.2%	-2.2%	-2.2%	-3.2%	-3.2%	-3.3%	-3.3%	-4.4%	-4.4%

**Table 4. Summary of income impacts for non-tribal, non-whiting commercial groundfish fisheries sectors under the 2011-2012 management alternatives.**

<b>Port Area</b>	<b>(\$ million)</b>		<b>Change from No Action (\$ million)</b>								
	<b>No Action</b>	<b>Alt 1a</b>	<b>Alt 1b</b>	<b>Alt 1g</b>	<b>Alt 1h</b>	<b>Alt 2a</b>	<b>Alt 2b</b>	<b>Alt 3a</b>	<b>Alt 3b</b>	<b>Alt 3c</b>	<b>Alt 3d</b>
Puget Sound	5.70	- 1.10	- 1.10	- 1.11	- 1.11	- 1.40	- 1.40	- 1.65	- 1.65	- 2.43	- 2.43
N. WA Coast	1.32	- 0.24	- 0.24	- 0.25	- 0.25	- 0.25	- 0.25	- 0.33	- 0.33	- 0.59	- 0.59
S.& Cen. WA Coast	4.86	- 0.66	- 0.66	- 0.66	- 0.66	- 0.86	- 0.86	- 1.00	- 1.00	- 1.45	- 1.45
Astoria	15.49	- 1.96	- 1.96	- 1.98	- 1.98	- 3.76	- 3.76	- 3.70	- 3.70	- 4.16	- 4.16
Tillamook	0.22	- 0.06	- 0.02	- 0.06	- 0.06	- 0.06	- 0.06	- 0.11	- 0.10	- 0.11	- 0.11
Newport	9.88	- 1.57	- 1.56	- 1.59	- 1.59	- 2.18	- 2.18	- 2.11	- 2.11	- 3.25	- 3.24
Coos Bay	7.87	- 1.34	- 1.34	- 1.35	- 1.35	- 2.01	- 2.01	- 1.97	- 1.97	- 2.60	- 2.60
Brookings	3.93	- 0.72	- 0.61	- 0.74	- 0.73	- 0.86	- 0.85	- 0.95	- 0.94	- 1.47	- 1.46
Crescent City	1.60	- 0.24	- 0.18	- 0.24	- 0.23	- 0.33	- 0.32	- 0.37	- 0.36	- 0.48	- 0.48
Eureka	6.06	- 0.92	- 0.90	- 0.92	- 0.92	- 1.43	- 1.43	- 1.44	- 1.44	- 1.75	- 1.75
Fort Bragg	5.23	- 0.71	- 0.71	- 0.72	- 0.72	- 0.84	- 0.84	- 0.81	- 0.81	- 1.37	- 1.37
Bodega Bay	0.37	- 0.06	- 0.06	- 0.07	- 0.07	- 0.09	- 0.09	- 0.08	- 0.08	- 0.14	- 0.14
San Francisco	1.87	- 0.25	- 0.25	- 0.26	- 0.26	- 0.36	- 0.36	- 0.38	- 0.38	- 0.54	- 0.54
Monterey	1.46	- 0.11	- 0.11	- 0.12	- 0.12	- 0.16	- 0.16	- 0.16	- 0.16	- 0.33	- 0.33
Morro Bay	3.43	+ 0.03	+ 0.03	- 0.12	- 0.12	- 0.13	- 0.13	- 0.03	- 0.03	- 0.07	- 0.07
Santa Barbara	0.80	+ 0.11	+ 0.11	+ 0.10	+ 0.10	+ 0.10	+ 0.10	+ 0.10	+ 0.10	+ 0.10	+ 0.10
Los Angeles	1.74	- 0.04	- 0.04	- 0.07	- 0.07	- 0.07	- 0.07	- 0.04	- 0.04	- 0.05	- 0.05
San Diego	0.73	- 0.01	- 0.01	- 0.02	- 0.02	- 0.02	- 0.02	- 0.01	- 0.01	- 0.01	- 0.01
<b>Coastwide</b>	<b>72.57</b>	<b>-9.86</b>	<b>-9.59</b>	<b>-10.17</b>	<b>-10.14</b>	<b>-14.73</b>	<b>-14.71</b>	<b>-15.05</b>	<b>-15.02</b>	<b>-20.69</b>	<b>-20.67</b>

**Table 5. Summary of income impacts for non-tribal, non-whiting commercial groundfish fisheries sectors under the 2011-2012 management alternatives.**

<b>Port Area</b>	<b>(\$ million)</b>		<b>% Change from No Action</b>								
	<b>No Action</b>	<b>Alt 1a</b>	<b>Alt 1b</b>	<b>Alt 1g</b>	<b>Alt 1h</b>	<b>Alt 2a</b>	<b>Alt 2b</b>	<b>Alt 3a</b>	<b>Alt 3b</b>	<b>Alt 3c</b>	<b>Alt 3d</b>
Puget Sound	5.70	- 19.3%	- 19.3%	- 19.4%	- 19.4%	- 24.6%	- 24.6%	- 28.9%	- 28.9%	- 42.6%	- 42.6%
N. WA Coast	1.32	- 18.3%	- 18.2%	- 18.9%	- 18.9%	- 19.3%	- 19.3%	- 25.0%	- 25.0%	- 44.7%	- 44.7%
S.& Cen. WA Coast	4.86	- 13.5%	- 13.5%	- 13.6%	- 13.6%	- 17.8%	- 17.8%	- 20.6%	- 20.6%	- 29.8%	- 29.8%
Astoria	15.49	- 12.6%	- 12.6%	- 12.8%	- 12.8%	- 24.3%	- 24.3%	- 23.9%	- 23.9%	- 26.8%	- 26.8%
Tillamook	0.22	- 24.7%	- 7.8%	- 26.2%	- 24.6%	- 29.0%	- 27.4%	- 48.0%	- 46.5%	- 49.7%	- 48.2%
Newport	9.88	- 15.9%	- 15.8%	- 16.1%	- 16.0%	- 22.1%	- 22.0%	- 21.4%	- 21.4%	- 32.8%	- 32.8%
Coos Bay	7.87	- 17.0%	- 17.0%	- 17.1%	- 17.1%	- 25.5%	- 25.5%	- 25.1%	- 25.1%	- 33.0%	- 33.0%
Brookings	3.93	- 18.4%	- 15.5%	- 18.7%	- 18.5%	- 21.9%	- 21.7%	- 24.1%	- 23.8%	- 37.4%	- 37.1%
Crescent City	1.60	- 15.0%	- 11.2%	- 14.9%	- 14.6%	- 20.5%	- 20.2%	- 22.9%	- 22.7%	- 30.2%	- 30.0%
Eureka	6.06	- 15.2%	- 14.8%	- 15.2%	- 15.2%	- 23.6%	- 23.6%	- 23.8%	- 23.8%	- 28.9%	- 28.9%
Fort Bragg	5.23	- 13.7%	- 13.6%	- 13.7%	- 13.7%	- 16.1%	- 16.1%	- 15.5%	- 15.5%	- 26.2%	- 26.2%
Bodega Bay	0.37	- 17.5%	- 17.5%	- 18.2%	- 18.2%	- 23.7%	- 23.7%	- 22.7%	- 22.7%	- 36.7%	- 36.7%
San Francisco	1.87	- 13.6%	- 13.3%	- 13.9%	- 13.9%	- 19.2%	- 19.2%	- 20.2%	- 20.2%	- 29.0%	- 29.0%
Monterey	1.46	- 7.8%	- 7.4%	- 8.4%	- 8.4%	- 10.7%	- 10.7%	- 10.6%	- 10.6%	- 22.8%	- 22.8%
Morro Bay	3.43	+ 0.9%	+ 1.0%	- 3.4%	- 3.4%	- 3.8%	- 3.8%	- 1.0%	- 1.0%	- 1.9%	- 1.9%
Santa Barbara	0.80	+ 13.6%	+ 13.9%	+ 11.9%	+ 11.9%	+ 11.9%	+ 11.9%	+ 12.3%	+ 12.3%	+ 12.3%	+ 12.3%
Los Angeles	1.74	- 2.3%	- 2.3%	- 4.3%	- 4.3%	- 4.3%	- 4.3%	- 2.4%	- 2.4%	- 2.8%	- 2.8%
San Diego	0.73	- 1.3%	- 1.3%	- 2.5%	- 2.5%	- 2.5%	- 2.5%	- 1.4%	- 1.4%	- 1.4%	- 1.4%
<b>Coastwide</b>	<b>72.57</b>	<b>- 13.6%</b>	<b>- 13.2%</b>	<b>- 14.0%</b>	<b>- 14.0%</b>	<b>- 20.3%</b>	<b>- 20.3%</b>	<b>- 20.7%</b>	<b>- 20.7%</b>	<b>- 28.5%</b>	<b>- 28.5%</b>

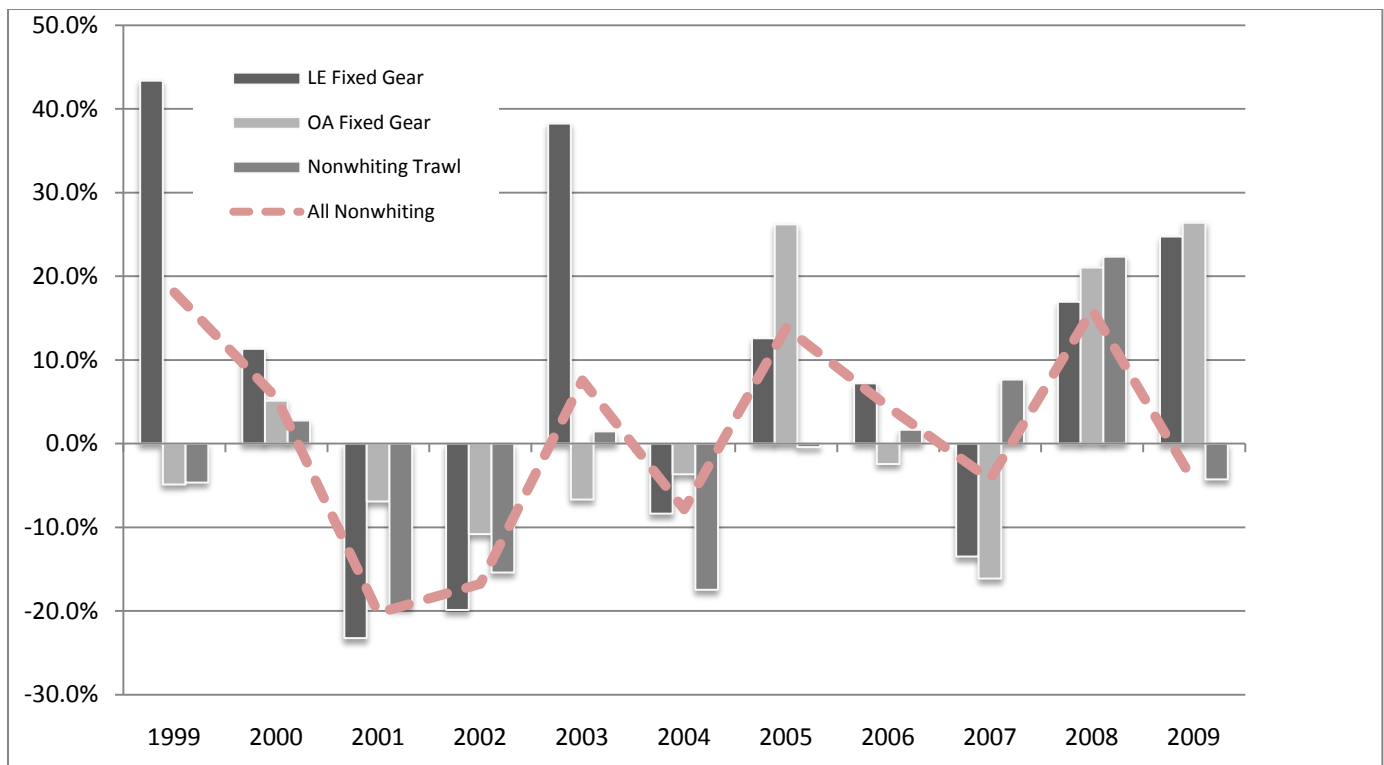


**Table 6. Change in projected ex-vessel revenue (\$millions) by alternative and port group area and fishery.**

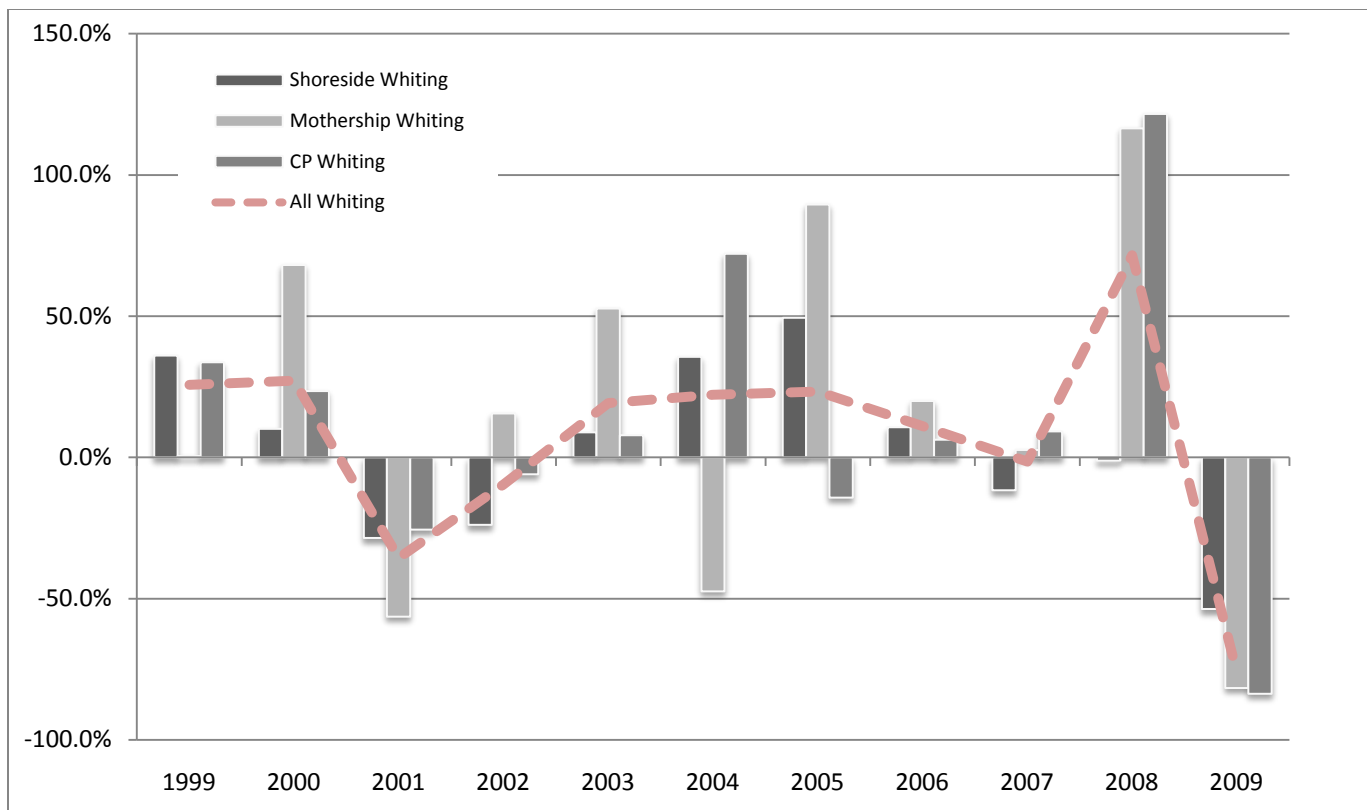
IO_AREA	SECTOR_NAME	Change from No Action (\$ million)									
		Alt 1a	Alt 1b	Alt 1g	Alt 1h	Alt 2a	Alt 2b	Alt 3a	Alt 3b	Alt 3c	Alt 3d
Puget Sound	Non-whiting trawl	- 0.2	- 0.2	- 0.2	- 0.2	- 0.3	- 0.3	- 0.3	- 0.3	- 0.3	- 0.3
	Limited entry fixed gear	- 0.4	- 0.4	- 0.4	- 0.4	- 0.4	- 0.4	- 0.5	- 0.5	- 0.8	- 0.8
N. WA Coast	Non-whiting trawl	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
	Limited entry fixed gear	- 0.2	- 0.2	- 0.2	- 0.2	- 0.2	- 0.2	- 0.3	- 0.3	- 0.4	- 0.4
	OA non-nearshore	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
	Tribal groundfish	- 0.5	- 0.5	- 0.5	- 0.5	- 0.5	- 0.5	- 0.5	- 0.5	- 0.5	- 0.5
S. & Cen. WA Coast	Shoreside whiting trawl	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
	Non-whiting trawl	- 0.2	- 0.2	- 0.2	- 0.2	- 0.3	- 0.3	- 0.3	- 0.3	- 0.3	- 0.3
	Limited entry fixed gear	- 0.3	- 0.3	- 0.3	- 0.3	- 0.3	- 0.3	- 0.4	- 0.4	- 0.6	- 0.6
	OA non-nearshore	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.1	- 0.1	- 0.1	- 0.1
	Incidental OA										
Astoria	Shoreside whiting trawl	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
	Non-whiting trawl	- 1.1	- 1.1	- 1.1	- 1.1	- 2.4	- 2.4	- 2.4	- 2.4	- 2.4	- 2.4
	Limited entry fixed gear	- 0.2	- 0.2	- 0.2	- 0.2	- 0.2	- 0.2	- 0.2	- 0.2	- 0.4	- 0.4
	OA nearshore	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
	OA non-nearshore	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.1	- 0.1
Tillamook	Non-whiting trawl	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
	OA nearshore	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.1	- 0.1	- 0.1	- 0.1
	OA non-nearshore	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
Newport	Shoreside whiting trawl	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
	Non-whiting trawl	- 0.7	- 0.7	- 0.7	- 0.7	- 1.4	- 1.4	- 1.4	- 1.4	- 1.4	- 1.4
	Limited entry fixed gear	- 0.6	- 0.6	- 0.6	- 0.6	- 0.6	- 0.6	- 0.6	- 0.6	- 1.5	- 1.5
	OA nearshore	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.1	- 0.1	- 0.1	- 0.1
	OA non-nearshore	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.1	- 0.1
Coos Bay	Shoreside whiting trawl	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
	Non-whiting trawl	- 0.7	- 0.7	- 0.7	- 0.7	- 1.3	- 1.3	- 1.3	- 1.3	- 1.3	- 1.3
	Limited entry fixed gear	- 0.2	- 0.2	- 0.2	- 0.2	- 0.2	- 0.2	- 0.2	- 0.2	- 0.5	- 0.5
	OA nearshore	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
	OA non-nearshore	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.2	- 0.2
Brookings	Non-whiting trawl	- 0.3	- 0.3	- 0.3	- 0.3	- 0.5	- 0.5	- 0.5	- 0.5	- 0.5	- 0.5
	Limited entry fixed gear	- 0.3	- 0.3	- 0.3	- 0.3	- 0.3	- 0.3	- 0.2	- 0.2	- 0.6	- 0.6
	OA nearshore	- 0.2	- 0.0	- 0.2	- 0.2	- 0.2	- 0.2	- 0.3	- 0.3	- 0.3	- 0.3
	OA non-nearshore	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.3	- 0.3
Crescent City	Shoreside whiting trawl	+ 0.0	+ 0.0	+ 0.0	+ 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
	Non-whiting trawl	- 0.2	- 0.2	- 0.2	- 0.2	- 0.3	- 0.3	- 0.3	- 0.3	- 0.3	- 0.3
	Limited entry fixed gear	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.2	- 0.2
	OA nearshore	- 0.1	+ 0.0	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1
	OA non-nearshore	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
Eureka	Shoreside whiting trawl	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0

**Change from No Action (\$ million)**

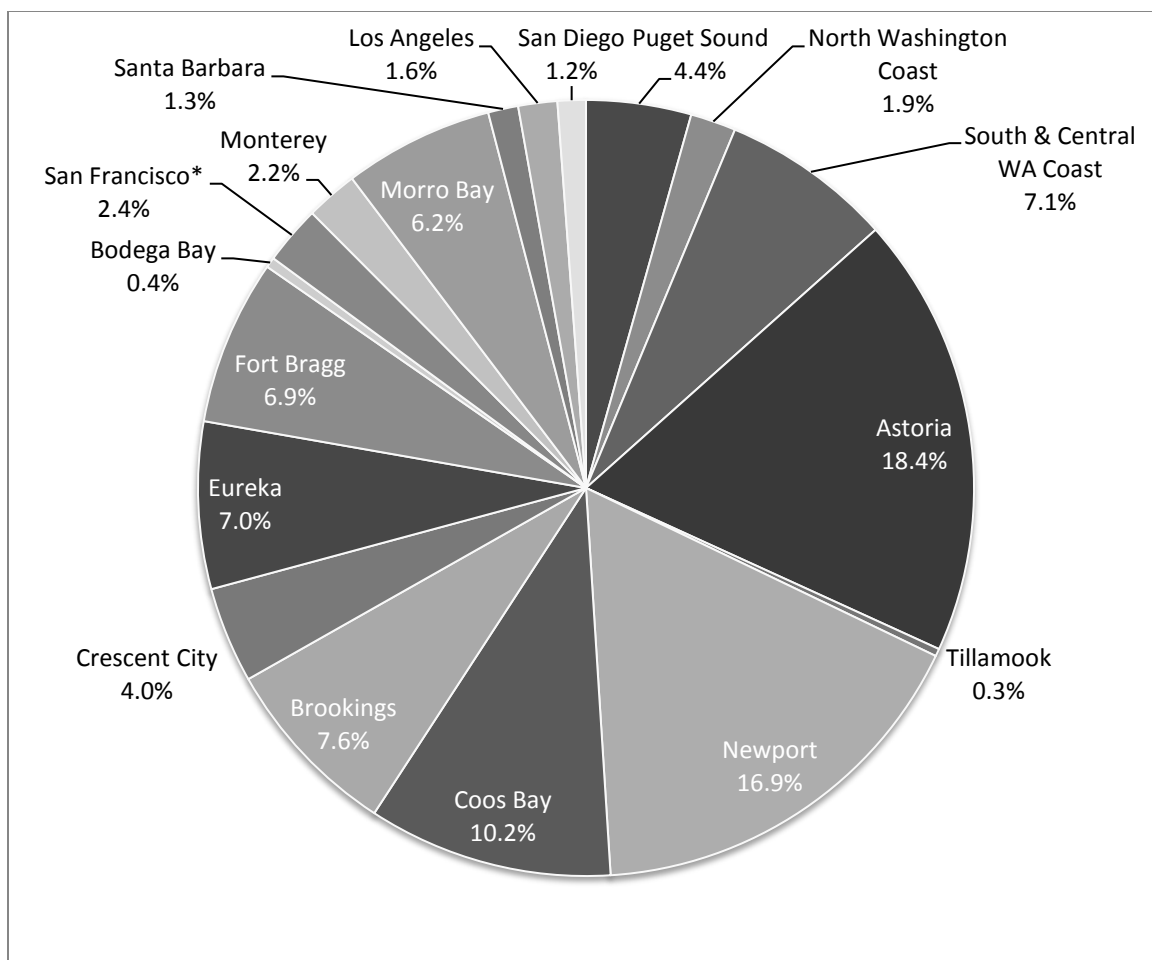
<u>IO AREA</u>	<u>SECTOR NAME</u>	<u>Alt 1a</u>	<u>Alt 1b</u>	<u>Alt 1g</u>	<u>Alt 1h</u>	<u>Alt 2a</u>	<u>Alt 2b</u>	<u>Alt 3a</u>	<u>Alt 3b</u>	<u>Alt 3c</u>	<u>Alt 3d</u>
	Non-whiting trawl	- 0.5	- 0.5	- 0.5	- 0.5	- 0.9	- 0.9	- 0.9	- 0.9	- 0.9	- 0.9
	Limited entry fixed gear	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.2	- 0.2
	OA nearshore	- 0.0	+ 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
	OA non-nearshore	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.0	- 0.0	- 0.1	- 0.1
Fort Bragg	Non-whiting trawl	- 0.3	- 0.3	- 0.3	- 0.3	- 0.4	- 0.4	- 0.4	- 0.4	- 0.4	- 0.4
	Limited entry fixed gear	- 0.2	- 0.2	- 0.2	- 0.2	- 0.2	- 0.2	- 0.2	- 0.2	- 0.4	- 0.4
	OA nearshore	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1
	OA non-nearshore	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.2	- 0.2
Bodega Bay	Non-whiting trawl	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
	Limited entry fixed gear	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
	OA nearshore	+ 0.0	+ 0.0	+ 0.0	+ 0.0	+ 0.0	+ 0.0	+ 0.0	+ 0.0	+ 0.0	+ 0.0
	OA non-nearshore	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
San Francisco	Non-whiting trawl	- 0.1	- 0.1	- 0.1	- 0.1	- 0.2	- 0.2	- 0.2	- 0.2	- 0.2	- 0.2
	Limited entry fixed gear	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1
	OA nearshore		+ 0.0					- 0.0	- 0.0	- 0.0	- 0.0
	OA non-nearshore	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.1	- 0.1
	Incidental OA										
Monterey	Non-whiting trawl	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1
	Limited entry fixed gear	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1
	OA nearshore	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.0	+ 0.0	+ 0.0	+ 0.0
	OA non-nearshore	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.1	- 0.1
Morro Bay	Non-whiting trawl	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
	Limited entry fixed gear	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
	OA nearshore	+ 0.2	+ 0.2	+ 0.2	+ 0.2	+ 0.2	+ 0.2	+ 0.2	+ 0.2	+ 0.2	+ 0.2
	OA non-nearshore	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.1	- 0.2	- 0.2
	Incidental OA										
Santa Barbara	Non-tribal non-groundfish										
	Limited entry fixed gear	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
	OA nearshore	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1
	OA non-nearshore	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
Los Angeles	Incidental OA										
	Limited entry fixed gear	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
	OA nearshore		+ 0.0					- 0.0	- 0.0	- 0.0	- 0.0
	OA non-nearshore	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
San Diego	Non-tribal non-groundfish										
	Limited entry fixed gear	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0
	OA nearshore		+ 0.0					- 0.0	- 0.0	- 0.0	- 0.0
	OA non-nearshore	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0	- 0.0



**Figure 1. Percent change in inflation adjusted ex-vessel revenue for nonwhiting sectors, 1999-2009.**



**Figure 2. Percent change in inflation adjusted ex-vessel revenue for whiting sectors, 1999-2009.**



**Figure 3. Distribution of revenue from groundfish in 2009 by port group area.**

**Table 7. Community status indicators, commercial groundfish fishery.**

Port Group Area	Primary Sector	Vulnerable Counties	Rationalization Effects			Potential QP Revenue
			Fleet Efficiency	Bycatch Dependent Area	Shorebased Infrastructure	
Puget Sound	Nonwhiting Trawl (53.5%)	None out of 8*	?	--	++	Medium
North Washington Coast	Tribal Nonwhiting (59.7%)	None out of 2	-	--	--	Low
S. and Central WA Coast	Shoreside Whiting (41.9%)	2 out of 3	-	-	+	Medium
Astoria	Nonwhiting Trawl (67.0%)	None out of 2	+	+	++	High
Tillamook	OA Fixed Gear (58.9%)	1 out of 1				Low
Newport	Nonwhiting Trawl (40.9%)	1 out of 1 (Most Vulnerable)	+	+	++	High
Coos Bay	Nonwhiting Trawl (72.8%)	1 out of 3	+	+	++	High
Brookings	Nonwhiting Trawl (42.7%)	1 out of 1	+	+	-	Low
Crescent City	Nonwhiting Trawl (60.7%)	1 out of 1 (Most Vulnerable)	-	+	+	Low
Eureka	Nonwhiting Trawl (79.4%)	1 out of 1	+	+	+	High
Fort Bragg	Nonwhiting Trawl (67.9%)	1 out of 1 (Most Vulnerable)	-	-	+	Medium
Bodega Bay	Nonwhiting Trawl (58.4%)	None out of 2				Low
San Francisco	Nonwhiting Trawl (68.1%)	None out of 2	-	--	++	High
Monterey	Nonwhiting Trawl (47.3%)	None out of 2	-	--	+	Medium
Morro Bay	OA Fixed Gear (60.8%)	None out of 1	?	+	-	Medium
Santa Barbara	OA Fixed Gear (51.6%)	None out of 2				None
Los Angeles	LE Fixed Gear (79.5%)	None out of 2				None
Sand Diego	LE Fixed Gear (75.0%)	None out of 1				None

**Table 8. Importance of sectors in port group areas based on ex-vessel revenue, 2005-2009.**

Port Group Area	Shoreside Whiting		Nonwhiting Trawl		Fixed Gear (LE & OA)	
	Coastwide	In Port	Coastwide	In Port	Coastwide	In Port
Puget Sound	Medium (0.0%)	Medium (0.1%)	High (6.5%)	Medium (53.5%)	High (9.5%)	Medium (44.6%)
North Washington Coast	Low (0.0%)	Low (0.0%)	Low (2.3%)	Low (17.7%)	Medium (5.2%)	Low (22.4%)
South and Central WA Coast	High (27.4%)	High (41.9%)	Medium (2.9%)	Low (15.3%)	High (6.9%)	Low (20.4%)
Astoria	High (27.7%)	High (23.0%)	High (23.6%)	High (67.0%)	Medium (5.8%)	Low (9.4%)
Tillamook	None (0.0%)	None (0.0%)	Low (0.2%)	Medium (33.1%)	Low (0.8%)	High (63.9%)
Newport	High (35.4%)	High (36.2%)	High (11.7%)	Medium (40.9%)	High (11.1%)	Low (21.9%)
Coos Bay	High (3.7%)	Medium (5.8%)	High (13.7%)	High (72.8%)	High (6.8%)	Low (20.5%)
Brookings	Low (0.0%)	Low (0.0%)	Medium (4.3%)	Medium (42.7%)	High (10.2%)	High (56.8%)
Crescent City	Medium (2.6%)	High (10.2%)	Medium (4.6%)	High (60.7%)	Medium (3.8%)	Medium (28.6%)
Eureka	Medium (3.0%)	Medium (6.4%)	High (11.1%)	High (79.4%)	Low (3.4%)	Low (13.9%)
Fort Bragg	None (0.0%)	None (0.0%)	High (7.4%)	High (67.9%)	Medium (6.1%)	Medium (31.7%)
Bodega Bay	None (0.0%)	None (0.0%)	Low (0.9%)	Medium (58.4%)	Low (1.0%)	Medium (36.3%)
San Francisco	None (0.0%)	None (0.0%)	Medium (4.6%)	High (68.1%)	Low (3.2%)	Medium (26.4%)
Monterey	Low (0.0%)	Low (0.0%)	Medium (3.5%)	Medium (47.3%)	Medium (6.5%)	Medium (49.4%)
Morro Bay	None (0.0%)	None (0.0%)	Medium (2.4%)	Low (32.7%)	High (8.5%)	High (64.9%)
Santa Barbara	None (0.0%)	None (0.0%)	Low (0.0%)	Low (0.4%)	Low (3.5%)	High (87.6%)
Los Angeles	None (0.0%)	None (0.0%)	Low (0.0%)	Low (0.1%)	Medium (4.7%)	High (91.9%)
San Diego	None (0.0%)	None (0.0%)	Low (0.0%)	Low (0.0%)	Low (2.9%)	High (92.5%)

**Table 9. Distribution of ex-vessel revenue from groundfish within port group areas, 2005-2009.**

Port Group Area	Whiting Shoreside	Nonwhiting Trawl	LEFG	OAFG	Incidental	Tribal Shoreside Whiting	Tribal Nonwhiting Groundfish
Puget Sound	0.1%	53.5%	43.8%	0.8%	0.2%	0.0%	1.6%
North Washington Coast	0.0%	17.7%	19.0%	3.4%	0.1%	0.0%	59.7%
South and Central WA Coast	41.9%	15.3%	16.9%	3.6%	0.8%	20.9%	0.6%
Unidentified WA	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	99.9%
Astoria	23.0%	67.0%	8.2%	1.2%	0.6%	0.0%	0.0%
Tillamook	0.0%	33.1%	5.1%	58.9%	3.0%	0.0%	0.0%
Newport	36.2%	40.9%	20.5%	1.4%	1.0%	0.0%	0.0%
Coos Bay	5.8%	72.8%	16.8%	3.7%	0.9%	0.0%	0.0%
Brookings	0.0%	42.7%	23.9%	32.9%	0.5%	0.0%	0.0%
Crescent City	10.2%	60.7%	12.7%	15.9%	0.6%	0.0%	0.0%
Eureka	6.4%	79.4%	8.9%	5.0%	0.3%	0.0%	0.0%
Fort Bragg	0.0%	67.9%	10.9%	20.8%	0.5%	0.0%	0.0%
Bodega Bay	0.0%	58.4%	8.6%	27.7%	5.3%	0.0%	0.0%
San Francisco	0.0%	68.1%	13.4%	13.0%	5.5%	0.0%	0.0%
Monterey	0.0%	47.3%	25.3%	24.1%	3.3%	0.0%	0.0%
Morro Bay	0.0%	32.7%	4.2%	60.8%	2.3%	0.0%	0.0%
Santa Barbara	0.0%	0.4%	36.0%	51.6%	12.0%	0.0%	0.0%
Los Angeles	0.0%	0.1%	79.5%	12.3%	8.1%	0.0%	0.0%
San Diego	0.0%	0.0%	75.0%	17.5%	7.5%	0.0%	0.0%
Unidentified CA	0.0%	0.0%	51.5%	43.0%	5.5%	0.0%	0.0%



## GROUNDFISH BIENNIAL SPEX

### CHAPTER 3.0 Affected Environment

#### 3.3 Fishery Ecosystem

##### 3.3.1 Protected Species

Four different laws designate a species or stock as “protected” within U.S. waters: the Endangered Species Act (ESA), the Marine Mammal Protection Act (MMPA), the Migratory Bird Treaty Act (MBTA), and Executive Order 13186. For the purposes of this section, a species is considered protected if it falls under the regulatory umbrella of one of these Federal laws.

In November, 2009, the Council and NMFS published the Draft Environmental Impact Statement on Rationalization of the Pacific Coast Groundfish Limited Entry Trawl Fishery. This document describes protected species found in the West Coast EEZ, and is summarized briefly below. The June 2008 Final EA on “A Limited Entry Program for the Non-Tribal Sectors of the Pacific Whiting Fishery” (FMP Amendment 15 EA) and the December 2005 Final EIS on “Pacific Coast Groundfish Fishery Management Plan Essential Fish Habitat Designation and Minimization of Adverse Impacts” (EFH EIS) (NMFS 2005) provided descriptions of West Coast EEZ species protected under the ESA, the MMPA, the MBTA and EO 13186 at Section 3.2 and 3.4, and Section 4.6, respectively, and provided information on fisheries interactions, where available and applicable. The December 2006 Final EIS on “Proposed Acceptable Biological Catch and Optimum Yield Specifications and Management Measures for the 2007-08 Pacific Coast Groundfish Fishery” (PFMC 2006) provided descriptions of West Coast EEZ species protected under these same laws at Chapter 6, and analyzed the effects of the groundfish fisheries on these species.

In March, 2010, the West Coast Groundfish Observer Program (WCGOP) published a report entitled “Bycatch of Marine Mammals, Sea Turtles, and Seabirds in the 2002-2008 U.S. West Coast Commercial Groundfish Fishery.” The document includes information on one interaction with a leatherback sea turtle (*Dermochelys coriacea*), representing the first documented sea turtle interaction with this fishery in many years. (Heery et al 2010). Leatherback, green (*Chelonia mydas*), and olive ridley (*Lepidochelys olivacea*) turtles are listed as endangered under the ESA, while loggerhead (*Caretta caretta*) turtles are listed as threatened. Heery et al (2010) also documents interactions with other marine mammals and seabirds, and uses a ratio estimator to estimate bycatch rates (Cochran 1977).

Whales listed under the ESA or the MMPA, and known to be present in West Coast waters include humpback, fin, blue, sperm, gray, and orca. However, only the sperm whale (*Physeter macrocephalus*) has been observed to have interacted with commercial groundfish vessels on the West Coast.

Other cetaceans with documented interactions with the West Coast groundfish fishery include the harbor porpoise (*Phocoena phocoena*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), and Risso’s dolphin (*Grampus griseus*). These species are protected under the MMPA but not the ESA.

Other marine mammals with documented interactions with the West Coast groundfish fishery include the California sea lion (*Zalophus californianus*), harbor seal (*Phoca vitulina*), northern elephant seal (*Mirounga angustirostris*), and the steller sea lion (*Eumetopias jubatus*). These species are all protected under the MMPA, and the steller sea lion is also listed under the ESA.

The U.S. West Coast supports a diversity of seabird species, including several with documented interactions with the groundfish fishery. These species fall under a variety of protective statutes and are listed in Table 4.3-2).

Based on these NEPA implementing regulations, the relevant content of the aforementioned EAs, EISs, and data report are incorporated by reference.

### **Species Recently Listed Under the ESA**

Lower Columbia River coho (70 FR 37160, June 28, 2005) the Southern Distinct Population (DPS) of green sturgeon (71 FR 17757, April 7, 2006), and the southern DPS of eulachon (75 FR 13012) on March 18, 2010) have been listed as threatened under the ESA. In addition, Oregon Coast coho was proposed on May 26, 2010, to remain listed as threatened (75 FR 9489). As a consequence, NMFS has reinitiated its Section 7 consultation on the Council's FMP.

### **3.3.2 Essential Fish Habitat**

A description of West Coast marine ecosystems and the affected essential fish habitat are available in volume 1 of the Council's 2008 Stock Assessment and Fishery Evaluation (SAFE) document. Volume 1 of the 2008 SAFE document is available by request to the Council office or online at [www.pcouncil.org/groundfish/gfsafe.html](http://www.pcouncil.org/groundfish/gfsafe.html). That document is hereby incorporated by reference.

### **Essential Fish Habitat and Periodic Reviews**

EFH has been described within the project area for highly migratory species, CPS, salmon, and groundfish. The MSA defines EFH to mean "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity" (16 U.S.C. 1802 sec. 3(10)). Regulatory guidelines elaborate that the words "essential" and "necessary" mean EFH should be sufficient to "support a population adequate to maintain a sustainable fishery and the managed species' contributions to a healthy ecosystem." The regulatory guidelines also establish authority for Councils to designate Habitat Areas of Particular Concern (HAPC) based on the vulnerability and ecological value of specific habitat types. Councils are required to minimize, to the extent practicable, the adverse effects of fishing on EFH. NMFS works through a consultation process to minimize adverse effects of non-fishing activities (50 CFR 600 subpart J). Refer to Volume 1 of the Council's 2008 groundfish SAFE document for more information. The Magnuson Act requires councils and NMFS to periodically review EFH and make changes as warranted by newly available information. All four West Coast FMPs are either in the review process (salmon and CPS) or pending (HMS, groundfish).

### **3.3.3 Trophic Structure**

#### **West Coast Marine Ecosystems**

The term ecosystem is generally defined as a "functional unit of the environment" within which the basic processes of energy flow and cycling are identifiable and can be (relatively) localized. In this sense, marine ecosystems are extremely difficult to identify, as most are relatively open systems, with poorly defined boundaries and strong interactions across broad spatial scales. The California Current ecosystem, like other Eastern boundary current ecosystems, are especially difficult to define, as they are characterized by tremendous fluctuations in physical conditions and productivity over multiple time scales (Parrish et al. 1981; Mann and Lazier 1996). To some degree, food webs are structured around coastal pelagic species (CPS) that exhibit boom-bust cycles over decadal time scales in response to low frequency climate variability (Bakun 1996; Schwartzlose et al. 1999). Similarly, the top trophic levels of such ecosystems are often dominated by highly migratory species such as salmon, albacore tuna, sooty shearwaters, fur seals and baleen whales, whose dynamics may be partially or wholly driven by processes in entirely different ecosystems, even different hemispheres. For this analysis, the ecosystem is considered in terms of physical and biological oceanography, climate, biogeography, essential fish habitat (EFH), marine protected areas, and the role of depleted species' rebuilding in the marine ecosystem.

#### **3.3.3.1 Physical and Biological Oceanography**

The California Current is essentially the eastern limb of the Central Pacific Gyre, and begins where the west wind drift (or the North Pacific Current) reaches the North American Continent. This occurs near the northern end of Vancouver Island, roughly between 45° and 50° N latitude and 130° to 150° W longitude (Ware and McFarlane 1989). A divergence in the prevailing wind patterns causes the west wind drift to split into two broad coastal currents, the California Current to the south and the Alaska Current to the north. As there are really several dominant currents in the region, all of which vary in geographical location, intensity, and direction with the seasons, this region is often referred to as the California Current System (Hickey 1979). A more detailed description of the physical and biological oceanography of West Coast marine ecosystems can be found in Volume 1 of the 2008 SAFE document.

#### **3.3.3.2 Interannual and Interdecadal Climate Forcing**

The effects of climate on the biota of the California Current ecosystem have been recognized for some time. Many of these effects and research illuminating these processes can be found in Volume 1 of the 2008 SAFE document. Additional information regarding anthropogenic climate forcing follows.

Climate change and ocean acidification pose significant additional stresses to managed fisheries on top of fishing mortality (IPCC 1995;WBGU 2006;IPCC 2007). Heat stress from warming waters and changes in the timing and magnitude of upwelling and associated nutrients and prey are just two examples. As climate change proceeds, there will likely be greater departure from historic population trends and increased uncertainty and risk in fisheries management. In addition, the effects of fishing pressure may unexpectedly magnify the effects of climate change and vice versa (IPCC 2001;Harley and Rogers-Bennett 2004;Hsieh et al. 2008). For example, overfishing and climate interactions are believed to have facilitated the sustained collapse of the Atlantic cod (Rose and O'Driscoll 2002;Beaugrand et al. 2003).

Over the past decade, researchers have observed numerous oceanographic changes along the Pacific Coast which are consistent with anthropogenic climate forcing. They include: warmer surface waters in the California Current (Mendelssohn et al. 2003;Mendelssohn et al. 2005), increased stratification in the Southern region of the current (Roemmick and McGowan 1995), increased rate of eustatic sea level rise (IPCC 2007), declining pH with episodes of aragonite undersaturated waters occurring on the continental shelf (Feely et al. 2004;Orr et al. 2005;Caldeira and Wickett 2008), and phenology (changes in the timing and duration of upwelling) (Barth et al. 2007;Chan et al. 2008. Bograd et al. 2009). Ecological responses have also been observed, including shifts in planktonic community in the California Current from subtropical to tropical (Roemmick and McGowan 1995;Field et al. 2006), reproductive failures in seabird colonies (Sydeman et al. 2006; Peterson et al. 2006, Sydeman et al. 2009), numerous northward range extensions (Erickson et al. 1991;Carlton 2000;Hoff 2002;Walker et al. 2002;Tognazzini 2003;Field et al. 2007; Roberts et al. 2007;Rogers-Bennet 2007), shoaling of the oxygen minimum layer in deep water (Bograd et al. 2008), and reoccurring seasonal dead zones off the coast of Oregon (Chan et al. 2008).

Ludwig et al. ( 1993) argue the potential for adverse impacts on fish populations from the identified changes, individually and cumulatively and our inability to formulate precise predictions regarding fisheries' responses requires adoption of a more precautionary approach to exploitation than is the norm. As climate change imposes a variety of selective pressures, it will be critical for fish populations to maintain their connectivity and adaptability (IPCC 1995; IPCC 2001; FAO 2002;Arctic Council Arctic Climate Impact Assessment 2005; WBGU 2006). This will require preservation of large, genetically diverse populations which are broadly distributed, and maintenance of a more natural size distribution within populations, to promote productivity.

#### **3.3.3.3 Biogeography**

Biogeography describes spatial patterns of biological distribution. Along the U.S. west coast within the California Current system, such patterns have been observed to be influenced by various factors including depth, ocean conditions, and latitude. Each is discussed in volume 1 of the 2008 groundfish SAFE document.

#### **3.3.3.4 Marine Protected Areas**

In addition to the closed areas described above, there are marine protected areas distributed throughout the project area. The EIS for Pacific Coast Groundfish EFH contains a complete analysis of these sites and is incorporated here by reference. The following is a brief summary of these areas.

##### Federally Designated Marine Managed Areas

- Twenty-eight National Wildlife Refuges, covering approximately 89,000 ha. Regulations vary by refuge, but generally, commercial fishing is not allowed in most refuges.
- Seven National Parks, covering approximately 570,000 ha (although only a small fraction of this area is the marine portion of the parks). Regulations vary by park.
- Five National Marine Sanctuaries covering approximately 3,000,000 ha. Regulations vary by sanctuary, but in general, all types of fishing are allowed in Federal waters of the sanctuaries.
- Four National Estuarine Research Reserves (NERR), covering approximately 8,000 ha. All fishing and fishing gear are prohibited from the Tijuana River NERR and the Elkhorn Slough NERR (which doesn't include the Slough's main channel). All other NERR sites allow or do not address specific fishing regulations.

##### Other Federal Areas

These are some additional areas under Federal jurisdiction that may have restrictions to vessel access, rather than specific regulations having to do with fishing or fishing gear. These data were developed in 1998 by Al Didier for the Pacific States Marine Fisheries Commission (PSMFC), so the total number of areas may have changed since these data were compiled.

- Twenty-two Regulated Navigation Areas (33CFR165) cover approximately 17,000 ha, and are located generally in urban areas such as Puget Sound, Columbia River, San Francisco Bay, Los Angeles, and San Diego.
- Forty-nine Danger Zones and Restricted Areas (33CFR334) cover approximately 170,000 ha. These are located in Puget Sound, San Francisco Bay, Monterey Bay, between Morro Bay and Point Conception, off some of the Channel Islands, and a few additional southern California locations.
- Twenty-seven weather and scientific buoys. Two buoys are located off the Washington coast, one is located off the Oregon coast, and twenty buoys are located off the California coast, with six of these located off Monterey Bay. Four of these buoys are located outside the EEZ.

##### Fishing regulated areas established by the Council:

- Rockfish Conservation Areas (RCAs): These areas have changed over time, as well as having a seasonal component to their locations. In addition, there are specific areas for trawl gear and non-trawl gear.
- Cowcod Conservation Areas (CCAs): Sections of the CCA cover a total area of 1,372,447 ha.
- Darkblotched Conservation Area (DBCA): The Darkblotched Conservation Area covered 1,029,415 ha.
- Yelloweye Rockfish Conservation Area (YRCA): This area encompasses 59,285 ha.
- Two National Marine Fisheries sites (Pacific Whiting Salmon Conservation Zones), covering approximately 44,000 ha. These two sites, one off the Columbia River and one off the Klamath River, prohibit fishing for Pacific Whiting with commercial mid-water trawl gear.

Currently, these area-based spatial management measures, as well as depth-based gear restrictions, are key to achieving a range of management objectives, particularly those to reduce the bycatch of rebuilding species while maintaining fishing opportunities on healthy stocks. Latitudinal area management is outlined in the ABC and OY tables within the biennial specifications (e.g., North 40°10' N. latitude and South 40°10' N. latitude) and in the trip limit tables where, in some instances, limits differ from the ABC/OY delineations because of bycatch considerations.

Complex spatial management measures have become increasingly necessary within the existing management framework, for example, the RCA configuration adopted in March 2007 to minimize canary rockfish bycatch created a spatial management regime considerably more complex than past management measures. Yet the underlying causes and consequences for the spatially varying abundance and bycatch rates were unclear; the management regime was implemented without explicit knowledge of whether the differences in high versus low bycatch rates by area reflected habitat association and stock distribution, or historical patterns of depletion that leave depleted (low bycatch) regions more vulnerable to localized depletion. As trawl rationalization management alternatives are considered by the Council, there may be a further increased need for spatial management measures, possibly in a manner different than status quo. For example, some intersector allocation alternatives, as well as trawl rationalization alternatives, could result in effort and catch being concentrated in smaller areas than status quo, as some current alternatives allocate the IQ of groundfish stocks according to the Council's ABC/OY table rather than existing cumulative limits that separates the fishery into as many as three latitudinal areas (i.e., north and south of 40° 10' N latitude and between 38° and 40° 10' N latitude). There is also some potential for greater spatial resolution of nearshore resource management relative to that offshore. For example, there is some evidence that nearshore ecosystems exhibit marked regional differences in their species composition, dynamics and productivity, and the specialization of associated fishery, offshore ecosystems (particularly the slope ecosystem and species) tend to have more population connectivity and more homogenous distribution and life history characteristics (Pacific Marine Conservation Council 2006).

There is growing recognition of spatially complex stock structure for many west coast groundfish (e.g. (Miller et al. 2005; Gunderson and Vetter 2008), as well as increasing recognition for the need to characterize and maintain fish stocks at appropriate spatial scales (Berkeley et al. 2004b; Francis et al. 2007). New approaches for evaluating relative exploitation rates or size structure of exploited populations have also provided insights into the relative impacts of fisheries over finer spatial scales than traditional assessments (Harvey et al. 2006; O'Farrell and Botsford 2006). To accommodate and respond to such complexity appropriately, there is general agreement that additional research and analyses of current data sources will be needed, as spatial analysis in fisheries research and management have tended to lag behind more academic research in marine and terrestrial ecology (Pelletier and Mahevas 2005; Wilen 2006). A recent National Research Council report found that spatial analyses may be one of the greatest obstacles faced by fishery managers, and that advances in both assessment methods and simulation techniques should provide the means to better cope with the challenges of incorporating such complexity in the face of increasingly complex and spatially explicit management regimes (National Research Council 2006). Spatially-explicit management will continue to be critical to meeting conflicting management goals and objectives, such as maintaining fishing opportunities on healthy stocks while reducing incidental catches of rebuilding species, and meeting habitat protection requirements. Recent research by the NWFSC has examined some of the interactions between spatial management, and yield optimization, and protected species biomass (Horne et al. 2010). This recent research has not yet been fully analyzed in the context of this document.

State Marine Protected Areas. The California Marine Life Protection Act (MLPA) directs the state to reevaluate and redesign California's system of MPAs to: increase coherence and effectiveness in protecting the state's marine life and habitats, marine ecosystems, and marine natural heritage, as well as to improve recreational, educational and study opportunities provided by marine ecosystems subject to minimal human disturbance. The MLPA also requires that the best readily available science be used in the redesign process, as well as the advice and assistance of scientists, resource managers, experts, stakeholders and members of the public. This section's text and information is taken from the California Department of Fish and Game MSPA website (<http://www.dfg.ca.gov/mlpa/>).

A regional approach is being used to redesign MPAs along California's 1,100-mile coast. The state has been divided into five study regions:

- Central Coast (Pigeon Point to Point Conception)
- North Central Coast (Alder Creek near Point Arena to Pigeon Point)
- South Coast (Point Conception to the California/Mexico border)
- North Coast (California/Oregon border to Alder Creek near Point Arena)
- San Francisco Bay (waters within San Francisco Bay, from the Golden Gate Bridge northeast to Carquinez Bridge)

The North-Central Coast region and the Central region have MPAs already impletments, while the other three regions (South Coast, North Coast, and San Francisco Bay) are in process.

California's North-Central Coast Marine Protected Areas took effect May 1, 2010, from Alder Creek, near Point Arena (Mendocino County) to Pigeon Point (San Mateo County). The series of 21 marine protected areas (MPAs), three State Marine Recreational Management Areas, and six special closures, covers approximately 153 square miles (20.1%) of state waters in the north central coast study region. Approximately 86 square miles (11%) of the 153 square miles are designated as "no take" state marine reserves, while different take allowances providing varying levels of protection are designated for the rest.

North-Central Coast MPAs (the second of five study regions along the coast) include:

- 11 State Marine Conservation Areas (SMCA), which limit recreational and commercial fishing
- 10 "no-take" State Marine Reserves (SMR), which prohibit recreational and commercial fishing
- 3 State Marine Recreational Managed Area (SMRMA)
- 6 Special Closures

California's Central Coast Marine Protected Areas went into effect September 21, 2007. From Pigeon Point (San Mateo County) south to Point Conception (Santa Barbara County), the series of 29 marine protected areas represent approximately 204 square miles (or approximately 18 percent) of state waters in the Central Coast Study Region.

Central Coast MPAs (the first of five study regions along the coast) include:

- 15 State Marine Conservation Areas (SMCA), which limits recreational and commercial fishing.
- 13 "no-take" State Marine Reserves (SMR); a total of 85-square miles and;
- One State Marine Recreational Managed Area (SMRMA); Morro Bay State Marine Recreational Management Area, where recreational fishing is limited or restricted.

Oregon: MPA boundaries for three types of sites in Oregon were provided by ODFW. These are all small intertidal sites encompassing approximately 460 ha.

- Seven Marine Gardens: Generally, commercial and recreational pot gear is prohibited, other gear types not restricted.
- Six Research Reserves: Generally, commercial pot gear is prohibited.
- One Habitat Refuge: All commercial and recreational fishing activities are prohibited.
- Two no-take pilot marine reserves: Otter Rock off Depoe Bay and Redfish Rocks off Port Orford.

The Oregon Legislature also required state agencies to evaluate potential reserves at Cape Falcon south of Cannon Beach, Cascade Head near Lincoln City and Cape Perpetua near Yachats. It tells the agencies to support a reserve proposal for the Cape Arago-Seven Devils area, south of Coos Bay.

Washington: The Washington State GIS data for MPAs contain 68 individual sites covering approximately 28,000 ha. The areas are managed by one of the following organizations: Washington Department of Fish and Wildlife (WDFW), Washington Department of Natural Resources (WDNR), San Juan County Marine Resource Committee (MRC), Washington State Parks and Recreation Commission (WSPRC), or The Nature Conservancy (TNC). The total area figure is a bit of an overestimate because some of the areas, such as state parks and TNC areas include the upland portions of the sites as well as the marine portions.

- Nine WDFW Marine Preserves: generally prohibit most types of commercial fishing gear.
- Two WDFW Wildlife Refuges: generally closed to all access.
- Nine WDFW Conservation Areas: most restrictive of fishing—all fishing and gear are prohibited from nearly all of these sites.
- Two WDFW Sea Cucumber Closures: closed to commercial harvest of sea cucumbers and urchins.
- Six WDNR Aquatic Reserves: no restrictions on commercial or recreational fishing.
- Seven WDNR Natural Areas Preserves: highest level of restriction—only allowable activities are scientific or education functions. Therefore, no commercial or recreational fishing allowed.
- Two WDNR Natural Resource Conservation Areas: no specific prohibition of fishing activities.
- Eight San Juan County MRC Bottomfish Recovery Zones: these are voluntary bottomfish no-take zones—no specific prohibition of fishing activities.
- Seven State Parks: prohibited to take non-game invertebrates and seaweed. No specific prohibition of fishing activities.
- Two TNC Conservation Easements.
- Fourteen TNC Nature Preserves: limitation on public access and all fishing activities.

### The Role of Rebuilding Species in the Marine Ecosystem

Under Section 304 of the MSA (104-297), fishery management plans, plan amendments, or proposed regulations for overfished species must take into account status and biology of any overfished stocks of fish as well as the interaction of overfished stocks within the marine ecosystem. This section was developed to consider the relevant aspects of these stocks with respect to their interaction with other biotic elements of the ecosystem.<sup>1</sup> The intent is not to replicate the evaluation of status, life history, and productivity of the stocks themselves, which is discussed in more detail in Chapters 2 and 4, but rather to focus on the role of these species in the environment, and to attempt to evaluate the relative impacts of

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<sup>1</sup> Many marine organisms (such as many types of plankton, structure-forming invertebrates, and burrowing or bioturbating organisms) can and do interact with abiotic (physical and chemical) characteristics of an ecosystem that could have broader-scale impacts to marine communities and ecosystems. However, such interactions are neither known nor suspected for the rebuilding species evaluated in this section, and consequently are not explicitly considered here.

alternative management decisions analyzed in this document with respect to the long-term consequences on other elements of the ecosystem.

The general role of rebuilding species in the marine ecosystem is discussed in more detail in volume 1 of the 2008 groundfish SAFE document.



## CHAPTER 4.3 The Fishery Ecosystem

### 4.3.1 Protected Species Impacts

This section addresses impacts of the considered alternatives on protected resources in the West Coast marine ecosystem. This includes migratory species that depend on the West Coast marine ecosystem as part of their life history. This section relies to some degree on the analysis presented in the 2009-2010 SPEX EIS. However, several protected species are included here that were not included previously. These include recent ESA listings and certain species of sea turtles and marine mammals.

#### 4.3.1.1 Methods: Types of Impacts and Mechanisms, Metrics, and Indicators

The nature of impacts to protected species will vary depending on the nature of the fishery and the life history behavior of the particular species or population. Any changes in fishing location, effort, and gear switching will all likely result in changes to bycatch and other interactions with protected species. However, the impacts will not be uniform across the spectrum of protected species, due to the variability in the behavior and susceptibility to various fishing practices of each protected species. The conceptual matrix below provides a method for making general inferences regarding impacts, and is used as a basis for the qualitative statements about impacts. This matrix provides information on fishing opportunities in response to different management regimes on a relative basis. It does not attempt to provide quantitative information on the likely impacts to protected species.

Management Scenarios	Change in Fishing Opportunities (Trawl and Fixed Gear)
Higher ACLs for shelf spp.	Increased inshore opportunities
Lower ACLs for shelf spp.	Decreased inshore opportunities
Higher ACLs for slope spp.	Increased offshore opportunities
Lower ACLs for Slope spp.	Decreased offshore opportunities

Table 4.3-1. Conceptual matrix of impacts relative to fishing alternatives.

Table 4.3-2 below lists the protected species considered in the SPEX EIS, from Heery et al. 2010. As indicated above, the nature and magnitude of impacts of various fishing permutations depend on the nature of the species, migratory patterns, seasonality, etc. Note that extremely limited number of observations preclude developing statistically significant estimates of bycatch fishery-wide. Therefore, the WCGOP typically excludes single observations in the development of bycatch ratio estimates. For species with more bycatch data available, the WCGOP generated bycatch estimates, but only if the coefficient of variation (CV) for the observed number of bycatch observations was less than 80%. Observations with greater than 80% CV were excluded in bycatch estimates. Those species with bycatch estimates are indicated by an asterisk (\*) in Table 4.3-2. Those bycatch estimates can be found in Heery et al. 2010.

Species	Taxonomic Name	# of Observed bycatch, 2002-2008	Fishery
<b>Marine Mammals</b>			
Steller sea lion*	<i>Eumetopias jubatus</i>	15	Trawl, non-NS

California sea lion*	<i>Zalophus californianus</i>	94	Trawl
Harbor seal*	<i>Phoca vitulina</i>	9	Mixed
Northern elephant seal*	<i>Mirounga angustirostris</i>	14	Trawl
Pacific white-sided dolphin	<i>Lagenorhynchus obliquidens</i>	1	N/A
Humpback whale			
Gray whale			
Sperm whale	<i>Physeter macrocephalus</i>	1	N/A
Harbor porpoise	<i>Phocoena phocoena</i>	1	N/A
Risso's dolphin	<i>Grampus griseus</i>	1	N/A
<b>Finfish</b>			
Green sturgeon	<i>Acipenser medirostrum</i>		
Eulachon			
Salmon spp.	<i>Oncorhynchus spp.</i>		
<b>Sea turtles</b>			
Green	<i>Chelonia mydas</i>		
Leatherback	<i>Dermochelys coriacea</i>	1	N/A
Olive ridley	<i>Lepidochelys olivacea</i>		
Loggerhead	<i>Caretta caretta</i>		
<b>Sea Birds</b>			
Black footed albatross	<i>Phoebastria nigripes</i>	132	Fixed gear
Brandt's cormorant*, and other non-specified cormorants	<i>Phalacrocorax penicillatus, etc</i>	10	Mostly trawl; some Fixed gear
Brown pelican	<i>Pelecanus occidentalis</i>	1	N/A
Common murre*	<i>Uria aalge</i>	50	Trawl
Leach's storm petrel*	<i>Oceanodroma leucorhoa, and unspecified petrels</i>	8	Trawl
Western gull* and other unspecified gulls	<i>Larus occidentalis, etc</i>	10	Fixed gear
Northern fulmar*	<i>Fulmarus glacialis</i>	79	Trawl, offshore
Sooty shearwater	<i>Puffinus griseus, and unspecified shearwaters</i>	30	Mostly offshore trawl; some offshore fixed gear

Table 4.3-2. Observed interactions of protected species. Primary fishery is indicated when the interactions occurred primarily in that fishery. (Adapted from Heery et al. 2010).

#### 4.3.1.2 Direct and Indirect Impacts of the Alternatives

Chapter 2 describes four sets of harvest limit alternatives (including the No Action Alternative), with suboptions to be considered under Alternatives 1, 2, and 3. In general terms, fishing opportunities that would result in gear changes, geographic distribution, or timing of fishing effort are likely to have differential impacts to protected species. However, fishing behavior, and therefore impacts, is difficult to predict at this time. This section provides a discussion of possible scenarios, based on bycatch information from the WCGOP.

#### **4.3.1.2.1 Salmon**

Alternatives that would result in great slope opportunities would likely result in reduced incidental take of Chinook and coho salmon, as well as other shelf species, in comparison with the No Action Alternative. Quantitative models assessing bycatch of salmon species under various alternatives have not been developed, in part because factors external to the fishery are major drivers of bycatch rates. Oceanic conditions in particular affect migration patterns spatially and temporally, as does prey availability and other factors. A qualitative assessment of changes in bycatch is therefore presented in this document. For Chinook salmon, NMFS completed a supplemental biological opinion (NMFS 2006) which established incidental take limits established by the NMFS, which establishes take limits of 11,000 Chinook in the whiting fishery and 9,000 in the non-whiting groundfish bottom trawl fishery. For other salmonid species, incidental take limits have not yet been established.

There is considerable uncertainty about bycatch of salmon in the bottom trawl fishery. The magnitude and distribution of bycatch in the trawl fishery since 2002 has been affected by significant changes in management measures to protect overfished groundfish stocks, including: implementation of regulations for use of selective flatfish trawl gear; smaller scale spatial closed area management; and closing trawl fishing in some areas shoreward of the RCA. The uncertainty will remain until more years of observer data are available and changes in groundfish fishery management and effort distribution are analyzed in relation to the incidental take of salmon.

Few Chinook salmon are encountered south of Cape Mendocino, therefore changes in Chinook incidental take would likely be minimal in response to changes in bottom trawl effort in this area. Setting zero ACLs for all depleted species would likely require closure of most, if not all, groundfish fisheries (and other fisheries with groundfish incidental catch). In that case, incidental take of Chinook salmon, coho salmon, and other shelf species subject to trawl bycatch in West Coast groundfish fisheries would be effectively eliminated.

For 2011 and beyond, the Council is considering establishing automatic action authority under 50 CFR 660.370 (d) to implement depth based area closures in the non-tribal whiting fishery. These depth based area restrictions can be implemented to shift fishing effort to different depths based on catches and availability of depleted species managed with sector-specific bycatch limits, as well as catches of Chinook salmon, as discussed in section 4.5.3.2. Beginning in 2007, NMFS established automatic action authority to implement an Ocean Salmon Conservation zone in response to Chinook catches observed in 2005-06. When NMFS projects the catch of Chinook salmon in the Pacific whiting fishery will exceed the 11,000 fish threshold, the Ocean Salmon Conservation Area could be put in place for all sectors of the whiting fishery through a single Federal Register notice. Catches of Chinook salmon in the whiting fishery was below the 11,000 fish threshold in 2007-08 and the Ocean Salmon Conservation Zone mitigation measure was not implemented during this biennium. The Ocean Salmon Conservation Zone will still be available in 2011 and beyond, should the 11,000 fish threshold be reached.

Although the resulting incidental take of Chinook salmon cannot be predicted, in 2011-12 it is likely to be within the range of incidental take experienced in the recent past.

**4.3.1.2.2 Marine Mammals.** The West Coast Groundfish Observer Program (WCGOP) documents interactions with marine mammals. Several species are protected under the ESA and the MMPA. Again, a qualitative approach is used here to assess the significance of the impacts to marine mammal populations, based on reported interactions and, when available, the Potential Biological Removal (PBR) established for a species.

NMFS prepared a Biological Opinion in 1990 that concluded the groundfish fisheries are not likely to jeopardize the continued existence of listed marine mammals. Species specific discussions are available

in the EFH FEIS (section 4.6.3). The effects of the harvest limit alternatives on endangered and threatened marine mammal species are difficult to quantify, but recent WCGOP data (Heery et al. 2010) provides some ability to make inferences about potential relative impacts of various management scenarios. NMFS is currently in the process of analyzing available data on the interactions of the groundfish fishery with marine mammals.

The effect of the management measure alternatives on marine mammals may be negative if fishing effort intensifies in areas where they congregate. However, the effects of the alternatives on effort displacement are not predictable and the effects of the alternatives are unknown. NMFS is currently in the process of analyzing available data on the interactions of the groundfish fishery with marine mammals.

#### **4.3.1.2.3 Sea Turtles**

The WCGOP reported one documented interaction with a leatherback sea turtle, in 2008. The rarity of documented interactions precludes meaningful analysis of bycatch estimates. Therefore, the impacts analysis will be limited to a qualitative description of the past interaction, and the possibility of future interactions based on the alternatives presented.

Based on information available for the December 2005 EFH FEIS (section 4.6.4), trawl and longline fisheries, as occur in the West Coast groundfish fishery, could adversely affect sea turtles; however, the relative effects of fisheries occurring under the Groundfish FMP on sea turtles are difficult to assess. Species specific discussions are available in the EFH FEIS (section 4.6.4). There is very little information available to estimate total mortalities of sea turtles, with the exception of the drift gillnet fishery, which is not a part of the Groundfish FMP, therefore the effects of the harvest limit alternatives on endangered and threatened sea turtle species are unknown. NMFS prepared a Biological Opinion in 1990 that concluded fisheries conducted under the groundfish FMP are not likely to jeopardize the continued existence of listed sea turtles.

There is very little information available to estimate total mortalities of sea turtles, with the exception of the drift gillnet fishery, which is not a part of the Groundfish FMP, therefore the effects of the management measure alternatives on endangered and threatened sea turtle species are unknown. The effect of the management measure alternatives on sea turtles may be negative if fishing effort intensifies in areas where sea turtles congregate. However, the effects of the alternatives on effort displacement are not predictable and the effects of the alternatives are unknown.

#### **4.3.1.2.4 Recently Listed Species**

The Southern DPS of Eulachon (*Thaleichthys pacificus*), or Columbia River smelt, was listed as threatened under the ESA on May 17, 2010. NMFS has not yet developed an Incidental Take Statement. However, the Status Review (NMFS 2010) describes the most likely threats to eulachon recover, allowing for a qualitative assessment of the potential significance of impacts to eulachon from the U.S. West Coast commercial groundfish fishery.

The Southern DPS of the North American green sturgeon (*Acipenser medirostris*) was listed as threatened in April, 2006 (71 FR 17757, April 7, 2006), with Critical Habitat designated October 9, 2009. NMFS has not yet concluded ESA consultation and therefore has not yet established an Incidental Take Statement for the groundfish fishery. Documented interactions with the California halibut trawl fishery provide background for a qualitative assessment of the potential significance of impacts to green sturgeon. However, quantitative modeling or bycatch estimates have not yet been developed.

The effect of the management measure alternatives on the Southern DPS of green sturgeon may be negative if fishing effort intensifies in areas where they congregate. However, the effects of the

alternatives on effort displacement are not predictable and the effects of the alternatives are unknown. NMFS has reinitiated its Section 7 consultation on the Council's groundfish FMP.

#### **4.3.1.2.5 Seabirds**

Seabird species with documented interactions with the U.S. West Coast commercial groundfish fishery represent a diverse suite of life histories, migration patterns, and reproductive strategies. Three distinct spatial/temporal seasons have been identified for the West Coast: the Upwelling, Oceanic, and Davidson Current seasons (Ford et al. 2004). Distribution of seabird species also varies latitudinally. These seasons coincide with winter (January-April), summer (May-August) and fall (September-December).

Based on information available for the December 2005 EFH FEIS (section 4.6.2), seabird interactions in the West Coast groundfish fishery were described as "rare and infrequent." NMFS prepared a Biological Opinion in 1990 that concluded the groundfish fisheries are not likely to jeopardize the continued existence of listed seabirds. The effects of the harvest limit alternatives on endangered and threatened seabird species are unknown. NMFS is currently in the process of analyzing available data on the interactions of the groundfish fishery with seabirds.

However, the WCGOP provides information on the relative impacts of certain seabird species by fishing activity. The effect of the management measure alternatives on seabirds (listed and non-listed) may be negative if fishing effort intensifies in areas where seabirds congregate. Nonetheless, the effects of the alternatives on effort displacement are not predictable and the effects of the alternatives are unknown. NMFS is currently in the process of analyzing available data on the interactions of the groundfish fishery with seabirds.

#### **4.3.1.3 Cumulative Impacts**

This section briefly identifies two categories of actions that have effects that when combined with the effects of the proposed action, could result in significant impacts to ESA-listed Chinook and coho salmon, and impacts to marine mammals, seabirds, green sturgeon, and sea turtles. First are actions occurring in the past or the present that will have effects persisting into the period when the proposed action is implemented and possibly beyond. Second are reasonably foreseeable effects, which will be implemented on or after January 1, 2011 and combine with the direct and indirect effects of the proposed action to produce potentially significant cumulative effects. This section describes the cumulative effects on protected species resulting from the direct, indirect, and external effects on protected species.

Past and present actions with persistent effects:

Groundfish harvest specifications and management measures, 1998-2008: The 1998–08 period is identified for comparison because it marks a substantial reduction in groundfish harvest limits in comparison to earlier years. During this period rebuilding plans were developed and adopted for depleted groundfish species. Selection of a rebuilding strategy for each stock narrows the range of OYs that may be chosen for those stocks and has required the implementation of various constraining management measures to limit catches of these stocks. Past groundfish management measures authorized fishing, indirectly affecting the incidental take of Chinook salmon, as described in Section 5.1. The groundfish fishery, even with management measures in place to reduce impacts to Chinook salmon, has a persistent effect on stock productivity; however, given the life cycle of Chinook and coho salmon, fishing mortality in more recent years would have a much greater contributory effect on population status. NMFS is in the process of analyzing available data on the interactions of fisheries conducted under the Pacific Coast groundfish FMP with marine mammals and seabirds. NMFS has reinitiated its Section 7 consultation on the Council's groundfish FMP for the Southern DPS of green sturgeon. There is very little information available to estimate total mortalities of sea turtles, with the exception of the drift gillnet fishery, which is

not a part of the Groundfish FMP, therefore the cumulative effects of fisheries conducted under the Pacific Coast groundfish FMP on endangered and threatened sea turtle species are unknown.

West Coast non-groundfish fisheries: Commercial and recreational salmon fisheries target nonlisted salmon but incidentally take listed Chinook and coho salmon. All fisheries have a similar persistent effect, contributing to total fishing mortality and attendant effects on stock productivity. Commercial and recreational salmon fisheries are managed to optimize harvest of hatchery-produced fish while keeping the take of wild, ESA-listed stocks within limits that will ensure their continued existence. Thus, in managing these stocks, all sources of fishing mortality are estimated or accounted for, including incidental take in groundfish fisheries. Humpback whale interactions have been documented in fisheries using pot and trap gear off the West Coast, including the West Coast crab fisheries. Additional species specific information on other fisheries is available in the EFH FEIS in Section 4.6.3. Green sturgeon are caught incidentally in estuaries by the white sturgeon fishery (NMFS 2002 - *NMFS 2002. Status Review for North American Green Sturgeon, Acipenser medirostris. National Marine Fisheries Service Southwest Fisheries Science Center. 110 Shaffer Road, Santa Cruz, California.*). Sea turtle capture has been documented in purse seines, gillnets, and other types of fishing gear that are not commonly used or are not authorized for use in fisheries conducted under the groundfish FMP.

Nonfishing actions: Salmon are vulnerable to human-caused degradation of freshwater habitat used for spawning. These effects are generally well known and diverse. They include physical barriers to migration (dams), changes in water flow and temperature (often a secondary effect of dams or water diversion projects), and degradation of spawning environments due to increased silt in the water due to adjacent land use. A very large proportion of the long-term, and often permanent, declines in salmon stocks are attributable to this class of impacts. For a detailed summary of nonfishing impacts to salmon habitat see Section 3.2.5 of the EFH Appendix in Amendment 14 to the Pacific Coast Salmon FMP. Besides entanglement in fishing gear, seabirds may be indirectly affected by commercial fisheries in various ways. Change in prey availability may be linked to directed fishing and the discarding of fish and offal. Vessel traffic may affect seabirds when it occurs in and around important foraging and breeding habitat and increases the likelihood of bird strikes. In addition, seabirds may be exposed to at-sea garbage dumping and the diesel and other oil discharged into the water associated with commercial fisheries. As stated in Section 4.6.4 of the EFH FEIS, numerous human-induced factors have adversely affected sea turtle populations in the North Pacific.

Reasonably foreseeable future actions:

Groundfish harvest specifications and management measures, 2012-13 and beyond: As with past harvest specifications, future harvest specifications are likely to have an indirect effect on the incidental take of listed Chinook salmon and coho, which in combination with incidental take during 2011-12 will have cumulative effects on year classes intercepted by the fisheries during that time; however it is unlikely that impacts to listed Chinook salmon will exceed the 20,000 fish threshold for multiple years. (No incidental take threshold has been established for Oregon Coast coho). This cumulative effect will only persist as long as the affected year classes. For 2011-12 harvest specifications and management measures this is of relatively short duration. Projected rebuilding times for depleted species are much longer and rebuilding alternatives are thus likely to affect groundfish harvest levels, and thus indirectly effect interactions with Chinook salmon, seabirds, marine mammals, green sturgeon, and sea turtles for decades. However, it is likely that rebuilding strategies will continue to be modified in the future based on new information, so it is probably unrealistic to expect that any strategy adopted as part of this proposed action will remain unchanged for the duration of a given rebuilding period. Nonetheless, in very general terms groundfish fishing effort is likely to be constrained to mitigate depleted species catch for the foreseeable future.

Trawl Rationalization – Amendment 20 to the FMP: Rationalization of the trawl fishery is not expected to fundamentally change the mixed stock fishery structure where catch of healthy species will be constrained in order to meet rebuilding requirements for overfished groundfish species. It will increase flexibility of fishers to harvest their quotas, however, this increase in flexibility will also increase uncertainty in predicting Chinook and coho salmon, seabird, marine mammal, green sturgeon, and sea turtle interactions due to the changes that are likely to occur in fishing behavior due to changes in management measures that will regulate the trawl fishery under the new quota system.

West Coast non-groundfish fisheries: Similar to groundfish fisheries, future take in non-groundfish fisheries contributes to year-class-specific total fishing mortality of protected species, and will have persistent effects to other ESA listed species that are encountered incidentally.

Non-fishing actions: Adverse impacts to freshwater salmon habitat are likely to continue for the foreseeable future. Indirect effects to seabirds by commercial fisheries are likely to continue for the foreseeable future.

#### **4.3.1.4 Summary of Impacts**

Under a rationalized fishery, it is difficult to predict fishing behavior and resultant impacts to protected resources. It is likely that any Alternative resulting in a decreased overall effort would likewise result in decreased impacts to protected resources. However, there may be exceptions depending on a variety of factors discussed below. Further, it is possible that a rationalized fishery, assuming an increase targeting efficiency, would increase harvest of targeted species but would decrease bycatch. This circumstance would potentially happen with even less effort than currently used.

#### Gear Switching

Transition of effort from trawl gear (small footrope, large footrope) to fixed gear (longline, pots, etc.) under the Amendment 20 gear switching provision may change the nature of interactions with protected species. For example, California sea lion observed bycatch in the limited entry trawl fishery totaled 30 observations from 2002 to 2008, but only one observed bycatch in the nearshore fixed gear fishery during the same time period. As such, a shift of effort from trawl gear to fixed gear may result in a decrease in California Sea lion impacts.

If trawlers chose to harvest more of their quota pounds with fixed gear, increased impacts to protected resources might also occur. For example, black-footed albatross bycatch observations were limited almost entirely to the non-nearshore fixed gear fishery. If more vessels choose to harvest quota pounds with fixed gear in the non-nearshore (e.g., targeting sablefish) then bycatch of black footed albatross may increase.

It is not possible to further evaluate the potential for gear switching to change protected resources impacts because there is no qualitative method to predict the number of limited entry trawl permit holders who will chose to harvest their quota pounds with fixed gear. Further, we cannot predict which legal fixed gear they may use (e.g., pots, longline, rod and reel, trolled longline, etc.) and in what area (i.e., where a protected resource may occur).

#### Geographic Displacement

Increasing the extent of Rockfish Conservation Areas (RCA) would likely decrease bycatch pressure on those species subject to trawl bycatch as well as fixed gear. This would include all species in Table 4.3-2 that have any significant levels of bycatch.

Upshelf movement of effort, based on RCA increase in spatial extent, would disproportionately impact those species impacted by nearshore trawl or fixed gear fisheries. However, it is not clear that the Alternatives presented would result in a noticeable change in fishing distribution.

#### Targeted Effort

Even with a status quo overall effort, a rationalized fishery could result in decreased impacts to protected resources due to the increased flexibility afforded to participants in the fishery. This could be realized via the incentives to fish cleaner. Under this scenario, overfished stocks might not be limiting factors in closing fisheries. Rather, the fisheries would reach the maximum harvest allowable, ideally leaving overfished stocks below their bycatch thresholds.

#### **4.3.2 Essential Fish Habitat**

EFH descriptions have been developed for each of the four FMPs managed by the Council. These contain detailed descriptions of the habitat requirements and associations, fishing and non-fishing impacts, and information on species biology and life histories. These include groundfish Amendment 19 (“Essential Fish Habitat Designation and Minimization of Adverse Impacts”), Appendix D or CPS Amendment 8 (“Description and Identification of Essential Fish Habitat for the Coastal Pelagic Species Fishery Management Plan); HMS Appendix F to the Fishery Management Plan for U.S. West Coast Fisheries for Highly Migratory Species; and Appendix D to Amendment 14 of the Pacific Salmon FMP. All are available on the Council’s website (<http://www.pcouncil.org>) and are hereby incorporated by reference.

For reference information more directly relevant to groundfish EFH, a description of West Coast marine ecosystems and the affected essential fish habitat are available in volume 1 of the Council’s 2008 Stock Assessment and Fishery Evaluation (SAFE) document. Volume 1 of the 2008 SAFE document is available by request to the Council office or online. That document is also hereby incorporated by reference.

##### **4.3.2.1 Methods: Types of Impacts and Mechanisms, Metrics, and Indicators**

The conceptual framework for analysis of EFH would include development of spatial and temporal geospatial information, overlaid with the expected geographic shifts in fishing opportunities resulting for the considered Alternatives. Because fishing behavior changes resulting from various management Alternatives, it is difficult to predict impacts to EFH. This precludes a quantitative assessment of impacts here. However, this document incorporates by reference the impacts assessment in the Draft EIS on Amendment 20, Rationalization of the Pacific Coast Groundfish Limited Entry Trawl Fishery.

##### **4.3.2.2 Direct and Indirect Impacts of the Alternatives**

To the extent that management alternatives will alter geographic area or gear type, there could be impacts to EFH. Increased RCA spatial extent could result in a decreased impact to EFH. However if fishing effort is re-located to other areas of EFH, this positive effect may be nullified. However, the Alternatives considered in Chapter 2 would likely result in geographic impacts at too fine a scale to make significant changes to EFH.

##### **4.3.2.3 Cumulative Impacts**

Protected species are subject to various sources of human-induced and natural mortality, and other factors affecting population viability. These external factors include:

- Take of marine mammals and seabirds in other fisheries
- Nonfishing sources of direct mortality (e.g., ship strikes, oil spills)
- Degradation of nesting habitat for seabirds and disturbance of haul out areas for marine mammals
- Climate forcing affecting food chain dynamics, producing more or less prey



#### **4.3.2.4 Summary of Impacts of the Alternatives**

With regard to EFH, NMFS recently completed an EIS to comprehensively evaluate groundfish habitat and the effects of groundfish fishing on that habitat, in response to litigation (*American Oceans Campaign v. Daley et al.*, Civil Action No 99-982[GK]). Amendment 19 of the Groundfish FMP, approved on March 8, 2006, provides for a comprehensive strategy to conserve EFH, including its identification, designation of HAPC, and the implementation of measures to minimize to the extent practicable adverse impacts to EFH from fishing. The final rule implementing Amendment 19 provides measures necessary to conserve EFH and no additional EFH recommendations are necessary for this proposed action.

The general effects of fishing on habitat and the marine ecosystem are further described in volume 1 of the 2008 groundfish SAFE document.

Impacts to EFH are difficult to predict under a rationalized fishery. However, inferences can be made based on likely scenarios.

In general, there is no empirical or theoretical evidence that declines in these stocks of west coast rockfish have had impacts on predators or higher trophic level species, particularly impacts above and beyond those which might be expected by reduction of biomass to their target levels. However, there is potential evidence, largely theoretical, that among those rebuilding species that are higher trophic level predators, there could be cascading ecological consequences to some benthic communities resulting from severe depletion and potential replacement by more opportunistic species. Again, the extent to which such impacts (if real) might be of a greater magnitude than those that would be expected under scenarios in which biomass declined to target levels is currently impractical to quantify. Recent research by the NWFSC attempts to measure the effects of fishing on seabird productivity. However, the research is pending publication and therefore is not included in this analysis.

#### **Management Measure Alternatives**

The management measure alternative's principal function is to constrain short-term fishing mortality to levels consistent with the rebuilding targets established in rebuilding plans, or other stock management goals for precautionary zone and healthy stocks. In this respect the management measures that have been implemented by the Council in recent years appear to have contributed to increasing abundance and productivity levels for rebuilding depleted (and other) species, although such improvement may be as much a result of factors outside the control of the management regime, such as changes in climate. Components of the management measure alternatives, and the management framework generally, that employ spatial closures, which effectively eliminate fishing mortality from broad areas of habitat that are optimal for both the rebuilding species and other, healthier groundfish stocks in the California Current, likely have an ancillary mitigating effect with respect to the ecosystem impacts of fishing. The protection of intact functional patches of habitat was identified by Baskett, et al. ( 2006) as one of the management measures that had the greatest potential to avoid or reverse changes in species composition on small rocky reef habitats. These area closures, intended to reduce bycatch of depleted species, are sited in those depth zones and habitats in which these species are most frequently encountered. As such, they tend to represent the optimal habitat for these species, and are either known or suspected (from catch rate data, trawl surveys, ROV surveys, and other means) to sustain the highest densities of depleted species. Consequently, this approach would be expected to effectively maintain functioning habitat areas and/or metapopulations of rebuilding species with an extremely high degree of protection.

Management measures' effects on the ecosystem operate in two ways: by affecting fish populations directly through measures to reduce fishing mortality and the protection of intact patches of habitat.

Thus, management measure alternative 1, intended to constrain total catch to the low end of the range, is likely to have the least adverse impacts with respect to the ecosystem because of the extent of area closures and reductions in fishing mortality for rebuilding species. The Council-preferred alternative implements area closures generally similar to those currently in place (no action) except for the addition of a new YRCA off Westport, Washington and the potential implementation of YRCAs off northern California. In particular, the configuration and extent of the area closures within this alternative represents a short-term effect over the next biennium, which may be less relevant, in terms of the ecosystem, than how these types of management measures will be applied over the long term. In summary, it is intuitive that the lower the fishing mortality rate, and the greater the extent of spatial closures over the long term, the greater the potential for rebuilding species to fill their niche or role in the ecosystem relative to the risk of changes or shifts in equilibrium or ecosystem states. But both the precision of multispecies or ecosystem models and their ability to accurately reflect the potential cumulative impacts to the ecosystem that result in slightly differing rebuilding trajectories are extremely low, particularly with respect to any ability to detect thresholds that may exist with respect to alternative stable states within either small or broad-scale habitats and ecosystems.

In comparing the preferred alternative to no action, the cumulative effect of recent action taken to mitigate the adverse effects of fishing to EFH through the implementation of Groundfish FMP Amendment 19 needs to be taken into account. That action not only protects additional habitat areas from trawl fishing impacts into the foreseeable future, but also prohibits the use of large-footrope gear shoreward of the 100 fm depth contour, mitigating impacts to remaining nearshore high-relief reef communities. These measures became effective in June 2006 and will likely further mitigate the effects of fishing in the next biennium.

#### **4.3.3 Trophic and other ecosystem impacts**

The California Current large marine ecosystem is not predicted to be substantially impacted by rationalization, although it is difficult to make predictions about a complicated system that has many inputs to productivity. Changes in catch, induced by moving from status quo management to share-based management, may result in changes to the ecosystem's food web that are perceptible. Changes in location of catch and changes in the type of gear utilized may result in changes to the amount and kind of essential fish habitat impacted. Such changes in habitat impacts may have an effect on the ecosystem. However, that link, while logical, is difficult to demonstrate, as noted in the EFH EIS (PFMC 2004).

#### **4.3.3.4 Summary of Impacts of the Alternatives**

Several fishery-related factors could affect incidental take of marine mammals: geographic redistribution of effort and opportunities; gear switching; and changes to harvest guidelines. This provides good general indications of the relative threats faced by protected species. However, it is unlikely that the 2011-2012 Groundfish SPEX will result in a significant impact to the ecosystem, especially when considered in the context of the No Action Alternative. A summary of ecosystem impacts is found in the EIS on Groundfish Amendment 20, and is hereby incorporated by reference.

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Proposed Changes to the California Commercial and Recreational Groundfish Fishery  
Management Measures for the 2011-2012 Season

Modifications to commercial and recreational management measures for the 2011-2012 season are being considered for final action by the Pacific Fishery Management Council (PFMC) at this meeting. Many of the proposed management measures pertaining to California fisheries have been evaluated by the Groundfish Management Team (GMT) and are currently available for review in the draft EIS Document under Agenda Item B.3. Additional analyses pertaining to California will be submitted by CDFG in a supplemental report prior to the June meeting and will be available at the meeting and from the electronic briefing book on the Pacific Fishery Management Council website at <http://www.pcouncil.org/council-operations/briefing-books>. Management measure specification options provided at the PFMC April 2010 meeting (Agenda Item I.4.b, Supplemental CDFG Report) are summarized below and are still available for consideration at the June meeting, except those identified at the end of this report.

**Commercial**

The following management measures are covered in the draft EIS document Agenda Item B. 3:

- Lingcod Spawning Closure Modification
- Removal Of Other Flatfish Gear Restriction

Trip limit modifications for nearshore species including nearshore rockfish, scorpionfish, and lingcod will be considered inseason as necessary to stay within harvest limits.

**Recreational**

The following management measure options and analyses are covered in the draft EIS document under Agenda Item B.3.

- Revision of Depth Restriction in the Cowcod Conservation Area (from 20 fms to 30 fms or 40 fms).

The following recreational management measure options and analyses will be covered in a forthcoming supplemental CDFG report under Agenda Item B.3.

- Changes in Groundfish Management Area depth and season restrictions.
- Lingcod spawning closure in the Southern Management Area (eliminate closure during March and December).
- Revision of Species Retention Restrictions in the Cowcod Conservation Area (CCA) [Allowing retention of shelf and slope rockfish other than cowcod, canary and bronzespotted rockfish in the open depths and seasons within the CCA.]

- Changes in Depth Restrictions in Groundfish Management Areas pertaining to scorpionfish in the Southern Management Area.
- Elimination of the 10 fm Depth Closure around the Farallon Islands and Noonday Rock.
- Combine the South-Central Morro Bay and South-Central Monterey Bay Management Areas
- Additional Management Line at Cape Vizcaino (in the North-Central North of Point Arena Management Area).
- 2011-2012 Rockfish, Cabezon and Greenlings (RCG) Bag Limits Under Consideration
  - a. Cabezon—increase the Sub-bag limit
- Increase the Lingcod Bag Limit to 3 or 4 fish.
- Lingcod Size Limit (Reduce from 24 inches to 22 inches).
- Catalina Island 100 fm Depth Closure.

In-depth analysis of the following recreational management measure options was discontinued at the April Council, but may be reconsidered in future regulatory specification cycles once the related issues are resolved.

- Rockfish Fishery in Waters Deeper than 150 fms: Discontinued due to a lack of representative data to project impacts.
- Exemption of Federally Managed Flatfish from Depth and Season Restrictions: Discontinued due to concerns regarding impacts on Petrale Sole which is currently overfished.

## GROUNDFISH MANAGEMENT TEAM REPORT ON HARVEST SPECIFICATIONS FOR COMPLEXES AND SUB-COMPLEXES

The implementation of the revised national standard 1 (NS1) guidelines and annual catch limits (ACLs) — including the P-star ( $P^*$ ) approach to accounting for scientific uncertainty and the risk of overfishing — has added complexity to the harvest specifications setting process for this biennial cycle. Implementation of ACLs for the stock complexes has been particularly complicated. The Groundfish Management Team (GMT) has reviewed the Council's preliminary preferred harvest specifications alternatives (PPA) and provides the following comments for consideration by the Council. In particular, the GMT would like to highlight the ACL for the minor rockfish north complex and the possible risks of overfishing that it might create. We recommend an alternative approach.

### **General Considerations for management of stock complexes**

#### *Preventing overfishing using stock complexes*

Although more than 90 species are managed in the groundfish fishery management plan, to date only 30 species or so have their overfishing level (OFLs) set based on stock assessments. For the remaining species, an alternative means of preventing overfishing has been necessary. Stock complexes have been the major tool by which the Council has attempted to prevent overfishing and achieve optimum yield of unassessed stocks.

Management by stock complex offers two major advantages in achieving this objective. First, stocks similarly affected by the fishery or fishery sectors can be managed with common management measures, e.g., as trip limits on the stock complex as a whole. Second, stock complexes facilitate the monitoring of landings. Lack of catch information is a major source of uncertainty in the status of many rockfish stocks because historical records did not report at the individual species level. Yet, with the state port sampling programs in place, stock complexes are sampled with methods designed to produce unbiased estimates of catch at the individual stocks/species level. This also benefits vessels and buyers because they do not have to sort and account for every species of groundfish individually.

Taken together, management measures are meant to keep catch at acceptable levels and catch monitoring is designed to determine whether catch was maintained below acceptable levels. The acceptable level of catch for the complex is thus the key question.

#### *Determining acceptable level of catch for stock complexes – the OFL*

Without stock assessments available, alternative means of calculating the OFL are needed to calculate OFLs for most every species in the groundfish stock complexes. Prior to this cycle the Council used either an average catch or swept area biomass estimate and some precautionary adjustment meant to minimize the risk of overfishing the species within the complex. For some stocks, the method used to identify the harvest level under use is undocumented and neither the GMT nor the SSC have any way of recreating those values or providing the Council with a scientific explanation of their continued validity.

For the 2011-12 harvest specifications, the SSC reviewed and accepted new methods for identifying OFLs for most of the stock complex component species, including depletion-corrected average catch (DCAC) and depletion-based stock reduction analysis (DB-SRA). These estimates replaced the previous methods and now represent the best scientific information available for identifying the stock-specific OFLs. The GMT notes that, while these OFLs were calculated on a coastwide basis and then apportioned north and south, other allocation or apportionment methodologies are not likely available at this time for any of the complexes or their component species.

#### *Determining acceptable level of catch for stock complexes – the ABC*

For each stock complex component species, the Council chose to use an acceptable biological catch (ABC) control rule that accounts for scientific uncertainty and the risk of overfishing given that level of uncertainty. The Council picked a  $P^*$  value of 0.4 (“risk of overfishing”) for all stock complex component species and a scientific uncertainty estimate (“sigma”) of 1.44, the value recommended by the SSC for category 3 stocks (Agenda Item I.2.b, Supplemental SSC Report, April 2010). The ABC values that result from these choices are meant to represent the Council’s acceptable risk of overfishing for the stocks in the complex.

#### *Determining acceptable level of catch for stock complexes – the ACL*

The Council’s PPA OFLs and ABCs for stock complexes (i.e. minor rockfish north and minor rockfish south) are built on individual component stock-specific OFLs and ABCs. The ACLs, in contrast, are set only on the sub-stock complexes (i.e. minor nearshore, shelf, and slope both north and south) as a whole. While available information on stocks managed within a complex is generally less than stocks managed on an individual basis, the ACL for the sub-complexes should be set at a level that keeps catch from exceeding the best scientific estimate of ABC for each component stock in the complex. As suggested by the NS1 guidelines, the ACLs for stock complexes should be established so that they prevent overfishing of the most vulnerable stocks within the complex.<sup>1</sup> To do otherwise would frustrate the objective of preventing overfishing.

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<sup>1</sup>50 C.F.R. § 600.310(d)(9):

If the stocks within a stock complex have a wide range of vulnerability, they should be reorganized into different stock complexes that have similar vulnerabilities; otherwise the indicator stock should be chosen to represent the more vulnerable stocks within the complex. In instances where an indicator stock is less vulnerable than other members of the complex,

The Council could adopt OFLs and ABCs at the sub-complex level, i.e., minor nearshore rockfish north, minor shelf rockfish north, minor slope rockfish north, and similar for the three southern sub-complexes. OFLs for each sub-complex would be the sum of the OFLs for all species within the sub-complex—the same approach currently used to determine OFLs at the major complex level. The Council could then choose a  $P^*$  for each sub-complex that, when combined with the SSC’s characterization of scientific uncertainty, determines ABCs for each sub-complex. This approach is consistent with the basis for the SSC’s recommended OFLs and focuses the Council’s decisions regarding risk on groups of species that are frequently caught together.

Even though species-specific OFLs are managed at the complex level, the ACL should be set with the species-specific OFLs and ABCs in mind. The purpose of the ACL is to prevent catch from exceeding the ABC. As described below, if not set appropriately the GMT sees the potential for sub-complex ACLs to allow catch of particular species that would exceed its stock-specific ABC.

### **Review of the Council’s preliminary preferred stock complex alternatives**

The GMT sees two problems with Council’s preliminary preferred ACLs for sub-complexes. The first is that they are likely to result in transferring catch from the shelf and reassigning it to the nearshore (primarily) and slope sub-complexes. For instance, the greenstriped rockfish OFL in 2011 is >33% of the sum total of all the ‘minor rockfish north’ OFLs. Because this is a non-targeted species with low vulnerability and projected catches are well below this number, there is risk that this additional catch, when aggregated at the complex level, could then be applied to potentially overharvest a highly vulnerable species such as quillback rockfish. In other words, the minor rockfish north complex is “inflated” by the very large (1,208 mt) OFL contribution of greenstriped rockfish especially compared to recent catch (Table 1). Some of that 1,208 mt from a shelf species could be used to greatly exceed the OFL for highly vulnerable nearshore species such as quillback (8.7 mt), or any of the relatively small stock-specific OFLs in the minor nearshore or minor slope north sub-complexes.

The second is that the PPA ACLs for the shelf and slope sub-complexes are higher than the summed ABCs for their component stocks and the summed OFLs for minor nearshore rockfish north. This is problematic as these ACLs are not based on any of the currently accepted catch-calculation methods (i.e. the best available science as recommended by the SSC). Rather they represent status quo numbers, the basis for which cannot be entirely reproduced, that add up to less than the aggregate ‘minor rockfish north’ ABCs and OFLs. Thus, there is no method available to calculate such ACLs, just methods to calculate the OFLs and ABCs by which to compare them.

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management measures need to be more conservative so that the more vulnerable members of the complex are not at risk from the fishery.



Table 1 demonstrates the resultant ABCs under different scenarios of scientific uncertainty ( $\sigma$ ) and probabilities of overfishing ( $P^*$ ). Total catch for 2007<sup>2</sup> and 2008<sup>3</sup>, as estimated by the West Coast Groundfish Observer Program, are also shown for comparison. In these examples,  $P^*$ s are specified by sub-complex to demonstrate the Council's flexibility in handling ABCs at the sub-complex level. In all cases of  $\sigma$  and  $P^*$ , the current preliminary preferred ACL for the minor nearshore rockfish sub-complex exceeds the ABC, which occurs because the ACL also exceeds the sub-complex OFL. For the minor slope rockfish north,  $P^*=0.45$  or the use of the original SSC-designated category for each species (rather than treating each species in a complex as a category 3) allows the ABC to be greater than the preliminary preferred ACL. These sub-complex numbers do not take into consideration reallocation of catch from a bycatch species (e.g. splitnose) to a vulnerable species (e.g. rougheye). This is similar to the issue raised with greenstriped and quillback rockfish above except that catch is shifted to a more vulnerable species within a sub-complex (i.e. minor slope rockfish north) rather than between sub-complexes. To avoid this, the Council could adopt a low  $P^*$  value for each of the non-target species that have low vulnerability to reduce their overall contribution to the sub-complex OFL.

For additional context, Table 2 supplies the recent catches (2007-2008) for each sub-complex by sector. The Council preliminary preferred ACLs are greater than past catches in every sub-complex and area.

The GMT believes there are two major reasons why the Council should use the SSC-prescribed OFLs and ABCs to compute the final sub-complex ACL : 1) consistency and transparent use of the best scientific information available and 2) consistency with the Magnuson Stevens Reauthorization Act (MSRA). The ACLs should be calculated from the sum derived from the species-specific OFLs and ABCs in order to fully specify the catch allocations and avoid the type of overfishing concerns demonstrated by the greenstriped and quillback rockfish examples. This establishes a link from OFL to ABC to ACL, as directed by the MSRA, and provides a transparent and defensible method by which the catches are determined. Finally, in order to achieve the flexibility afforded by specifying  $P^*$  at the subcomplex level as illustrated in Table 1, **the GMT recommends the Council specify OFL and ABC as well as ACL for each of the subcomplexes.**

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<sup>2</sup> Bellman, M.A., Heery, E., and J. Hastie. 2008. Estimated discard and total catch of selected groundfish species in the 2007 U.S. west coast fisheries. West Coast Groundfish Observer Program. NWFSC, 2725 Montlake Blvd E., Seattle, WA 98112.

<sup>3</sup> Bellman, M.A., Heery, E., and J. Majewski. 2009. Estimated discard and total catch of selected groundfish species in the 2008 U.S. west coast fisheries. West Coast Groundfish Observer Program. NWFSC, 2725 Montlake Blvd E., Seattle, WA 98112.

Table 1. Total catch by sub-complex (2007-2008) and the resultant ABCs given various assumptions of  $P^*$  and scientific uncertainty ( $\sigma$ ).

Treating all stocks within complexes as category 3 stocks ( $\sigma = 1.44$ )						
2007 Catch (TM Report)	133	153	522	466	365	149
2008 Catch (TM Report)	97	62	484	394	212	189
OFL	116	2032	1462	1156	2238	907
ABC	Minor Rockfish North			Minor Rockfish South		
$P^*$	Nearshore	Shelf	Slope	Nearshore	Shelf	Slope
0.49	112	1960	1410	1115	2159	875
0.45	97	1696	1220	965	1868	757
0.4	81	1411	1015	803	1554	630
Preliminary preferred ACL	155	968	1160	650	714	626

Treating each stock with its "original" (SSC-approved) category and resultant $\sigma$						
2007 Catch (TM Report)	133	153	522	466	365	149
2008 Catch (TM Report)	97	62	484	394	212	189
OFL	116	2032	1462	1156	2238	907
ABC	Minor Rockfish North			Minor Rockfish South		
$P^*$	Nearshore	Shelf	Slope	Nearshore	Shelf	Slope
0.49	113	1981	1433	1123	2163	892
0.45	99	1791	1324	1001	1885	836
0.4	85	1579	1201	868	1585	771
Preliminary preferred ACL	155	968	1160	650	714	626

Table 2. Catches by sector of the minor rockfish sub-complexes by management area for years 2007-2008.

2007	Minor Rockfish North			Minor Rockfish South		
	Nearshore	Shelf	Slope	Nearshore	Shelf	Slope
Commercial	75	127	517	70	54	148
Recreational	58	20	0	396	308	0
Research	0	6	5	0	3	1
Total	133	153	522	466	365	149

2008	Minor Rockfish North			Minor Rockfish South		
	Nearshore	Shelf	Slope	Nearshore	Shelf	Slope
Commercial	51	49	480	90	41	189
Recreational	46	12	0	304	171	0
Research	0	1	4	0	0	0
Total	97	62	484	394	212	189

OREGON AND CALIFORNIA DEPARTMENTS OF FISH AND WILDLIFE  
JOINT PROPOSAL ON MANAGEMENT MEASURES FOR 2011-2012 FISHERIES

The southern component of black rockfish was first assessed in 2003. Beginning in 2004, the Council allocated 58 percent of the optimum yield (OY; now referred to as an Annual Catch Limit or ACL) to Oregon and 42 percent to California based on recent year landings. This allocation was also used in adopting biennial harvest guidelines for the two states starting with the 2004-05 cycle and continuing through 2010. The Oregon Department of Fish and Wildlife and California Department of Fish and Game propose the sharing arrangement of the black rockfish ACL (OY) be used again in 2011-2012.

OREGON DEPARTMENT OF FISH AND WILDLIFE REPORT SUMMARIZING  
PUBLIC COMMENT RECEIVED REGARDING 2011-12 COMMERCIAL AND  
RECREATIONAL GROUNDFISH MANAGEMENT MEASURES

The Oregon Department of Fish and Wildlife held a series of public meetings to gather public input on the range of management measures adopted by the Pacific Fishery Management Council (Council) for each of the 2011-12 groundfish fisheries (commercial and recreational). Meetings were scheduled in five ports; Astoria, Newport, North Bend, Port Orford, and Brookings, between May 17 and 20, 2010. The meetings consisted of a joint session to discuss regulation setting processes and harvest levels, and break-out sessions to separately discuss the harvest levels and management measures specific to the recreational and commercial fisheries.

A total of 77 members of the public attended these meetings. Sectors represented included recreational (charter and private), commercial fixed and troll gear (nearshore and slope fixed gear fisheries), and limited entry bottom trawl (whiting and non-whiting). Other community members who are affected by fishery-management decisions were also in attendance.

The primary purpose of these meetings was to obtain input on potential management measures for the 2011-12 groundfish fisheries. General discussions pertaining to other fishery issues were also discussed at each public meeting. This document will summarize public input received that dealt with potential 2011-12 management measures as well as comments regarding other topics (e.g., trawl rationalization, survey design, and need for more selective gears in the fixed-gear fisheries). The comments and views expressed in this document are those of the meeting participants.

Recreational

Figures 1 and 2 show the season structure options under consideration given the Council's preliminary preferred yelloweye rockfish ACL and the Stonewall Bank Yelloweye Rockfish Conservation Area (YRCA). Table 1 is a summary of the majority opinions from each meeting as well as a listing of other comments regarding proposed recreational management measures for the 2011-12 groundfish fisheries.

Maintaining a year round season with status quo marine bag limit and similar seasonal depth restrictions was a common theme. Based on the Council's preliminary preferred alternative of a 20 metric ton (mt) yelloweye rockfish Annual Catch Limit (ACL), an increase from status quo; liberalizing the 40-fathom depth restriction or allowing groundfish retention during the central Oregon all-depth halibut days should be explored. To meet the recreational portion of the Oregon cabezon ACL, a partial year sub-bag limit

was supported, preferably corresponding to the timing of the depth restrictions, for simplicity of regulations. A minority of anglers suggested increasing the lingcod bag limit to three fish. The majority of anglers expressed interest in allowing limited canary rockfish retention (a 1 or 2 fish sub-bag limit), since they are being encountered in large numbers. There is concern that as the species rebuilds, the recreational fishery will not show similar increased levels of usage as other sectors, which could lead to a reduced share of the rebuilt ACL. Additionally, information gained by allowing limited retention may benefit the stock assessment. Given the Council's preliminary preferred yelloweye rockfish ACL of 20 mt, no YRCA additions or modifications were recommended at the meetings, unless as a last resort to prevent a complete closure of the fishery.

## Commercial

### **Nearshore Commercial Fisheries**

Representatives for the nearshore commercial fisheries were present at all ports visited. Most with ties to this fishery were present at the Brookings and Port Orford meetings, where the majority of the Oregon nearshore fisheries takes place.

In response to yelloweye constraining the nearshore fisheries, several fishermen thought there were more yelloweye than the stock assessment indicated. They identified the source of this discrepancy as flawed surveys, and indicated that yelloweye are not in the areas that surveys are conducted. They stressed the need for improving survey design, such as using visual techniques (i.e., camera or other imaging methods) to supplement current survey methods.

Participants were concerned about potential decreased fishing opportunities due to the current court decision regarding yelloweye rockfish. Participants voiced their concern that they are already managed at such low landing caps that any further reductions in landing caps to protect overfished species will be dire. Hence, it was a common theme among ports that this fishery cannot tolerate further reductions in landing-cap limits. This and other concerns follow.

#### *Area Management and Depth Restrictions*

Most nearshore fishermen felt that depth management should be the first management measure used to limit fishing impacts to yelloweye rockfish. Some participants from the south coast feel that the 20-fm depth restriction currently in effect to 43° N latitude should be extended to the Washington border if yelloweye impacts by this fishery need to be reduced further. Some noted that they would like the opportunity to fish out to 30 fm again if the opportunity arose, because the 20-fm strip is too narrow and limits fishing opportunities. Finally, there was some discussion regarding the localized nature of yelloweye rockfish; and that localized, reef, or smaller area closures may be more appropriate than depth restrictions or trip limit reductions.

#### *Trip limit and Season Reductions*

Participants stressed that further trip limit reductions would be devastating to the fishery and the livelihood of nearshore fishermen and the communities. Many stated that further reductions in landing limits would put many out of business; the value of the allowable landed fish would not be enough to cover associated expenses.

Participants supported restructuring trip limits that emphasize catch/landings of target species that are associated with lower catch rates for overfished species. For example, limits could be increased for black rockfish and decreased for other nearshore rockfish. The result would be higher total landings of nearshore species with no change in impacts to overfished species.

We asked participants that if lower catches were required to reduce yelloweye rockfish impacts, whether reducing trip limits or the season length would be preferred. Fishermen in Brookings would not provide a preference, because reducing catch any further was considered intolerable. Fishermen in Port Orford provided mixed answers but stressed that any further reductions would be a last resort and would run many out of the fishery. If reductions were required, then some preferred to see a shorter season (i.e., shut the fishery down in or near the winter season once the total landing cap is reached) whereas others wanted to maintain a year around fishery. The latter stated that they had no other fishing opportunities if the nearshore fishery was shut down, and a total closure would result in an economic hardship (i.e., paying bills).

#### *Gear Restrictions*

Some participants expressed concern over yelloweye rockfish impacts by longline gear. These individuals feel that bycatch rates of yelloweye rockfish are higher for longline gear than other gears used in the nearshore fishery, and banning longline gear in this fishery would reduce yelloweye impacts and provide the opportunity for higher landed catches of nearshore species. Other participants, however, stated that it would not be economically feasible to fish with any gear but longline. They also noted that longline gear was used to start this fishery and should not be eliminated. Some pointed out that it was not the longline gear that was the problem, but rather how the gear was rigged and fished. More restrictive and clear specifications (and education) regarding longline gear and rigging could significantly reduce yelloweye bycatch rates (i.e., gangion length, weighted line, longline length, etc.). Finally, some suggested that pots be allowed in this fishery (currently only one fisherman is allowed to use pots). Participants stated that pots are selective for cabezon and catch very little rockfish. If longlines were banned, it was suggested that those affected should be allowed to fish pots.

#### *Assumed Discard Survival Rates*

Participants expressed their concern that current mortality rates applied to the discarded catch of overfished species by nearshore species are too high. These rates were developed through a research project aimed at recreational fisheries without venting prior to release. Participants suggested that data exist to develop more updated and realistic discard survival rates (e.g., live fishery landings). They also stressed that tagging studies should be conducted through exempted fishing permits to obtain better estimates. One

participant felt that obtaining exempted fishing permits is difficult and the process should be amended.

### **Slope Fixed Gear Fisheries**

Fixed gear representatives were primarily from the sablefish fishery. Some targeted lingcod seaward of the RCA. Some also fished halibut.

Much of the discussion pertained to the inability of the limited entry “daily trip limit” fishery to catch their harvest guideline because bimonthly trip limits are too restrictive. Participants are frustrated because other fisheries are consistently modeled and managed to reach their harvest guidelines. It was asked why this fishery was ignored and mismanaged. Participants were encouraged that a new model developed by the Groundfish Management Team might allow them to reach the harvest guideline. However, they would like more transparency (e.g., the model) and they feel that catches should be tracked closer. This would allow for better inseason management. Participants expressed their concern that inseason changes take too much time to be implemented following Council’s recommendations. Finally, participants felt that inseason mechanisms should be allowed to provide inseason decisions during times outside of Council meetings.

One participant suggested that this fishery begin using proper release and handling methods, as is done in Alaska for halibut fisheries. Increasing survival of released sablefish will benefit this fishery with more and larger fish in the future. More discussion of this suggestion can be found in the general section below.

### *Structure of Bimonthly and Weekly Limits*

Most participants felt that bimonthly limits for the “daily trip limit” sablefish fisheries should be structured with highest landings allowed during periods 2, 3, 4, and 5. Weather is typically poor during December, so planning on higher bimonthly limits during this period to finish catching the harvest guideline may be ineffective. Many participate in other fisheries during the winter months (e.g., crab).

Weekly trip limits should be structure to enable fishermen to reach the bimonthly limit in two or three trips per period. If the weekly trip limits are too low, poor weather, break downs, or other events may lead to their inability to catch the bimonthly limit.

### *Depth Restrictions*

Few comments were received regarding depth restrictions. However, some participants stated much of their productive fishing grounds are between 100 and 125 fathoms. Moving the Rockfish Conservation Area (RCA) boundary to 125 fathoms has negative impacts for this fishery.



## **Non-whiting Trawl and Whiting Trawl Fisheries**

There was little discussion regarding management measures for the trawl fisheries. This may be because it is assumed that trawl rationalization will be implemented on January 1, 2011. There was significant discussion regarding trawl rationalization and the potential negative impact to the fishery and Oregon coastal communities. This and other trawl general trawl topics are discussed at the end of this report.

### *Petrals Cutouts*

One participant stressed that if petrale cutouts are removed, that encounters with darkblotched rockfish will increase. This will force fishermen to fish petrale sole in areas where darkblotched interactions are higher. Fishing within petrale cutouts will not increase discarding of petrale sole because fishermen will adjust their towing duration appropriately.

## **Comments on Other Issues**

### *Salmon Fishermen and Lingcod Limits for Open Access*

Numerous fishermen were concerned about the regulation limiting lingcod retention to the ratio of 15 salmon: 1 lingcod applying if fishing did not occur in the RCA. Salmon trollers were under the assumption that, as was the case in the past, if the entire trip was conducted outside of the RCA, up to 400 pounds of lingcod could be landed (cumulative monthly limit) on a trip regardless of the number of salmon in possession. They would like to see the regulations written to allow this option. Participants stressed that there is a large resource of lingcod but it is inaccessible. These participants also noted that a dinglebar fishery still exists where people target lingcod both shoreward and seaward of the RCA with little yelloweye rockfish bycatch.

### *Trawl Rationalization*

Some participants are planning on trawl rationalization being implemented on January 1, 2011 and feel that it will improve the west coast groundfish fishery. Others are concerned about potential negative impacts of trawl rationalization. These fishermen cited recent articles and stories from the East Coast, where catch sharing was recently implemented. Some of these concerns include:

- Shares of overfished species are so low that numerous boats will not be able to fish. These individuals will either sell their permits and get out of fishing completely or enter open access fisheries to make up the difference (e.g., crab and shrimp).
  - o Less groundfish will be landed, therefore impacting coastal communities and tax revenue.
  - o Infrastructure for crab and shrimp fisheries will not be able to absorb a large influx of participants.

Participants noted that the vessel buy back program was devastating to our coastal communities. The result was loss of infrastructure. Trawl rationalization will be equally or more devastating to our communities.

Fishermen who were concerned about potential negative impacts of trawl rationalization suggest that implementation should be delayed until the problems can be fixed. One individual who owns a boat yard is delaying plans for expansion because of concerns that trawl rationalization will reduce the number of boats in Oregon.

#### *Survey Design and Stock assessments*

A common concern was that stock assessments are based on bad science and survey designs need to be improved to provide better biomass estimates. Participants feel that the biomass of species such as canary rockfish and yelloweye rockfish are much higher than assessments estimate. Participants stated that they are catching more of these two species, which may represent a spill over from their preferred habitat (i.e., rocky areas inside the RCA) into less suitable habitat (i.e., flat bottom areas), due to increased population size.

Participants noted that petrale sole commercial catch per unit effort (CPUEs) are higher now than they have observed for years. There is frustration that these CPUEs are not used in assessments. Participants stressed that commercial CPUEs should be incorporated to provide biomass and trend estimates to the stock assessment.

Participants suggested that trawl surveys should utilize visual or other survey methods to sample areas that are inaccessible by trawl vessels/gear. These other methods would not replace trawl surveys, but rather be used to supplement trawl surveys for those inaccessible areas. Trawl gear used by surveys should be redesigned to more effectively sample rockfish species. The current trawl gear used by surveys is ineffective for sampling rockfishes. It was also suggested that additional trawl and fixed gear survey designs include some non-random survey stations selected by fishermen that would be sampled every survey season.

#### *Selective gears in fixed gear fishery*

Participants expressed their concern that annual catch limits for many target species are not reached because we are managing for the weakest species (e.g., yelloweye). Under this management scenario, there is a need for more selective fishing gears. More work on gear research is needed. Species such as canary and yelloweye rockfish may react differently to different gears. Bait size, hook size, and other potential gear modifications are needed to selectively catch under-harvested species such as lingcod. More research should be funded and encouraged. Exempted fishing permits should be issued to develop better selective fishing methods. If selective fishing methods for lingcod could be developed and/or shown, then the high lingcod biomass could be accessed, perhaps even within the RCA.

Participants stressed that we should concentrate on how to catch lingcod without impacting yelloweye rockfish. Lingcod are abundant, we are grossly under-harvesting

the resource relative to the Annual Catch Limit, and lingcod are a major predator that eats rockfish, including yelloweye rockfish. Management is currently letting this predator go unchecked.

Some participants noted that pots are selective for cabezon and do not catch rockfish. Others noted that longline catch rates of yelloweye rockfish can be reduced if rigged properly.

#### *Logbooks*

Participants felt that current logbooks are uninformative. Questions should be revised that may provide information that can be used to evaluate selectivity among gears and within gears. For example, logbooks only provide a space for number of hooks. There are no questions regarding hooks size, spacing, etc. A lot could be learned from logbooks if the right questions were included.

Participants expressed the importance of logbooks for management. They stressed that fishermen should carefully and truthfully complete logbooks.

#### *“Select Grade Harvest” Techniques*

One participant expressed his concern over survival of small or juvenile sablefish that are discarded by sablefish fixed gear fisheries. Handling and fishing methods should be regulated and/or publicized that will maximize discard survival of sablefish. This includes the elimination of crucifers, educating fishermen regarding the benefit of increased survival to the fishery, and eliminate the use of gaff hooks in this fishery. Juvenile sablefish should be released by hand to improve their survival. Fishing no deeper than 200 fathoms may also increase the survival for discarded sablefish. The result of these methods will be better survival, less waste, and eventually more large sablefish

#### *Yellowtail Rockfish limit for open access fisheries*

Open access fishermen (including salmon trollers) request an increased landing limit for yellowtail rockfish. The landing limit for yellowtail rockfish is so low that landings do not cover the cost of the vessel monitoring system (VMS).

#### *Multiple Gears during Single Trips*

Participants requested that multiple gears be allowed during single trips. Requests were made for the following:

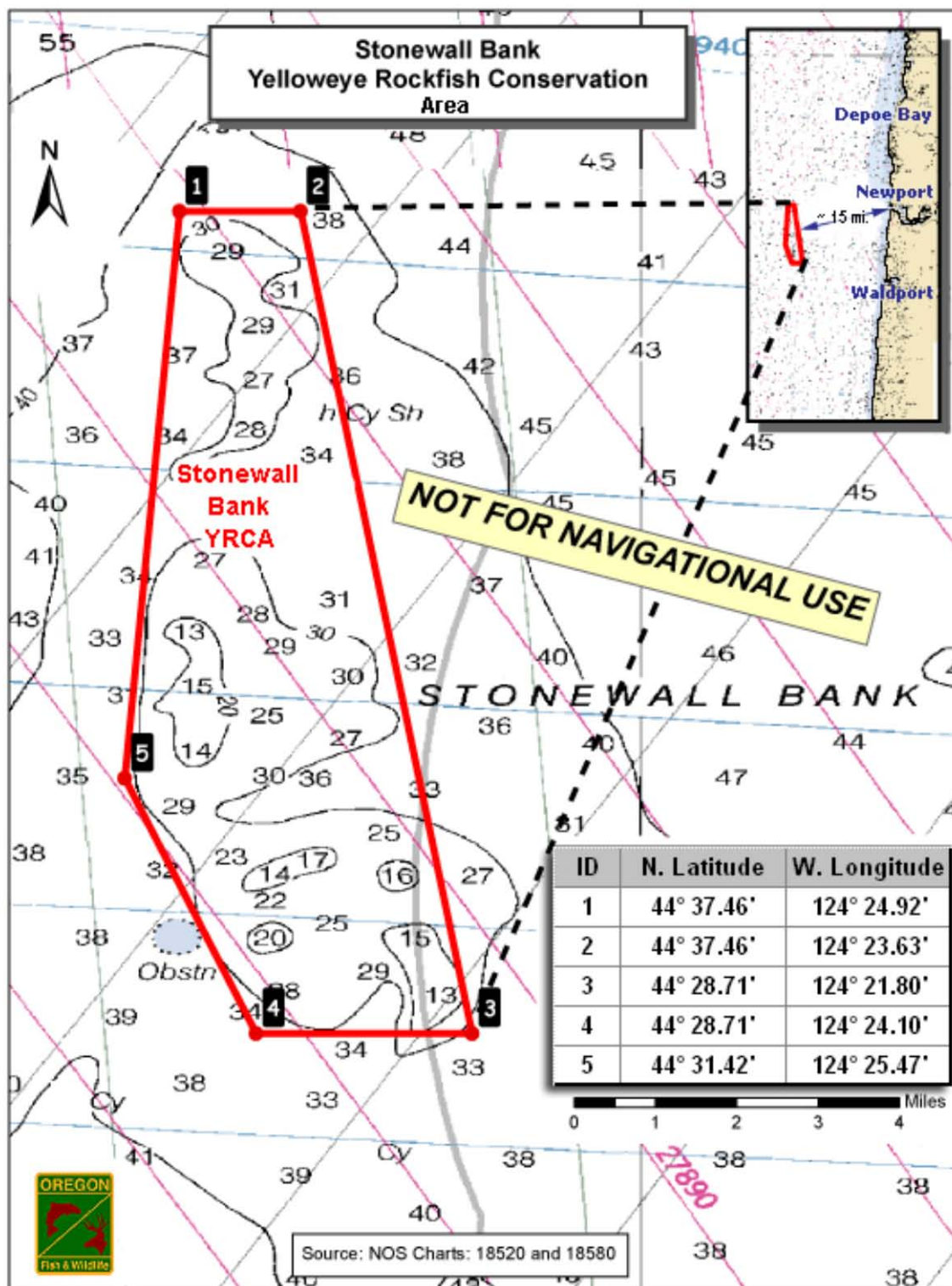
- Fish salmon during shrimp trips
- Fish tuna during shrimp trips
- Fish for salmon and tuna during fixed gear sablefish trips
- Fish for salmon and tuna inside of the RCA.

## Figures and Tables

Option	J	F	M	A	M	J	J	A	S	O	N	D	Est. Yelloweye Impacts (mt)		Est. Canary Impacts (mt)	
													Status quo	GF in halibut	Status quo	GF in halibut
1	Open all depths			Open < 40 fm						Open all depths			2.1	2.5	2.4	2.8
2	Open all depths			Open < 40 fm						Open all depths			2.3	2.6	2.5	3.0
3	Open all depths			Open < 40 fm						Open all depths			2.5	2.8	2.7	3.1
4	Open all depths				Open < 40 fm			Open all depths				2.9	3.21*	2.9	3.4	

\* exceeds the projected 3.0 mt yelloweye allocation, under the Preliminary Preferred Alternative (20 mt ACL)

**Figure 1.** Season structure along with expected yelloweye and canary rockfish impacts for 2011-2012 Oregon recreational fishery options, including retention of groundfish during all-depth Pacific halibut days, under the Council's preliminary preferred yelloweye ACL.



**Figure 2.** Stonewall Bank YRCA (located approximately 15 miles out of Newport).

**Table 1.** Major recreational issues discussed during public meetings reviewing the 2011-2012 management measures.

Issue	Astoria	Newport	North Bend	Brookings	Port Orford
<b>year-round ocean boat fishery</b>	N/A	support	support	support	support
<b>bag limits</b>	N/A	Marine fish--7; lingcod--2	Marine fish--7; lingcod--2	Marine fish-- 7-10; lingcod--2	Marine fish--7; lingcod--2 or 3
<b>if YE ACT (HG) is increased, how to "spend" the additional impacts allowed</b>	N/A	no consensus; if additional all-depth months, add April , there are other fishing opportunities in Sept. (salmon and tuna)	allow groundfish retention during the all-depth halibut days	liberalize the inside 40 fathom depth restriction (more all-depth months; partuculary September)	allow groundfish retention during the all-depth halibut days
<b>increase YRCA or add new YRCAs</b>	N/A	not in favor, since YE ACL may be increasing, use if necessary to prevent reaching YE ACT (HG)	not in favor, since YE ACL may be increasing, use if necessary to prevent reaching YE ACT (HG)	not in favor, since YE ACL may be increasing	not in favor, since YE ACL may be increasing
<b>cabezon management measures</b>	N/A	1 fish seasonal sub-bag limit, coincide with 40-fathom regulations, or closed during the spawning season, institute a slot limit	1 fish sub-bag limit, coincide with 40-fathom regulations, make regulations as simple as possible	1 fish sub-bag limit, coincide with 40-fathom regulations, make regulations as simple as possible	1 fish sub-bag limit, coincide with 40-fathom regulations, make regulations as simple as possible; increase size limit
<b>other issues</b>		worries about spawning rockfish in April, lots of very ripe females	need more education on fish ID and release techniques	need a better red rockfish guide, one that is bigger and waterproof; more education on release devices	allow a sub-bag limit of 1 or 2 canary
			allow retention of 1 or 2 canary, there are many out there, hard to avoid, will reduce catch of other nearshore rockfish	need a proper rockfish assessment, take into account the amount of feed available in the ocean	expanded lingcod opportunity; marine fish bag limit trade-off or depth restrictions to ease YE impacts
			some sort of substitution scenarios (eg. 1 yelloweye equals 1 lingcod) in the bag limits	sperate management lines for groundfish, similar to salmon, don't like being lumped in with the entire coast	explore what other Council's have done in regards to releasing/ venting fish
				allow retention of canary	

**California Department of Fish and Game Report on Changes to Rockfish Conservation  
Area (RCA) Lines for 2011-2012**

Adjustments to trawl and non-trawl RCA latitude and longitude lines in California are being proposed by industry and the California Department of Fish and Game (CDFG). Industry requests were made to modify the 200 fm trawl line in the Cape Mendocino area and the 60 fm non-trawl line in the San Diego area to better approximate depth contours or better align the RCAs to Essential Fish Habitat (EFH) boundaries. All proposed changes have been reviewed by CDFG Enforcement and verified that they do not conflict with existing EFH boundaries. CDFG does not anticipate additional impacts to overfished species since the proposed adjustments occur in areas of low bycatch. Adjustments are necessary because discrepancies exist between current and proposed depth contours, resulting in lost fishing ground and differences in actual versus predicted bycatch.

**Changes to Trawl RCAs in the Cape Mendocino Area**

**Changes to the 100 fm line:** Revisions to the 100 fm line are required to eliminate cross-overs caused by industry proposed changes to the 200 fm line.

**Changes to the 125 fm line:** Revisions to the 125 fm line are required to eliminate cross-overs caused by industry proposed changes to the 200 fm line.

**Changes to the 150 fm line:** Revisions to the 150 fm line are required to eliminate cross-overs caused by industry proposed changes to the 200 fm line.

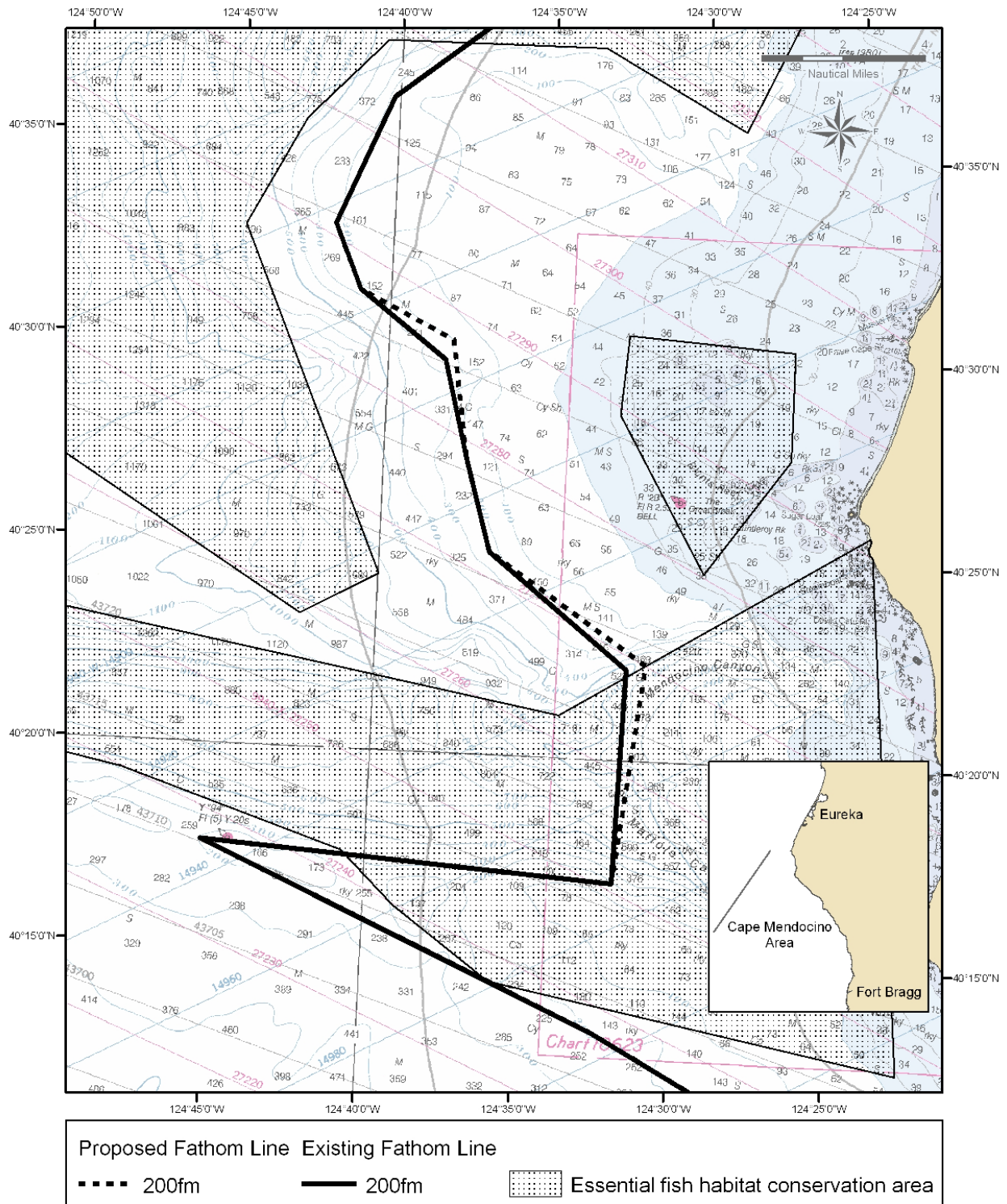
**Changes to the 180 fm line:** Revisions to the 180 fm line are required to eliminate cross-overs caused by industry proposed changes to the 200 fm line.

**Changes to the 200 fm line:** Revisions to the 200 fm line are proposed by industry and modified by CDFG to better approximate depth contours resulting in more accurate bycatch information by depth strata and to better align with EFH boundaries.

Fathom Line	Proposed Coordinates					Action	Long Change	Original Coordinates Published in the Federal Register			
	Point	Lat		Long				Lat		Long	
		Deg	Min	Deg	Min			Deg	Min	Deg	Min
100	156	40	30.37	124	37.30	crossover	shoreward	40	30.00	124	38.13
100		40	28.48	124	36.95	add					
125	180	40	30.35	124	37.52	crossover	shoreward	40	29.88	124	38.09
125		40	28.39	124	37.16	add					
150	157					delete		40	30.00	124	38.50
150	158	40	30.30	124	37.63	crossover	shoreward	40	29.76	124	38.13
180	159	40	30.22	124	37.80	crossover	shoreward	40	30.00	124	38.50
180		40	27.29	124	37.10	add					
200	133	40	30.16	124	37.91	revision		40	30.00	124	38.15
200	136	40	22.34	124	31.22	revision		40	22.22	124	31.85
200		40	14.40	124	35.82	add					



# CDFG Changes to 2011-2012 Rockfish Conservation Area Boundaries - Cape Mendocino Area -



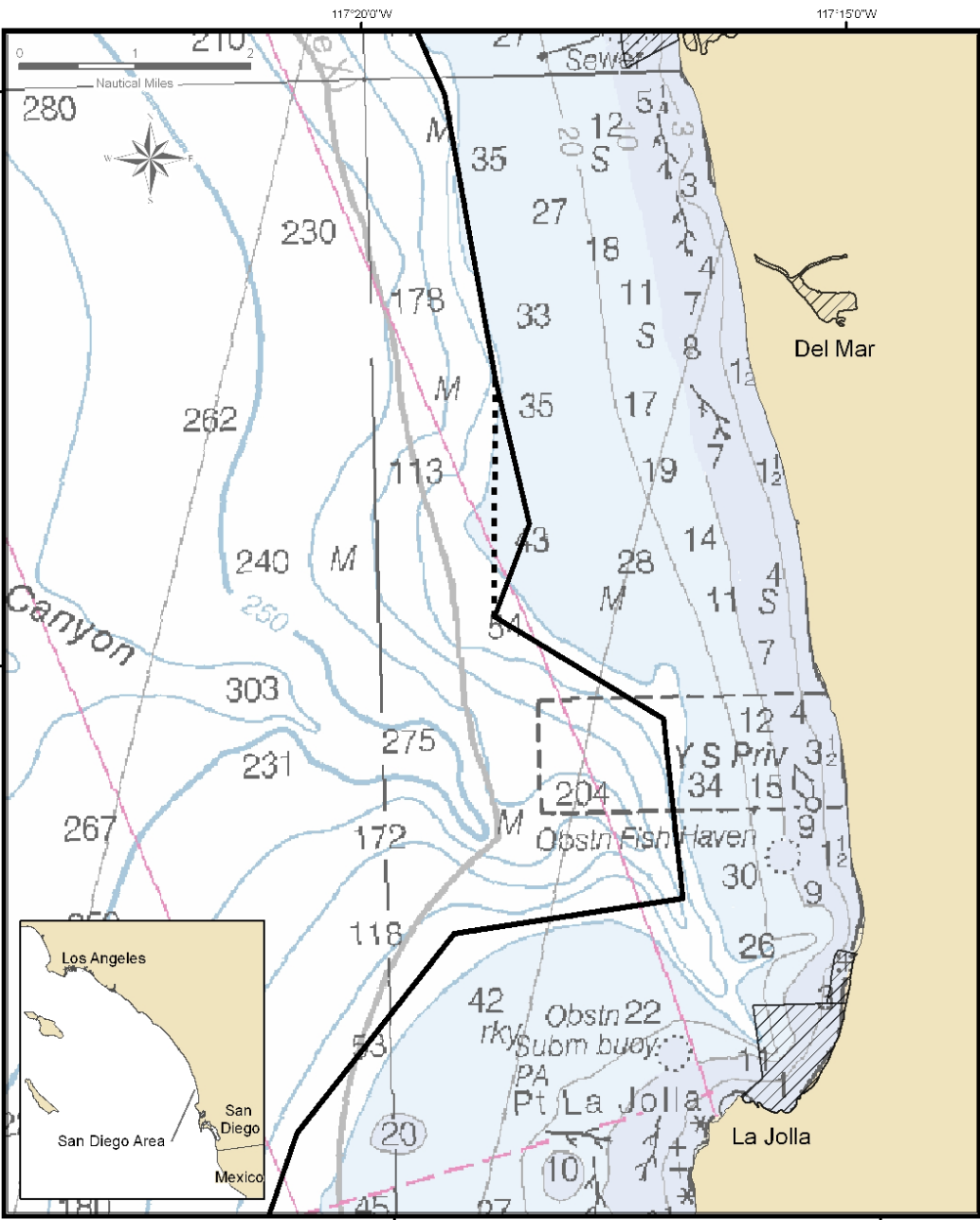
**Changes to Non-Trawl RCAs in San Diego Area -**

**Changes to the 50 fm line:** Revision to the 50 fm line in the San Diego area is required to eliminate a crossover.

**Changes to the 60 fm line:** Revision to the 60 fm line in the San Diego area is proposed by industry and modified by CDFG to better approximate depth contours resulting in more accurate bycatch information by depth strata.

Fathom Line	Proposed Coordinates					Action	Long Change	Original Coordinates Published in the Federal Register			
	Point	Lat		Long				Lat		Long	
		Deg	Min	Deg	Min			Deg	Min	Deg	Min
50	188	32	55.35	117	18.65	crossover	shoreward	32	55.71	117	18.99
60	198					delete		32	56.11	117	18.41

**- San Diego Area -**



## California Department of Fish and Game Proposed Management Measures for the Recreational Groundfish Fishery in 2011 and 2012

The California Department of Fish and Game (CDFG) provides analyses of the proposed depth and season restriction alternatives, as well as other proposed recreational management measures, for the California recreational fishery in 2011 and 2012. Four alternatives and their impacts are provided below—season restrictions apply to boat-based anglers; analyses of additional management measures are included in Attachment 1, and a description of the CDFG RecFISH model used to estimate impacts for each alternative is provided in Attachment 2.

### 1. Analyses of Depth and Season Restriction Alternatives in the California Recreational Fishery in 2011-2012 (using the Annual Catch Limit Alternatives under Consideration by the Council)

The recreational depth and season restrictions possible in 2011 and 2012 remain below the California harvest guidelines (HGs) corresponding to each of the overfished species annual catch limit (ACL) alternatives under consideration by the Council. These alternatives include the No Action Alternative, Preliminary Preferred Alternative ACLs (Alternative 1), Intermediate ACLs (Alternative 2) and Low ACLs (Alternative 3). Individual overfished species present unique constraints in each management area and the proposed alternatives represent the CDFG's best attempt to maximize opportunities under each ACL alternative. The HGs corresponding to each of the ACL alternatives for 2011 and 2012 are presented in Table 1-1 and Table 1-2 respectively.

**Table 1-1.** The 2011 California recreational harvest guidelines (HG) for each of the ACL alternatives under consideration. The Preliminary Preferred Alternative is referred to as the PPA in the table. The Optimal Yield (OY) equivalent HGs from 2010 are provided.

Species	Harvest Guideline (HG)			
	No Action Alt 2010 OY eq.	Alt 1 PPA	Alt 2 Intermediate	Alt 3 Low
Yelloweye Rockfish	2.8	3.4	2.6	1.6
Bocaccio	67.3	162	61.9	32.6
Cowcod Option 1*	0.3	0.3	0.2	0.1
Cowcod Option 2	NA	1.9	1.4	0.9
Canary Rockfish	22.9	22.9	16.5	8.6

\*Option 1 is derived from the status quo catch sharing; Option 2 reflects the increased catch share for the recreational fishery under consideration by the Council, as discussed on page 2.

**Table 1-2.** The 2012 California recreational harvest guidelines (HG) for each of the ACL alternatives under consideration. The Preliminary Preferred Alternative is referred to as the PPA in the table. The Optimal Yield (OY) equivalent HGs from 2010 are provided.

<b>Species</b>	<b>Harvest Guideline (HG)</b>			
	<b>No Action Alt 2010 OY eq.</b>	<b>Alt 1 PPA</b>	<b>Alt 2 Intermediate</b>	<b>Alt 3 Low</b>
Yelloweye Rockfish	2.8	3.4	2.6	1.6
Bocaccio	67.3	168.9	65.8	27.6
Cowcod Option 1	0.3	0.3	0.2	0.1
Cowcod Option 2	NA	1.9	1.4	0.9
Canary Rockfish	22.9	24.2	17.7	9.1

Since the harvest limits for 2011 and 2012 do not differ substantially for a given ACL alternative, the implications for future fishing opportunity in the tables below apply to both years. The following information is provided to illustrate the implications of each of the alternatives under consideration by the Council.

- A figure displaying the season and depths for each management area as well as the number of months open to fishing.
- The overfished species impacts are provided for species found in the California recreational fishery including yelloweye rockfish, bocaccio, canary rockfish, cowcod and widow rockfish. In addition, the harvest guidelines (HG) or harvest limits (HL) for each species and the corresponding percentage of the HG/HL represented by the projected impacts are provided.
- The non-overfished species impacts were projected for the season and depth under each alternative. All species were modeled to remain within their respective harvest limits from the preliminary preferred catch sharing for overfished species decided at the April 2010 Council meeting and the preliminary preferred ACLs (assuming 2010 catch sharing for non-overfished species.)

The Northern and North-Central North of Point Arena Management Areas will continue to be constrained by yelloweye rockfish. In the North-Central South of Point Arena and South-Central Management Areas, blue rockfish is a potential constraint on season length, while yelloweye rockfish constrain the maximum allowable depth restrictions and season length at lower ACLs. The Southern Management Area is constrained by cowcod and bocaccio impacts.

Cowcod Catch Sharing Options. The current cowcod harvest limit of 0.3 mt under cowcod catch sharing (Option 1 – Status Quo) was based on projected impacts from the RecFISH model in a past biennial management cycle and though the recreational fishery has been able to remain below this harvest limit with status quo regulations, it constrains the depth restrictions in the Southern Management Area. A revised catch sharing option was proposed for cowcod (Option 2) that would provide the recreational fishery with 47.5% of the 4 mt ACL under the preliminary preferred alternative resulting in a 1.9 mt HG for the recreational fishery. This is more reflective of the historical take in the recreational fishery, which was nearly 50% of the catch, whereas the 0.3 mt harvest limit under Option 1 represents 7.5% of the ACL.

The recreational fisheries are held harmless relative to the catch of widow rockfish. Widow rockfish catch in the California recreational is negligible; therefore its catch in the recreational fishery does not dictate

the season or depth restrictions. The widow rockfish projected impact is provided for each alternative as a harvest target for the recreational fishery. Darkblotched rockfish, Pacific Ocean Perch (POP) and petrale sole are uncommonly encountered in the recreational fishery or infrequently targeted, thus they have not been modeled as a constraint.

Proposed season and depth restriction alternatives also remain within the recreational harvest guidelines for non-overfished species resulting from the ACL alternatives and biennial catch apportionments between sectors of the fishery. Minor nearshore rockfish continues to constrain the recreational fishery in some management areas. The catch of these non-overfished species is tracked inseason and will continue to be monitored during the 2011-2012 season.

Additional Proposed Management Measures under Consideration: The CDFG is proposing the following management actions in 2011 and 2012 under all of the ACL alternatives analyzed below. Details of the management measure analyses are provided in Attachment 1.

- Eliminating the lingcod spawning closure in the California recreational fishery.
- Revising the California scorpionfish (sculpin) depth restriction in the Southern Management Area.
- Eliminating the ten fathom depth closure around the Farallon Islands and Noonday Rock.
- Combining the Monterey South-Central and Morro Bay-South Central recreational management areas.
- Adding a management line at Cape Vizcaino.
- Increasing the cabezon bag limit to 3 fish.
- Decreasing the lingcod size limit to 22 inches.
- Increasing the recreational depth restrictions within the Cowcod Conservation Area from 20 fm to 30.
- Modifying the list of groundfish species allowed to be taken recreationally in the Cowcod Conservation Area to include shelf and slope rockfish.
- Modifying cabezon and kelp greenling gear restrictions to be consistent with rockfish regulations.
- Revising the naming convention for the California recreational management areas.

***Recreational Analyses Removed from Consideration***

- Increasing the lingcod bag limit.
- Increasing the depth restriction to 50 fm in the Monterey and Morro Bay recreational groundfish management areas.

**NO ACTION ALTERNATIVE (2010 OYs)**

Season and depth restriction diagrams (Figure 1-1) are provided below under the no action alternative as well as corresponding impacts on overfished species (Table 1-3) and non-overfished species (Table 1-4). Under the no action alternative, the yelloweye rockfish catch HG would be 2.8 mt. The projected yelloweye rockfish impacts of 3.0 mt would exceed the harvest guideline for yelloweye rockfish by 0.2 mt under the current season and depth restrictions. The slight increase in the projected impacts results from updates to model parameters including addition of 2008 and 2009 catch estimates. The impacts on the remaining overfished species and non-overfished species would remain below the specified HGs.

Management Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Months
Northern	CLOSED				May 15 - Sept 15 <20 fm								4
North-Central North of Pt. Arena	CLOSED				May 15 - Aug 15 <20 fm								3
North-Central South of Pt. Arena	CLOSED					June 13–Oct < 30 fm						4.5	
South-Central Monterey	CLOSED				May – Nov 15 < 40 fm							6.5	
South-Central Morro Bay	CLOSED				May – Nov 15 < 40 fm							6.5	
Southern	CLOSED		Mar –Dec < 60 fm										10

**Figure 1-1.** Rockfish, cabezon and greenling season and depth restrictions in each management area under the no action alternative.

Under the current regulations, the depth restriction for scorpionfish in the Southern Management Area is limited to 40 fm in January and February when the rockfish, cabezon and greenling season is closed. CDFG has proposed that this depth restriction be increased to 60 fm during these months to make the depth restriction consistent with the Rockfish, Cabezon and Greenling (RCG) depth restrictions during March through December to accommodate requests by industry to simplify regulations, which is not expected to appreciably increase impacts on overfished species.

**Table 1-3.** Projected impacts to overfished species in the California recreational fishery under the no action alternative (2010 OYs).

Species	2011 HG (mt)	2012 HG (mt)	Projected Impacts (mt)	2011 Percent HG	2012 Percent HG
Yelloweye Rockfish	2.8	2.8	3.0	107%	107%
Bocaccio	67.3	67.3	54.6	81%	81%
Cowcod Option 1	0.3	0.3	0.17	64%	64%
Cowcod Option 2	1.9	1.9	0.17	9%	9%
Canary Rockfish	22.9	22.9	8.0	35%	35%
Widow Rockfish	NA	NA	8.1	NA	NA

**Table 1-4.** Projected impacts to non-overfished species in the California recreational fishery under the no action alternative.

Species	Projected Impacts (mt)
Black Rockfish	151.0
Blue Rockfish	178.3
Cabazon	23.3
California Scorpionfish	63.8
California Sheephead	31.7
Greenlings	10.5
Lingcod	196.0
Minor Nearshore Rockfish North	7.8
Minor Nearshore Rockfish South	308.6

#### **ALTERNATIVE 1: PRELIMINARY PREFERRED ALTERNATIVE ACLs FOR OVERFISHED SPECIES**

Season and depth restriction diagrams (Figure 1-2) as well as corresponding impacts on overfished species (Table 1-6) and non-overfished species (Table 1-7) under this alternative are provided below. The 20 mt yelloweye rockfish ACL under the preliminary preferred alternative and the corresponding 3.4 mt HG allow the limited season in the North-Central North of Point Arena Management Area to be sustained as well as allowing a one and a half month increase to the season in the Northern Management Area. This alternative also provides one and a half months of additional fishing opportunities in the North-Central South of Point Arena Management Area and the Monterey and Morro Bay South-Central Management Areas while providing a 0.3 mt buffer between the projected impacts of 3.1 mt and the harvest guideline of 3.4 mt. The reduced catches of Minor Nearshore Rockfish South and blue rockfish in the 2008 and 2009 seasons resulted in reduced projected impacts for these species in 2011 and 2012, which will accommodate the one and a half month increases in the fishing season in these three management areas. The preliminary preferred alternative would allow for an additional 5.5 months of fishing season statewide over the No Action Alternative, though the resulting seasons still represent very limited fishing opportunity compared to a full year fishing season.

Under the remaining ACL alternatives, the season would have to be reduced in the North-Central North of Point Arena and in other management areas to prevent yelloweye rockfish impacts from exceeding the lower harvest guideline. Yelloweye rockfish impacts are extremely constraining to the fishery North of Point Arena and reductions in the ACLs from the preliminary preferred alternative of 20 mt would result in additional season length reductions in the North-Central North of Point Arena Management Area. This management area is already severely constrained, with only a three month fishing season at 20 fms. Lower ACL options will also require a reduction in the season length in the Northern or North-Central South of Point Arena Management Areas to remain within the yelloweye rockfish harvest guidelines resulting in lost revenue to coastal communities in these areas as well.

While modifying the depth restriction in the Cowcod Conservation Area from 20 to 30 fms is projected to result in increased catch of cowcod, the 2008 Total Mortality Rate catch sharing would provide a significant buffer between the projected impact of 0.17 mt and the 1.9 mt Harvest Guideline under the preliminary preferred alternative. The 168.3 mt bocaccio OY would accommodate any potential increase in bocaccio impacts in the recreational fishery from allowing retention of shelf and slope rockfish and a 30 fm depth restriction in the CCA.



The canary rockfish harvest guideline of 22.9 mt under the preliminary preferred alternative will provide a buffer between the projected impacts and variability in the estimated catch of canary rockfish.

In addition, the proposed options under the PPA will accommodate the proposed changes to management measures other than depth and season.

Management Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Months
Northern	CLOSED				May 15 - Oct <20 fm								5.5
North-Central North of Pt. Arena	CLOSED				May 15 - Aug 15 <20 fm								3
North-Central South of Pt. Arena	CLOSED				June–Nov < 30 fm								6
South-Central Monterey	CLOSED				May – Dec < 40 fm								8
South-Central Morro Bay	CLOSED				May – Dec < 40 fm								8
Southern	CLOSED		Mar –Dec < 60 fm									10	

**Figure 1-2.** Rockfish, cabezon and greenling season structure under the preliminary preferred alternative (Alternative 1).

**Table 1-5.** Projected impacts to overfished species in the California recreational fishery under the preliminary preferred alternative (Alternative 1).

<b>Species</b>	<b>2011 HG (mt)</b>	<b>2012 HG (mt)</b>	<b>Projected Impacts (mt)</b>	<b>2011 Percent HG</b>	<b>2012 Percent HG</b>
Yelloweye Rockfish	3.4	3.4	3.1	92%	92%
Bocaccio	161.8	168.9	55.0	34%	33%
Cowcod Option 1	0.3	0.3	0.2	64%	64%
Cowcod Option 2	1.9	1.9	0.2	11%	11%
Canary Rockfish	22.9	24.2	9.1	40%	38%
Widow Rockfish	NA	NA	8.7	NA	NA

**Table 1-6.** Projected impacts to non-overfished species in the California recreational fishery under the preliminary preferred alternative ACLs (Alternative 1). Results in parenthesis reflect impacts from additional changes to management measures other than season and depth.

<b>Species</b>	<b>Projected Impacts</b>
Black Rockfish	168.9
Blue Rockfish	176.7
Cabezon	26.4 (28.9)
California Scorpionfish	61.4 (63.8)
California Sheephead	31.7
Greenlings	11.9
Lingcod	215.1 (263.2)
Minor Nearshore North	5.6
Minor Nearshore South	347.1

## **ALTERNATIVE 2: INTERMEDIATE OVERFISHED SPECIES ACLs**

Season and depth restriction diagrams (Figure 1-3) as well as corresponding impacts on overfished species (Table 1-7) and non-overfished species (Table 1-8) under this alternative are provided below. This alternative would not allow an increase in the season length in the Northern Management Area despite their reduced impacts on yelloweye rockfish. It would result in a half month reduction in the already highly constrained three month season length in the North-Central North of Point Arena Management Area with the loss of the first two weeks of August. In the North-Central South of Point Arena Management Area, October would be closed to fishing while the season start date was moved from June 13<sup>th</sup> to June 1<sup>st</sup>, reducing the season length by a half month relative to the no action alternative. In this management area, both yelloweye and blue rockfish constrain the season lengths. The season length in the Monterey and Morro Bay South-Central Management Areas could still be increased to include December, increasing the season length by one and a half months since yelloweye rockfish is not constraining in this area.

Though the canary rockfish impacts for the California recreational fishery in 2009 were far below the 22.9 mt HG, the annual catches of canary rockfish in the recreational fishery are variable and this residual buffer between projected impacts of 7.4 mt and the HG of 16.5 mt in 2011 should be maintained to prevent the need for inseason action to close the fishery before the proscribed date. The bocaccio HG of 61.9 mt in 2011 under the catch sharing alternative selected by the Council and the cowcod harvest limit of 1.4 mt under the Total Mortality Report catch sharing (Option 2) would provide sufficient residual catch to allow the proposed 30 fm or 40 fm depth restriction in the CCA and retention of shelf and slope rockfish including bocaccio in the CCA.

In addition the proposed options under Alternative 2 will accommodate the proposed changes to management measures other than depth and season.

Management Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Months
Northern	CLOSED				May 15 - Sep 15 <20 fm								5.5
North-Central North of Pt. Arena	CLOSED				May 15 - Jul <20 fm								2.5
North-Central South of Pt. Arena	CLOSED					June–Sep < 30 fm							4
South-Central Monterey	CLOSED				May – Dec < 40 fm								8
South-Central Morro Bay	CLOSED				May – Dec < 40 fm								8
Southern	CLOSED		Mar –Dec < 60 fm									10	

**Figure 1-3.** Rockfish, cabezon and greenling season structure under Alternative 2 with intermediate ACLs for overfished species.

**Table 1-7.** Projected impacts to overfished species in the California recreational fishery under Alternative 2 with intermediate ACLs for overfished species.

<b>Species</b>	<b>2011 HG (mt)</b>	<b>2012 HG (mt)</b>	<b>Projected Impacts (mt)</b>	<b>2011 Percent HG</b>	<b>2012 Percent HG</b>
Yelloweye Rockfish	2.6	2.6	2.4	94%	94%
Bocaccio	61.9	65.8	52.2	84%	79%
Cowcod Option 1	0.2	0.2	0.17	85%	85%
Cowcod Option 2	1.4	1.4	0.17	12%	12%
Canary Rockfish	16.5	17.7	7.4	45%	42%
Widow Rockfish	NA	NA	7.8	NA	NA

**Table 1-8.** Projected impacts to non-overfished species in the California recreational fishery under Alternative 2 with intermediate ACLs. Results in parenthesis reflect changes to management measures other than season and depth.

<b>Species</b>	<b>Projected Impacts</b>
Black Rockfish	145.0
Blue Rockfish	145.1
Cabazon	21.6 (23.8)
California Scorpionfish	61.4 (63.8)
California Sheephead	31.7
Greenlings	9.3
Lingcod	170.3 (209.7)
Minor Nearshore North	7.8
Minor Nearshore South	286.1

### **ALTERNATIVE 3: LOW OVERFISHED SPECIES ACLs**

Season and depth restriction diagrams (Figure 1-4) as well as corresponding impacts on overfished species (Table 1-9) and non-overfished species (Table 1-10) under this alternative are provided below. The reduction in the yelloweye rockfish ACL to 14 mt would result in a 1.6 mt HG for the recreational fishery, which would not allow an increase in the four month fishing season in the Northern Management Area despite their reduced impacts on yelloweye rockfish since the 20 fm depth restriction was put in place in 2008. A reduction to the already highly constrained three month fishing season in the North-Central North of Point Arena Management Area would be needed to remain within the yelloweye rockfish HG; only a one and a half month season could be accommodated,. In addition, the season length in the North-Central South of Point Arena Management Area would have to be decreased by a half month. Rather than the one month increase in season length in the South-Central Management Area proposed under Alternatives 1 and 2, the season would be reduced by 1 month to help maintain the 0.1 mt residual between the 1.6 mt HG and the 1.5 mt projected impacts for yelloweye rockfish and to remain below the bocaccio HG.

With the bocaccio HG of 27.6 mt, season lengths would have to be severely reduced by five months in the Southern Management Area resulting in only a five month fishing season during the least valuable months of the season. The resulting season would not encompass the critical months for rockfish fishing from March through April when Coastal Pelagic and Highly Migratory species are not available to the fishery. In addition, the season in the South-Central Management Area would be reduced by one month resulting in a six month fishing season to reduce bocaccio impacts to within the HG.

Under Alternative 3, the cowcod HG would be 0.1 mt under the status quo catch sharing (Option 1); cowcod is less constraining than the bocaccio OY which requires severe season length reductions or shallower depth restrictions in the Southern Management Area to remain within its 27.6 mt HG. The bocaccio HG in 2011 and the cowcod harvest limit of 0.9 mt under the 2008 Total Mortality Report Catch (Option 2) sharing would provide a 0.85 mt residual catch to allow the proposed increase in depth restriction in the CCA from 20 fm to 30 fm or 40 fm and retention of shelf and slope rockfish including bocaccio in the CCA. Potential increases in bocaccio impacts from these actions would be a concern given the 27.6 mt bocaccio OY and the projected impacts of 26.6 mt in 2011, given the 1 mt residual between the projected impacts and the HG. Though there is concern as to whether the proposed changes to regulations in the CCA could be implemented, the alternative will accommodate all the other proposed

changes to management measures. The reductions in season length in the Southern and South-Central Management Areas as well as forgone increases in fishing opportunity in the CCA would have extreme negative implications for fishing opportunity and the businesses in communities that rely on fishing for their economic well being.

Management Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Months
Northern	CLOSED				May 15 - Sep 15 <20 fm								4
North-Central North of Pt. Arena	CLOSED				May 15 - June <20 fm								1.5
North-Central South of Pt. Arena	CLOSED				June–Sep < 30 fm								4
South-Central Monterey	CLOSED				May – Oct < 40 fm								6
South-Central Morro Bay	CLOSED				May – Oct < 40 fm								6
Southern	CLOSED				May –Sep < 60 fm								5

**Figure 1-4.** Rockfish, cabezon and greenling season structure under Alternative 3 with low ACLs for overfished species.

**Table 1-9.** Projected impacts to overfished species in the California recreational fishery under Alternative 3 with low ACLs for overfished species.

Species	2011 HG (mt)	2012 HG (mt)	Projected Impacts (mt)	2011 Percent HG	2012 Percent HG
Yelloweye Rockfish	1.6	1.6	1.5	95%	95%
Bocaccio	32.6	27.6	26.6	82%	97%
Cowcod Option 1	0.1	0.1	0.03	31%	31%
Cowcod Option 2	0.9	0.9	0.03	3%	3%
Canary Rockfish	8.6	9.1	7.6	88%	83%
Widow Rockfish	NA	NA	7.0	NA	NA

**Table 1-10.** Projected impacts to non-overfished species in the California recreational fishery under Alternative 3 with low ACLs for overfished species. Results in parenthesis reflect changes to management measures other than season and depth.

<b>Species</b>	<b>Projected Impacts</b>
Black Rockfish	148.4
Blue Rockfish	150.3
Cabazon	18.1 (19.9)
California Scorpionfish	16.6 (19.0)
California Sheephead	10.3
Greenlings	9.0
Lingcod	164.7 (196.7)
Minor Nearshore North	10.0
Minor Nearshore South	279.0

***Summary of Comparison Among Alternatives.***

Provided in Table 1-11 are the number of months open to fishing in each management measure under each of the overfished species ACL alternative under consideration by the Council. Comparison of the alternatives to the No Action alternative provides an indication of the number of months the season would increase or decrease relative to the status quo season length. Comparison of the other alternatives to the Preliminary Preferred Alternatives indicates the forgone fishing opportunity that would result from the selection of lower ACLs.

**Table 1-11.** Number of months open to fishing in each Management Area under each of the overfished species ACL alternatives under consideration by the Council.

<b>Management Area</b>	<b>Months and Season of Fishing under each ACL Alternative</b>			
	<b>No Action Alternative</b>	<b>Alt 1 Preliminary Preferred Alternative ACLs</b>	<b>Alt 2 Intermediate ACLs</b>	<b>Alt 3 Low ACLs</b>
Northern	4 May 15 - Sep 15	5.5 May 15 - Oct	5.5 May 15 - Sep 15	4 May 15 - Sep 15
North-Central North of Pt. Arena	3 May 15 - Aug 15	3 May 15 - Aug 15	2.5 May 15 - Jul	1.5 May 15 - Jun
North-Central South of Pt. Arena	4.5 Jun 13 - Oct	6 June - Nov	4 Jun - Sep	4 Jun - Sep
South-Central Monterey	6.5 May - Nov 15	8 May - Dec	8 May - Dec	6 May - Oct
South-Central Morro Bay	6.5 May - Nov 15	8 May - Dec	8 May - Dec	6 May - Oct
Southern	10 Mar - Dec	10 Mar - Dec	10 Mar - Dec	5 May-Sep
<b>Total Months</b>	<b>35.5</b>	<b>40.5</b>	<b>38</b>	<b>26.5</b>

## **Attachment 1: Analysis of Proposed Changes to Management Measures in the California Recreational fishery in 2011 and 2012.**

### **2. Elimination of the Lingcod Spawning Closure in the California Recreational Fishery**

#### ***Rationale***

A lingcod spawning closure has been in place in California from December through March since the southern stock was deemed overfished in 2001. This was done to protect nest-guarding males during the spawning period in the interest of rebuilding the southern lingcod stock more quickly. According to the most recent stock assessment, the southern lingcod stock has rebuilt to 70% of virgin biomass, well above the 40% target biomass set by the Council thus the need to continuing protection is questionable. This will greatly increase the California recreational harvest guideline from 422 mt in 2010 to 1151 mt in 2011 under the preferred ACL and the current catch sharing between sectors.

The lingcod closure is not the only time closure affecting nearshore fisheries. The recreational rockfish cabezon and greenling complex (RCG) season in the Southern Groundfish Management Area is closed in January and February to boat-based anglers and open March through December. The December through March lingcod closure applies to all recreational anglers (boat-based as well as shore-based and spear divers). The current discrepancy in the RCG and lingcod seasons can be resolved by allowing lingcod to be retained in March and December to reduce regulatory complexity and allow for additional take while remaining far below the recreational harvest guideline for lingcod.

The annual take in the California recreational fishery has been close to half of the harvest guideline (HG) for the California recreational fishery since 2004 (Table 2-1) due to constraints from over fished species. Under the Council preliminary preferred alternative ACL, the sector specific harvest target for the California recreational fishery will more than double. With limited access to the primary depth distribution of lingcod in deeper waters, few management measures are available to harvest the full harvest guideline of lingcod in 2011 and 2012.

CDFG proposes to eliminate the lingcod spawning closure in the California recreational fishery to reduce regulatory complexity by maintaining consistent seasons with the other groundfish species including rockfish and enhance fishing opportunity during the months open to fishing. Lingcod would remain closed when the RCG is closed to prevent anglers that would target lingcod from accruing regulatory discard mortality on rockfish. For example, in 2011, retention of lingcod would not be allowed in the Southern Management Area in January and February, during the closed season for the RCG complex. From 2004–2009, not a single canary or yelloweye rockfish was encountered from the shore by anglers interviewed in the California Recreational Fishery Survey who were targeting lingcod and only about six tenths (0.6) of a metric ton of bocaccio were encountered in the shore mode statewide during those six years. Clearly, shore-based anglers have minimal impact on overfished species.

For the purpose of regulation consistency and brevity, the CDFG proposes to eliminate the lingcod spawning closure statewide for all modes of fishing including boat-based and shore-based fishing as well as spear diving.

#### ***Lingcod Take Relative to Increased OYs/ACLs in 2011***

In 2011 and 2012 the Harvest Guideline (HG) for the recreational fishery under the preliminary preferred alternative with the status quo catch sharing will increase dramatically from 422 mt in 2010 to 1151 mt in 2011 and to 1184 mt in 2012. The average statewide recreational lingcod take from 2005–2009 was only 197 mt, which is 47% of the 422 mt HG in 2010 and 17% of the 2011 HG (Table 2-1). The annual lingcod take in 2009 was only 168 mt, which is only 40% of the 422 mt HG and only 14% of the 2011 HG. The unused yield will increase without changes to current management measures.

**Table 2-1.** Recreational lingcod take by year as compared to the harvest guideline.

<b>Year</b>	<b>Recreational Harvest Guideline (mt)</b>	<b>Recreational Lingcod Catch (mt)</b>	<b>% HG Utilized</b>
2005	422	242	57%
2006	422	301	71%
2007	422	174	41%
2008	422	99	23%
2009	422	168	29%
Average	422	197	44%

The monthly projected take of lingcod in the California Recreational fishery from January to March with the status quo 2010 depth restrictions by management area are reported below in Table 2.2. The RecFISH model projections indicate that opening the lingcod fishery in March and December in the Southern Groundfish Management Area will increase annual statewide catch by only 3.8 mt in 2011. If January through March and December were open to fishing in all management areas, lingcod impacts are only projected to increase by 47.8 mt although under the Preliminary Preferred Alternative, the least restrictive, these months would remain closed to fishing in most management areas. The projected impacts for December and March 2011 were 3.1 mt and 0.7 mt, respectively. This additional take is negligible relative to the 983 mt of unharvested lingcod between the 2011 HG of 1151 mt and the estimated impacts in 2009 of 168 mt.

**Table 2-2.** Projected impacts on lingcod in each month from December to March in each management area if the season was open.

<b>Management Area</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Total All Months</b>
Northern	0.9	0.7	0.7	4.0	6.3
North Central North of Point Arena	0.9	0.7	0.7	4.0	6.4
North Central South of Point Arena	10.5	2.3	2.3	8.2	23.3
South-Central Management Area	2.2	0.5	0.5	1.7	4.9
Southern Management Area	3.1	1.6	1.6	0.7	6.9
Total All Management Areas	17.6	5.8	5.8	18.6	47.8

Additional lingcod management measures options are also being proposed. An increase in the recreational bag limit to 3 or 4 fish per angler or a reduction of the lingcod size limit to 22 inches under consideration by the Council are not expected to appreciably increase impacts relative to the preliminary preferred 2011 HG. The constraints posed by the bycatch of canary rockfish and yelloweye rockfish continue to prevent commercial and recreational groundfish fisheries from accessing a higher lingcod biomass in deeper water. Few additional methods beyond size limits, bag limits and an increased season length are available to increase the fishing opportunity for lingcod. An even larger residual of lingcod will be left unutilized even if size limits are reduced, bag limits are decreased, and fishing is allowed during the spawning season. The projected lingcod impacts under each alternative and accounting for both allowing retention during the spawning season and a 22 inch size limit from the respective analyses are provided in Table 2-3 as well the corresponding percentage of the recreational harvest guideline for 2011.



**Table 2-3.** Projected lingcod impacts (mt) under each of the overfished species ACL alternatives and management measures relative to the 2011 recreational HG under the preliminary preferred alternative.

ACL Alternative	Present Lingcod Impacts	No Spawning Closure	Size Limit	No Spawning Closure and 22 in. Length Restriction	Percent 2011 HG
PPA	215.1	220.4	256.8	263.2	23%
Intermediate	170.3	175.6	203.4	209.7	18%
Low	164.7	164.7	196.7	196.7	17%

This residual should compensate for the loss of reproductive output resulting from removal of males during the spawning and nest-guarding period. Opening the spawning season is one of the few ways to harvest additional lingcod given the constraints on fishing deeper water posed by the bycatch of overfished species.

*Conclusion:* California supports removal of the spawning closure in the recreational fishery for all anglers.

### **3. Revision to the California Scorpionfish (Sculpin) Depth Restriction in the Southern Management Area**

#### ***Rationale***

CDFG proposes to change the 40 fathom (fm) California scorpionfish depth restriction to 60 fm during the closed season for the RCG complex which is presently in January and February in the Southern Groundfish Management Area (Point Conception to the U.S.-Mexico border). This action will make the scorpionfish depth restriction consistent with the general groundfish depth restriction during the remainder of the year. The scorpionfish depth restriction will be set at 60 fm year-round, simplifying recreational regulations. The 2009 California scorpionfish take was only 62 percent of the recreational harvest guideline (HG). The proposed action will provide additional fishing opportunity south of Point Conception and is not anticipated to result in an appreciable increase in take of overfished species.

#### ***Scorpionfish Impacts Relative to Harvest Guidelines***

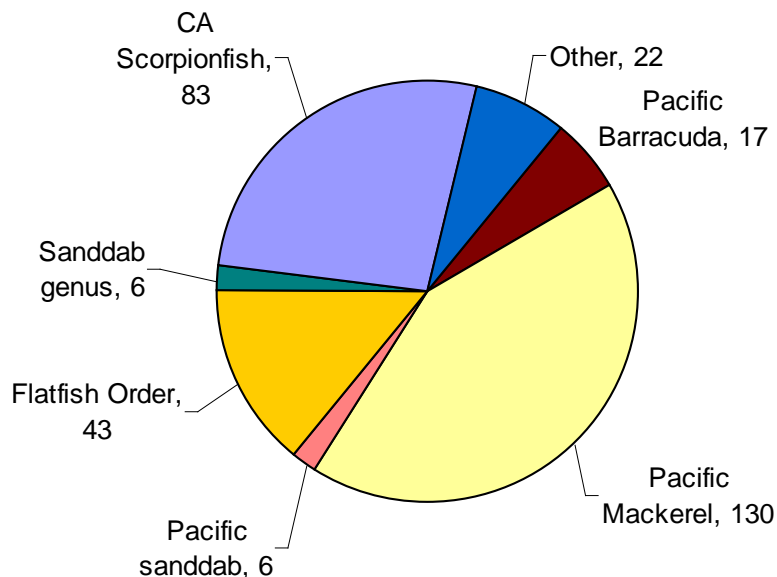
The RecFISH model was used to project 2011–2012 annual scorpionfish and overfished species (e.g. bocaccio, canary, cowcod, yelloweye rockfishes) take with the modified depth restriction. The RecFISH model uses 2005–2009 data to project for 2011–2012. The projected increased impacts for the aforementioned overfished species were compared to the 2011 and 2012 HGs to evaluate whether those HGs would be exceeded as a result of this action. The RecFISH model projects that if scorpionfish is opened to 60 fathoms in the Southern Management Area in January and February, annual statewide scorpionfish take will increase only 1.3 mt from 75.7 mt to 77.0 mt in both years. The projected impacts under each ACL alternative with a 40 fm depth restriction and 60 fm depth restriction on California scorpionfish in Jan and Feb in the Southern Management Measure and the corresponding percentage of the 2012 harvest guideline under the preliminary preferred alternative assuming the current catch sharing are in Table 3-1 below. The projected scorpionfish take including this small increase is below the 2011 and 2012 recreational HG of 89 and 83 metric tons (mt) respectively. The RecFISH model projects this action will result in a negligible increase in the annual take of bocaccio, canary, cowcod, and yelloweye rockfishes (less than 0.01 mt).

**Table 3-1.** Projected California scorpionfish impacts in metric tons under each of the ACL alternatives with a 40 fm and 60 fm depth restriction in January and February in the Southern Management Area.

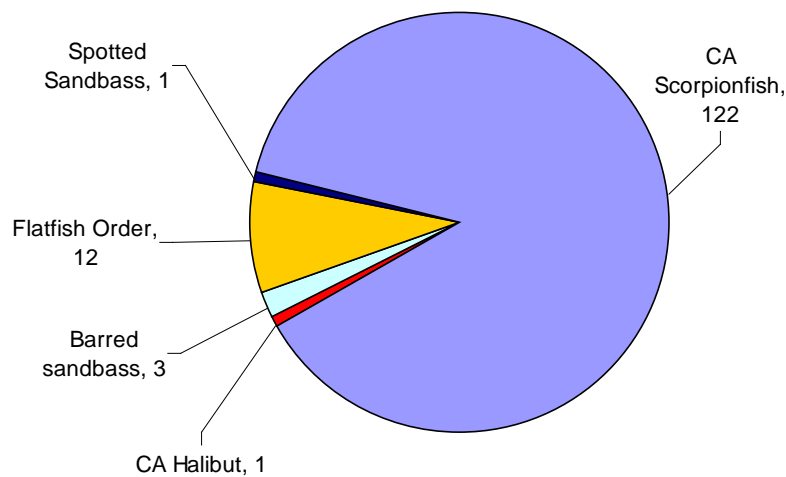
ACL Alternative	Scorpionfish Impacts with 40 fm Open in Jan and Feb (SQ) (mt)	Scorpionfish Impacts with 60 fm Open in Jan and Feb (mt)	Percent 2012 HG
PPA	61.4	63.8	76%
Intermediate	61.4	63.8	76%
Low	16.6	19.0	23%

### ***Overfished Species Bycatch***

To determine if an appreciable amount of overfished species are affiliated with scorpionfish from 40 fm to 60 fm, the RecFIN boat sample data were queried for 1999–2000 (before many of the recreational regulations were put in place) between 0–60 fm for trips where scorpionfish was targeted. The purpose was to identify whether the take of overfished species was associated with scorpionfish before the 40 fm depth restriction was in place. The boat sample data includes private/charter boat (PC) onboard data and private/rental boat (PR) dockside data and both show that few rockfishes were caught when boat anglers target scorpionfish. The top four ranked species affiliated with scorpionfish were: Pacific mackerel, flatfish order, barracuda, and Pacific sanddab (Fig. 3.1). No overfished species were recorded in the PC onboard sample data during 1999–2000. For the same years, the PR boat sample data show the top ranked affiliated species were: flatfish order, barred sandbass, California halibut and spotted sandbass (Fig. 3.2). No overfished species were recorded in the PR dockside sample data during 1999–2000.

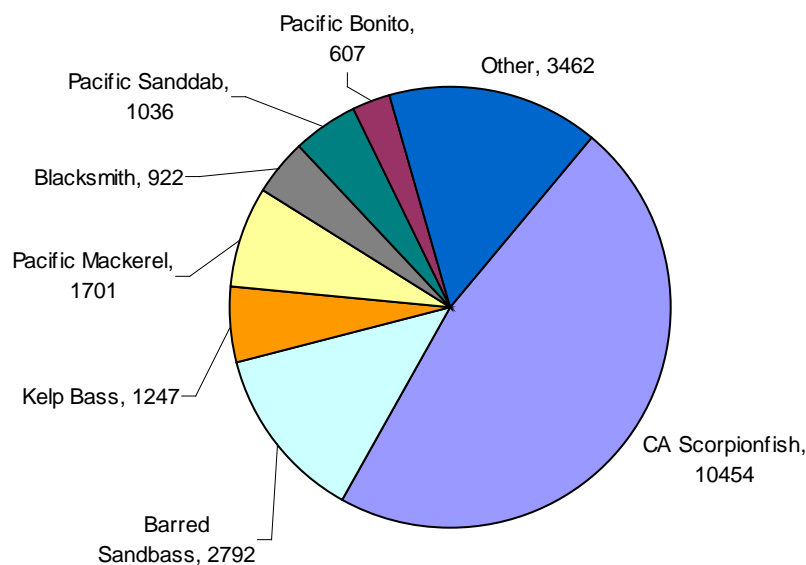


**Figure 3-1:** Total fish caught onboard party/charter boats targeting CA scorpionfish, 1999–2000, January and February, south of Point Conception. Data source: RecFIN boat sample data.

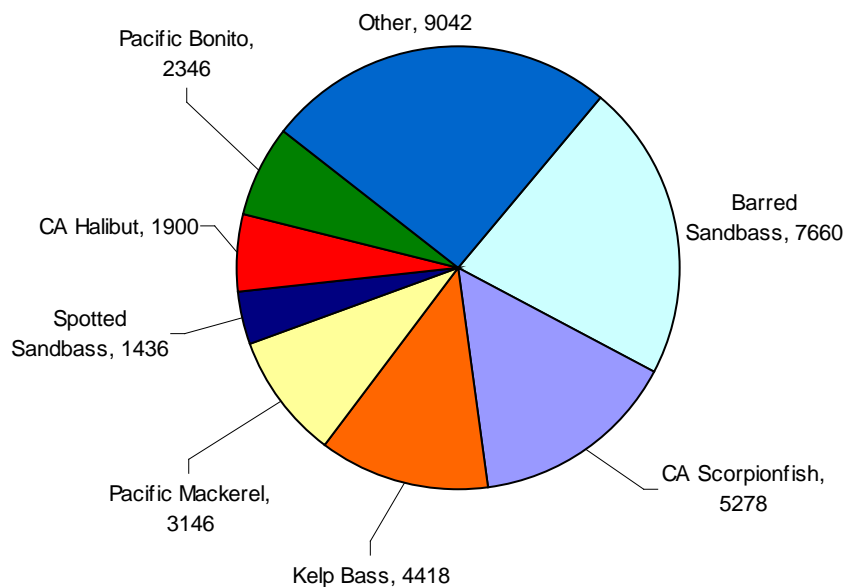


**Figure 3-2:** Total fish caught onboard private/rental boats targeting CA Scorpionfish, 1999–2000, January and February, south of Point Conception. Data source: RecFIN boat sample data.

To identify the species affiliated with scorpionfish in more recent years, the RecFIN California Recreational Fisheries Survey (CRFS) sample database was used for 2004–2009. All species that were caught in association with scorpionfish (targeted or caught) during the months of January and February south of Point Conception were queried and the data were stratified by PC and PR boat modes. Figures 3-3 and 3-4 show the top six species caught in association with scorpionfish in January and February of 2004–2009 by mode; the results are similar to the boat sample data in Fig. 3-1 and 3-2. Few overfished fish were caught while anglers targeted or caught scorpionfish (Table 3-2). Some bocaccio were encountered while anglers fished for scorpionfish, but no yelloweye were caught, and only two canary rockfish and two cowcod were caught during the entire six-year span.



**Figure 3-3.** Total fish caught on party/charter boats in association with CA scorpionfish, 2004–2009, January and February, south of Point Conception. Data source: CRFS sample data.



**Figure 3-4.** Total fish caught on private/rental boats in association with CA scorpionfish, 2004–2009, January and February, south of Point Conception. Data source: CRFS sample data.

**Table 3-2.** Numbers of overfished species caught in association with CA scorpionfish from boat modes in the Southern Management Area, February and January, 2004–2009. PC = party/charter boats, PR = private/rental boats. Data source: CRFS sample data.

Year	Numbers of Fish Sampled - PC				
	CA Scorpionfish	Bocaccio	Canary	Cowcod	Yelloweye
2004	5469	72	0	0	0
2005	282	0	0	0	0
2006	455	0	0	0	0
2007	1159	0	0	0	0
2008	2230	0	0	0	0
2009	859	0	0	0	0
Year	Numbers of Fish Sampled - PR				
	CA Scorpionfish	Bocaccio	Canary	Cowcod	Yelloweye
2004	3962	56	2	2	0
2005	174	5	0	0	0
2006	397	0	0	0	0
2007	255	0	0	0	0
2008	138	0	0	0	0
2009	352	8	0	0	0

### ***Conclusion***

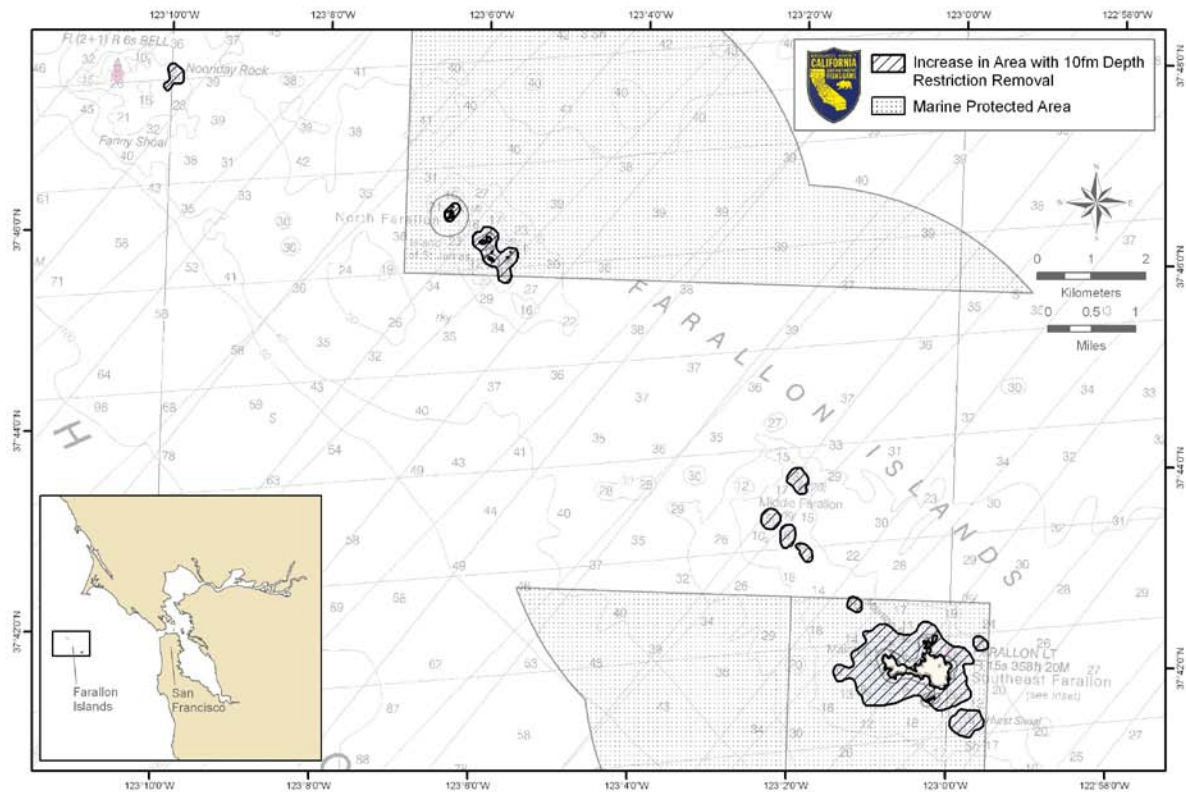
CDFG supports changing the recreational scorpionfish depth restriction in the Southern Groundfish Management Area to 60 fm year-round.

### **4. Elimination of the Ten Fathom Depth Closure Around the Farallon Islands and Noonday Rock** ***Rationale***

The California Department of Fish and Game (CDFG) proposes to eliminate the 10 fm depth closure around the Farallon Islands and Noonday Rock in the North-Central South of Point Arena Management Area. At present, take or possession of groundfish is prohibited in waters of 10 fm or less around the Farallon Islands and Noonday Rock. This management measure was initially put in place to reduce impacts on shallow nearshore rockfish species such as China, kelp, grass, black and yellow and gopher rockfishes. Marine Protected Areas (MPAs), effective May 1, 2010, prohibit fishing around the Islands. MPAs are depicted by light shading in Figure 4-1. The MPAs are closed to fishing and encompass many of the areas within the 10 fm depth closure (as represented by the black hatched areas within the shaded MPAs in Figure 4-1). Thus, the 10 fm fishery closure is redundant and results in unnecessary regulatory complexity. The remaining open areas not affected by MPAs which are 10 fms or less in depth around the Islands are represented by the black hatch areas outside of the shaded MPA areas in Figure 4-1. These small areas (around Middle Farallons) will remain open to groundfish fishing under the proposed action, although minimal effort is expected to occur there.

## **Proposed Depth Change for 2011-12 Recreational Groundfish Seasons**

California Department of Fish and Game  
Groundfish Project



**Figure 4-1.** Areas within the current 10 fm depth restriction around the Farallon Islands and Noonday Rock and the location of Marine Protected Areas remaining closed to fishing for groundfish.

### ***Fishing Effort in the Proposed Open Areas***

The Farallon Islands and Noonday Rock are located approximately 30 miles west of the San Francisco Bay entrance, limiting the number of private and rental (PR) boat anglers willing to travel the distance to fish. The party and charter boats (PC) that target groundfish in this area tend to fish in deeper water in pursuit of schooling species and lingcod, rather than the shallow nearshore. The long distance from shore in combination with poor weather and rough conditions limit the number of days that PR or PC boat anglers fish at the Islands during the open months of the season.

### ***Shallow Nearshore Rockfish Catch***

A vast majority of the shallow nearshore rockfish habitat is closed to fishing around the Farallon Islands through the MPAs. Even with the remaining areas open to fishing, the majority of fishing effort is anticipated to be focused on deeper depths (20 to 30 fms). Therefore, this proposed action is not expected to greatly increase the statewide catch Minor Nearshore Rockfish South complex. Areas open to fishing would only represent less than one square mile of habitat, primarily distributed around the Middle Farallons and Noonday Rock (Table 4-2). Though this is a small increase in the area open to fishing, elimination of the 10 fathom depth closure will reduce regulatory complexity without greatly impacting Minor Nearshore Rockfish.

**Table 4-1.** Area gained from elimination of 10 fm depth closure around the Farallon Islands and Noonday Rock

<b>Location Opened to Fishing</b>	<b>Area Increase (sq. miles)</b>
Farallon Islands - Noonday Rock	0.11
Farallon Islands – North*	0.02
Farallon Islands - Middle	0.40
Farallon Islands - Southeast*	0.00

\* Little to no increase in area due to MPAs

### ***Conclusion***

CDFG supports the elimination of the 10 fm depth closure around the Farallon Islands and Noonday Rock.

## **5. Combine the Monterey South-Central and Morro Bay-South Central Management Areas**

### ***Rationale***

CDFG proposes to eliminate the division between the Monterey South-Central (from Pigeon Point to Point Lopez) and the Morro Bay South-Central (Point Lopez to Point Conception) Management Areas to form a single Central Management Area. The original justification for this management line was to allow for finer-scale management in Central California where the main species of concern is canary rockfish. The set harvest limit for canary rockfish has greatly increased since 2008, eliminating the need for the division between these areas. Furthermore, CDFG has not had to enact differing regulations in these two areas since 2006 when the line was put in place.

### ***Conclusion***

CDFG supports the elimination of the division between the Monterey South-Central and the Morro Bay South-Central Management Areas, to form a single Central Management Area.

## **6. Additional Management Line at Cape Vizcaino**

### ***Rationale***

CDFG proposed to add a management line at Cape Vizcaino (39° 44' N. latitude) in the North-Central North of Point Arena Management Area. Currently, there are no management lines identified in the North-Central North of Point Arena Management Area between Fort Bragg and Shelter Cove. The additional management line allows for finer-scale inseason management for an area which accrues the vast majority of statewide yelloweye rockfish catch. If the yelloweye rockfish catch is projected to exceed the harvest guideline, the North-Central North of Point Arena Management Area may be divided at Cape Vizcaino in order to close groundfish fishing in the northern portion (Shelter Cove) and keep the southern portion (Fort Bragg) open to fishing.

### ***Conclusion***

CDFG supports the addition of a management line at Cape Vizcaino.

## **7. Cabezon Bag Limit Increase**

### ***Rationale***

The California Department of Fish and Game (CDFG) proposes to increase the statewide bag limit for cabezon. The proposed action will increase the cabezon bag limit from two to three fish statewide within the ten fish RCG bag limit. Additional cabezon impacts can be accommodated within the increased harvest guidelines.

***Increase in Catch Expected from Increasing the Cabezon Bag Limit from 2 to 3 fish***

CDFG used the RecFIN methodology for Hypothetical Bag Limit Analyses to determine increased impacts cabezon resulting from this change. We used the A+B1+B2 fish from 2004 to 2009 for estimating the increased impact based on all fish encountered. The A fish are sampled dead fish. CDFG assumes for cabezon that B1 includes filets and there were no fish thrown back dead as cabezon have a high survival rate when released. B2 includes live fish over the bag limit or under the size limit of 15".

Since there is no way to estimate the proportion of fish that were undersized, this analysis also assumes there were no fish thrown back as sub-legal and assumes that all B2 fish would be available if the bag limit were increased as the most conservative estimate. All bags over the existing limit are then set to the hypothetical limit to calculate increased take. Results show a consistent increase in expected catch for the all mode for both species, as well as increases in catch for cabezon shore modes.

The Hypothetical Bag Limit Analyses indicated that there would be a 10% increase in total harvested cabezon. The 10% increase represents an estimated 35mt, which is 44% of the 2010 recreational total allowable catch (TAC) of 79mt. The recreational TAC of Cabezon will increase to 122 mt under the preliminary preferred alternative ACL of 179 mt. Given the magnitude of the buffer between recent impacts with a two fish bag limit in place in 2009, an increase in the bag limit from two to three fish is not expected to result in the TAC being exceeded. The projected impacts on cabezon resulting from increasing the 2 fish cabezon bag limit to 3 fish per angler under each overfished species ACL alternative can be accommodated with the 95 mt recreational TAC under the preliminary preferred alternative assuming the current catch sharing (Table 7-1).

**Table 7-1.** Projected increase in impacts in metric tons from increasing the cabezon bag limit to three cabezon with each overfished ACL option and corresponding resulting percentage 2011 TAC.

<b>ACL Alternative</b>	<b>Present Cabezon Impacts 2 Fish Bag Limit (mt)</b>	<b>Projected Impacts with a Three Fish Limit (mt)</b>	<b>Percent 2011 TAC</b>
PPA	26.3	28.9	30%
Intermediate	21.6	23.8	25%
Low	18.1	19.9	21%

### **Conclusion**

CDFG supports the increased cabezon bag limit of three fish within the ten fish RCG bag limit.

## **8. Lingcod Size Limit**

### **Rationale**

CDFG proposes to lower the minimum size limit for lingcod statewide to 22 inches. The lingcod size limit will be reduced to achieve an annual catch level closer to the recreational HG. The lingcod take has been nearly half of the HG for the years 2004–2009, except 2006 (Table 8-1). The previous stock assessment in 2005 shows the southern lingcod stock has rebuilt. The most recent stock assessment (2009) shows increasing abundance and the HG will likely increase from 422 mt in 2009 to 1151 mt in 2011 under the preliminary preferred alternative. Reducing the size limit will increase annual take, but projections show that the lingcod HG will easily accommodate this change. CDFG has had much support from constituents and industry regarding this proposed action.

The current lingcod size limit in recreational fisheries in Oregon and Washington is 22 inches, so this action will make recreational regulations consistent coast wide. Historically, the California recreational size limit has varied from no size limit prior to 1981 to 30 inches in 2004. The size limit in California has



remained 24 inches since 2005, despite the lingcod catch staying well below the HG. This proposed action will help improve fishing opportunity and achieve the optimum yield of lingcod.

**Table 8-1.** Recreational lingcod take by year as compared to the harvest guideline (HG).

<b>Year</b>	<b>Recreational HG</b>	<b>Recreational Lingcod Catch (mt)</b>	<b>% HG Utilized</b>
<b>2004</b>	269	130	48%
<b>2005</b>	422	242	57%
<b>2006</b>	422	301	71%
<b>2007</b>	422	174	41%
<b>2008</b>	422	99	23%
<b>2009</b>	422	121*	29%

\*Includes RecFIN data through 10/31/09

### ***Increased Impacts***

Length frequency distributions of discarded and retained lingcod from 2005 to 2009 in combination with weight-at-length data from CRFS onboard sampling were used to estimate the percent increase in catch (by number of fish and weight). The only available length data for recreational discards are from the onboard sampling of PC boats. As a result, lengths from this mode were assumed to be representative of all modes.

In order to normalize the length frequency distributions for retained and discarded catch, the frequencies were converted to proportions of catch by length and multiplied by the respective catch estimates in numbers of fish. The size limit was 24 inches from 2005 to 2009 and normalized length composition data from all five years were combined to provide an aggregate length frequency distribution for this period. From this distribution, the proportional increase in lingcod catch (by number of fish) expected from a given reduction in the size limit was estimated. This was done by calculating the percentage of lingcod that were between the 24 inch size limit and the 22 inch size limit (Eq. 1 below).

**Eq. 1.** Proportional Increase in the Number of Lingcod for a Given Size Limit = Number of fish larger than new size limit / Number of fish larger than 24 inches.

The length-weight relationship from the 2009 stock assessment (Hamel 2009) was used to calculate the average weights of each length bin. The expected increase by weight was then estimated by multiplying the average weights by the frequency for that bin. The proportion of catch between the new size limit and the 24 inch size limit was then calculated, reflecting the percentage increase metric tons (Eq. 2 below).

**Eq. 2.** Proportional Increase in the Weight of Lingcod for a Given Size Limit = Number of fish in each length bin larger than new size limit \* weight of fish for each frequency bin (sum of  $L_i \times W_i$  for all  $i > x$ ) / number of fish in each length bin larger than 24 inches \* weight for each frequency bin (sum of  $L_i \times W_i$  for all  $i > 24$ ).

### **Assumptions:**

1. Anglers will retain all fish above the size restriction.
2. Anglers will discard all fish below the size restriction.
3. The percent increase in catch from PC mode is representative of all recreational fishing modes in CRFS.

4. The aggregate length frequency distribution for discarded and retained lingcod from 2005-2009 is representative of the stock structure in 2011 and 2012. In reality, it may vary depending on recent recruitment patterns.

The expected percentage increase in catch resulting from reduction of the size limit to 22, 20, or 18 inches and no size limit by number of fish and weight are shown in Table 8-2 below. The increase in catch by weight is estimated to increase from between 19.4% for a 22 inch size limit to 39.3 percent in the absence of a size limit. Even if the lingcod size limit had been eliminated in the years 2005–2009, California would not have exceeded the HG in any year. The length frequency distribution of discarded lingcod does not indicate unusually large year classes will be recruiting to the recreational fishery in the near future, which would have increased catch substantially as a result of a 22 inch size limit.

**Table 8-2.** Percent increase in recreational lingcod catch estimated to result from each prospective reduced size limit (2005–2009 RecFIN data).

<b>Size Limit (in.)</b>	<b>Percent Increase in Fish (#)</b>	<b>Percent Increase in Catch (mt)</b>
<b>22</b>	38.0%	19.4%
<b>20</b>	65.5%	29.8%
<b>18</b>	83.7%	34.9%
<b>None</b>	115.2%	39.3%

#### ***Ability to Accommodate Increased Lingcod Impacts***

It is possible to eliminate the lingcod size limit altogether, without exceeding the recreational HG, given the large anticipated increase in the HG. If the size limit was lowered, the increased lingcod fishing mortality would decrease predation on and competition with the less productive *Sebastes* species. A lower lingcod size limit makes it more likely that an angler will obtain the two fish lingcod limit before attaining the RCG limit and stop fishing, rather than continuing to discard rockfish in pursuit of lingcod. So, this proposed action will discourage high-grading and will reduce bycatch of rockfish.

Lingcod exhibit sexual dimorphism in depth distribution, with males found in shallower water than females and males displaying nest-guarding behavior. Males mature between 18 and 20 inches, while females mature between 27 and 30 inches. The current depth restrictions preserve a large proportion of the female spawning biomass in deeper waters, while redistributing fishing effort onto nearshore waters, increasing impacts on males. Thus, it may be prudent to maintain an appreciable size limit, like 22 inches, to ensure that male lingcod abundance is sufficient to maintain an adequate population of mature nest guarding males.

#### ***Conclusion***

CDFG supports a minimum size limit of 22 inches to preserve nest guarding males, yet still allow for increased lingcod fishing opportunity. The fillet length restriction would also be reduced to reflect the change in the length restriction (i.e. 14 inch fillet length restriction under a 22 inch total length restriction).

9. **Analysis of 30 and 40 fm Recreational Depth Restrictions within the Cowcod Conservation Area** (see Agenda Item B.3a, Attachment 1. Preliminary Analysis of the Integrated Alternatives and Management Measures for 2011-2012 Groundfish Fisheries in the EIS document for full analysis)

10. **Modification to the List of Groundfish Species Allowed to be taken Recreationally in the Cowcod Conservation Areas**

### ***Rationale***

Under the current regulations, of the more than 90 species within the Pacific Coast Groundfish Management Plan, only Nearshore Rockfish, cabezon, California scorpionfish, greenlings of the genus *Hexagrammos*, California sheephead, ocean whitefish and lingcod may be retained within the depths and seasons open to recreational groundfish fishing in the Cowcod Conservation Areas (CCA). Currently, all shelf and slope rockfishes encountered within the CCA must be discarded. A percentage of these discarded fish die due to barotrauma and hooking/handling injuries. These fish are wasted as regulatory discards as anglers continue pursuing their 10 fish rockfish, cabezon and greenling (RCG) bag limit of nearshore rockfish, cabezon and greenling, while accruing additional discards. In conjunction with modifying the list of groundfish species that can be retained, the CDFG is also considering an increase in the depth restriction in the Cowcod Conservation Areas (CCA) which would increase the likelihood of encountering shelf rockfish.

The current recreational depth restriction in the Cowcod Conservation Area (CCA) is 20 fm. The CDFG proposes allowing retention of shelf and slope rockfishes within the depths open to recreational groundfish fishing within the CCA. This will make the retention regulations for these species consistent with regulations in the other groundfish management areas. Retention of cowcod, canary and bronzespotted rockfish will still be prohibited statewide. While this change results in a limited increase to overall take of shelf and slope rockfish, this change will eliminate wastage due to regulatory discarding. Identification of these species has proven difficult for anglers and the regulation change will greatly simplify regulations as a result. Minimization of regulatory discarding is an expressed preference of stakeholders. Under the proposed action, recreational anglers are expected to meet their RCG bag limit sooner and with less discarding, reducing the chances of encountering overfished species in pursuit of their bag limit.

### ***Enforceability of Retention Regulations***

Discussions with CDFG enforcement indicated that the ability to enforce retention regulations does not differ based on the species that can be retained in this case.

### ***Conclusion***

CDFG supports the inclusion of shelf and slope rockfish in the list of allowed species to be taken in the CCAs.

## **11. Addition of gear Restrictions for Cabezon and Kelp Greenlings**

### ***Rationale***

CDFG proposes to establish cabezon and greenlings gear restrictions such that no more than one rod with two hooks and one line may be used. This proposed action will eliminate the loophole in existing regulations and make gear restrictions consistent among cabezon, greenlings, rockfish and lingcod. This proposed action will eliminate the discrepancy in allowable methods of take among species which are commonly caught and managed together as the RCG complex. This proposed action will prevent the excessive recreational fishing effort of multiple rods to target cabezon and kelp and rock greenling.

### ***Conclusion***

CDFG supports new regulatory language to limit the method of take for cabezon and greenlings to not more than one rod with two hooks and one line.

## **12. Revised Naming Convention for the California Recreational Management Areas as Compared to the Status Quo Management Areas**

### ***Rationale***

To simplify the names used to describe the recreational Management Areas, the longer less intuitive status quo names were replaced with single one word names that relate to the geographic location of the area.

The names of the status quo management areas and the new equivalents are provided in Table 11-1. below. Other than the elimination of division between the South-Central Management Areas at Point Lopez, the geographic points delineating each area have not changed. The geographic locations delineating the management areas are also provided.

**Table 11-1.** New California Recreational Management Area Names for 2011-2012, points and latitudes delineating the new areas and the status quo management area name equivalent.

<b>2011-2012 Management Area Name</b>	<b>Northern Border (Latitude)</b>	<b>Southern Border / (Latitude)</b>	<b>Status Quo Management Area Name</b>
Northern	CA/OR Border (42° N. lat.)	Near Cape Mendocino (40° 10' N. lat.)	Northern
Mendocino	Near Cape Mendocino (40° 10' N. lat.)	Point Arena (38° 57.5' N. lat.)	North-Central North of Point Arena
Bay	Point Arena (38° 57.5' N. lat.)	Pigeon Point (37° 11' N. lat.)	North-Central South of Point Arena
Central	Pigeon Point (37° 11' N. lat.)	Point Conception (34° 27' N. lat.)	Monterey South-Central Morro Bay South-Central
Southern	Point Conception (34° 27' N. lat.)	CA/Mexico Border	Southern

## **Recreational Analyses Removed from Consideration by CDFG**

### **13. Exempting Federally Managed Flatfish from Recreational Groundfish Depth and Season Closures**

Exemption of federally managed flatfish, including petrale sole, from depth and season closures may be not be prudent at this time given the depleted status of petrale sole. This management option may be reconsidered once the petrale sole stock has rebuilt.

### **14. Modify Regulations Regarding Filleting Federal Groundfish Species at Sea**

Feedback from the public has identified a number of potentially adverse effects from prohibition of filleting at sea. Deck hands make a considerable portion of their income from filleting the catch of patrons on the way back to port. A prohibition on filleting at sea would result in reduction in much needed income. Party boat operators are required to allow California Recreational Fisheries Survey (CRFS) samplers to collect data onboard their vessels at sea, providing access to fish before being filleted. The fish reported by the angler as a destined for a purpose that would be included in the "plan to eat" disposition code make up less than 9% of unidentified rockfish. Filleted fish make up an unknown but likely a small fraction of this percentage since anglers are required to leave the entire skin attached allowing identification of filleted fish. Given the limited potential for reduction of unidentified rockfish in the recreational catch, filleting regulations will not be changed in the 2011-2012 season.

### **15. Lingcod Bag limit Increase**

#### ***Rationale***

The CDFG proposed to increase the statewide bag limits for lingcod. The proposed action would increase the lingcod bag limit from two fish to three fish statewide. Additional lingcod impacts can be accommodated within the increased harvest guideline. The action would improve fishing opportunities especially in nearshore areas.

### ***Implications of Increasing the Lingcod Bag Limit from 2 to 3 or 4 Fish***

CDFG analyses of bycatch rates show that an increase in the lingcod bag limit is likely to increase the rockfish bycatch including overfished species. Anglers would have to fish for a longer period of time to obtain three lingcod and in the process may encounter additional overfished rockfish including yelloweye rockfish. Given the constraints presented by yelloweye rockfish, there is concern that catch rates may increase if anglers continue to fish for their lingcod bag limit and an increase in the bag limit may result in increased yelloweye rockfish catch per angler. Increasing the lingcod bag limit may also encourage high-grading behavior by recreational anglers as anglers encounter larger rockfish than are currently in their 10 fish bag and high grade these larger fish for smaller dead fish that were previously retained. Although the three fish lingcod bag limit could be accommodated by the lingcod harvest guideline, interactions with over fished species and potential high-grading prevent implementation of an increased lingcod bag limit at this time.

### ***Conclusion***

CDFG does not support the change to the lingcod bag limit at this time.

## **16. Increase in Depth Restriction to 50 fm in the Monterey and Morro Bay Recreational Groundfish Management Areas**

### ***Rationale***

CDFG proposed to change the depth restriction in the Monterey and Morro Bay South-Central Management Area from 40 fm to 50 fm. Currently, the depth restriction is 40 fm in the South-Central Groundfish Management Areas (Monterey and Morro Bay South-Central Management Areas combined, from Pigeon Point to Point Conception). The area seaward of the depth restriction line is termed the Rockfish Conservation Area (RCA). The South-Central Management Areas have had a depth restriction in place since 2001. The change in RCA lines from 40 fm to 50 fm will provide increased fishing opportunities on the central coast but may not be feasible due to interactions with yelloweye rockfish.

### ***Impacts to Relevant Species***

The RecFISH model was used to project the 2011–2012 annual take of select groundfish species with the modified depth restriction. The RecFISH model uses data from 2005–2009 to project for 2011–2012. The RecFISH model projects that if the depth restriction is changed from 40 fm to 50 fm in the South-Central Management Areas in 2011 and 2012, the annual take of select species will increase. There will be no additional impacts for California scorpionfish, California sheephead, greenlings, cowcod, or cabezon. Most of the recreationally caught species commonly encountered in the South-Central Groundfish Management Areas will have small increases in statewide fishing impacts as a result of this action as compared to the Harvest Guideline for the recreational fishery.

### ***Impacts to Species of Concern***

Some of the most constraining species and species groups in the Central Groundfish Management Area are blue rockfish and the Minor Nearshore rockfish group (specifically black rockfish). There is additional fishing opportunity available with the status quo ACL option likely for blue rockfish and the Minor Nearshore Rockfish group. The proposed action will cause the negative impacts for Minor Nearshore Rockfish (8.0 mt), and blue rockfish (4.0 mt). Analyses of Minor Shelf Rockfish catch indicate that the increase in take can be accommodated within the status quo ACL which is the preliminary preferred alternative for 2011–2012, or the ACL determined by the Science and Statistical Committee (SSC).

### ***Impacts to Overfished Species***

Few cowcod and yelloweye rockfish are encountered in central California, however, at deeper depths, they are more common. With this action, there is projected to be impacts to bocaccio (20.2 mt),

yelloweye (0.2 mt), canary (0.8 mt) and negligible impacts to cowcod (less than 0.01 mt). The 24 mt canary rockfish HG, 1.9 mt cowcod HG, and 163 mt bocaccio HG under the preliminary preferred alternatives will accommodate the projected impacts.

Yelloweye rockfish, however, is a cause for concern. The additional 0.2 mt of yelloweye rockfish catch projected to occur in the South-Central Management Areas represents a substantial increase in statewide yelloweye rockfish catch relative to the 3.4 mt preliminary preferred alternative. The high yelloweye catch, and variability of the catches in the North-Central North of Point Arena Management Area, make *any* increase in yelloweye rockfish catch a cause for concern. If significant residual yelloweye catch is left over between the 2011 catch and the 2011 HG, the 50 fm depth restriction could be put in place for the 2013–2014 management cycle.

### ***Conclusion***

At present, the CDFG does not support changing the depth restriction to 50 fm in Central California in 2011 and 2012 though it may be reconsidered in the future. The change from 40 fm to 50 fm would allow for additional fishing opportunity, but the state would like to have an indication of the changes to impacts from other management measures under consideration for 2011 and 2012 California recreational fishery before making additional changes to regulations in 2013-2014 when this action can be reconsidered.

## **Attachment 2: Methods Used in Modeling the California Recreational Fishing Season and Depth Restrictions for 2011 and 2012.**

### ***Description of the Catch Projection Model for the California Recreational Fishery (RecFISH)***

The CDFG revised their impact projection model (“RecFISH”) that was reviewed by the GMT at their January 2010 meeting and revisions were discussed in a conference call in May of 2010. The GMT recommends this updated model for use in projecting impacts of groundfish species in 2011 -12 California recreational fisheries. This model is described below and is used in impact analyses in this EIS.

Recreational fisheries management for multi-species assemblages in California presents many challenges. In recent years, declining stocks of several rockfish species have dictated recreational groundfish management seasons and depths in California. Increasingly complex restrictions have been necessary to keep total catch of depleted species within the reduced limits that are necessary to rebuild the stocks while providing fishing opportunity.

Prior to 2000, the recreational daily bag limit for rockfish was 15 fish per angler with no closed months or depths. Beginning in 2000, the daily bag limit was reduced to 10 fish. Regulations have changed each year since 2000, making analyses of the effects of particular regulations difficult. In addition, regulations have become more region-specific, adding to the difficulty of modeling projected catches.

### ***Methodology Used to Project Recreational Catches for 2011–12***

The recreational catch model incorporates a number of parameters and assumptions, all of which are either risk-neutral or risk-adverse. The basic analytical approach is the same as that used for 2009–10. The 2005-2009 data from the California Recreational Fishery Survey (CRFS) program serves as a baseline. The model output predicts expected catch under any combination of season and depth fishing restrictions for each of the regions

Key differences between 2009-10 and 2011-12 RecFISH model changes

- Includes 2008 & 2009 CRFS catch estimates
- Discard mortalities for 2009 used new GMT methodology
- Revised proportion of catch by depth for management areas north of Point Arena
- Revised proportion of catch by time for management areas north of Point Arena

### ***CDFG/California Recreational Groundfish (RecFISH) Model Assumptions***

The following assumptions are made in the application of the RecFISH model in projecting fishing impacts in the California recreational fishery.

- Effort Shift Inshore: The model includes a 27.6 percent increase in expected landings when fishing is restricted to less than 30 fm and a 39.3 percent increase in expected landings when fishing is restricted to less than 20 fm. The increase, or effort shift, is to account for increased effort in a smaller fishing area.
- Discard Mortality: The GMT developed depth-dependent mortality rates for discarded rockfish of the genus *Sebastes* in 10-fm increments, the derivation of which is described in section 4.1.5.6. The species specific depth-dependent mortality rates agreed upon by the GMT and approved by the PFMCI in 2008 are applied to the discarded fish (B2 & B3) in the CRFS base data from 2005-09 used in the RecFish model. When projecting the 2011-12 season catch, discard catch estimates are multiplied by the proportion of catch in a given 10-fm depth increment times the depth-dependent mortality rate for the corresponding depth for each species.

### ***Inputs and Key Parameters for the Model***

**Weighting of Base Years:** Base year data 2005-2009 were given nearly equal weighting by applying a 0.99 decay function. The previous biennial cycle made use of a 0.67 decay function to weight 2005 more heavily than 2004. With the exclusion of the 2004 data in the current model due to issues with the comparability of trip types between years, there are five years of data available for the model and these are weighted equally to represent the base catch in the model.

**Base Year Catch:** Initially, CRFS catch estimates in weight of fish were summed for caught and retained (CRFS “A” catch), filleted/caught otherwise unavailable (“B1” catch), and for species of concern, a proportion of CRFS reported discarded fish derived using depth-based mortality estimates. Base year catch estimates are assumed to be for an unrestricted fishing year with no months closed and no depths closed. Therefore, for each year, a back calculation method was used to obtain an estimate for what the catch would have been if all months and all depths had been open. This back calculation uses month and depth catch proportions derived from historical catch estimates from seasons unregulated by month and depth.

**Historical Catch By Month:** Estimates of historical percent catch by two-month period were calculated for each region based on Marine Recreational Fisheries Statistics Survey (MRFSS) data (weight of A+B1) from 1993-99, which was a time period when seasons and depths were unconstrained. Proxies were considered on a species by species basis for regions where there was a lack of catch data for that area. Monthly estimates of percent catch then were divided equally (50:50) for each pair of months.

**Historical Catch by Depth:** Estimates of percent catch by depth were calculated for each region based on MRFSS depth sample data (numbers caught A+B1 for CPFV and A+B1+B2 for PR) from 1999-2000, which was a time period when depths were unconstrained. Proxies were considered on a species by species basis for regions where there was a lack of catch data for that area.

### ***Description of the Catch Projection Model for the California Recreational Fishery (RecFISH)***

To improve the accuracy of catch estimates for yelloweye rockfish, two methods were employed when modeling the effect of depth restrictions on the catch of this species:

1. For expanding baseline input catch data from regulated seasons to all depths, unregulated depth distribution of catch data from other areas can be used to supplement the existing historical data; these data must be from unregulated years to be able to expand to all depths. In the Northern Management Area, data from 1999-2003 were used (years unregulated by depth in the North), recent unregulated Oregon catch by depth (1999-2003), and 1999-2000 data from the North-Central area that is north of Point Arena (for bathymetric and fishing effort similarities to the North). For the North-Central area, additional data from dockside party charter catch by depth data from 1999-2000 were used.
2. More recent catch data from CRFS were used to produce region-specific proportions of catch by depth with a higher sample size than historical data to provide improved projections that represent the current depth distribution of catch. Although this data is from regulated years, recent years have seen a consistent regulatory scheme by depth that would allow for use in apportioning catch by depth within the open depth strata. For example, for the Northern Management Area, the years 2004-2007 saw a consistent 0-30 fm depth restriction in place. The catch by depth for those years was used to project the depth distribution within the upper 30 fm for upcoming years (assuming catch will be restricted to within this zone), providing a more current framework than using the historical 1999-2000 data. Similarly, this applies to 2006-2009 catch by depth data for the North-Central Management Areas (same 0-30 fm depth restrictions). These depth distributions are applied as a post-model run adjustment, reapportioning the projections with the new depth distributions.



## Determining the Proportion of Angler Reported Unavailable Dead Catch for Yelloweye and Canary Rockfish that was Composed of Discarded Dead Fish:

The California Recreational Fisheries Survey program (CRFS) uses several different catch types in generating catch estimates: sampler examined catch (“A”), angler-reported dead fish (“B1”), and angler reported discarded live catch (“B2”). The B1 category includes disposition such as retained (filleted fish, fish given away, used for bait or otherwise unavailable) and fish discarded dead. Unfortunately, since CRFS began in 2004, no disposition of the B1 catch has been recorded for the majority of private and rental trips which are sampled in the PR1 mode. Therefore, it is not possible to separate the discarded dead fish from the retained unavailable fish in the B1 catch type without use of a proxy for the proportion of fish discarded dead. Attempts have been made to use sparse available data and apply these to the B1 catch data, but little data exists for depleted non-retention species, such as yelloweye and canary rockfish.

To estimate the proportion of B1 catch of yelloweye and canary rockfish that is discarded dead, a “compliance factor” (CF) was determined from recent (2005-2009) CRFS data. The CF is calculated by dividing the B2 catch by the total catch (A+B1+B2); this represents the proportion of fish reported discarded live by anglers (reported live only) while complying with regulations. It is conservative, as a portion of the B1 catch (the discarded dead) in the denominator should be in the numerator. The CF is used as a proxy for the proportion of B1 that is discarded dead, and so it is multiplied by the B1 catch to estimate the total fish discarded dead. This amount is added to the known B2 catch to arrive at total discards. This value is then multiplied by discard mortality factors by depth to obtain the discard mortality. Total mortality is then the retained catch (A+B1, less the proportion of B1 designated discarded dead) + discard mortality. Because the CFs are conservative, the proportions of B1 that are considered otherwise unavailable dead (filleted, used for bait, given away) will be biased high, thereby leading to an estimate of total mortality that is biased high. CFs were determined for each management area for both yelloweye and canary rockfish and applied to the B1 (aggregate unavailable dead catch) catch for these species to provide a conservative proxy estimate of fish discarded dead to which depth dependent mortality rates would be applied in estimating total mortality.

### ***Methodology Used to Calculate Annual Unrestricted Catch***

1. Pull (A+B1+B2+B3) Catch for each year from the RecFIN CRFS data web site: <http://www.psmfc.org/recfin/forms/est2004.html>. Specify species, and select the parameters: month and district under Define Table Layout.
2. Pull historical catch by depth (1999-2000, most recent years unregulated by depth) from the RecFIN boatdepth3 CDFG private access website. Add PC and PR fish caught together for each separate region and species, maintaining combined depth totals for each depth strata. Calculate average percentage of total fish caught within each 10 fm depth stratum (= “Depth Profile”) by dividing 10 fm depth strata totals by combined total sum of all strata for the region. Assign proxies as needed for data-poor areas, using adjacent regions, similar species, etc.
3. Pull historical catch through time (1993-1999, the most recent years unregulated by monthly closure) from RecFIN website: <http://www.psmfc.org/recfin/forms/est.html>. Calculate average wave percents over combined years 1993-1999 by dividing individual wave totals by sum of all waves for each region. Assign proxies as needed for data-poor areas using the other region (North or South) as the proxy.

4. For each management region and species, calculate total regulated catch based on months each set of regulations was in effect. For example, if fishing was only open from 0-60 fm for March-December, sum total catch for those months only. Each management region should now have catch data for all species grouped by the different sets of management regulations (MR sets) in effect for the year so that the identical calculations can easily be performed on identically restricted species.
5. Expanding to All Depths. For each MR set: If there was no depth restriction, use the unmodified total regulated catch as the expected catch for all depths for that period of the year. If a depth restriction was in place, use total regulated catch to expand out each species in each MR set to all depths: from the Depth Profile, divide total regulated catch by sum of proportion of catch represented by the depths where fishing was open. This is the total expected catch for all depths. For example, if fishing for a MR set was open < 20 fm, divide the total catch by the percentage of the catch < 20 fm using the appropriate Depth Profile (historical unregulated catch data) for each species and region.
6. Effort Shift. If the depth restriction is confined to a 20 or 30 fm band, we assume increased effort occurred for these months. To remove this effect, apply an Effort Shift factor to remove the increased fishing (and increased catch) for the constrained depth zone. For example, if a 0-20 fm restriction was in effect, divide the total expected catch for all depths by 1.393 to get final total expected catch for those months. Similarly, use a factor of 1.276 if fishing was restricted within a 30 fm range. No Effort Shift is applied for depth restrictions > 30 fm.
7. Accounting for Closed Months. After expanding to all depths and removing Effort Shift (if needed), sum all the final expected catch values across all the MR sets for the year for each management region and species. Divide this sum by the percent catch for the year that these regulated months represent (from the wave percents for the year). In other words, divide the calculated catch for all open months by the percentage of the catch for the year these months historically represent. This results in the expected annual unregulated catch, expanded out from the regulated catch, for each region and species.
8. Input expected annual unregulated catch for each region-species into the Catch by Year Table in the RecFish Model database. The weighting of the different years' data to be used by the model in projecting catch can be selected at the model-user interface.

#### ***Changes to the RecFISH Model for 2011-2012***

The CRFS estimates from 2008 and 2009 were added to the estimates from 2005-2007 used in the previous iteration of the model. A fixed 42% discard mortality rate was applied to the B2 and B3 discarded rockfish catch for the input data for 2008. The proportion of catch by depth applied to the depth dependent mortality rates to derive Management Area Specific discard mortality rates were updated and applied to the 2009 in put data. In addition, the proportion of catch by time and proportion of catch by depth in the historical catch were revised as described below, to better reflect the seasonality of effort North of Point Arena and the proportion of catch by depth North of 40 deg 10 min N. Latitude respectively.

1. Elimination of the Division between the Monterey and Morro Bay South-Central Management Areas. These areas are combined to reflect the consolidation of these two management areas into a single South-Central Management Area in 2011 and 2012. The CRFS district 3 shares the boundaries for this Management Area, extending from Pt. Conception to Pigeon Pt, allowing the same geographic scale of projections and inseason catch estimates for this region. A further analysis of this management measure is provided under the management measures analysis section of the EIS under B.3 attachment 1.

2. Revision to the Historical Catch by Month in North of Point Arena. The proportion of catch by wave was refined to a finer spatial resolution. Historically the fishery South of Point Conception, the area between Point Conception and Point Arena and the area between Point Arena and the CA/OR border have different proportions of catch by time due to weather, but previously only the differences North and South of Point Conception were accounted for in the model. In the area North of Point Conception, a far greater proportion of the total catch is derived from areas South of Point Arena biasing the proportion of catch by time. Oregon catch by time data were used as a proxy for North of Point Arena since catch data are available from Oregon during the unregulated fishing season, and the North Coast is similar to Oregon in terms of weather, opportunity and effort.

Historical Oregon data (1993–1999) replaced historic California data (1993–1999) for the North and North-Central North of Point Arena Management Areas for the following species: bocaccio, cabezon, canary rockfish, black rockfish, blue rockfish, brown rockfish, copper rockfish, quillback rockfish, greenling genus, kelp greenling, rock greenling, lingcod, China rockfish, grass rockfish, widow rockfish, and yelloweye rockfish. Oregon RecFIN catch data were extracted by wave for the years 1993–1999 because this is a time when Oregon had open seasons and no depth restrictions similar to California. “Catch” is defined as sampler-examined dead and angler-reported dead fish (A+B1). Estimated total catch in metric tons were compiled in MS Excel by species and wave. Catch-by-wave was converted into catch-by-month by dividing wave data in half. Areas between Point Arena and Point Conception (the North-Central South of Point Arena and the South-Central Management Areas) and Southern California, were not affected by this revision.

### 3. Revision to the Historical Catch by Depth in the Northern Management Area.

The proportion of catch by depth for the Northern Management Area (40 deg 10 min N. Latitude to the OR/CA border) was previously calculated using data from 1999 and 2000. The RecFISH model now includes data from 2001 and 2002 as well, since depth restrictions did not go into effect until 2003. This increased the sample size and improved the accuracy of the projections. The additional data reduced the reliance on proxy data for the Northern Management Area.

Historical California data (2001–2002) from RecFIN was added the existing data for the Northern North Management Areas for all species within the RecFISH model. The “Boat Depth 3” RecFIN website was used to query the catch by depth data. The data were downloaded into MS Access and aggregated into 60ft (10 fm) depth bins to match the layout found within the RecFISH model. The RecFIN survey data used consist of angler-retained fish (A+B1) as well as angler discarded fish (B2). Proxies were used for some species where data was limited or non-existent. A similar proxy process were used in the model before but the number of proxies was greatly reduced, resulting in a more robust RecFISH model. Recreational Groundfish Management Areas between Cape Mendocino and the California/ Mexico border were not affected by this revision.

The names of the Management Areas will be changed in 2011 to make them shorter and the south-central management areas will be combined to form a single management area, reducing the number of management areas from six to five, reducing regulatory complexity.

ENFORCEMENT CONSULTANTS REPORT ON  
TENTATIVE ADOPTION OF HARVEST SPECIFICATION,  
REBUILDING PLAN REVISIONS,  
AND MANAGEMENT MEASURES FOR 2011-2012 FISHERIES

The Enforcement Consultants (EC) reviewed the management measure alternatives under Agenda Item B.3 and offers the following comments.

Define sablefish dressed weight: The EC reviewed federal regulations, and found that it is generally unlawful to process groundfish at-sea, except that heading and gutting is not defined as processing. Heading and gutting is therefore a legal activity, so long as a conversion rate is provided. Sablefish currently delivered on the West Coast are landed in the traditional Eastern J-cut fashion (that is, eviscerated with head and “collar” removed). This practice may constitute “processed” under current federal regulations and is potentially unlawful. A question raised: is a collar part of the head, or is it part of the fish?

Regardless of the number of dressing variations, acceptable practice should only be that which can be concisely defined and associated with an appropriate conversion rate.

In an effort to ensure at least traditional dressing activity be legally accommodated, the EC recommends the following definition be added to regulations:

DRESSED SABLEFISH - “means sablefish that have been eviscerated, and the head removed just behind the collar bone. Dressing by this definition does not constitute processing.”

A rate of 1.6 is applied to convert dressed sablefish to round weight. The Groundfish Management Team may wish to visit whether this is appropriate conversion factor for collar-off.

Evaluate VMS gear storage for fixed gear vessels transiting closed areas: fixed gear vessels wish to be able to bait gear while underway through the Rockfish Conservation Area (RCA) to fishing grounds, and untangle gear on the way back. This practice is currently unlawful as gear must be stowed while transiting the RCA. Apparently, the baiting and untangling of gear is occurring despite the prohibition. The EC met with a Groundfish Advisory Subpanel representative and listened to his concern that the prohibition impedes efficiency. The EC evaluated the current regulation and the benefit to providing additional assurances that closed area fishing would be deterred. Given the ease that fixed gear can be baited and deployed anyway, the EC believes that some flexibility would not be a major set-back to enforcement.

RECOMMENDATION: Buoy line and anchors must be visible and stowed on the deck, and transit through RCA’s must remain continuous. With these two provisions, baiting and unbaiting of fixed gear could be authorized.

Ice and Slime deduction: The issue of ice and slime deduction is currently being addressed for Trawl Individual Quota fishery in the deeming process. The EC recommends that we postpone analyzing this for the other sectors. Per federal law, except for halibut, there are no deductions allowed for slime and ice and accurate weights are required.

Catch Accounting: The EC recommends that all federally managed groundfish be accounted for prior to leaving the Exclusive Economic Zone (EEZ). In other words, prohibit fish harvested from the EEZ from being exported unless the fish are properly documented. This can be facilitated through either a state fish receiving ticket system or vessel activity report as used by the Alaska Region. If the latter is used, some reporting mechanism needs to be implemented to ensure that the data is captured in the PACFIN system.

PFMC  
06/14/10

GROUND FISH ADVISORY SUBPANEL REPORT ON TENTATIVE ADOPTION OF  
HARVEST SPECIFICATIONS, REBUILDING PLAN REVISIONS, AND MANAGEMENT  
MEASURES FOR 2011-2012 FISERIES

In April, the Groundfish Advisory Subpanel (GAP) presented the Council with recommendations on annual catch limits (ACLs) for rebuilding stocks. Our focus was on these stocks as they are the driver for availability of many of the healthy target species. Our recommendations were based on two criteria: 1) being within the Ttarget rebuilding time; and 2) a more reasonable time that still achieves stock rebuilding. Both of these options took into account the needs of conservation, the fishery and fishing-dependent communities.

In our April recommendations, the GAP focused on ACLs that would maintain or regain fishing opportunities, both commercial and recreational. It was our endeavor at the time to provide justification and demonstrate the various fisheries and ports affected by these management decisions.

However, the GAP did not go into detail regarding the economic consequences of our current management. Nor did we try to present the total spectrum of the stocks and the constraining management currently in place. This statement attempts to do both.

Uncertainty in stock data, fishing behavior, areas of habitat and discards contributed to a pessimistic approach or more precautionary approaches to fisheries management in the past. Our coastwide Rockfish Conservation Area (RCA) is an example of a management strategy to in this vein. At the same time, the council has not looked at, nor taken credit for, the number of protected areas within the state and federal waters that have unknown quantities of healthy stocks. The GAP urges the council take a closer look at the 6-page public comment piece under this agenda item, “Marine Protected Areas May Reduce Uncertainty and Precautionary Buffers,” by Environmental Defense Fund’s Rod Fujita, which addresses this issue. Fujita notes:

“The PFMC’s area of jurisdiction is rich in MPAs of many kinds, some of which may restrict fishing and be of sufficient size to increase target and bycatch species biomass, fecundity, and recruitment levels enough to have a significant effect on scientific and management uncertainty. Yet these MPA effects are not accounted for in the buffers used to generate ACL and ACT levels. Accounting for the effects of the sizeable MPAs within the PFMC’s jurisdiction may result in more science-based (and potentially smaller) precautionary buffers and in more accurate ACL and ACT levels.”

We all recognize the rebuilding paradox, however, another paradox will result when, in the course of rebuilding, the fleet diminishes to the point at which harvest rates no longer matter since little harvest effort will remain. Are we meeting the “net benefit to the nation” goal as we tear down our fishing fleet and import Icelandic cod, Canadian rockfish, Asian shrimp, Norwegian salmon and other seafood?

The national standard of “rebuilding in the shortest time possible, while taking into account the needs of the fishing communities” has not been met. We believe that provision was purposely added to afford the needed flexibility to achieve satisfactory results to both the stocks and the fishing communities.

While some environmental groups have chosen to work within the Council process to develop sustainable management measures, it is unfortunate that others seem to believe that litigation is the answer. Unfortunately, this latter course has, in our view, done little to improve management and a lot to prevent development of creative solutions to conservation problems.

In contrast, one has only to look at New Zealand to find a more responsive approach to rebuilding stocks while considering the needs of fishing communities. In a recent paper by Larkin, et.al., the difference in management style is explained:

*“Under the rubric of sustainable fisheries, nations are mandated to rebuild overfished stocks. Although rebuilding strategies are almost universally directed by the available biological information, approaches vary depending on fishery laws, management objectives and technical guidelines. For example, rebuilding schedules in the United States are primarily designed to achieve rapid rebuilding of biomass and spawning stocks consistent with the biological characteristics of the resource. In contrast, New Zealand has greater flexibility in rebuilding stocks in order to consider economic, social and cultural needs. In this paper, we investigate potential economic costs to the fishery that result by limiting the U.S. manager's flexibility in choosing a recovery trajectory. Using numerical models for moderate- and long-lived stocks, the analysis reveals that, depending on productivity of the stock and the discount rate, extending the rebuilding timeframe can substantially increase annual harvest and economic benefits. The results underscore the importance of economic analysis in crafting flexible rebuilding schedules that account for the unique characteristics of the economic analysis in crafting flexible rebuilding schedules that account for the unique characteristics of the fisheries, including economic and social needs.”<sup>1</sup>*

The GAP stresses the utmost importance of the earlier recommendations and how they relate to the feasibility of success under the Trawl Individual Quota (TIQ) program. In addition to program costs, the availability of and access to rebuilding species is another major concern as we move to TIQ.

Of equal importance is the rebuilding species’ effect on all other sectors, such as the heavily affected recreational fisheries in all three states.

Under this agenda item, the GAP is supposed to give the council any advice it deems necessary with regard to the various proposed levels of ACLs for 2011-12. The GAP cannot see fit to deviate from the recommendations made at the April council meeting and all the supporting rationale for how and why those levels were recommended.

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<sup>1</sup> Sylvia, Gilbert; Larkin, S. L., and Harte, M. The economic costs of regulation: a bioeconomic comparison of legislative mandates for rebuilding fish stocks in the United States and New Zealand. 2006; 14, (1): 216.

While the GAP is quick to point out the concerns, we also realize the council, because of threatening litigation, may not feel comfortable in changing the course of action with regard to setting ACLs. However, the GAP feels it is time to bring this rebuilding issue and the resultant community impacts to the forefront.

The GAP has separated the rest of this statement into the following sections:

1. Recommendations for ACLs and ABCs for non-complex and non-overfished species
2. Recommendations for ACLs and ABCs for complexes
3. Recommendations for ACLs and ABCs for overfished species
4. Preliminary recommendations for management measures

### **1. ACLs and ABCs for non-complex, non-overfished species**

The GAP supported the preliminary preferred options for ACLs for the non-complex, non-overfished species for 2011 and 2012 as listed in Agenda Item B.3.a, Attachment 2, “Chapter 2, Range of Alternatives,” Tables 2-8 and 2-9, pages 21 and 22, with the exceptions listed below.

- Sablefish: The GAP was made aware of changes to the figures for sablefish referenced in Table 2-10, page 23 and supported those changes for Option 2, which are as follows:

For 2011: North/South apportionment of 68/32; 5,511 mt in the north; 1,298 mt in the south, which includes the 50 percent reduction for uncertainty.

For 2012: North/South apportionment of 68/32; 5,347 mt in the north; 1,258 mt in the south, which includes the 50 percent reduction for uncertainty.

- Dover sole:

For 2011 and 2012: The GAP recommends 26,000 mt.

At the April meeting, the GAP recommended the same ACL amount. And, like in April, the 26,000 mt is not a stated alternative but it accommodates the maximum historic landing for this species, is well below the ABC, and is within the range of ACLs proposed by the council.

Furthermore, the GAP discussed several issues regarding the abundance of the Dover sole stock. The 2011 OFL is 44,400 mt and the 2012 OFL increases to 44,826. The proposed 26,000 mt ACLs are only about 58 percent of the OFLs, far lower than any buffers in place under Amendment 23 policies.

Flexibility, is necessary, especially as the trawl industry transitions to a rationalized fishery in which every fish will be accounted for. Dover is a healthy stock and is a big component of the TIQ system. There is no need to set the ACL



at a lower level that may cripple the fishery in the future. The higher level will also allow the flexibility necessary to access deeper water stocks, healthy target stocks, in other complexes.

Another consideration is related to the market conditions associated with the groundfish fishery as a whole and for Dover in particular. As the Dover stock grows and as the biomass increases, the fish are forced out to deeper water. Deepwater Dover is more jelly-like than its firmer counterpart closer to shore and thus fetches lower prices and is harder to sell, which increases market discards. Dover should be harvested while they are closest to shore and in their best condition.

## **2. ACLs and ABCs for complexes**

The GAP supported the preliminary preferred options for ACLs for complexes for 2011 and 2012 as listed in Agenda Item B.3.a, Attachment 2, “Chapter 2, Range of Alternatives,” Table 2-16, page 57, use the SSC Stock categories and set the ACLs equal to the ABCs, with the exception listed below.

- Minor nearshore rockfish north:

The GAP recognizes the problem of having a higher preliminary preferred ACL of 155 mt for 2011 and 2012 than the OFL of 116 mt. Therefore, the GAP referenced Table 2-18, page 61 for the minor nearshore rockfish north and recommends using the SSC stock category but setting the P\* value at 0.45.

The Oregon recreational fleet would be severely affected by a change to ACLs lower than the status quo of 155 mt. The fleet has consistently run very close to the nearshore complex OY over the last several years at the coastwide level of 155 mt. There are no practical management measures other than fishing season closure to prevent exceeding the ACL. Since there are multiple precautionary measures involved with setting the OFL, ABC and ACLs, with this complex, it is believed that a P\* of 0.45 still offers a precautionary approach while considering the needs of fishing communities as described in National Standard Guideline 8, to “... take into account the importance of fishery resources to fishing communities in order to 1) provide for the sustained participation of such communities; and 2) to the extent practicable, minimize adverse economic impacts on such communities.”

Two members of the GAP disagreed with adjusting P\* to 0.45. The reasoning was that the minor nearshore rockfish north species are largely category 3 stocks, unassessed and long-lived stocks that, individually, are at risk of becoming overfished. Instead, the council should take into account the biomasses of those species in closed areas – as mentioned earlier in this report and in the public comments by Rod Fujita – to address uncertainty.

### **3. ACLs and ABCs for overfished species**

As mentioned earlier, the GAP recommends the same ACLs for overfished species that it recommended in April and summarized in the table below (for reference, the April GAP statement is Agenda Item I.4.b, Supplemental GAP report). In that April report, GAP members assembled clear and compelling arguments for higher ACLs.

#### ***Summary of April GAP Recommendations (all figures in metric tons):***

<b>Species</b>	<b>2010 OY (for reference)</b>	<b>Alternative</b>	<b>2011 ACL</b>	<b>2012 ACL</b>
Bocaccio	288	5	373	384
Canary rockfish	105	6	155	162
Cowcod	4	modified*	5	5
Darkblotched rockfish	291	modified*	364	360
Pacific Ocean perch	200	4	265	269
Widow rockfish	509	6	3,000	3,000
Yelloweye rockfish	17	6	20	21
Petrale – w/winter fishery	1,200	4	976	1,222

*\* The GAP consulted the rebuilding analyses for these species to find higher ACLs that would afford more flexibility while still meeting rebuilding targets*

The GAP feels it's important to note that the Magnuson-Stevens Act requires rebuilding be done as quickly as possible, taking into account the needs of fishing communities and the interaction of the species within the marine ecosystem.

A rebuilt stock is defined as a population that is at maximum sustained yield (MSY). This is an important concept. MSY is an economic target, not a biological or ecological one. The point of MSY is the point at which the stock is most productive and utilization of that stock can be maximized over the long term. The requirement that rebuilding occur and "be done as quickly as possible taking into account ..." recognizes the fact that rebuilding is to be done for economic purposes, except in cases where that stock also plays an important ecological role that necessitates faster rebuilding.

The GAP believes the PFMC's current schedules for rebuilding will destroy many of our fishing communities during the rebuilding process. In other words, the Council is rebuilding in order to provide economic opportunity and make communities healthy, but is destroying the very industry and the very communities that are supposed to benefit from this process. The GAP urges the Council not lose sight of the fact that rebuilding is being done largely for economic purposes. We should not destroy the industry in the process.

Furthermore, the council's own documents address this issue. From Page 47 of Agenda Item B.3.a, Attachment 2, June 2010:

*"Yet, what the courts have not seemed to recognize ... is that delaying rebuilding based on short-term concerns might have little to no cost to conservation and the long-term economic return to communities. In fact, in pure economic terms, some delay in rebuilding can be in the best long-term economic interests of fishing communities."*

The attached charts for the nine overfished species also demonstrate the relatively low effect the total catch (as defined in each species' respective stock assessment, which, in most cases, included bycatch and discards, sport and commercial catch and tribal catch) has on the total biomass for each species.

#### **4. Preliminary recommendations for management measures**

The GAP recognizes there are three overarching alternatives listed in Agenda Item B.3.a, Attachment 1, that correspond to the council's three alternative OFL/ABC and resultant ACL selections for analysis by the Groundfish Management Team. Roughly, alternative 1 corresponds to the higher ACL, alternative 2 with the mid-range ACL and alternative 3 with the lowest ACL.

This presents a difficulty for the GAP since the panel is proposing higher ACLs for overfished species as mentioned in section 3 of this report. The GAP anticipates revisiting this management measures issue as the GMT continues its analysis this week.

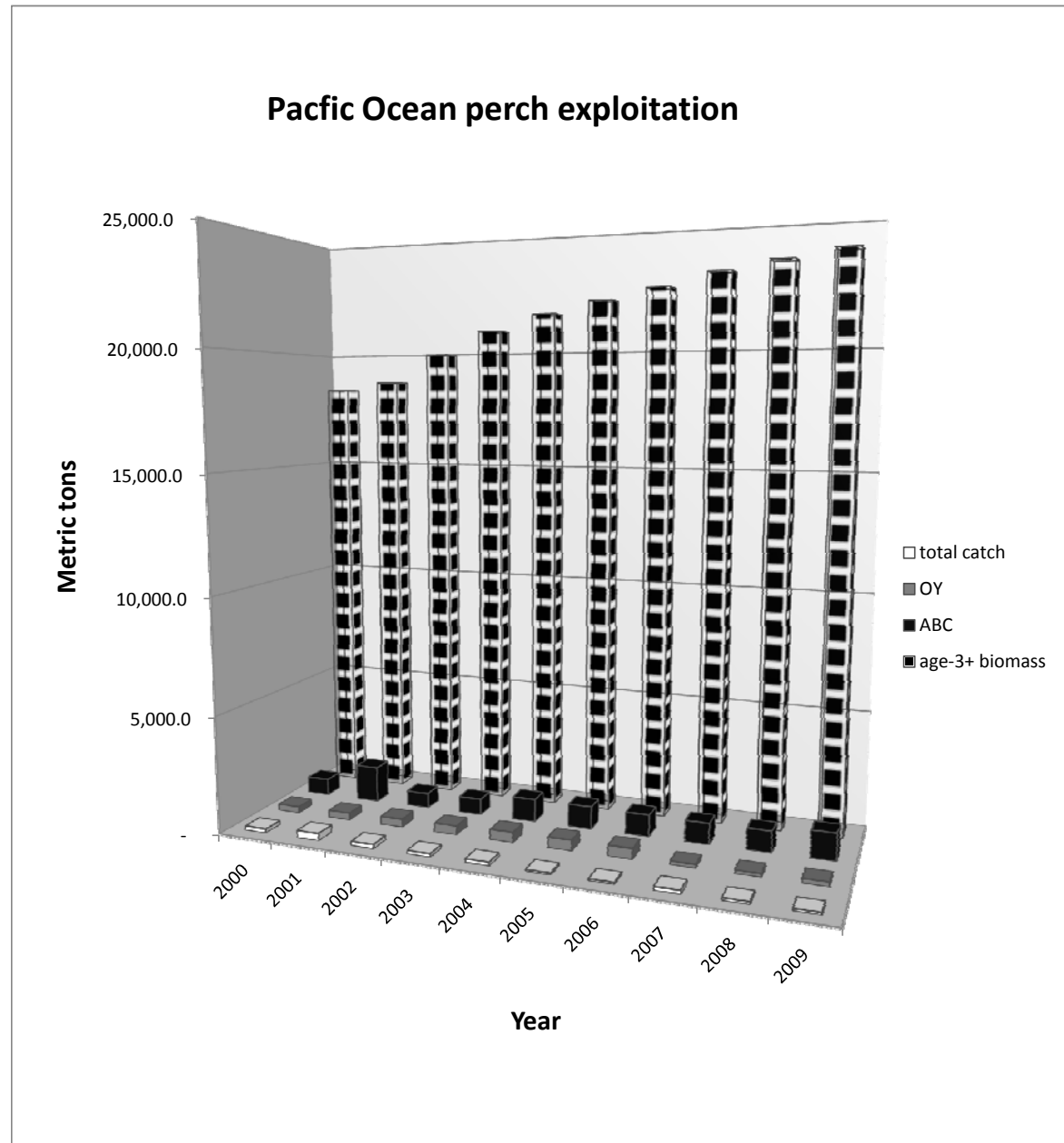
In the interim, the GAP recommends:

- Further analysis of a directed midwater yellowtail fishery under a rationalized fishery.
- Widow rockfish already is expected to be rebuilt and a new assessment will be completed in 2011. With the expectation of rebuilding ending, the GAP proposes including a higher widow ACL in 2012, which is in line with the assumed rebuilt abundance of the stock. Furthermore, it is important to change the ACL at this time, rather than wait for the next management cycle in 2013-14. The higher ACL for widow would allow more flexibility in a rationalized fishery and also a directed fishery.
- Elimination of the daily trip limit for sablefish in the limited entry fixed-gear sablefish fishery in the Conception Area (south of 36°). This would mirror the in-season adjustment that will take place in September 2010.
- A no-action alternative for the nearshore limited entry and open access fishery south of 40° 10' for the RCA is the only action that can be considered because the new model cannot segregate areas south of 40° 10. Everything south of 40° 10 is considered one unit; further breakdown of areas cannot be done at this point. The GAP recognizes the GMT is working on this issue but given these reasons, the only option at this point is the no-action alternative.

PFMC  
06/14/10

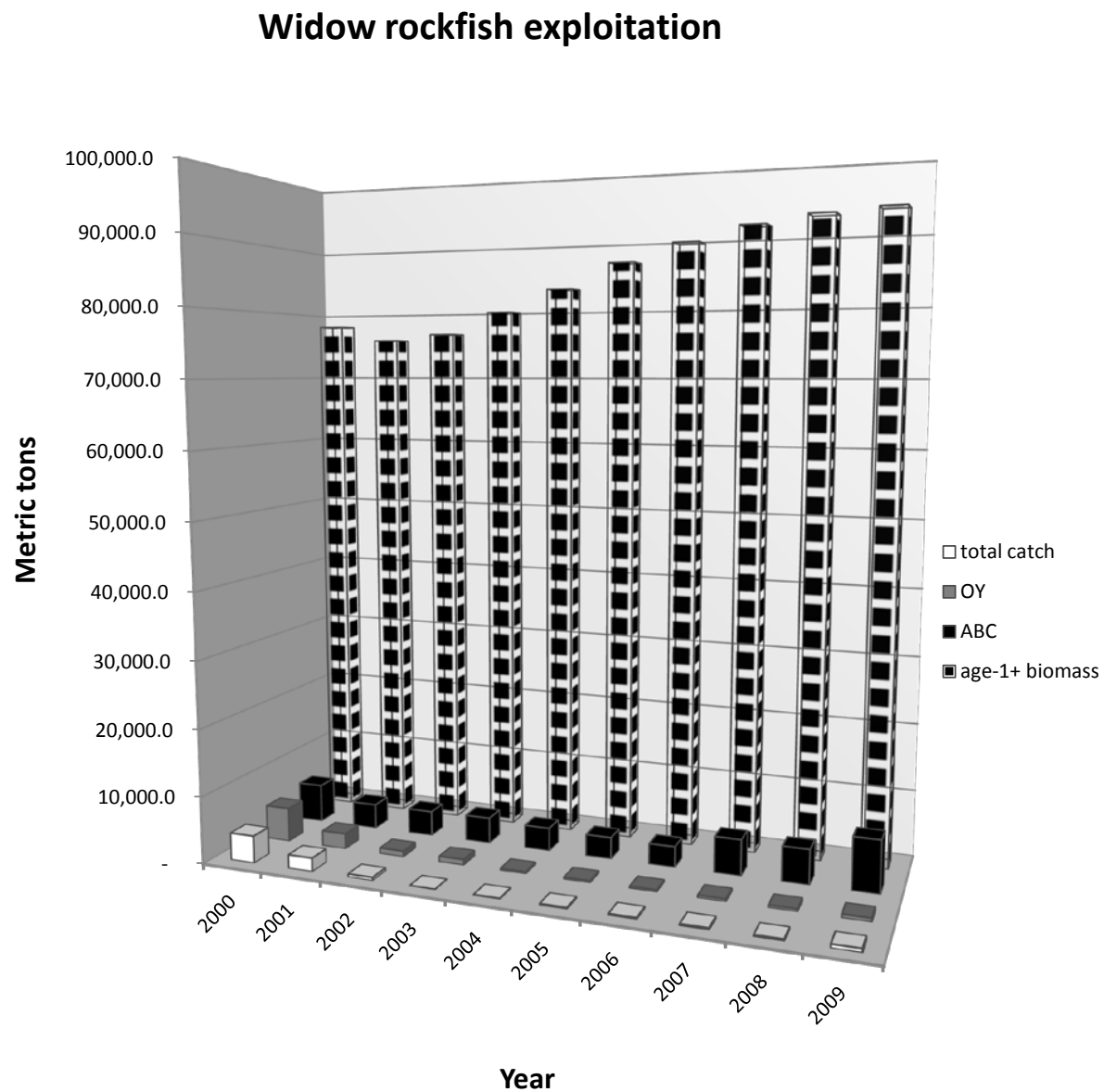
Pacific Ocean perch rockfish

Year	total catch	OY	ABC	age-3+ biomass
2000	171.0	270.0	713.0	18,366.0
2001	307.0	303.0	1541	18,710.0
2002	178.0	350.0	640.0	19,926.0
2003	145.0	377.0	689.0	20,908.0
2004	150.0	444.0	980.0	21,593.0
2005	81.0	447.0	966.0	22,104.0
2006	82.0	447.0	934.0	22,563.0
2007	156.0	150.0	900.0	23,128.0
2008	106.0	150.0	911.0	23,492.0
2009	95.4	189.0	1,160.0	23,844.0



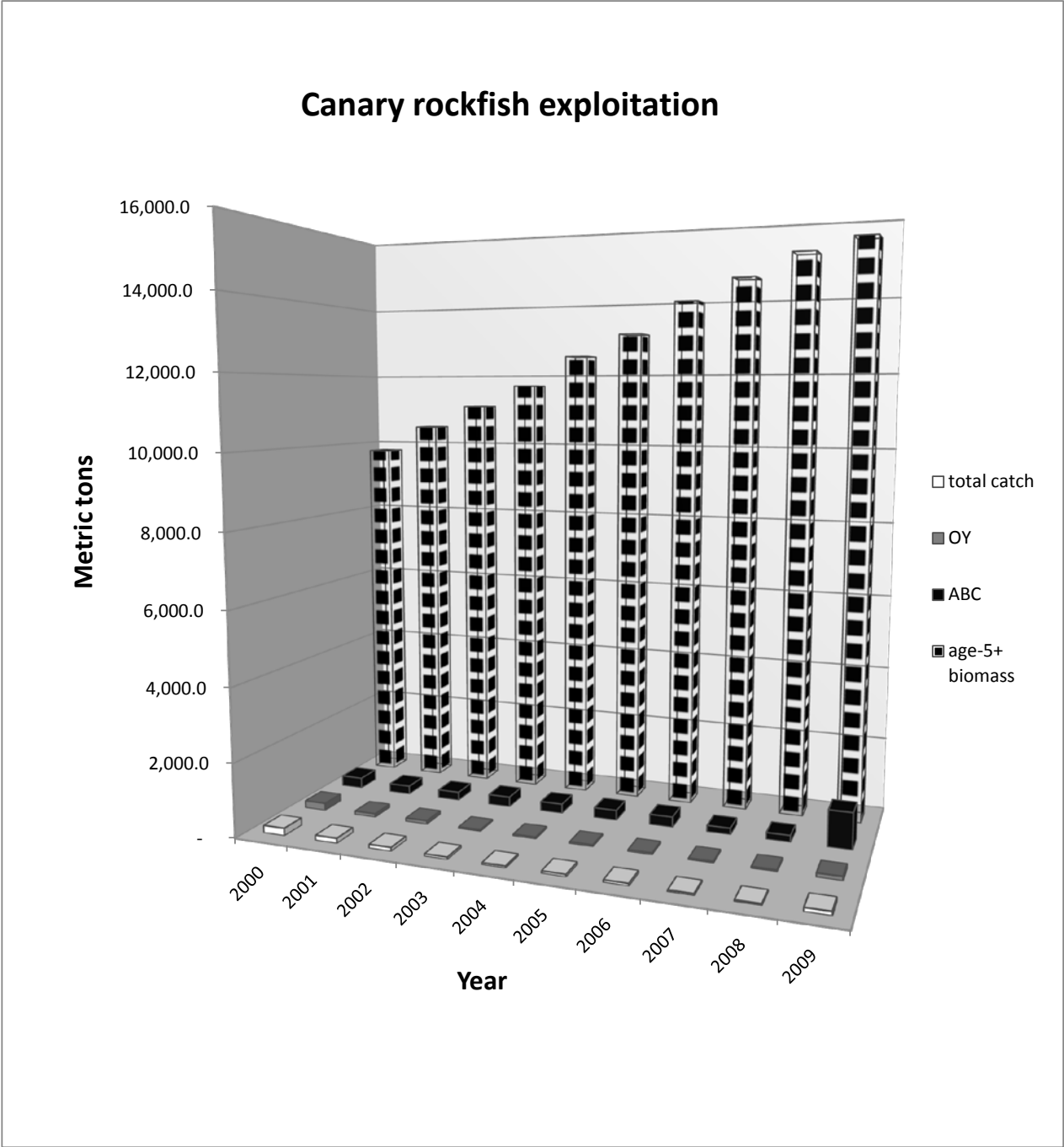
# Widow rockfish

Year	total catch	OY	ABC	age-1+ biomass
2000	4,049.0	5,090.0	5,750.0	78,036
2001	1,989.0	2,300.0	3,727.0	75,845
2002	432.0	856.0	3,727.0	76,752
2003	43.0	832.0	3,871.0	79,983
2004	101.0	284.0	3,460.0	83,281
2005	199.0	285.0	3,218.0	86,937
2006	215.0	289.0	3,059.0	89,536
2007	258.0	368.0	5,334.0	91,678
2008	243.0	368.0	5,144.0	92,871
2009	522.0	522.0	7,728.0	93,509



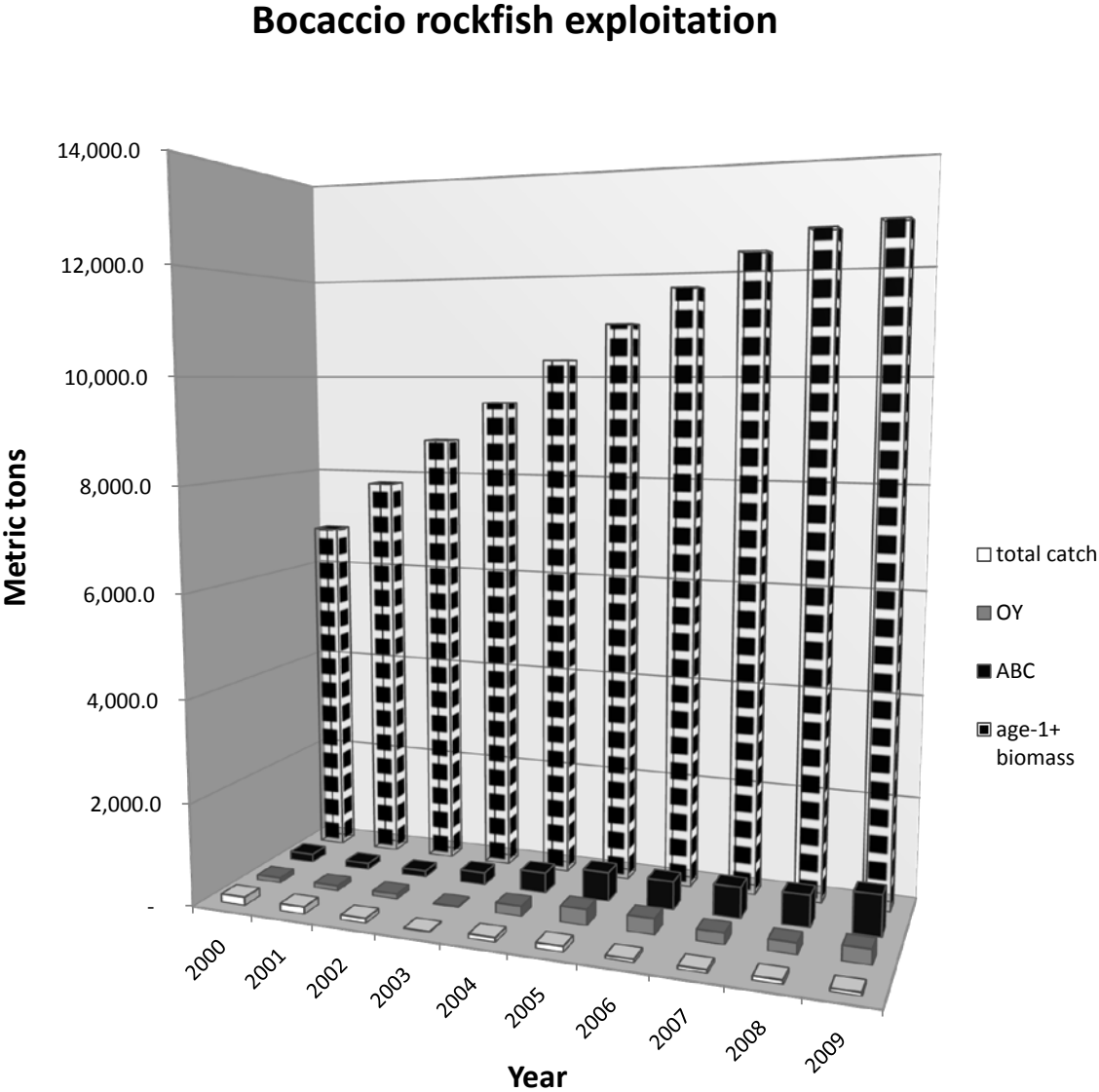
Canary rockfish

Year	total catch	OY	ABC	age-5+ biomass
2000	199.9	200.0	287.0	9,783
2001	133.0	93.0	228.0	10,502
2002	98.1	93.0	228.0	11,114
2003	59.9	44.0	272.0	11,698
2004	50.3	47.3	256.0	12,513
2005	60.4	46.8	270.0	13,106
2006	62.0	47.0	279.0	13,954
2007	44.7	44.0	172.0	14,542
2008	40.5	44.0	179.0	15,145
2009	100.0	105.0	981.0	15,483



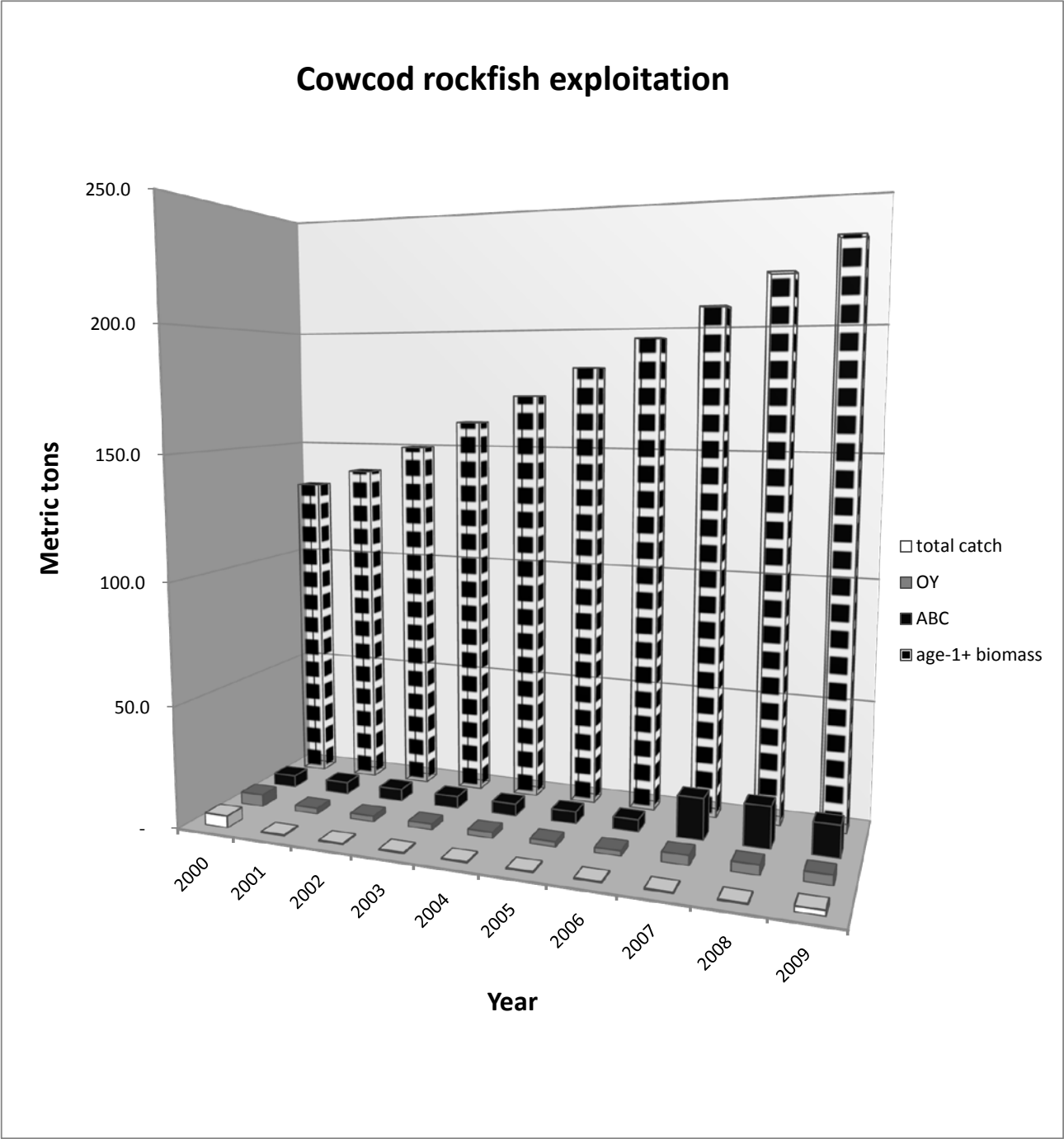
Bocaccio rockfish

Year	total catch	OY	ABC	age-1+ biomass
2000	160.0	100.0	164.0	6,817
2001	139.0	100.0	122.0	7,798
2002	90.0	100.0	122.0	8,718
2003	13.0	20.0	244.0	9,480
2004	85.0	199.0	400.0	10,319
2005	107.0	307.0	566.0	11,008
2006	60.0	306.0	549.0	11,677
2007	63.0	218.0	602.0	12,309
2008	77.0	218.0	618.0	12,692
2009	62.0	288.0	793.0	12,808



Cowcod rockfish

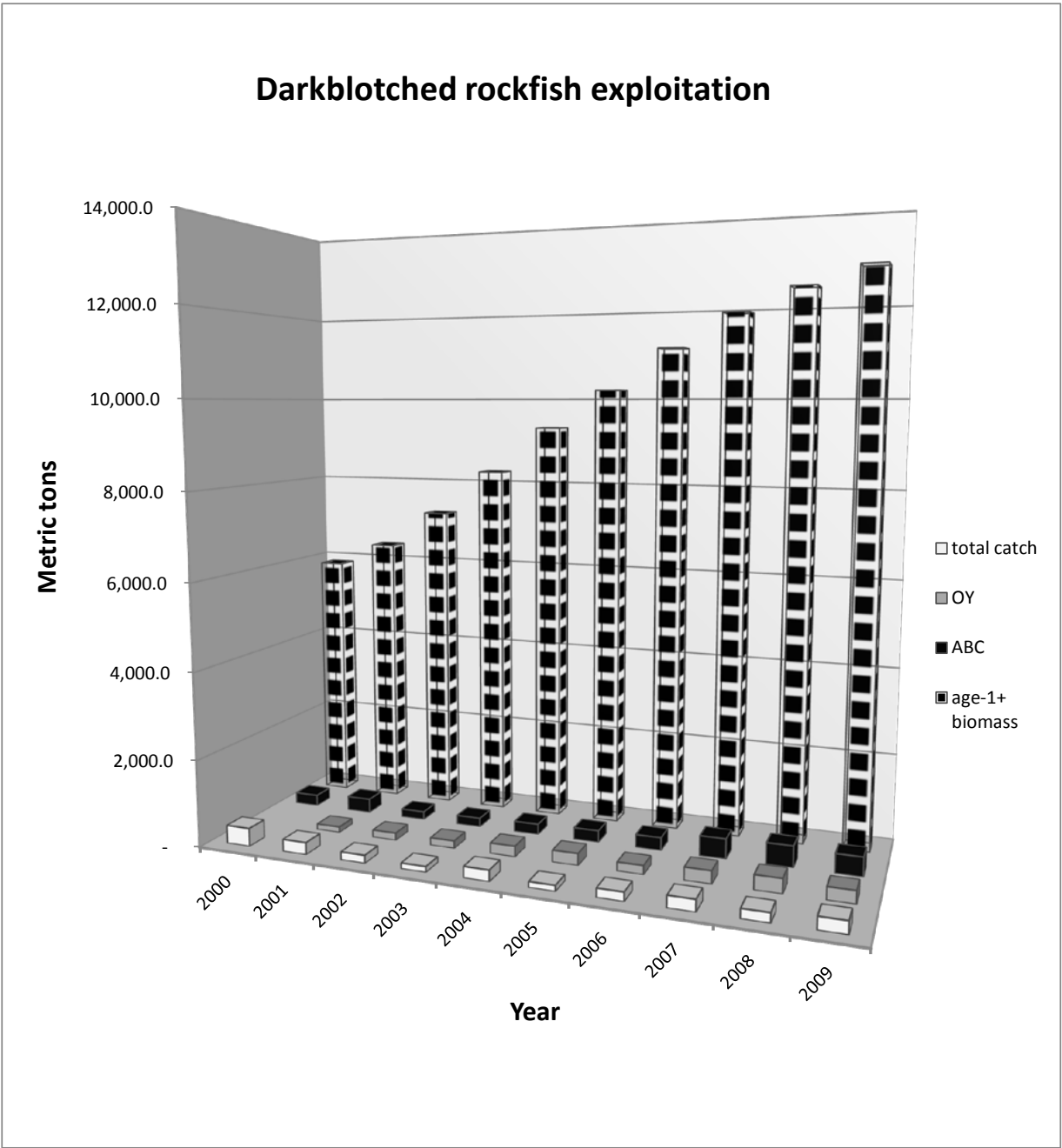
Year	total catch	OY	ABC	age-1+ biomass
2000	4.9	5.0	5.0	132.0
2001	0.5	2.4	5.0	138.7
2002	0.5	2.4	5.0	149.7
2003	0.5	2.4	5.0	160.8
2004	0.5	2.4	5.0	172.1
2005	0.5	2.1	5.0	183.7
2006	0.5	2.1	5.0	195.5
2007	0.5	4.0	17.0	207.6
2008	0.5	4.0	17.0	220.0
2009	2.1	4.0	13.0	232.9





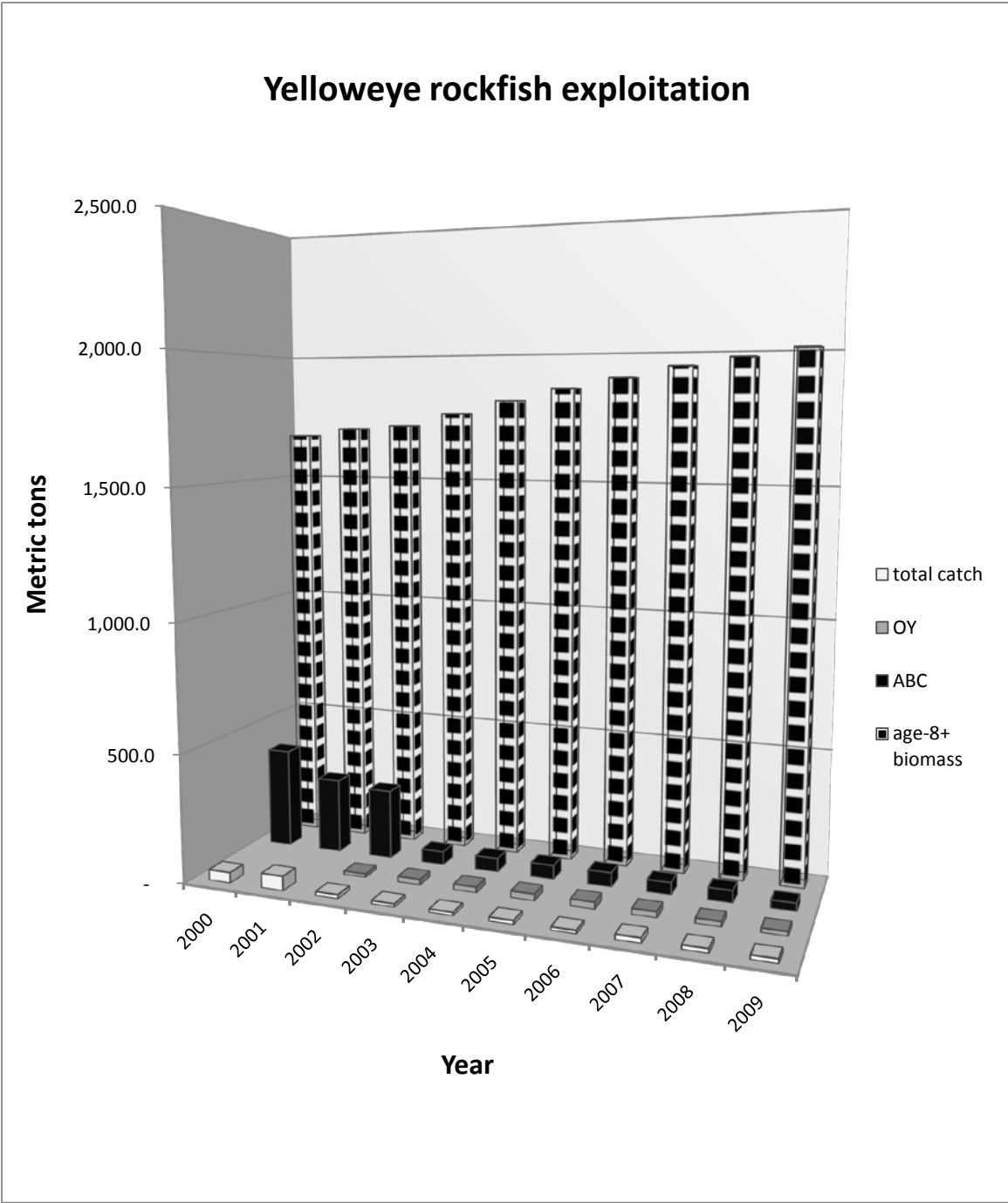
Darkblotched rockfish

Year	total catch	OY	ABC	age-1+ biomass
2000	414.0		256.0	5,862
2001	274.0	130.0	326.0	6,382
2002	179.0	168.0	187.0	7,231
2003	127.0	172.0	205.0	8,266
2004	252.0	240.0	240.0	9,326
2005	129.0	269.0	269.0	10,204
2006	200.0	200.0	294.0	11,142
2007	264.0	290.0	456.0	11,899
2008	213.0	330.0	487.0	12,423
2009	277.4	285.0	437.0	12,836



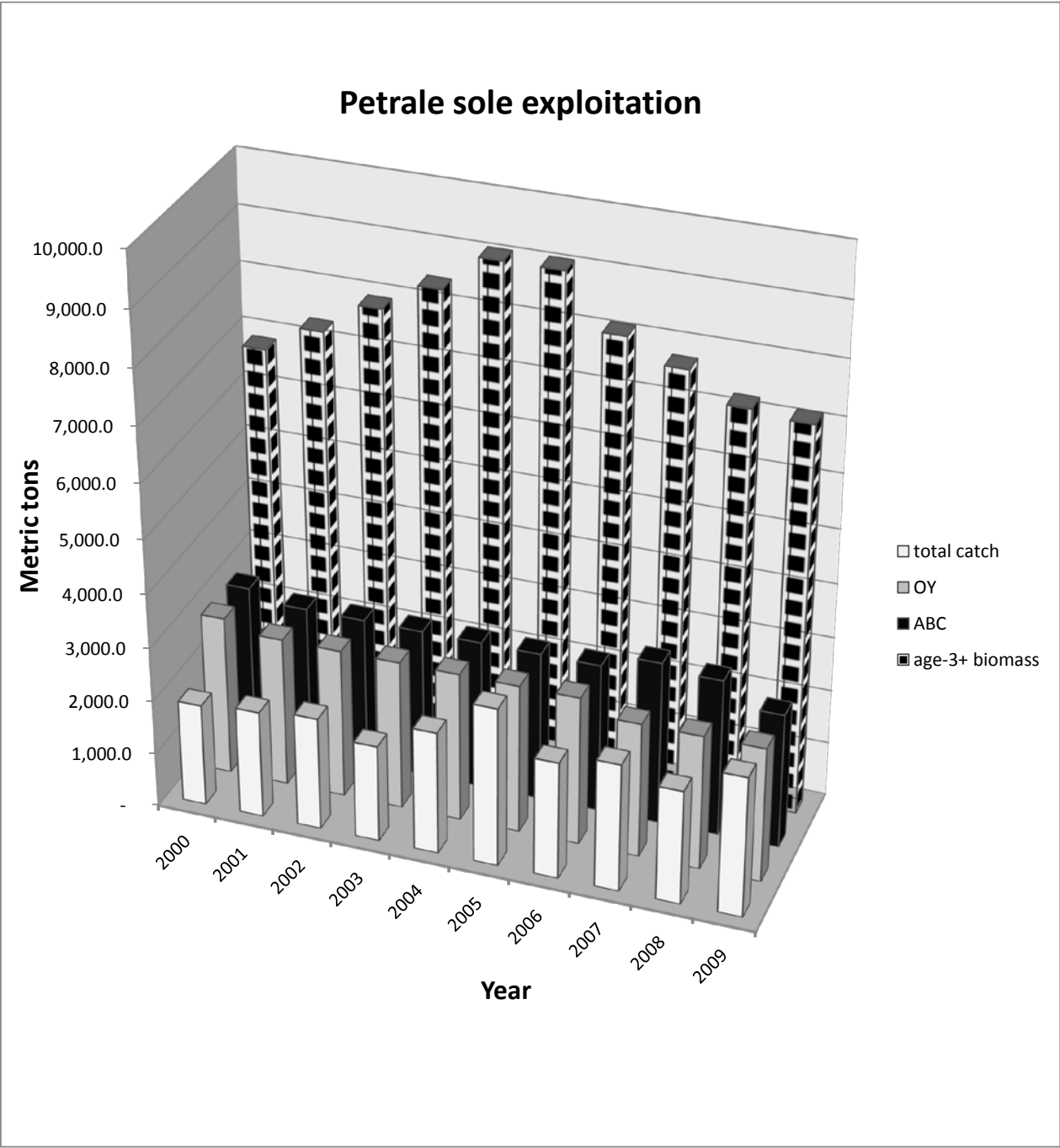
Yelloweye rockfish

Year	total catch	OY	ABC	age-8+ biomass
2000	40.9		392.0	1,674
2001	56.1		293.0	1,704
2002	15.8	13.5	273.0	1,717
2003	12.4	22.0	52.0	1,767
2004	12.3	22.0	53.0	1,817
2005	15.1	26.0	54.0	1,864
2006	12.4	27.0	55.0	1,904
2007	19.6	23.0	47.0	1,945
2008	16.5	20.0	47.0	1,976
2009	16.5	17.0	31.0	2,008



Petrale sole

Year	total catch	OY	ABC	age-3+ biomass
2000	1,895.0	2,950.0	2,950.0	6,846.9
2001	1,987.0	2,762.0	2,762.0	7,337.9
2002	2,088.0	2,762.0	2,762.0	7,913.0
2003	1,793.0	2,762.0	2,762.0	8,422.5
2004	2,276.0	2,762.0	2,762.0	9,079.6
2005	2,951.0	2,762.0	2,762.0	9,082.0
2006	2,176.0	2,762.0	2,762.0	8,132.4
2007	2,373.0	2,499.0	3,025.0	7,735.8
2008	2,115.0	2,499.0	2,919.0	7,240.2
2009	2,604.0	2,499.0	2,499.0	7,150.6



## GROUNDFISH ADVISORY SUBPANEL REPORT ON PART 1 OF MANAGEMENT MEASURES FOR 2011-2012 FISHERIES

The Groundfish Advisory Subpanel (GAP) considered options for 2011-2012 acceptable biological catches (ABCs) and associated annual catch limits (ACLs) for groundfish species. There are two parts to this statement: the first contains general comments; the second covers ACL recommendations for overfished species (OFS) under rebuilding plans.

For this report, the GAP referenced Agenda Item I.2.a, Attachment 2, “Tables and Graphics Relevant to Deciding 2011-2012 Groundfish Annual Catch Limits,” table 2-4: Estimated time to rebuild and SPR harvest rate relative to alternative 2011-2012 ACLs for depleted west coast groundfish species. (Attached)

Regarding management measures, the GAP referenced Agenda Item I.4.a, Attachment 2, “Preliminary Range of Management Measures for 2011-12 Groundfish Fisheries.”

### GENERAL COMMENTS

#### *Needs of Fishing Communities*

Status quo harvest levels are not meeting the needs of fishing communities. In the past, optimum yields (OYs) for overfished species have been set extremely low, which greatly affects fishing opportunity for healthier stocks that are caught in association with less abundant species. As noted in the April 8, 2008, GAP statement, Neah Bay is an example of this worst-case scenario: Neah Bay’s trawl fleet no longer exists due to management measures associated with extremely low harvest guidelines for some species. Westport's traditional groundfish trawl fleet, once active in significant numbers, now has only two vessels whose total catch is trucked away from Westport for processing.

The GAP understands the need to endure short-term consequences for long-term gain, but the two are linked. Short-term management measures must allow the opportunity for recreational and commercial businesses to survive the immediate future and prosper in the years to come.

Most all the rebuilding stocks have come in under their respective OYs for most of the last 10 years, with the exception of canary. Six of the other overfished species went over their respective OYs only once or twice between 1999 and 2008, according to their 2009 stock assessments: POP in 2001 and 2007; petrale in 2005; darkblotched in 1999 and 2000; bocaccio in 2000 and 2001; and yelloweye in 2002 (cowcod was difficult determine because it was managed as part of a mixed stock for some years). Widow has not exceeded its OY during this time. This performance demonstrates that current management measures are working and that we know how those management measures will affect fishing behavior.

### ***TIQ program uncertainty***

As everyone is well aware, the trawl individual quota program (TIQ) is scheduled to go into effect on Jan. 1, 2011. With it comes unanticipated changes, despite the council's and advisory bodies' best efforts to account for everything. Higher ACLs, especially on overfished species, will add more flexibility overall to a system that is a radical change from status quo and make the switch easier for fishermen and processors.

Higher ACLs will help alleviate the zero allocation problem coastwide. An example of this has recently become apparent when fishermen from Fort Bragg notified the council they had no allocation of yelloweye – or effectively not enough yelloweye to accommodate targeted fisheries on healthy stock.

The zero-allocation issue is a two-part problem: 1) Limited ACLs of overfished species and 2) an inadequate initial allocation formula in the TIQ program.

### ***Rebuilding paradox***

Much has been made about the need to justify even the smallest increases in OYs of depleted species. It's expected that recent and current levels of exploitation are somehow adequate – that people have been able to “make-it” on these low levels, so increases that result in slightly longer rebuilding periods are not justified.

This is not the case.

We know that people have not been able to “make it,” as is apparent in Neah Bay and Westport, Wash. We also know that all species currently under rebuilding plans are in fact rebuilding – some at a much faster pace than anticipated. Higher ACLs of overfished species are primarily justified based on this rebuilding paradox. As stocks are rebuilding at accelerated rates, the incidence of interactions with these stocks also increases.

### ***Closed areas***

When most if not all of a depleted species' habitat is off limits to fishing through rockfish conservation areas (RCAs), it is unclear why further restrictions on catch outside of these sensitive habitats are warranted. For example, the Cowcod Conservation Area is more than 4,600 square miles and protects the majority of cowcod habitat. However, we still need to press for even a status quo harvest outside of this massive protected area. The addition of MPAs to existing closed areas – the RCA, the CCA, the Yelloweye Conservation Area, etc. – are further reducing the fishing opportunity for both recreational and commercial fishermen.

There is going to be a huge economic impact due to the Marine Life Protection Act process in California – and with similar plans in Oregon and Washington. Raising of the ACLs will help offset any of the economic impacts, particularly to nearshore recreational fishermen.

We need to remember that the RCA was a quick and simple approach to capture the minimum and maximum depths at which most of the overfished species occurred. This wide swath was created at a time when we did not have enough information to capture species' specific hot spots. In short, we've taken a shotgun approach to a target shooting event.

It is time to readdress the rebuilding plans based on the effectiveness of those closed areas.

### ***Cumulative effects***

As noted in the comments below related to the overfished species, the cumulative effects of closed areas, gear changes, bag limits, seasonal closures, trip limits and other management measures for individual species have created a cumulative effect that has depressed the economic potential of the recreational and commercial fleets. It's the "death by a thousand cuts" syndrome: Over a period of time, each change eliminates another person or business from the community.

### ***Data collection***

Higher ACLs would result in fewer regulatory discards and make more fish available for biological data collection in both the recreational and commercial sectors. This is data that is needed for continued management.

### ***General economic conditions***

#### ***Commercial fishery***

Generally, for the period from 1981 through 1997, the ex-vessel value of the commercial non-whiting groundfish fishery was very good. The average annual value, when adjusted for inflation, was \$110 million during those 16 years.

Then things changed. The Sustainable Fisheries Act of 1996, amendments to the Magnuson Act, came into play. By 1998, management changed to include consideration of depleted species and plans to rebuild those species. Nine species were declared overfished in 2000 and the council and National Marine Fisheries Service instituted rebuilding plans that effectively reduced harvests to protect those species. The effects of those changes became readily apparent during the last 12 years, starting in 1998.

During the second time period, from 1998 through 2009, the annual average ex-vessel value of the fishery was \$54 million, in figures adjusted for inflation. This is roughly half the average value of the pre-1998 fishery. (See the attached "West Coast Groundfish values, 1981-2009" table.)

We are not taking advantage of the cumulative success at improving fisheries management through rebuilding programs. The council, NMFS, fishermen, processors – the industry – has made great strides in the last 20 years, the time during which rebuilding plans were instituted. The annual value of groundfish has slowly been improving since 2004, when the lowest non-whiting groundfish value was only \$45 million, but they are still at levels drastically reduced

from historical highs that sustained boats and crews, processors and crews, and related businesses.

### *Recreational fishery*

It is difficult to estimate the social and economic value of recreational fishing. All West Coast communities are suffering heavy economic losses from increasing closures and management restrictions. While we agree that a sustainable fishery is in the public best interest, we implore the Council to consider the needs of communities when implementing management measures to rebuild groundfish stocks. Whenever possible, longer periods to rebuild the stocks should be considered when these devastating effects of heavy regulations are placed upon the groundfish industry.

### California

In California, management changes and restrictions are having serious impacts to the coastal fisheries and the local communities. The smaller communities that rely upon fisheries for economic health are being stressed to the breaking point. To illustrate, the groundfish draft environmental impact statement (DEIS) from June 2006 notes that the values calculated were drawn from the dollars anglers spent pursuing the fishery. In 2005, California Recreational Survey data in northern California recorded almost 57,000 angler trips for the months of September and October. To develop the economic value of these trips, local businesses, harbor masters, restaurants, motels, sports shops, marine mechanics and suppliers, fuel docks, harbors, and businesses that support the fishing community have all been affected and must be considered.

Loss of time on the water due to restrictions, closures, bag limit reductions and effort shift to other areas by tourists have resulted in the loss of tens of millions of dollars to the coastal communities. At a time when all areas within the state are under economic pressure from revenue losses due to the recession, it is particularly hard on these small coastal communities.

An illustration of these effects is the early closure of the groundfish season in 2008 to the northern coastal California region due to yelloweye impacts. In September and October of 2008, the season was closed in an emergency action. That specific closure resulted in the direct loss of more than \$3.7 million per month to the Humboldt County area alone.

Using the ports of Shelter Cove, Eureka and Trinidad, the number of local boats, number of anglers, mooring, launch fees, equipment, gear, ice, food, fuel, lodging, mileage and vehicle and boat costs and other related expenses are factored in as supporting information (see attached table, "Recreational Fishing Expenses for Humboldt County.") Using the information supplied by businesses such as Englund Marine, Trinidad Harbor, RecFIN survey information, Humboldt Bay Harbor District, local marine mechanics such as Redwood Marine and Full-on Marine, estimates of losses to the local community were developed. Local suppliers experience large capital costs when they cannot sell inventory and materials. Local mechanics have lost as much as 90% of their marine income due to season closures.

Daily trip costs per angler were conservatively estimated to be \$105 per day with an additional \$25 per day per angler for annual vehicle, boat, license fees and maintenance costs. Using \$130

per day per angler and using the California Survey Data as corroboration, more than \$3.7 million were lost per month for the closure in 2008. With the subsequent loss of the salmon season in 2009, more than \$14.8 million was lost to Humboldt County. That is devastating to the region and is symptomatic of small communities from Crescent City to the Southern California area. California is showing a long downward trend of fishing license sales and tourist visits due to restrictions and loss of fishing opportunities.

### Oregon

The recreational charter fleet in Oregon has been reduced from 232 boats in 2001 to 76 in 2008. About 25% of the boats are not full-time operators – many are small 6-pack boats that are on trailers and may operate only on weekends. Management measures implemented since 2001 have greatly reduced and changed the make-up of the fleet. Many of the full-time operators have already gone out of business, especially when combined with the devastating salmon closures of recent years. The few full-time operators that are left are barely holding on. As management continues to tighten it takes fewer restrictions to break the remaining participants.

Under low OY conditions, the Oregon recreational fleet stands to lose even more small businesses and private recreational opportunity – and these also are essential to the health and economy of our coastal communities.

### Washington

For the Washington recreational fleet, both private and charter operations are operating under restrictions that are difficult to quantify. Businesses in all sectors (hotel/motel, bait and tackle shops, charter offices, etc.) are showing a downturn in revenues from the same time the previous year. This is a cumulative effect of short halibut seasons, fathom restrictions, fuel prices, and a poor economy.

## GAP RECOMMENDATIONS FOR ACLs FOR SPECIES UNDER REBUILDING PLANS

In general, the GAP would like to remind the Council that any liberalization of OYs – or ACLs, as they are now called – on overfished species does not present new fishing opportunities. We are looking to reinstate significant lost opportunities and ease constraints for some existing fisheries. In the last five years, some of the commercial and recreational participants have been permanently lost, shoreside infrastructure and facilities have closed, ice machines have had to be subsidized in some ports and buyers have stopped buying product due to reduced availability. This has led to increased competition of imported and aquaculture products to fill traditional market demands.



**Summary of GAP Recommendations:**

Species	2010 OY (for reference)	Alternative	2011 ACL	2012 ACL
Bocaccio	288	5	373	384
Canary rockfish	105	6	155	162
Cowcod	4	modified*	5	5
Darkblotched rockfish	291	modified*	364	360
Pacific Ocean perch	200	4	265	269
Widow rockfish	509	6	3000	3000
Yelloweye rockfish	17	6	20	21
Petrals – w/winter fishery	1,200	4	976	1,222

\* The GAP consulted the rebuilding analyses for these species to find higher ACLs to afford more flexibility while still meeting rebuilding targets

**Bocaccio**

The GAP recommends an ACL of 373 mt in 2011 and 384 mt in 2012.

Species	Current Ttarget	ACL Alt.	Median Time to Rebuild	ACLs (mt)		SPR HR	Basis
Bocaccio ( S of 40°10' N lat.) a/		1	2019	0	0	F100%	
		2	2019	53	56	F95%	Varying the range of SPR harvest rates
		3	2020	109	115	F90%	Varying the range of SPR harvest rates
		4	2022	263	274	F77.7%	SPR harvest rate in the current rebuilding plan
		5	2024	373	384	F70%	Varying the range of SPR harvest rates
			2028	539	545	F60%	
			2031	605	609	F56%	Highest ACL that meets legal requirement for 50% probability of rebuilding by Tmax

**Justification for recommendation**

- The 373 and 284 mt ACLs equate to an SPR harvest rate of F70% and result in rebuilding by 2024 – two years earlier than the Ttarget.

**Regained opportunities:**

- Recreational: There is a significant benefit to charter boat operations when retention of more bocaccios is made available (current retention is two fish). Increasing this could reduce regulatory discards. It is also well documented that passenger counts have decreased due to the severe restrictions currently in place.
- Recreational: Bocaccio is of more importance to recreational fisheries in central and southern California.
- Fixed-gear and open access: A 373 mt ACL combined with increased ACL for canary could allow open access fishermen to capture their deeper nearshore and shelf trip limits as well as their lingcod trip limits.
- Trawl: Under the new TIQ program, boats have substantial opportunity to catch chilipepper, however, that opportunity is constrained by low ACLs in the rebuilding plan.

## Canary rockfish

The GAP recommends an ACL of 155 mt in 2011 and 162 mt in 2012.

Species	Current Ttarget	ACL Alt.	Median Time to Rebuild	ACLs (mt)		SPR HR
				2011	2012	
Canary	2021	1	2024	0	0	F100%
		2	2025	49	51	F94.4%
		3	2026	69	72	F92.2%
		4	2027	102	107	F88.7%
		5	2027	129	135	F86%
		6	2028	155	162	F83.4%
			2031	253	263	F74.4%
			2035	308	318	F70%
			2043	396	408	F63.4%
			2046	415	426	F62.1%

The SPR rate that results from a 2010 OY of 44 mt (possible reduction under interim)

The SPR rate that results from a 2009/2010 OY of 105 mt

SPR harvest rate in the current rebuilding plan, 2027 is also the Ttarget from the 2009

50% probability to recover by 2027, which is a year that occurs between TF=0 and Tm

OY resulting from applying an SPR harvest rate of 88.7% to the 2007 assessment result

50% probability to recover by 2031, which is a year that occurs between TF=0 and Tm

50% probability to recover by 2035, which is a year that occurs between TF=0 and Tm

50% probability to recover by 2043, which is a year that occurs between TF=0 and Tm

Highest ACL that meets legal requirement for 50% probability of rebuilding by Tmax,

### Justification for Recommendation

- The 155 and 162 mt ACLs are achieved by applying an SPR harvest rate of 88.7% to the 2007 assessment results. Rebuilding should be achieved by 2028, seven years later than the Ttarget of 2021.
- Alternatives 4 and 5 have a rebuilding Ttarget of 2027. Our recommendation pushes the rebuilding time back by only one year, to 2028. This is an increase of about 50 mt from the option that would rebuild the stock by 2027. However, canary is a very critical species. This increase will afford much greater flexibility for bycatch in all sectors and slow the loss of our valuable fishing heritage.
- The new Ttarget date is not a result of management failure, but rather reflects revised estimates of productivity in the new assessment. Because of the unrealistic Ttarget date, OYs were set excessively low, resulting in severe negative repercussions for fishermen and fishing communities.
- Several cumulative management measures are already in place to support rebuilding of canary. As cited on page 12 of the updated 2009 canary stock assessment:

“Managers employed several tools in an effort to constrain catches ... . These included: reductions in trip/bag limits for canary and co-occurring species, the institution of spatial closures and new gear restrictions intended to reduce trawling in rocky shelf habitats and the coincident catch of rockfish in shelf flatfish trawls.”

The most recent stock assessment suggests that, based on the biology of the stock, rebuilding will not be possible by the previous Ttarget date of 2021. These measures do lend themselves to a more realistic Ttarget of 2028. This new Ttarget takes into account the needs of the communities and community infrastructure.

*Regained opportunities:*

- Trawl whiting: A higher ACL for canary rockfish will increase flexibility for the whiting fishery, which has been constrained by canary bycatch.
- Trawl: A higher ACL is expected to provide some yellowtail opportunity for the mid-water trawl fishery whose yellowtail fishery has been completely eliminated in recent years due to imposed restrictions. The TIQ plan has provided ample yellowtail opportunity north of 40° 10', but it is constrained by canary bycatch.
- Recreational, open access, fixed-gear: A higher ACL could move the shoreward RCA boundary above 40°10' from 20 fathoms out to 30 fathoms. This presents reinstated opportunities for shelf rockfish for commercial fishermen as well as potentially longer seasons for recreational fishermen.
- Recreational: A higher ACL could lead to a one-fish bag limit that would help achieve bag limits more quickly, resulting in boats spending less time on the water, which in turn would have fewer impacts on yelloweye and nearshore species. In short, regulatory discards would be reduced.
- Recreational: One fish equates to a 14.28% reduction of impacts to other fish in Oregon and a 10% reduction in both California and Washington.
- Trawl: The directed fishery for arrowtooth in Washington waters was eliminated in 2005 due to a lack of canary to accommodate bycatch.
- Trawl: A higher ACL would provide more opportunities both inside and outside of the RCA boundaries for prosecution of the chilipepper fishery south of 40°10', and a yellowtail north of 40°10'.
- Trawl: For the non-whiting trawl fleet, canary reductions have resulted in forgone opportunities for lingcod, a fishery for sanddabs, a shallow fishery for English sole and the arrowtooth fishery. Large areas have been closed inshore of the RCA, such as between Port Orford and Coos Bay, and a virtual elimination of the inshore trawl fishery off of Neah Bay. While a higher canary ACL does not bring all of these fisheries back, it is a step in the direction toward reinstating some of this lost opportunity.
- Trawl: In many instances, the trawl fleet still does not have access to enough canary to prosecute a fishery on target species. The council and staff recognized this problem in September 2009 and realized the problem warranted reconsideration of initial allocations of canary during the November 2009 council meeting. It also should be noted that this problem exists for other overfished species.
- Trawl: 2010 was the first year for a 105-mt OY. The most recent scorecard shows canary fully subscribed (97.3%).
- Fixed-gear: With canary and yelloweye limits somewhat higher, allowing the fixed-gear fleet inside the 125-fm and 150-fm RCA is justified. Historical catches of sablefish in the

fall typically yielded a larger, more valuable fish in waters shallower than 125 or 150 fm with a catch of lingcod. Being able to fish shallower would benefit the smaller vessels and enhance at-sea safety. Smaller vessels can be limited due to the increased gear that is required when fishing in deeper waters.

## Cowcod

The GAP recommends a 5 mt ACL in 2011 and a 5 mt ACL in 2012.

Species	Current Ttarget	ACL Alt.	Median Time to Rebuild	ACLs (mt)		SPR HR
				2011	2012	
Cowcod	2072	1	2060	0	0	F100%
		2	2064	2	2	F90%
		3	2068	3	3	F82.7%
		4	2071	4	4	F79%
		5	2097	9	9	F59.7%
Amendment 16-4 SPR harvest rate						
SPR harvest rate in the current rebuilding plan; also the 2009/2010 OY of 4 mt						
Highest ACL that meets legal requirement for 50% probability of rebuilding by Tmax						

### *Justification for recommendation*

- The 5-mt ACLs are taken from the 2009 Cowcod Rebuilding Analysis, Table 5 (attached) run No. 5. The 2.4 mt should be doubled, which, when rounded up, results in a 5-mt ACL that equates to a 74.2% SPR harvest rate and a 50% probability of recovery by 2074, only two years later than the current Ttarget of 2072. (*Note: the 2.4 mt should be doubled to take into account the **entire range** of the cowcod stock, not just the Conception area, per GMT recommendations.*)
- The cowcod conservation area covers 4,600 square miles of essential cowcod habitat.
- The majority of cowcod habitat is protected by this area and harvesting up to 5 mt outside of this area should not be an issue.

### *Regained opportunities*

- Trawl, fixed-gear, open access, recreational: Cowcod, like canary, is a cross-cutting species that constrains all these sectors in California below 40°10'. Even a 25% increase that barely extends the rebuilding time would help at least 31 ports and communities in California survive. A 5-mt ACL is not opening up any new opportunity or regaining any old opportunity; it is simply maintaining current limited opportunity to catch other, targeted species.

## Darkblotched rockfish

The GAP recommends 364 mt for 2011 and 360 mt for 2012.

Species	Current Ttarget	ACL Alt.	Median Time to Rebuild	ACLs (mt)		SPR HR
				2011	2012	
Darkblotched	2028	1	2016	0	0	F100%
		2	2018	130	131	F81.8%
		3	2022	222	222	F71.9%
		4	2025	298	296	F64.9%
		5	2027	332	329	F62.1%
			2037	461	453	F52.8%

Varying the range of ACLs for analysis  
 SPR harvest rate that results in a 50% probability of rebuilding by 2022 a year between  
 The SPR rate that results from a 2009/2010 OY of 285 and 291 mt, respectively  
 SPR harvest rate in the current rebuilding plan  
 Highest ACL that meets legal requirement for 50% probability of rebuilding by Tmax

### Justification for recommendation

- The 364-mt and 360-mt ACLs are taken from the 2009 Darkblotched Rebuilding Analysis<sup>1</sup>, Table 2 (attached), with the column for a Ttarget year of 2028. The 364-mt and 360-mt ACLs equate to a 60% SPR harvest rate and a 50% probability of recovery by 2028, the same year as the current rebuilding Ttarget.

### Regained opportunities

- Trawl, open access (shrimp): Currently, darkblotched constrains slope rock, sablefish, whiting, short and longspines, Dover and all other fisheries seaward of the RCA.
- Whiting trawl: An increase in darkblotched could ease the already restrictive bycatch caps in the whiting fishery.
- Open access: Here again, darkblotched is another rebuilding species that turns up more frequently due to the rebuilding paradox in the fishery. A current example of this is with the open access fishery, in the shrimp fleet. Shrimpers, during good years, encounter more darkblotched. A higher ACL would accommodate this while not constraining other fisheries.

## Pacific Ocean perch (POP)

The GAP recommends a 265 mt ACL for 2011 and 269 mt for 2012.

Species	Current Ttarget	ACL Alt.	Median Time to Rebuild	ACLs (mt)		SPR HR
				2011	2012	
POP	2017	1	2018	0	0	F100%
		2	2020	180	183	F86.4%
		3	2021	204	208	F84.8%
		4	2021	265	269	F81.1%
			2024	404	408	F73.6%
			2031	635	635	F63.6%
			2038	751	747	F59.5%
			2045	836	829	F56.8%
						Highest ACL that meets legal requirement for 50% probability of rebuilding by Tmax

SPR harvest rate in the current rebuilding plan  
 The SPR rate that results from a 2009/2010 OY (189, 200 mt respectively)  
 SPR harvest rate that results in a 50% probability of rebuilding by 2021, a year between  
 SPR harvest rate that results in a 50% probability of rebuilding by 2024, a year between  
 SPR harvest rate that results in a 50% probability of rebuilding by 2031, a year between  
 SPR harvest rate that results in a 50% probability of rebuilding by 2038, a year between

<sup>1</sup> Darkblotched Rebuilding Analysis, p. 6

#### *Justification for recommendation*

- The 265-mt and 269-mt ACLs equate to an F81.1% SPR harvest rate that results in a 50% probability of rebuilding by 2021, only four years beyond the current Ttarget of 2017. This species is similar to canary in that the rebuilding plan clearly isn't meeting the goals: even under a no-fishing alternative, the rebuilding date would be beyond the Ttarget. At the same time, it is needlessly constraining primarily trawl fisheries. The 2021 Ttarget is more realistic while regaining lost opportunity in the trawl fishery.
- In reality, this is a mid-range alternative; however, it's the highest one in the list of GMT-analyzed alternatives requested by the council.

#### *Regained opportunities*

- Trawl: This would provide greater access to the slope complex, especially during summer months on the north coast.
- Whiting trawl: POP is a constraining factor in both the tribal and non-tribal whiting fisheries.

### **Widow rockfish**

The GAP recommends a 3,000 mt ACL for 2011 and 2012.

Species	Current Ttarget	ACL Alt.	Median Time to Rebuild	ACLs (mt)		SPR HR
				2011	2012	
Widow	2015	1	2010	0	0	Constant catch scenarios
		2	2010	200	200	
		3	2010	400	400	
		4	2010	600	600	
		5	2010	1,000	1,000	
		6	2010	3,000	3,000	

#### *Justification for recommendation*

- A 3,000 mt ACL represents a constant catch scenario under the rebuilding plan. In other words, widow rockfish is already rebuilt and that level can be maintained without diminishing the stock.
- An in-season correction could be accommodated through the use of annual catch targets (ACTs).

#### *Regained opportunities*

- Trawl: Higher ACLs for widow would eventually allow a targeted mid-water yellowtail fishery to be pursued, which has been constrained by both canary and widow.
- Whiting trawl: A higher ACL for widow allows the whiting fishery additional flexibility as widow rockfish has affected fishing behavior and constrained the tribal and non-tribal whiting fishery in the past.

## Yelloweye rockfish

The GAP recommends an ACL of 20 mt in 2011 and 21 mt in 2012.

Species	Current Ttarget	ACL Alt.	Median Time to Rebuild	ACLs (mt)		SPR HR
				2011	2012	
Yelloweye	2084	1	2047	0	0	F100%
		2	2058	9	9	F86%
		3	2065	13	13	F80.7%
		4	2074	17	17	F76%
		5	2084	20	20	F72.8%
		6	2087	20	21	F71.9%
			2092	21	22	F70.9%

Apply the harvest rate that generated the 2009/2010 OY of 17 mt  
 SPR harvest rate that results in a 50% probability of rebuilding by 2065, a year between  
 SPR harvest rate that results in a 50% probability of rebuilding by 2074, a year between  
 SPR harvest rate that results in a 50% probability of rebuilding by 2084, the Ttarget in  
 SPR harvest rate in the current rebuilding plan under constant harvest rate strategy  
 SPR harvest rate that results in a 50% probability of rebuilding by 2092, which is Tma

### *Justification for recommendation*

- The 20-mt and 21-mt ACLs represent an SPR harvest rate (71.9%), that is in the current rebuilding plan under the constant harvest rate strategy with a rebuilding date of 2087, only three years beyond the current Ttarget of 2084.
- Increasing the ACLs for yelloweye is the only way to maintain current opportunities for recreational and commercial fisheries north of 40°10', given increased International Pacific Halibut Commission research fisheries bycatch and uncertainty in the trawl IQ program.
- Without an ACL increase, allowing continued effort on other fisheries relying on yelloweye as bycatch is precarious at best.
- The higher ACL will allow for some exempted fishing permit (EFP) opportunity so we can still obtain valuable research and data on this species. The authors of the 2009 yelloweye stock assessment noted that, "Data for yelloweye rockfish are sparse and relatively uninformative, especially regarding current trend."<sup>2</sup> Continuing EFPs that gather data about this species should continue to be supported as the stock rebuilds.
- Yelloweye total catch has consistently been below limits set by managers since 2003 due to cumulative effects of management changes – and it is increasingly difficult to do so. Yelloweye harvest is at a fraction of its historic levels. This was noted in the 2009 stock assessment:

"Since then (2002), there has been species-specific management and total catch has been below both the ABC and OY for yelloweye each year. These catch levels represent a 95% reduction from average catches observed in the 1980s and 1990s. Managers have constrained catches by eliminating all retention of yelloweye rockfish in both commercial and recreational fisheries, instituting broad spatial closures (some specifically for moving fixed-gear fleets away from known areas of yelloweye abundance) and creating new gear restrictions intended to reduce trawling in rocky shelf habitats and the coincident catch of rockfish in shelf

<sup>2</sup> Yelloweye rockfish assessment, 2009; p. 13

flatfish trawls. ... The total 2008 catch (16.7 mt) is estimated to be just 4% of the peak annual catch that occurred in the early 1980s.”<sup>3</sup>

- Yelloweye is another example of a species with a Ttarget date that doesn't take into consideration the needs of the community.
- The 2010 OY of 17 mt is already fully subscribed in the scorecard and is constraining fisheries across the board. Staying below the 17 mt-ton limit is clearly a burden on the management system.

#### *Regained opportunities*

- Data needs: A few current EFPs are designed to take minimal amounts of yelloweye while obtaining valuable information for a data-poor species and these efforts should lead to increased opportunity in the future.
- Recreational: An increased ACL for yelloweye could open some closed areas, enabling recreational fleets to access other popular groundfish stocks, such as lingcod and yellowtail.
- Trawl, fixed-gear, open access: This is very similar to cowcod: We are not gaining new opportunities or reinstating old ones. It is simply maintaining current limited opportunity to catch targeted species. In addition, this could help alleviate the zero initial allocations to some vessels under the proposed TIQ system.

#### **Petrale sole**

The GAP recommends an ACL of 976 mt in 2011 and 1,222 mt in 2012 that include the winter petrale fishery.

Species	Current Ttarget	ACL Alt.	Median Time to Rebuild	ACLs (mt)		SPR HR
				2011	2012	
Petrale (with a winter fishery) <i>cf</i>	NA	1	2014	0	0	F100%
		2	2014	459	624	F50%
		3	2016	695	1,125	25:6.25 rule
		4	2017	1,021	1,279	F30%
Actual harvest control rule for flatfish is 25:5. This needs to be recalculated Projected OFL under the F30% Frmsy proxy						

#### *Justification for recommendation*

- The ACLs of 976 mt in 2011 and 1,222 mt in 2012 represent a 25:5 harvest control rule that results in a rebuilding date of 2017.
- Trawl: Petrale is a main driver for much of the trawl fleet coastwide and for keeping a year-round fishery going. Inshore, offshore, north and south.

<sup>3</sup> Yelloweye rockfish assessment, 2009; p. 13



- Processors: To the processing sector, petrale is a critical component of processors' abilities to sell other products. Furthermore, petrale has a significant place in the market. Interrupting that year-round flow of product to the market makes it possible for competing products -- including imported fish, competing protein products, or farmed fish -- to gain a foothold.
- All sectors: This is a prime case in which the council can devise a rebuilding plan in the quickest time possible, less than 10 years, while considering the economic needs of the communities and fleet. All of the rebuilding scenarios are less than 10 years. This is an instance in which the council could deviate from the shortest rebuilding time because the economic needs of communities are paramount -- yet at the same time the fish will be protected and will be rebuilt.
- Trawl ports: Petrale is caught by large boats and smaller boats, in all three states. The value to ports from Washington to California is very important, as is noted on Table 5-13, "Revenues 2007," (attached) from the 2008 groundfish Stock Assessment and Fishery Evaluation.

### **Management Measures**

The GAP considered Agenda Item I.4.a, Attachment 2, and agrees that the overarching measures are high-priority items that need to be analyzed. The GMT confirmed these measures already are in the process of analysis.

Members of the GAP appreciate the heavy workload these management measures demand of NMFS and state staff and carefully considered the benefits that would be gained from these measures vs. the time and work needed to accomplish these tasks.

The GAP also requests that management measures associated with higher ACLs (GAP recommendations for ACLs will be presented as a separate item) should be on the high priority list, especially given the uncertainty resulting from a transition to a rationalized fishery in the trawl sector.

For the other categories, the GAP has the following recommendations:

#### *Vessel monitoring systems (VMS)*

The first bullet point, evaluate gear stowage requirements for fixed-gear vessels transiting closed areas, should remain on the high-priority list. Furthermore, the third measure, reconvening the Ad Hoc Vessel Monitoring System Committee to analyze VMS issues related to both limited entry and open access, also should remain on the list.

The second bullet point can be dropped, since reconvening the VMS committee will address any other VMS issues such as drifting.

### *Limited Entry Non-whiting trawl*

The first two bullet points, 1) analyzing management measures for the LE trawl fishery as a contingency plan if TIQ is implemented later than Jan. 1, 2011; and 2) comparing current trawl gear regulations with specifications used during trawl bycatch reduction studies, should remain as high-priority items.

The third measure, analyzing trawl latitudinal management lines south of 40° 10', can be dropped.

The fourth, analyzing size limits for lingcod, can be dropped.

### *Fixed-gear fisheries*

All five measures in this category are important and should remain on the high-priority list.

Bullet point No. 4, analyzing the impacts of allowing fishing inside the 100 fm line around Catalina Island, is especially important to fishermen in southern California.

Similarly, bullet No. 5, ownership and control issues, are important to the fishermen in the Pacific Northwest.

### *Recreational fisheries*

Bullet points 1, 4, 5, 6 and 9 are the most important and should stay on the high-priority list (these are: 1) analyzing lingcod size limits; 4) analyzing management measures for cabezon in Oregon; 5) analyzing removing the lingcod spawning closure in California; 6) consideration of exempting flatfish from the groundfish depth and season closures in California and; 9) analyzing changes to the depth restriction and retention of shelf and slope rockfish in the Cowcod Conservation Area).

No. 9, pertaining to the depth restriction and retention of shelf and slope rock in the CCA, is of major importance to fishermen south of Pt. Conception.

The second measure, developing a long-leader fishery, can be dropped altogether.

### *Low-priority issues*

Of the six bullet points, three can be removed: Nos. 3, 4 and 6 – 3) analyzing retention of shelf and slope rockfish in the CCA for California commercial fisheries; 4) analyzing removal of the Period 2 closure for limited entry and open access non-trawl fisheries south of 34°27' N; and 6) consideration of mandatory logbooks for recreational charter/for hire vessels in Oregon and Washington. The charter logbook measure can be removed because a high level of shoreside sampling that already occurs would create redundant information.

Of the remaining three – 1) modifying the definition of dressed weight for halibut (if necessary); 2) generating midwater trawl trip limits for Pacific whiting during the primary

season south of 42° N; and 5) developing additional management lines for California and Oregon recreational fisheries – can remain on the low priority list.

However, the trip limits for Pacific whiting south of 42° N should be considered *only* if the TIQ program is not implemented in 2011.

PFMC  
04/14/10

Table 2-4. Estimated time to rebuild and SPR harvest rate relative to alternative 2011-2012 ACLs for depleted west coast groundfish species.

Species	Current Target	ACL Alt.	Median Time to Rebuild	ACLs (mt)	SPR HR	Basis
Bocaccio (S of 40°10' N lat.) a/	2026	1	2019	0	0	F100%
		2	2019	53	56	F95%
		3	2020	109	115	F90%
		4	2022	263	274	F77.7%
		5	2024	373	384	F70%
Canary			2028	539	545	F60%
			2031	605	609	F56%
	2021	1	2024	0	0	F100%
		2	2025	49	51	F94.4%
		3	2026	69	72	F92.2%
Cowcod		4	2027	102	107	F88.7%
		5	2027	129	135	F86%
		6	2028	155	162	F83.4%
			2031	253	263	F74.4%
			2035	308	318	F70%
Darkblotched			2043	396	408	F63.4%
			2046	415	426	F62.1%
	2072	1	2060	0	0	F100%
		2	2064	2	2	F90%
		3	2068	3	3	F82.7%
POP		4	2071	4	4	F79%
		5	2097	9	9	F59.7%
	2028	1	2016	0	0	F100%
		2	2018	130	131	F81.8%
		3	2022	222	222	F71.9%
		4	2025	298	296	F64.9%
		5	2027	332	329	F62.1%
			2037	461	453	F52.8%
	2017	1	2018	0	0	F100%
		2	2020	180	183	F86.4%
		3	2021	204	208	F84.8%
		4	2021	265	269	F81.1%
			2024	404	408	F73.6%
			2031	635	635	F63.6%
			2038	751	747	F59.5%
			2045	836	829	F56.8%

Table 2-4 (continued). Estimated time to rebuild and SPR harvest rate relative to alternative 2011-2012 ACLs for depleted west coast groundfish species.

Species	Current Target	ACL Alt.	Median Time to Rebuild	ACLs (mt)	SPR HR	Basis
Widow	2015	1	2010	0	0	Constant catch scenarios
		2	2010	200	200	
		3	2010	400	400	
		4	2010	600	600	
		5	2010	1,000	1,000	
		6	2010	3,000	3,000	
Yelloweye	2084	1	2047	0	0	Apply the harvest rate that generated the 2009/2010 OY of 17 mt SPR harvest rate that results in a 50% probability of rebuilding by 2065, a year between $TF=0$ and $T_{max}$ SPR harvest rate that results in a 50% probability of rebuilding by 2074, a year between $TF=0$ and $T_{max}$ , also the 2009/2010 OY SPR harvest rate that results in a 50% probability of rebuilding by 2084, the Target in the current rebuilding plan SPR harvest rate in the current rebuilding plan under constant harvest rate strategy SPR harvest rate that results in a 50% probability of rebuilding by 2092, which is $T_{max}$
		2	2058	9	9	
		3	2065	13	13	
		4	2074	17	17	
		5	2084	20	20	
		6	2087	20	21	
			2092	21	22	
Petrale (with a winter fishery)	NA	1	2014	0	0	Actual harvest control rule for flatfish is 25:5. This needs to be recalculated Projected OFL under the F30% Frmsy proxy
		2	2014	459	624	
		3	2016	695	1,125	
		4	2017	1,021	1,279	
Petrale (without a winter fishery)	NA	1	2014	0	0	Actual harvest control rule for flatfish is 25:5. This needs to be recalculated Projected OFL under the F30% Frmsy proxy
		2	2014	586	732	
		3	2016	810	1,192	
		4	2017	1,170	1,369	
a/ All bocaccio alternatives have been reduced from the rebuilding analysis results by 6% to represent the portion of the stock south of 40°10' N. Latitude. (Agenda Item E.2.c. Supplemental SSC Report, September 2009).						
b/ All cowcod alternatives have been doubled from the rebuilding analysis to account for the Monterey contribution (see the 2009-2010 Spex FEIS).						
c/ Projected ACLs for petrale sole differ whether winter fishing on spawning aggregations is allowed or not due to differences in fishery selectivity (i.e., larger, more mature fish are caught in the winter).						

# West Coast Groundfish values, 1981-2009

## raw data and annual values adjusted for inflation

*Dotted line represents a marked change in management after the implementation of the Sustainable Fisheries Act of 1996, at which point rebuilding plans began to take effect.*

year	all groundfish (in \$1,000) <sup>1</sup>	non-whiting groundfish (in \$1,000) <sup>1</sup>	inflation rate (as of Dec. 2009) <sup>2</sup>	all groundfish in 2009 dollars (in \$1,000)	non-whiting groundfish in 2009 dollars (in \$1,000)	
2009	73,653.30	59,611.80	--	73,653.30	59,611.80	
2008	113,342.60	54,846.10	-0.36%	112,939.35	54,650.97	
2007	77,620.40	45,017.00	3.47%	80,313.91	46,579.14	
2006	79,250.30	44,824.30	6.42%	84,335.92	47,700.75	
2005	71,865.50	43,076.80	9.85%	78,944.23	47,319.85	
2004	61,054.30	39,373.40	13.57%	69,340.43	44,717.05	
2003	58,944.30	41,696.70	16.60%	68,726.81	48,616.77	
2002	52,222.00	38,598.30	19.25%	62,276.55	46,029.81	
2001	59,835.90	45,815.30	21.14%	72,484.55	55,500.15	
2000	75,311.80	54,364.20	24.59%	93,827.92	67,730.15	
1999	69,147.70	50,795.00	28.77%	89,044.06	65,410.61	
1998	61,837.30	48,749.90	31.62%	81,388.89	64,163.54	
1997	99,445.00	72,731.00	33.67%	132,926.06	97,218.01	SFA implementation
1996	88,630.50	77,008.60	36.73%	121,188.79	105,297.60	
1995	96,982.70	78,956.30	40.77%	136,524.79	111,148.61	
1994	79,438.10	62,903.90	44.76%	114,996.03	91,060.82	
1993	70,314.20	60,942.30	48.47%	104,394.45	90,480.13	
1992	88,692.50	65,396.50	52.91%	135,622.40	99,999.78	
1991	94,377.80	69,126.60	57.52%	148,660.28	108,885.56	
1990	65,030.50	62,793.50	64.14%	106,744.06	103,072.14	
1989	68,752.80	67,695.40	73.01%	118,951.77	117,122.32	
1988	68,377.90	67,254.80	81.35%	124,003.29	121,966.55	
1987	71,696.40	71,031.50	88.85%	135,400.80	134,145.11	
1986	56,449.70	56,000.20	95.75%	110,497.71	109,617.84	
1985	55,927.10	55,345.50	99.38%	111,509.59	110,349.98	
1984	48,574.50	48,169.10	106.48%	100,298.63	99,461.54	
1983	52,317.80	52,122.30	115.40%	112,691.81	112,270.70	
1982	59,998.20	59,816.60	122.32%	133,386.88	132,983.15	
1981	49,463.00	49,322.20	136.01%	116,739.75	116,407.45	

<sup>1</sup> Taken from PacFIN GMT reports: "PFMC INPFC Area Report: Estimated Ex-vessel Revenue (\$1,000) of Groundfish Landed-catch for All Gears," extracted 4/2/2010

<sup>2</sup> Data taken from U.S. Bureau of Labor Statistics Consumer Price index table on which the inflation rate is based: <ftp://ftp.bls.gov/pub/special.requests/cpi/cpi.txt> and BoLS inflation

# Recreational Fishing Expenses For Humboldt County

Trip Expenditures:	Residents	Non Residents	Totals
Transportation	\$225,000	\$810,000	\$1,035,000
Rental/Mooring	\$116,000	\$0	\$116,000
Launch Fees	\$51,000	\$110,000	\$161,000
Charter Fees	\$247,000	\$576,000	\$823,000
Food	\$450,000	\$1,350,000	\$1,800,000
Lodging	\$0	\$1,150,000	\$1,150,000
Boat Fuel	\$685,000	\$457,000	\$1,142,000
Bait and Ice	\$180,000	\$108,000	\$288,000
Subtotal	\$1,954,000	\$4,561,000	\$6,515,000
Annual Expenditures			
Tackle	\$300,000		\$300,000
Club Dues	\$6,000		\$6,000
Vehicle License Fees	\$20,000		\$20,000
Boat Maintenance Exp	\$400,000		\$400,000
Fishing Vehicle	\$800,000		\$800,000
Fishing License	\$52,000		\$52,000
Subtotal	\$1,578,000		\$1,578,000
Totals	\$3,532,000	\$6,139,000	
Total Expenditures			\$9,671,000

Estimate 1000 anglers times 62 days = 62,000 angler days.

Trip Expenditure: \$6,515,000 / 62,000 angler days = \$105 /angler/day

Annual Expenditure: \$1,578,000 / 62,000 anglers = \$25 /angler/day

Total angler day cost is \$105 + \$25 = \$130 per angler per day.

57,000 anglers per month from the CA Rec. Survey = 28,500 anglers/month

28,500 anglers per month X \$130 per day = \$3,705,000 per month

\$3,705,000 X 4 months = \$14,820,000 lost revenue.

# COWCOD

Table 5. Rebuilding reference points for requested model runs (see text for run descriptions).

	Run								
	1	2	3	4	5	6	7 (ABC)	7 (40:10)	8
SPR in 2011	90.0%	77.9%	79.0%	n/a	74.2%	59.7%	50%	100%	100%
50% prob. recovery by:	2064	2072	2071	n/a	2074	2097	2283	2215	2060
2011 OY (mt)	0.8	2	1.9	n/a	2.4	4.4	0	0	0
2011 ABC (mt)	6.2	6.2	6.2	n/a	6.2	6.2	6.2	6.2	6.2
2012 OY (mt)	0.9	2.1	2.0	n/a	2.5	4.5	0	0	0
2012 ABC (mt)	6.4	6.4	6.4	n/a	6.4	6.4	6.4	6.4	6.4
Probability of recovery by									
2059 (new Tmin)	46.7%	40.2%	40.2%	n/a	33.8%	27.6%	15.9%	21.6%	46.7%
2060 (old Tmin)	46.7%	40.2%	40.2%	n/a	40.2%	27.6%	15.9%	21.6%	52.5%
2072 (current Ttarget)	59.8%	53.3%	53.3%	n/a	46.7%	33.8%	22.2%	27.6%	59.8%
2097 (new Tmax)	72.4%	66.2%	66.2%	n/a	66.2%	50.0%	33.8%	40.2%	78.4%
2098 (old Tmax)	72.4%	66.2%	66.2%	n/a	66.2%	53.3%	33.8%	40.2%	78.4%

Cowcod Rebuilding Analysis, Sept. 29, 2009  
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# DARKBLOTCHED

Table 2. Darkblotched projections. The vertical double lines demarcate the evenly spaced quartile increments. Note that if an integer year is wanted for the year in which 50% probability is achieved, then, given the yearly nature of fishery management, that number should only be "rounded up" to the next highest integer.

SPR (target)	50% Prob Yr	OLD FMP SPR	2009-2010 OY SPR	SPR on which current OY's are based	Current Target Yr = 2028	FMP T <sub>max</sub> = 2033	FMP T <sub>target</sub> = 2011 & F = 0	Yr = 2021	Yr = 2026	Yr = 2031	New T <sub>max</sub> = 2037	ABC Rule	40-10 rule
SPR (target)	0.607	0.649	0.621	0.621	0.596	0.551	1.000	0.719	0.629	0.564	0.528	0.500	0.507-0.526 <sup>†</sup>
50% Prob Yr	2027.0	2024.4	2026.1	2026.1	2028.0	2033.0	2015.5	2021.3	2025.6	2031.0	2037.0	2045.5	2040.7
OY (2011)	349.2	297.6	331.5	331.5	363.6	427.1	0.0	221.6	322.0	407.1	461.4	507.8	465.7
ABC (2011)	507.8	507.8	507.8	507.8	507.8	507.8	507.8	507.8	507.8	507.8	507.8	507.8	507.8
OY (2012)	346.1	296.1	329.0	329.0	360.0	421.6	0.0	221.8	319.9	401.6	453.3	497.0	465.2
ABC (2012)	503.3	505.3	504.0	504.0	502.7	500.1	517.1	508.3	504.3	501.0	499.8	497.0	498.7

Probability of Recovery by Year (See the '50% Prob Yr' row above for the year of 50% probability of recovery.)												
2012	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
2020	11.2	19.0	13.5	13.5	10.1	5.6	100.0	38.5	15.1	6.6	4.4	3.1
2024	35.4	47.7	39.8	39.8	31.9	20.8	100.0	70.3	41.9	23.6	7.3	12.2
2028	53.6	66.3	58.0	58.0	50.0	36.2	100.0	84.6	59.5	40.8	22.5	21.4
2032	66.4	78.5	70.9	70.9	62.9	48.0	100.0	91.4	73.1	52.7	37.9	30.3
2036	74.9	85.2	78.8	78.8	71.4	57.2	100.0	95.1	80.3	62.8	48.8	37.6
2040	80.7	90.0	85.1	85.1	78.3	64.5	100.0	97.3	86.5	68.6	55.9	42.9
												48.7

<sup>†</sup> Range of the 40-10 rule SPR is for years 2011-2040.

2009 Darkblotched Retubing Analysis, Sept. 2009  
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# PETRALE VALUE

Table 5-13. Revenues 2007 (in dollars)

Stock or Complex	Washington State Ports	Astoria, OR	Brookings, OR	Charleston/ Coco Bay, OR	Newport, OR	Bodega Bay, CA	Crescent City, CA	Eureka, CA	Fort Bragg, CA	Monterey, CA	Morro Bay, CA	Moss Landing, CA	Petaluma/ Half Moon Bay, CA	San Francisco, CA	Grand Total
Lingcod	17,794	56,753	5,520	20,439	7,346										107,852
Pacific Halibut	42,241	25,884													68,125
Pacific Whiting	4,661,350	3,392,616	274	502,434	3,629,798						34				12,613,831
Sablefish	37,864	1,775,555	475,608	1,124,655	1,124,655						11,337	22,018	7,895	229,693	7,245,558
PACIFIC OCEAN															
PERCH	19,216	63,715	-	2,651	18,750			19							104,351
WIDOW	25,775	46,163	-	178	5,483			826	97					4	78,598
CANARY	1,280	661		118	671			2	461	122			33	756	4,104
Chilipepper								5,051	16,571	11,523	588		5,818	19,920	62,411
BOCACIO								11	263		14		311	58	657
Sprinkles Rockfish								4	10,716	28,447				14,356	53,808
Yellowtail Rockfish	94,641	48,931		395	4,987			100	608	285			97	2,132	151,894
Shortfin Mako	35,428	329,908	46,915	132,145	252,274			175,537	79,717	488	1,043	11,991	1	48,573	1,145,903
Longspine															
Thornyhead	9,925	99,933	79,615	147,824	45,653			255,830	110,393	382	788	14,145		54,441	855,270
Other thornyheads															
DARKBLOTCHED	2,688	25,722	5,953	30,535	15,512			4,682	11,772	31,451	1,753	420		8,631	132,621
YELLOWTILE	22	67		25	4							122		265	118
Black Rockfish	794	332		9	4								3		1,138
Morone chrysops															
Rockfish	20	15		4					72						438
Minor Shelf Rockfish	759	1,820	13	634	42			18	89	723	488	57	23,838	5,181	38,117
Minor Spotted Rockfish	15,006	57,850	4,395	5,238	25,931			3,742	8,713	47,650	241	15,773	14,553	1,150,331	205,801
Cabezon		23													
Dover Sole	1,452,272	1,988,618	462,987	1,110,520	851,921			326,960	1,183,718	425,210	331	10,859	247,793	247,437	7,074,539
English Sole	58,322	167,676	7,784	40,991	7,193			13,254	62,575	16,992	67	2,053	15,263	11,955	437,115
Petalite Sole	258,394	1,203,671	194,173	609,958	206,508			113,021	450,328	423,091	602	1,172	187,545	230,217	4,153,689
Arrowtooth Flounder	73,040	277,442	1,852	41,444	29,422			922	11,696	550					436,478
Starry Flounder	17,879	5,871		10				8	488						
Other Flatfish	20,826	237,127	40,790	102,745	25,539			42,221	79,052	18,168	12		10,558	5,399	39,690
Other Fish	29,779	2,345		3	137					11,608	14	1,860	89,472	31,419	699,526
Spiny Dogfish	41,181	135,843	12,913	169,794	67,515			1,494	35,947	2,578			4,514	849	37,846
Total	6,385,129	9,981,052	1,338,792	4,092,789	6,671,834	70,743	979,576	3,515,498	1,628,547	172,165	15,560	70,122	363,210	974,144	36,269,261

From: Status of the Pacific Coast Groundfish Fishery  
 Stock Assessment and Fishery Evaluation, Volume I  
 Prepared by the Pacific Fishery Management Council  
 March 2008

## GROUNDFISH MANAGEMENT TEAM REPORT ON HARVEST SPECIFICATIONS

The Groundfish Management Team (GMT) examined the Council's preliminary preferred harvest specifications alternatives (PPAs) and offers the following considerations.

### **Overfished Species**

#### *Introduction*

We lead off this statement on the Council's rebuilding plan decisions with some reactions to the court order that was issued two weeks after the Council identified its preliminary preferred rebuilding ACL alternatives in April. After making those observations, we attempt to synthesize information that may be useful to the Council on its rebuilding ACL decisions on a stock by stock basis.

#### *Discussion on the court order*

The court order had specific remedies for 2010 yet the court's guidance beyond that is unclear to us. In light of this unclear guidance, we feel somewhat unsteady in our role of helping to identify and inform issues and tradeoffs for the Council. Much of our discomfort comes from our impression that the legal standards involved with rebuilding have been taken further away from the basic principles of fisheries conservation and management. We think it in the best interests of this policy process that these legal standards become more reconnected with these basic principles so that all involved have more objective standards on which to express their policy preferences.

Perhaps the best way to summarize our impression of the court order is that the court seems to still be looking for a framework to decide whether the Council's rebuilding plans show a "measured proportionality" between the statutory commands to rebuild as fast as possible while taking into account the needs of fishing communities. In the time available here, we cannot get much into specific instances of why we are left with this impression. Instead we focus on general reasons why the court has concluded that some of the Council's decisions have not shown the required proportionality between the needs of fishing communities and the need to rebuild as quickly as possible. We break the concerns we see expressed by the court into two broad categories:

- Raising or not lowering catch when a new stock assessments makes the stock look "worse off" or not making expected progress;
- Overemphasizing short-term economic concerns at the expense of conservation

We believe both sets of concerns are based on certain misperceptions and misunderstandings that can and should be addressed. A full discussion would be lengthy. Given the volume of information before the Council in this agenda item, we do our best to outline the rationale

keeping only to the most salient of points. We can elaborate on the points made here for Thursday's agenda item if the Council would find it useful for its final decisions.

### Rebuilding and Status and Biology

In general, the courts have tended to view the raising or not lowering of catch when a stock looks "worse off" as unfavorable (i.e. not making expected progress toward rebuilding). It is a very legitimate question and one that the Council and its advisors evaluate from cycle to cycle. However, the reasons why a stock looks "worse off" or "better off" can be complex given the considerable scientific uncertainty involved with rebuilding species. Terms such as "more optimistic" or "more pessimistic" tend to oversimplify what are often complex situations.

#### *Changing Perceptions of Stocks*

The Council tracks rebuilding progress on three dimensions of stock "status and biology":

- a. Stock productivity
- b. *Absolute* stock abundance (or stock "scale")
- c. *Relative* stock abundance (or stock "status")

Each is subject to considerable scientific uncertainty and can change the overall rebuilding outlook from cycle to cycle. These dimensions are not mutually exclusive and can change in concert with one another. To truly determine whether a stock is better or worse off compared to a previous assessment, all three dimensions must be examined.

#### a) Stock productivity

Changes in understanding of productivity can affect rebuilding plans by altering our perception of how quickly a stock can increase. Stock productivity generally refers to the ability of a stock to generate new individuals, usually via birth and often above that lost to mortality, thus allowing a population to grow over time. Changes in our perception of life history traits (e.g. mortality, maturity, fecundity, or growth) can change our perception of stock productivity. Measuring recruitment is difficult given the elusive and inaccessible early life histories of most groundfish species. Even if we could measure such traits, recruitment events are not constant, and in the case of many groundfish, highly variable and sporadic. Age or length data, along with survey biomass estimates and removal histories, all inform recruitment patterns, but to varying degrees of resolution. Unfortunately, recruitment is lagged to length and age compositions, thus the most recent couple of years of recruitment are often the most uncertain.

#### b) Stock scale

Absolute stock abundance, or stock scale, is another derived assessment quantity that has demonstrated considerable variability across assessments. This behavior is often a result of uncertainty in removal histories, which scales the biomass via estimates of fishing mortality, but is also sensitive to life history parameters such as growth and mortality. Any changes in these estimates can have large effects in perceived biomass. These changes in scale are commonly witnessed in estimates of unfished biomass, though the scale of the entire population trajectory can shift up or down. Changes in population scale will affect the level of catch acceptable to achieve rebuilding goals if catch are not based on harvest rates.

### c) Status

We use status to define rebuilding reference points. Stock status is expressed as an estimate of current absolute abundance relative to the estimate of the absolute abundance of the unfished biomass. Estimates of status can also change conditioned on all of the previous mentioned factors. Importantly, changes in the scale of the estimated unfished biomass, even though the current population biomass stays the same, will vary the stock status. Likewise, productivity changes in current years may alter current year biomass relative to an unchanged unfished biomass. Since stock status is the basis of determining when a stock is rebuilt, subsequent estimates of  $T_{\text{TARGET}}$  may change with changing stock status.

#### *Rebuilding by Constant Harvest Rate*

We have observed that the constant harvest rate strategy to rebuilding also causes some confusion even amongst ourselves. The Council has chosen to manage overfished species using constant SPR harvest rates on the advice of the SSC. The SPR harvest rate removes a set proportion of the stock each year and takes into account the biology of the stock. Applying a constant SPR harvest rate is more precautionary in an uncertain environment because one is not chasing variability in the scale of biomass. When our understanding of stock scale changes, the constant harvest rate strategy is expected to keep us on track to the  $T_{\text{TARGET}}$ . Constant catch rebuilding strategies, the other major to constant SPR strategies, do not have this feature. This becomes a problem when our understanding of stock scale changes downward and the catch becomes too large relative to the size of the population and adjustments become necessary to meet the same  $T_{\text{TARGET}}$ . An upward change in our understanding of stock scale does not present the same concern. Constant harvest rates are also subject to revisions between management cycles. Changes to our understanding of stock productivity and relative biomass can still change estimates to the time to rebuild.

Another feature of constant harvest rate strategies is the increase in the ACL as stock abundance increases. We tend to focus on the ACLs for the two years of a biennial cycle. A SPR harvest strategy is perhaps better thought of as a trajectory over time. For stocks with slow trajectories, the differences between two alternatives build up over time. For example, with yelloweye rockfish the difference in times to rebuild between the alternative that produces 13 mt in 2011-2012 and the alternative that produces 20 mt is nearly 20 years. Yet that difference cannot be attributed to the difference between 20 mt and 13 mt in 2011-12. Rather, the difference builds up over the full course of the respective rebuilding trajectories. To illustrate this, we requested a rebuilding analysis run for a constant catch scenario of 20 mt. That run projects that the stock would be rebuilt only 3 years later than the SPR constant harvest rate strategy represented by 13 mt in 2011 and 2012.

#### *Measuring the Degree of Delay*

Another issue we have noticed is that the courts have tended to focus on the delay in number of years from the  $F=0$  mark ( $T_{F=0}$ ). No court has produced a definite statement about how far is too far away from that mark, yet it appears rebuilding plans that are set farther away from  $T_{F=0}$  have received more scrutiny.

We note here that years of delay is not the most biologically meaningful unit of measure because of differences in productivity between species. One year of delay for yelloweye rockfish (the slowest to rebuild) is not equivalent to one year of delay for petrale sole (the quickest to rebuild). This is an intuitive concept, yet we are not currently employing objective measure of relative delay other than number of years. The estimate of mean generation time recommended in the NSI guidelines was meant to serve in this manner, yet mean generation time is only used to define  $T_{MAX}$  and  $T_{MAX}$  has largely been left aside in the analysis by the courts.

A refocusing on the difference between  $T_{F=0}$  and  $T_{MAX}$  would be an improvement in our view. Assuming that will not happen, we would at least suggest expressing yearly delay as a percentage difference from  $T_{F=0}$  as better measure than number of years.

An even more preferable alternative might involve comparing alternatives on their estimated rate of increase to  $T_{TARGET}$ . The rate of increase at  $F=0$  still identifies the highest rate of increase given the biology of the stock. The other alternatives could be compared against this mark and against one another. For a productive species, a small difference in the number of years to rebuild might look large in terms of differences in the rate of increase. For low productivity species, large differences in the number of years result from smaller differences in the rates of increase. We suggest this not as a replacement to looking at years to describe differences in delay between species, but rather as complementary means of gauging what is biologically possible for each stock. Table 1 identifies expected rates of increase for each rebuilding alternative under consideration at this meeting.

**Table 1. Comparing the estimated rates of increase to  $T_{TARGET}$  for each of the Council's rebuilding alternatives.**

Expected rate of increase	Canary	Yelloweye	Darkblotched	POP	Cowcod	Petrale	Bocaccio
F=0	4.2%	2.4%	4.1%	4.4%	13.2%	36.3%	4.7%
Alt 1	3.9%	1.6%	3.1%	4.4%	13.2%	36.3%	4.7%
Alt 2	3.7%	1.4%	2.1%	4.4%	12.3%	24.2%	4.3%
Alt 3	3.5%	1.2%	1.5%	4.0%	11.7%	20.7%	3.5%
As a % of the rate at F=0 of increase	Canary	Yelloweye	Darkblotched	POP	Cowcod	Petrale	Bocaccio
Alt 1	93%	67%	75%	100%	100%	100%	100%
Alt 2	88%	58%	50%	100%	93%	67%	90%
Alt 3	82%	50%	35%	90%	89%	57%	75%

### *Rebuilding and Conservation*

Some of the court's statements would appear to echo a generic criticism of fisheries management that holds the view that fisheries managers tend to overemphasize short-term economic concerns at the expense of the long-term environmental concerns. Such criticisms may be valid in certain circumstances yet it is an oversimplification to equate any delay in rebuilding to an improper prioritization of short-term economic concerns over conservation.

To probe that view here, we use the court's observation that conservation involves the "double benefit of both improving the environment and providing long-term economic return." The court

characterized this “double benefit” as only “[p]art of the reason that Congress elevated conservation over economic interests.” We are not sure what other benefits the court may believe conservation involves, yet in our view the two mentioned—long-term yield and ecosystem considerations—articulate the fundamental reasons of why it is that we care about the abundance of a particular stock of fish. We consider how the Council’s rebuilding plans compare to these measures of conservation.

#### *Long-term Economic Return and Yield*

None of the alternatives before the Council here or actions taken in recent years by this Council are likely to or likely to have sacrificed long-term economic return for short-term economic needs. In fact, the Council’s rebuilding plans are much more likely to do the opposite and sacrifice long-term economic return for faster rebuilding.

We have shied away from analysis of long-term consequences of rebuilding because of the many species and many sectors involved with the rebuilding rockfish stocks. For petrale we were able to avoid these complexities and show quite simply that the slowest alternative to rebuild is the one that would provide the most yield overall and hence the best long-term economic return to fishing communities. The Council’s PPA actually produces less overall yield than simply following the strategy of following the standard ABC harvest control rule through rebuilding.

We took the same look at yelloweye rockfish, which stands in contrast to petrale as the slowest stock to rebuild, yet provides a similar story. The Council’s PPA provides more long-term economic return than either Alternatives 1, 2, and the  $F=0$  rebuilding strategy. It would not provide as much economic return as other alternatives that are slower to rebuild. This simple look offers a general long-term picture that sharpens when more complex economic assumptions are considered (e.g., the time value of money, the marginal value of yield for constraining species, etc.).

#### *The Slippery Slope Concerns*

The perception that the Council is improperly emphasizing short-term economics may just be a product of the way we frame our rebuilding alternatives. It may also be a product of the fact the Council does have several overfished species. On the framing issue, we note that the Council does not consider alternatives at the level where delays in rebuilding cause long-term economic return. Such alternatives would involve overfishing or fishing the stock at its current biomass indefinitely. For yelloweye, we have an analysis of such alternatives (although they’re not alternatives considered here) because the 40:10 harvest control rule and the  $F_{MSY}$  control rule are not projected to rebuild the stock over the 500 years analyzed in the rebuilding plan. That analysis would show that either alternative still provides more economic return over the next 500 years than the Council’s PPA despite the fact that they do not rebuild the stock.

In consideration of the Council’s rationale for the modification to the yelloweye ramp-down strategy for 2010, the court observed that the Council could “delay rebuilding indefinitely.” The court pointed this out under the assumption that such a delay came at some cost to long-term economic return. The incentive to postpone indefinitely becomes even stronger when there is no long-term cost.

Whatever Congress intended with the rebuilding provisions, the MSA requires stocks to be rebuilt back to  $B_{MSY}$  regardless of whether it is in the best economic interests of fishing communities or not. Not rebuilding is not an option. It is simply a matter of how quickly to rebuild.

None of the alternatives under consideration here would postpone rebuilding indefinitely. Sticking to a  $T_{TARGET}$  and justifying or explaining changes to the  $T_{TARGET}$  is what the Council strives to do. At the time the Council was considering the modification to the ramp-down, we expressed our opinion that doing so would be consistent with the original rationale of the ramp-down and we showed that the modification would not shift the  $T_{TARGET}$  in any appreciable manner. We also understood that such an action might give off the perception of serial delay and that is what occurred. This perception could still exist and can be answered to.

### *Marine Environment*

Environmental or ecological considerations are the other major set of reasons that we care about fish abundance. What is meant by the “environmental” is a complex topic. Here we break it down into two parts.

First, we note used a few phrases such as “dire circumstances” to justify the necessity of following the court’s order. We do not know whether such phrases are rhetorical flourish or a true indication of how the court perceives the condition of these stocks. Either way, we note here that the circumstances these populations face cannot be reasonably described as dire. Such terms are better reserved for species facing the risk of extinction. The best available science does not implicate such risks here.

Fishing pressure is the major threat faced by these stocks. If fishing pressure is set appropriately, the stocks are expected to increase as shown by our rebuilding analysis (summarized in Table 1). These rockfish may, as the court phrased it for darkblotched, have the “misfortune of comingling with profitable target species,” yet they are perhaps somewhat fortunate in that they live far enough away from humans that they are not thought to be affected by many of the pressures other species face (e.g., habitat loss and degradation, pollution, etc.). Fishing pressure is the major population threat. And to put that threat into perspective, the harvest rates the Council establishes for these stocks most often takes less, and often much less, than 1 percent of the population per year.

The other major environmental side of conservation is the ecological role these rebuilding stocks play in the marine environment. We cannot really contrast the Council’s rebuilding alternatives on how they compare in that ecological role. Again, given that rebuilding alternatives rebuild to the same level of abundance, it is really only the pace of rebuilding that is different between alternatives. And for many if not all of the rebuilding stocks, the quicker to rebuild alternatives would only have the stock at a higher abundance for a limited period of time (i.e., until the other alternatives caught up to it). More abundant stocks are certainly more valued by some because larger abundance equates to a more pristine environment. This is certainly a policy preference that can be argued to the Council through the MSA concept of optimum yield. However, the state of the science on this question is such that we can do little more than assume that more abundant stocks are better for the marine environment.



## **New Rebuilding Plans**

[Note that the alternative labels in the following sections correspond to the numbering in chapter 2 where harvest specifications are described. This numbering is different than the numbering in chapter 4 for the integrated alternatives, which include both the overfished species ACL decision correlated with the appropriate management measures.]

### *Petrale Sole*

The new petrale sole assessment treated the stock on a coastwide basis rather than having a north-south stock distinction at the INPFC Columbia-Eureka line (43° N lat.) and the updated treatment of ageing error. The new assessment indicated a similar scale and status trend from 1980 to the late 1990s relative to the previous assessment; however, unfished and terminal biomass estimates were very different and produced a lower current depletion and population trend. Specifically, the biomass scale is lower in the current assessment and does not show the sharply increasing population characterized by the 2005 assessment. According to the new assessment, the status of petrale has been  $<B_{25\%}$  since 1953. Petrale is now considered overfished (it was above the MSST in the last assessment). Current exploitation is estimated to be 28% of the unexploited biomass.

	$T_{MAX}$	Med time to rebuild	2011 OY/ACL	2012 OY/ACL	SPR
2011/12	2021	2014	0	0	100%
		2014	459	624	50%
		2015	776	1,160	25:5 rule
		2016	976	1,160	ABC in 2011; 25:5 rule thereafter
		2017	1,021	1,279	F30%

### **Alternative 3 (976 mt/1,160 mt)**

#### **Status and Biology of the Stock**

- Adds 2 years to rebuilding relative to the zero harvest option and rebuilds 5 years earlier than  $T_{MAX}$
- Meets the 10 year rebuilding requirement

#### **Fishery Impact**

Petrale sole are a major target stock in the current trawl fishery. Industry has indicated that an allowable harvest below the 1,000-1,200 mt level risks losing market share and significantly disrupts the fishery. While this alternative is below this critical level of harvest, it is the highest alternative considered for 2011-2012 and would therefore cause relatively less disruption to the fishery and economic harm to trawl-dependent fishing communities.

### **Alternative 2 (776 mt/1,160 mt)**

#### **Status and Biology of the Stock**

- Adds 1 year to rebuilding relative to the zero harvest option and rebuilds 6 years earlier than  $T_{MAX}$

#### Fishery Impact

Trip limits for selective flatfish trawl would have to be reduced for all flatfish species (Dover sole, petrale sole, arrowtooth, and other flatfish).

#### **Alternative 3 (459 mt/624 mt)**

##### Status and Biology of the Stock

- Rebuilds in the same year relative to the zero harvest option and rebuilds 7 years earlier than  $T_{TARGET}$

#### Fishery Impact

Trip limits for petrale would be reduced for all trawl gears. In addition, trip limits using selective flatfish trawl would also have to be reduced for all flatfish species (Dover sole, arrowtooth, and other flatfish). Trip limits for sablefish could be slightly increased for all gears.

#### **Rebuilding Plans Requiring Revision (Canary and POP)**

##### *Canary*

The biggest change in the 2009 canary assessment from the 2007 assessment was the addition of historical catch time series prior to 1981. Fishery and survey data were also updated to include the years since the last assessment, as well as data for earlier years.

The change in historical catch caused a relatively large change in the unfished and terminal spawning biomass, resulting in a lower depletion level in recent years compared to the 2007 assessment. The perception of the relative status and productivity of canary rockfish has therefore changed. It cannot rebuild by the current  $T_{TARGET}$  (2021) and the rebuilding plan must be modified. Canary catch exceeded its cumulative OY by 14 percent over the period 2000-2007 due to an excess harvest in 2001 when groundfish constraints were first being imposed. Exploitation rates for the 2009/2010 ACL is 0.67%.

	$T_{TARGET}$	Med time to rebuild	2011 OY/ACL	2012 OY/ACL	SPR
2007/8	2074	2063	44		88.7%
2009/10	2063	2021	105		92.2%
2011/12	2021	2024	0	0	100%
		2025	49	51	94.4%
		2026	69	72	92.2%
		2026	94	99	89.5%
		2027	102	107	88.7%

#### **Alternative 3 (102/107 mt)**

##### Status and Biology of the Stock

- SPR harvest rate under the PPA is the same as that in the FMP
- Adds 3 years to rebuilding relative to the zero harvest option

- Due to the nature of the canary stock, even higher harvest levels have small impacts on the time to rebuild (155 mt option rebuilds by 2028, which is only one year beyond the PPA)
- Applies the SPR rate in the FMP

#### Fishery Impact

Canary rockfish are under the rebuilding paradox and are difficult to avoid, so this ACL would provide for those expected increased interactions. The California nearshore fishery would be constrained under this alternative, preventing access to target species.

#### **Alternative 2 (94/99 mt)**

##### Status and Biology of the Stock

- SPR harvest rate (89.5%) is more conservative than the SPR harvest rate in the FMP
- Adds 2 years to rebuilding relative to the zero harvest option
- Takes into account the less optimistic assessment update and applies a more conservative SPR rate than in the FMP

#### Fishery Impact

The California nearshore fishery would be constrained under this alternative, requiring changes to the RCA and/or reductions in catch.

#### **Option 1 (49/51)**

##### Status and Biology of the Stock

- Represents a more precautionary harvest rate (94.4%)
- Adds one year to rebuilding relative to the zero harvest option and rebuilds 4 years earlier than  $T_{TARGET}$ .

#### Fishery Impact

The limited entry fixed gear fishery would be constrained, requiring changes in RCAs or reductions in catch. The California nearshore fishery would be constrained, requiring a statewide 20 fm line and significant reductions in catch. All recreational fisheries will be constrained under this alternative, resulting in reduced season lengths and restrictive depth restrictions.

#### *Pacific ocean perch*

The 2009 assessment changed the perception of stock status due to revised estimates of stock productivity and depletion arising from the NMFS Northwest Fisheries Science Center trawl survey indices that were low in 2007 and 2008. Changes to age and length compositions were also included. These changes resulted in similar population dynamics from the last assessment, but changed the scale of terminal biomass enough to warrant a revision of  $T_{TARGET}$ . Total catch from 2000-2008 was 48%. Current exploitation rates are very low (<1%).

	$T_{TARGET}$	Med Time to Rebuild	OY/ACL	OY/ACL	SPR
2007/8	2026	2017	150		86.4%
2009/10	2017	2011	189	200	86.4%
2011/12	2017	2018	0	0	100%

		2019	80	80	93.6%
		2019	111	113	91.2%
		2020	180	183	86.4%

### **Council PPA (180 mt/183 mt)**

#### Status and Biology of the Stock

- Represents the SPR harvest rate published in the FMP (86.4%)
- This option adds 2 years relative to the zero harvest option.

#### Fishery Impact

This alternative results in the same SPR harvest rate as applied in the 2009-10 Specifications EIS. This alternative results in slightly lower catches than those in 2009-10.

### **Rebuilding Plans Not Requiring Revision (Bocaccio, Cowcod, Darkblotched, Widow, and Yelloweye)**

#### *Bocaccio*

The new 2009 assessment is more optimistic and continues to show that bocaccio is rebuilding ahead of schedule (2007 – 13%, 2009 - 28%). The new assessment used the SSC modeling framework instead of SS1, extended the northern boundary from Cape Mendocino to Cape Blanco, and extended the period modeled from one beginning in 1951 to one beginning in 1892. The results of the new assessment are consistent with those of the 2007 update except for a smaller starting biomass, which resulted primarily from the extension of the assessment period back to 1892.

Because the rebuilding progress was considered adequate, and the assessment did not change our fundamental understanding of the stock, the SSC recommended maintaining the status quo rebuilding plan (i.e., no modifications to  $T_{TARGET}$  or SPR harvest rate). Total catch from 2000-2008, was 50% of the OY, indicating that management has been effective at curtailing fishing mortality to facilitate rebuilding as quickly as possible.

	$T_{TARGET}$	Med Time to Rebuild	OY/ACL	OY/ACL	SPR
2007-08	2023	2036	218		77.7%
2009-10	2026	2023	288		77.7%
2011-12	2026	2019	0	0	100.0%
		2019	53	56	95%
		2020	109	115	90%
		2022	263	274	77.7%

### **Alternative 3 (263 mt/274 mt)**

#### Status and Biology of the Stock

- Represents the SPR harvest rate published in the FMP (77.7%)
- This option adds 3 years relative to the zero harvest option and is still 4 years less than  $T_{TARGET}$ .

### Fishery Impact

This alternative applies the same SPR harvest rates as in 2009-10, even though it results in slightly lower harvest levels. This alternative also takes into account the status of the stock and facilitates rebuilding early, while attempting to strike a balance between providing protection for the stock and minimizing severe economic consequences to communities. Since bocaccio is a relatively productive species which is difficult for fishermen to avoid because it co-occurs with other stocks (e.g., widow and chilipepper). This alternative does not constrain any sectors of the fishery.

### **Alternative 2 (109 mt/115 mt)**

#### Status and Biology of the Stock

- Represents a more precautionary SPR harvest rate (90%)
- This option adds 1 year relative to the zero harvest option and is still 6 years less than  $T_{TARGET}$ .

### Fishery Impact

This alternative does not constrain any sectors of the fishery.

### **Alternative 1 (53 mt/56 mt)**

#### Status and Biology of the Stock

- Represents a more precautionary SPR harvest rate (95%)
- This option rebuilds in the same year relative to the zero harvest option and is 7 years less than  $T_{TARGET}$ .

### Fishery Impact

This alternative would constrain the California recreational fishery, resulting in a 5 month season reduction in the Southern Management Area and a 1 month season reduction in the South-Central Management Area.

### *Cowcod*

The 2009 update assessment is slightly more optimistic than the previous assessment. The stock continues to display a slow upward trend but this is little more than a stock projection due to the lack of data. There is little change in the view of stock status. The update was reviewed by the SSC and represents the best available science. Total catch has been 44% of the total OY during rebuilding (2002-2007).

Cowcod is extremely important to the recreational fishery and the trawl fishery south of 40°10' N lat. Trawl activity has declined south of 40°10' N lat over the last few years due in part to the buyback program. Trawl activity is expected to increase due to the new trawl rationalization program.

	$T_{TARGET}$	Med Time to Rebuild	OY/ACL	OY/ACL	SPR
2007-08	2090	2039	4	4	90.0%
2009-10	2039	2072	4	4	82.1%
2011-12	2072	2060	0	0	100%

		2064	2	2	90.0%
		2068	3	3	82.7%
		2071	4	4	79.0%

### **Alternative 3 (4 mt)**

#### Status and Biology of the Stock

- Less conservative SPR harvest rate (79%)
- Adds 11 years to rebuilding relative to the zero harvest option and is one year less than  $T_{TARGET}$
- Most of the cowcod habitat is protected within the CCA

#### Fishery Impacts

Since cowcod impacts have been variable over the last 5 years (according to the total mortality reports), this alternative would encompass the variability. No sectors would be constrained under this alternative

### **Alternative 2 – (3 mt)**

#### Status and Biology of the Stock

- SPR harvest rate (82.7%) is more conservative than other ACL options
- Adds 8 years to rebuilding relative to the zero harvest option and is 4 years less than  $T_{TARGET}$
- Most of the cowcod habitat is protected within the CCA

#### Fishery Impacts

Under this lower alternative extractive research may not be available under this alternative. No sectors would be constrained under this alternative.

### **Alternative 1 – (2 mt)**

#### Status and Biology of the Stock

- Matches SPR harvest rate in the FMP (90.0%)
- Adds 4 years to rebuilding relative to the zero harvest option and is 8 years less than  $T_{TARGET}$ .

#### Fishery Impacts

Under this lower alternative extractive research may not be available under this alternative. Modifications to the Southern Management Area in the California recreational fishery may be necessary.

#### *Darkblotched*

The status of darkblotched increased above 25% of the unfished biomass with an upward trajectory. Despite the addition of a new historical catch series prior to 1980 and updated length compositions, the population trajectory is the same as the 2007 assessment and our perception of the stock has not changed. The 2009 assessment results indicated that the fishing mortality rate has been greatly reduced and darkblotched appear to be rebuilding gradually at close to previous rebuilding projections. A total of 97% of the prescribed OY was achieved from 2001-2007. Exploitation rate is less than 1%.

	T <sub>TARGET</sub>	Med Time to Rebuild	OY/ACL	OY/ACL	SPR
2007-08	2030	2011	290	330	2007-64.1% 2008 – 60.7%
2009-10	2011	2028	285	291	62.1%
2011-12	2028	2016	0	0	100%
		2018	130	131	81.8%
		2022	222	222	71.9%
		2025	298	296	64.9%
		2027	332	329	62.1%

### **Alternative 3 (332 mt/329 mt)**

#### Status and Biology of the Stock

- More conservative than 2007 SPR harvest rate
- Adds 11 years to rebuilding relative to the zero harvest option and rebuilds one year faster than T<sub>TARGET</sub>

#### Fishery Impacts

No sectors would be constrained under this alternative.

### **Alternative 2 (298 mt/296 mt)**

#### Status and Biology of the Stock

- More conservative harvest rate
- Adds 9 years to rebuilding relative to the zero harvest option and rebuilds 3 years faster than T<sub>TARGET</sub>

#### Fishery Impacts

No sectors would be constrained under this alternative

### **Alternative 1 (130 mt/131 mt)**

#### Status and Biology of the Stock

- Most conservative harvest rate
- Adds 2 years to rebuilding from the zero harvest option and rebuilds 10 years faster than T<sub>TARGET</sub>

#### Fishery Impacts

Trawl opportunities on the slope would be constrained by this alternative. Further, the whiting trawl fishery could be constrained by this alternative.

#### *Widow*

The widow rockfish incorporated several changes from the 2007 assessment, including a longer time series, a reconstructed catch series, new fishery-independent indices of abundance, and a new modeling platform (Stock Synthesis 3). Despite the changes, the stock status and scale did not appreciably change, though some estimates of recruitment were noticeably different. The 2009 assessment indicated that the stock is at 38.5% of unfished biomass, just short of being

rebuilt. The rebuilding analysis projects that the stock will be rebuilt by 2010. A full assessment is scheduled for 2013-14 to confirm the rebuilt status. A total of 45% of the prescribed OY was taken between 2002 and 2007. Exploitation rate remains well below 1%.

	T <sub>TARGET</sub>	Med Time to Rebuild	OY/ACL	OY/ACL	SPR
2007-08	2015	2015	368		95%
2009-10	2015	2009	522	509	95%
2011-12	2015	2010	200		constant catch
			400		
			600		

### **Alternative 3 (600 mt)**

#### Status and Biology of the Stock

- This constant catch scenario is expected to rebuild by 2010, which is 5 years earlier than T<sub>TARGET</sub>
- Catches are slightly greater than status quo catches

#### Fishery Impacts

Widow is difficult for fishermen to avoid because it co-occurs with other stocks (e.g., bocaccio and chilipepper), therefore this higher ACL alternative may be able to provide additional opportunities for some sectors of the fishery. The mothership and shoreside whiting sectors may be constrained under this alternative

### **Alternative 2 (400 mt)**

#### Status and Biology of the Stock

- This constant catch scenario is expected to rebuild by 2010, which is 5 years earlier than T<sub>TARGET</sub>
- Represents less than status quo catches

#### Fishery Impacts

The whiting trawl fishery may be constrained under this alternative.

### **Alternative 1 (200 mt)**

#### Status and Biology of the Stock

- This constant catch scenario is expected to rebuild by 2010, which is 5 years earlier than T<sub>TARGET</sub>
- Represents catches far less than status quo

#### Fishery Impacts

All whiting sectors may be constrained under this alternative

#### *Yelloweye*

Although the 2009 assessment did not significantly alter the perception in stock status, it had many structural changes which resulted in a slightly higher depletion level (20.3%) compared to the 2007 assessment (16.4%). Changes to the 2009 assessment include the following:



- revised inputs (weight-length relationship, maturity schedule, addition of a fecundity relationship)
- estimation of parameters for natural mortality, steepness, and growth which were previously fixed
- two sex model instead of a combined sex model

	T <sub>TARGET</sub>	Med time to rebuild	OY/ACL	OY/ACL	SPR
2007-08	2058	2084	23	20	
2009-10	2084	2082	17	14	2009 – 66.3% 2010 – 71.3%
2011-12	2084	2047	0	0	100%
		2065	13	13	80.7%
		2074	17	17	76%
		2084	20	20	72.8%
		2087	20	21	71.9%

### **Alternative 3 (20 mt)**

#### Status and Biology of the Stock

- SPR harvest rate under the PPA, 20 mt (72.8%) is more conservative than the SPR harvest rate under the ramp down strategy for 2010 (71.3%)
- Represents a more conservative harvest rate than adopted in the FMP (71.9%)
- More conservative harvest rate than applied previously
- Rebuilds 3 years earlier than the median time to rebuild under the SPR harvest rate in the FMP
- Adds 37 years to rebuilding relative to the zero harvest option which is T<sub>TARGET</sub>.

#### Fishery Impacts

This alternative results in higher catches for 2011-12 due to the increased stock projection. This alternative provides slightly higher fishing opportunities for recreational and commercial fixed gear fisheries relative to the other alternatives.

### **Alternative 2 (17 mt)**

#### Status and Biology of the Stock

- Represents a more conservative harvest rate (76%)
- Reduces the time to rebuild by 10 years compared to the 20 mt alternative.

#### Fishery Impacts

The Oregon and California nearshore fisheries will be constrained under this alternative, resulting in more restrictive depth closures and/or reductions to landed catch. All recreational fisheries will be constrained under this alternative, resulting in reduced season lengths and restrictive depth restrictions

### **Alternative 1 (13 mt)**

### Status and Biology of the Stock

- Represents the most conservative harvest rate (80.7%)
- Reduces the time to rebuild by 19 years compared to the 20 mt alternative.

### Fishery Impacts

The Oregon and California nearshore fisheries will be constrained under this alternative, resulting in more restrictive depth closures and/or reductions to landed catch. All recreational fisheries will be constrained under this alternative, resulting in greatly reduced season lengths and restrictive depth restrictions.

Table 2 provides a summary of the 2011 ACLs for overfished species and other details relative to overfished species.

**Table 2. Range of 2011 annual catch limit (ACL) alternatives (mt) adopted for detailed analysis with time to rebuild.**

Stock	Amendment 16-4	Amendment 16-4	No Action Alternative	No Action Alternative	2011 Action Alternatives					
	2007-2008 OY	SPR	2010 OY	SPR	Alt 1 ACL	Alt 2 ACL	Alt 3 ACL	PPA SPR	T F=0	Current T <sub>TARGET</sub>
<b>OVERFISHED SPECIES</b>										
<b>BOCACCIO S. of 40°10' N lat.</b>	218	77.7%	288	77.7%	(2019) 53	(2020) 109	<b>(2022) 263</b>	N/A	2019	2026
<b>CANARY</b>	44	88.7%	105	92.2%	(2025) 49	(2026) 94	<b>(2027) 102</b>	88.7%	2024	2021
<b>COWCOD S. of 40°10' N lat.</b>	4	90.0%	4	82.1%	(2064) 2	(2068) 3	<b>(2071) 4</b>	79.0%	2060	2072
<b>DARKBLOTCHED</b>	290-330	64.1-61.7%	291	62.1%	(2022) 222	(2025) 298	<b>(2027) 332</b>	62.1%	2016	2028
<b>PACIFIC OCEAN PERCH</b>	200	86.4%	200	86.4%	(2019) 80	(2019) 111	<b>(2020) 180</b>	86.4%	2018	2017
<b>WIDOW</b>	368	95.0%	509	95.0%	(2010) 200	(2010) 400	<b>(2010) 600</b>	Constant catch	2010	2015
<b>YELLOWEYE</b>	23-20	Ramp-down	17	66.3%	(2065) 13	(2074) 17	<b>(2084a/ or 2087b/) 20</b>	72.8%	2047	2084
<b>PETRALE SOLE</b>	N/A	N/A	1,200	ABC	(2014) 459	(2015) 776	<b>(2016) 976</b>	25:5	2014	2021

**BOLD indicates PPA ACLs**

a/ YE rebuilding by 2084 is a 20 mt ACL in 2011 and a 20 mt ACL in 2012

b/ YE rebuilding by 2087 is a 20 mt ACL in 2011 and a 21 mt ACL in 2012

## Non-Overfished Species

### Sablefish

#### *ACL Alternatives*

The GMT was informed that the sablefish ACL alternatives listed in Table 2-10 in Agenda Item B.3.a, Attachment 2 were incorrectly calculated under the option 2 40-10 harvest control rule. A corrected version of the tables is provided below (Table 3).

**Table 3. Updated version of Table 2-10 in Agenda Item B.3.a, Attachment 2 with corrected sablefish ACLs.**

2011 ABC = 8,418							
Apportionment Method		40-10 (Opt. 1) 8,485			40-10 (Opt. 2) 8,110		
North/South Proportions	Basis	N ACL	S ACL	S ACL *.5	N ACL	S ACL	S ACL *.5
72/28	2003-06 survey	6,061	2,357	1,179	5,839	2,271	1,135
68/32	2003-08 survey	5,724	2,694	1,347	5,515	2,595	1,298
64/36	2003-08 survey (Variance weighted)	5,388	3,030	1,515	5,190	2,920	1,460
2012 ABC = 8,242							
Apportionment Method		40-10 (Opt. 1) 8,227			40-10 (Opt. 2) 7,863		
North/South Proportions	Basis	N ACL	S ACL	S ACL *.5	N ACL	S ACL	S ACL *.5
72/28	2003-06 survey	5,923	2,304	1,152	5,661	2,202	1,101
68/32	2003-08 survey	5,594	2,633	1,316	5,347	2,516	1,258
64/36	2003-08 survey (variance weighted)	5,265	2,962	1,481	5,032	2,831	1,415

#### *Apportionment*

The Council chose to apportion the coastwide sablefish ACL north and south of 36° N latitude using the 2003-2008 average swept area biomass estimates from the NMFS trawl survey, but declined the variance weighted approach to apportion the coastwide ACL. The GMT re-emphasizes that the variance weighted approach uses both the variability as well as the mean swept area biomass to inform this relationship, not just the mean. This inclusion of the variance balances uncertainty in the mean value rather than ignoring it. Unless the variance in these estimates are considered unreliable, **the GMT recommends using the variance weighted approach to determine the relative sablefish abundance north and south of 36° N latitude.**

#### The Implications of Removing Chilipepper from the Minor Shelf Rockfish North Complex

In 2007 an assessment was conducted for chilipepper off Oregon and California. Results from that assessment were incorrectly used to set harvest specifications for just the portion of the stock occurring south of 40°10' N lat.; north of 40°10' N lat., chilipepper was managed within the minor shelf complex. Chilipepper is a more southerly distributed species with only 7 percent occurring north of 40°10' N lat.

All trawl IQ analyses and initial issuance regulations have been completed based on current management of chilipepper north of 40°10' N lat. within the minor shelf complex. Removing

chilipepper from the northern minor shelf rockfish complex and designating a coastwide species-specific specification would require modifications to initial issuance rules, and control and vessel limits (for individual species and aggregate QS) for chilipepper and minor shelf rockfish. Determining the permit catch histories of chilipepper separately from the other northern minor shelf rockfish catch histories may be a very difficult task and may not be doable in time for January 1, 2011 implementation. For these reasons and considering the relatively small estimated biomass of chilipepper north of 40°10' N lat., **the GMT recommends the Council continue to manage chilipepper within the northern minor shelf complex for 2011-2012.**

Although initial allocation of trawl quota shares only occurs once, modifications to quota shares will occur in the future based on changes to our understanding of stock status from new assessments (e.g., removing stocks from complexes or declaring species rebuilt). Provisions to account for such changes have already been included in the trawl IQ program. There have been no discussions on the timing of these changes to allow incorporation into the biennial specifications. When a stock rebuilds and final specifications are decided in June, will NMFS have time to recalculate and issue IQ by January 1?

The GMT acknowledges that there are other species (e.g., greenstriped and splitnose rockfish) currently being managed within complexes that the Council may wish to consider removing in the future and species such as widow that are very nearly rebuilt. As such, guidance from NMFS relative to the process and timing needed for January 1 implementation of these specifications within the context of a rationalized trawl fishery would be beneficial.

#### Stock Complexes

##### *OFL Apportionment*

The OFLs determined using DCAC/DB-SRA methods were approved by the SSC, and the apportionment of those coastwide OFLs using the catch data are considered the best available science. The SSC approved use of average landings for the periods 1983-1989 and 1993-1999 for apportioning catch north and south of 40°10' N lat. in the 2011-2012 management cycle. However, in their April 2010 statement under Agenda Item I.2.b, the SSC acknowledged that although the apportionment method may not be ideal, other allocation or apportionment methodologies are not available at this time for any of the complexes or their component species. Other apportionment methods that should be examined for the next management cycle include survey indices of relative abundance and species habitat maps.

Concerns surrounding the current apportionment method based on historical landings arise from the fact that the depth distribution of effort and targeting of the species composing the complex may bias the apportionment relative to the actual abundance north and south of 40°10' N lat. The SSC recommended future consideration of species habitat maps and fishery independent surveys to revise the apportionment for the 2013 and 2014 management cycle. In addition, fishery-dependent data stratified to the appropriate depths such as commercial passenger fishing vessel (CPFV) onboard sampling data from Oregon and California may be used to develop an alternative measure of the relative abundance of minor nearshore rockfish to inform the apportionment of catch north and south of 40°10' N lat. The GMT supports more refined methods of apportioning coastwide OFLs and/or setting area-specific OFLs where possible in future management cycles.

### Subcomplex Harvest Specifications

At the April 2010 Council meeting, the Council adopted the status quo OY of 155 mt as their preliminary preferred alternative ACL for the minor nearshore rockfish north subcomplex. The GMT is concerned that this ACL is higher than the summed OFL contribution of the component stocks in the complex as determined using the SSC approved OFL estimation methods (Agenda Item B.3.b, GMT Report 1). Table 2 in GMT Report 1 is augmented and corrected in the following table (Table 4). Table 4 provides another year of estimated catch (2006) for comparison and corrects the research catch of minor shelf rockfish in the north for 2008 from 1 mt to 14 mt and the total from 62 to 75 mt.

**Table 4. Updated catch by sector of the minor rockfish subcomplexes by year for 2006-2008.**

2006	Minor Rockfish North			Minor Rockfish South		
	Nearshore	Shelf	Slope	Nearshore	Shelf	Slope
Commercial	42	115	373	64	74	197
Recreational	58	13	0	649	275	0
Research	0	5	3	0	3	1
Total	100	133	376	713	352	198
2007	Minor Rockfish North			Minor Rockfish South		
	Nearshore	Shelf	Slope	Nearshore	Shelf	Slope
Commercial	75	127	517	70	54	148
Recreational	58	20	0	396	308	0
Research	0	6	5	0	3	1
Total	133	153	522	466	365	149
2008	Minor Rockfish North			Minor Rockfish South		
	Nearshore	Shelf	Slope	Nearshore	Shelf	Slope
Commercial	51	49	480	90	41	189
Recreational	46	12	0	304	171	0
Research	0	14	4	0	0	0
Total	97	75	484	394	212	189

### *Blue Rockfish Harvest Guidelines*

Blue rockfish are currently managed in the minor nearshore rockfish subcomplexes with a California statewide harvest guideline (HG) specified to prevent overfishing the assessed portion of the stock. Blue rockfish is currently estimated to be in the precautionary zone at 30.3% of unfished biomass and is managed using a statewide California HG of 220 mt. The GMT notes the status quo HG is calculated based on the estimated OFL from the assessment despite the fact the stock is in the precautionary zone. While an HG based on the projected OFL from the 2007 assessment provides protection from overfishing the stock, it may not provide adequate harvest control to rebuild the stock to  $B_{MSY}$ . Therefore, a statewide HG based on the 40-10 harvest control rule should be considered.

The Council has identified option 2 as the preferred alternative for applying the 40-10 harvest control rule to stocks in the precautionary zone under Amendment 23. If the option 2 control rule is used in determining the blue rockfish HG, it would only apply to the assessed portion of the stock in California waters north of Pt. Conception. The HG contribution of the assessed portion of the stock would use the projected OFL from the assessment, apply a  $P^*$  buffer to

determine the ABC contribution, and then apply the 40-10 adjustment as contemplated under an option 2 control rule. The south of Pt. Conception HG contribution would be based on the OFL determined using a DB-SRA approach and then applying a P\* approach for determining the ABC. The ACL is set equal to the ABC and the two contributions are summed to calculate the HG. Therefore, the HG can depend on the choice of the P\*/ABC buffer in cases where that approach is used. The GMT has requested the option 2 40-10 adjustments and will provide alternative HGs for Council consideration under Agenda Item B.7.

### *High OFL Contribution Species*

The following species present a concern in the setting of harvest specifications given the estimates of abundance from new stock assessments or OFL calculations that result in large proportional contributions to the complexes and subcomplexes they are managed in. There are potentially two methods of constraining their contribution both at the complex and subcomplex levels. The first is to calculate their ABC contribution using an extremely low P\* value. While this might work mathematically, it seems a corruption of the original intent of P\* (i.e., assigning the probability of overfishing based on the risk of incorrectly assigning the OFL) that would provide a buffer against overharvest of co-occurring stocks in the complex rather than scientific uncertainty. The second is to specify the contribution of the component stock directly. This may be done through either an HG or ACT with the following considerations.

An HG or ACT would require sorting of landings and/or estimation of bycatch and discard levels at sea. In addition to the justification for lowering harvest of these component species, inseason monitoring capability may be spotty even with a sorting requirement. Greenstriped and splitnose are primarily bycatch species that are discarded at sea. As such they are likely to be estimated based on species composition estimates of all associated species within their subcomplex. The concepts of ACT and HG appear very similar, if not equivalent in concept in the draft Amendment 23 FMP language. ACTs are described as an accountability measure that might be particularly important for species for which inseason monitoring is less certain.

Ideally the specifications used to control the effect of these large contributor stocks would mimic the ratios of the component species encountered in the fishery. This is difficult to achieve for a number of reasons. Often data are only available at the subcomplex level, the ratios of catch change over time, and the biomass of component species relative to one another is not static over time. This leaves little option but to reduce catch of the large contributor stocks to an order of magnitude that would be expected from incidental fishery interactions.

The Council's PPA for setting subcomplex ACLs was to use the status quo harvest levels from the last biennial cycle. While the GMT has noted some issues with the PPA for subcomplex ACLs, one potential method of aligning the PPA with the notion of reducing large contributions of stocks down to an order of magnitude that would approximate what might be expected from the current level of catch is to set HGs or ACTs for these species that would lower their contribution and result in the status quo harvest levels. This is based on the assumption that status quo harvest levels would more closely approximate status quo ratios of interactions in the fishery. The GMT requests guidance on whether the Council would like to see this concept analyzed further.

### Greenstriped

Greenstriped rockfish is currently managed in the northern and southern minor shelf subcomplexes. In addition to the issue of transferring catch from the shelf to other subcomplexes

discussed in Agenda Item B.3, GMT Report 1, the same issue potentially exists within the minor shelf subcomplexes. This is due the fact that greenstriped is primarily a bycatch species with the majority of the catch discarded. The stock is also estimated to be abundant giving it a large ABC/ACL contribution to the complexes. As such, allowable catch resulting from the large contribution of greenstriped is likely to be transferred to more vulnerable species and/or species with much lower OFL estimates within the minor shelf subcomplexes.

#### Splitnose

Splitnose rockfish presents a similar problem to greenstriped rockfish in that it is an abundant species that is mostly discarded. It is managed within the northern minor slope rockfish subcomplex. The current ABC/ACL contributions are 58 and 60 percent of the subcomplex for 2011 and 2012, respectively.

#### Yellowtail

Yellowtail rockfish has a large contribution to the southern minor shelf subcomplex which may also be of concern given its co-occurrence with more vulnerable species. Yellowtail is not a bycatch species like greenstriped and splitnose, but the ABC/ACL contribution is greater than 50 percent of the subcomplex.

#### **GMT Recommendations:**

- 1. Correct the Sablefish ACL alternatives.**
- 2. Use the variance weighted approach to determining sablefish abundance ratios north and south of 36° N latitude.**
- 3. Manage chilipepper within the minor shelf rockfish subcomplex in the north rather than specifying a coastwide ACL.**
- 4. Request guidance from NMFS relative to the process and timing needed for January 1 implementation of new harvest specifications within the context of a rationalized trawl fishery.**
- 5. Examine alternative methods that may improve apportionment of stocks north and south of 40° 10' N lat. prior to 2013-2014.**
- 6. Consider whether or not to apply the 40-10 default harvest control rule for determining a California blue rockfish HG.**
- 7. Consider setting HGs or ACTs for greenstriped, yellowtail, and/or splitnose rockfish that would lower their contribution to subcomplexes (e.g., by setting them such that the result is status quo harvest for the subcomplex).**



## GROUNDFISH MANAGEMENT TEAM REPORT ON OVERARCHING MANAGEMENT MEASURES FOR 2011-2012 FISHERIES

At its April meeting, the Council adopted overfishing limits (OFLs), acceptable biological catch (ABCs), and annual catch limits (ACLs) including preliminary preferred ACLs for groundfish species and complexes for analysis. These harvest specifications are included in the Preliminary Draft Environmental Impact Statement (EIS) in Tables 2-1 and 2-2 (Agenda Item B.3.a, Attachment 2).

Under this agenda item, the Council is scheduled to confirm or modify the preliminary preferred ACLs for non-overfished species, confirm or modify the preliminary preferred rebuilding plans for overfished species, confirm or modify the preliminary preferred overfished species ACLs, and provide guidance on management measures for 2011-2012 fisheries.

The Groundfish Management Team (GMT) discussed these harvest specifications for 2011-2012 and their management implications and has the following comments.

### Considerations for Yield Set Asides

Given the sector allocations that will formally occur with implementation of Fishery Management Plan (FMP) Amendment 21 and the 2011-2012 harvest specifications and management measures, there is a need for the Council to consider setting aside some yield of overfished species as described in Section 2.2.5.1 of Agenda Item B.3.a, Attachment 2.

As the fishery is managed currently (e.g., without intersector allocations) if the Council discovers that the set-asides in the scorecard are mis-specified due to changes in tribal take, research, exempted fishing permits (EFPs), or incidental open access, the scorecard is simply updated and management measures for fisheries may be adjusted up or down to attain but not exceed optimum yield (OYs). Then these changes to management measures are implemented by NMFS via routine inseason action.

Under Amendment 21 and biennial specifications, formal sector allocations and set asides are specified in Federal regulations. Once the yield is compartmentalized like this, the GMT notes that it will be much more complicated to revise the estimates if changes in the set asides arise mid-biennium (i.e., much more than a scorecard update and subsequent remedy through inseason action). Further the GMT notes that any revision of set asides will impact non-trawl sectors disproportionately under a rationalized trawl fishery since the trawl allocation cannot be changed without recalculating quota pounds. **The GMT requests additional guidance from NMFS on the implications of formal allocations on inseason management if they need to be revised during the biennium.** Assuming that NMFS wants to minimize the number of adjustments made during the biennium to these allocations or set asides will be extremely rare, **the GMT recommends that the Council set the set-asides high enough that there is a very low risk they will be exceeded during the biennium. The GMT also recommends that the total set aside (sum of tribal, research, EFP, and incidental open access) be specified as one number to provide maximum flexibility.** That is, it would be easier to accommodate changes in these

activities under one set aside instead of having to update four different set aside numbers in regulation should changes in these estimates occur in season.

Section 2.2.5.1 of the draft EIS (Agenda Item B.3.a Attachment 2) lays out considerations for setting yield set asides for overfished groundfish species, including petrale sole. Section 2.2.5.2 of the draft EIS proposes set-asides for non-overfished species that are based on the highest recent mortality in the various types of activities mentioned above (Table 2-41 through 2-44). In the draft EIS chapters included in this agenda item there were a few technical corrections between the set-aside tables and the text. Corrections to the overfished species set-aside table are in Table 1; corrections to the non-overfished species set-aside tables are in Tables 4 and 5, at the end of this document. All corrections are indicated by numbers in bold. **The GMT recommends the Council adopt the set-asides for overfished and non-overfished species with the corrections and recommendations shown in Tables 1, 4, and 5.**

#### *Research Estimates of Canary and Petrale*

Under the PPA the Council adopted a level of yield for set asides for the overfished rockfish species and petrale sole (Table 2-30 of Agenda Item B.3.a, Attachment 2). In their recommendation for scientific research set asides for canary rockfish and petrale sole the Council did not recommend the highest catch in recent years, but a lower value. The GMT cautions that the Council may want to be more conservative and set the scientific research set asides erring towards the larger side for the reasons listed above and because regulations imposed under the MSA do not apply to scientific research; therefore, they cannot be closed or restricted by fishing regulations. Table 2-38 and 2-39 provide recent catch estimates in scientific research. **The GMT recommends that the Council consider the maximum recent catch in research should be the set as the scientific research set aside for 2011-2012.**

#### *EFP Set Asides*

Prior to 2011, the Council considered the merits of EFP applications and the projected impacts and available yield of both overfished and non-overfished species when approving EFPs on an annual basis. Given the sector allocation implications listed above, there is a need for the Council to consider setting aside some yield that could be used for development or continuation of EFPs on a biennial basis. This means that set-asides must be made pre-season and before EFP applications have even been received. This may be somewhat easier in future cycles as EFP applications for the following year will be submitted at the same meeting that set asides will be decided for the coming cycle. The analysis presented in the draft EIS uses the previous year's EFP for a starting point for the analysis however, the Council would not be setting catch limits for any specific EFP projects, but considering future EFPs and the potential for needing to give those projects some amount of yield of both overfished species as well as non-overfished species.

Specific to petrale sole, the GMT notes that in recent years, the only non-whiting EFP that has taken petrale sole in appreciable amounts is the community-based fishing association project sponsored in part by The Nature Conservancy (TNC). In 2009, their catch cap for petrale sole was 6 mt. TNC voluntarily reduced cap from 6 mt to 3 mt for 2010 in light of the petrale sole stock status falling below the overfished threshold in the 2009 petrale sole stock assessment and the 2010 petrale sole OY being reduced by approximately 50%. A proportional cut in the cap relative to the preliminary preferred ACL is 2 mt. The preliminary preferred set aside for petrale

is 6 mt, which is the highest seen in recent years. The Council should consider whether it anticipates approving EFPs that impact petrale and to what magnitude during the 11-12 cycle.

**The GMT therefore recommends that the Council establish overfished species set asides for EFPs that will accommodate the anticipated need for such projects.**

#### *Incidental Open Access*

It has recently come to the GMT's attention that the petrale set aside for incidental open access (43.2 mt) maybe incorrect. This catch is largely comprised of landings in what was classified as coming from the California halibut trawl fisheries. A recent review of West Coast Groundfish Observer Program reports including both the Total Mortality Report and the specific California halibut trawl report indicate that this number is too high. For example, the WCGOP reports state that trace amounts of petrale occur in this fishery (e.g., less than 1 mt). The GMT was unable to confirm the accuracy of the landings data that were provided to the team in April, since it was the weekend and no staff were available.

Table 1. Preliminary GMT Recommended 2011-2012 Set Aside for overfished species (corrections to Table 2-30 in Agenda Item B.3.b Attachment 2 are in **bold**, recommended increases are in *italics*).

Category	Bocaccio South 40'10	Canary	Cowcod South 40'10	Dark- blotched	POP	Widow	Yelloweye	Petrale
Tribal Whiting Trawl		4.3		<b>0.1</b>	7.2	5	0	
Tribal Mid-water Trawl		3.6			0	40	0	
Tribal Bottom Trawl		0.8			3.7	0	0	45.4
Tribal Troll		0.5			0		0	
Tribal Fixed Gear		0.3			0	0	2.3	
Open Access Incidental	<b>0.7</b>	<b>2.0</b>	0	15.0	<b>0.1</b>	3.3	<b>0.2</b>	43.2
Research	1.7	<i>7.2</i>	0.1	2.1	1.8	1.6	3.3	<i>17.0</i>
EFP	11	1.3	0.2	1.5	0.1	11	0.4	6.0
<b>Total</b>	<b>13.4</b>	<b>20</b>	0.3	<b>18.7</b>	<b>12.9</b>	60.9	<b>6.2</b>	<b>111.6</b>

#### Annual Catch Targets (ACTs) and Harvest

The GMT reviewed the analysis of the effectiveness of the current management system to prevent overfishing (Agenda Item E.4.a, Attachment 4, March 2010). We also examined total mortality of FMP species compared to OYs for recent years in light of the National Standard 1 requirement to examine existing accountability measures (AMs) in cases where the ACL is exceeded<sup>1</sup>. Given our current ability to monitor and react to fisheries impacts inseason, the GMT does not see any instances where specification of ACT is necessary.

The Council's current system of managing the commercial fishery, cumulative vessel landing limits combined with frequent monitoring and evaluation, has generally proven highly effective in preventing commercial catch targets from being substantially or serially exceeded. Although fishery-wide canary OYs of less than 50 mt were exceeded for several years, catches have

<sup>1</sup>The National Standard 1 Final Rule reads, "If catch exceeds the ACL for a given stock or stock complex more than once in the last four years, the system of ACLs and AMs should be re-evaluated, and modified if necessary, to improve its performance and effectiveness."

consistently been less than more recent higher OYs. Perhaps the greatest source of uncertainty in managing to commercial total catch targets is the fact that discard rates are not known for a particular year until well afterward. Thus, even in circumstances where landings are effectively constrained, taking into account expected discards, total catch may later be found to have exceeded specified targets, if realized discards exceeded those expectations. Uncertainty also arises from sampling uncertainty in the observation of discards and landings species composition for rockfish. Recreational fisheries have traditionally been more difficult to monitor and some fishing modes lack scientific observation of discards.

Under trawl rationalization, three sources of management uncertainty are addressed for that sector. Both fishing and landings are independently and comprehensively monitored, resulting in vastly less uncertainty regarding the amounts of retained and discarded catch by species or assemblage. Additionally, trip limits do not provide an automatic mechanism for ceasing harvest at the appropriate time. The product of trip limit amounts times the number of permits vastly exceeds the available amount of landed catch. Under individual quotas, if no individual exceeds their quota poundage, the fleet target cannot be exceeded.

For target species that are more likely to be fully subscribed in 2011-2012 (see Table 2-45 from Agenda Item B.3.a, Attachment 2), particularly sablefish and shortspine, the Council may want to set more conservative set asides to ensure that ACLs are not exceeded. While ACTs might also provide a mechanism for ensuring that ACLs are not exceeded either from impacts from a given sector or on the whole, the GMT notes that the reason that these species are fully subscribed is due to their importance as fishery targets. Both trawl and non-trawl fisheries that target these species have the aforementioned inseason monitoring and control mechanisms in place, however most of the set aside fisheries do not. For that reason, the **GMT recommends the use of conservative set asides rather than ACTs to prevent exceeding ACLs.**

Harvest guidelines (HGs) remain important management tools for fisheries where some portion is shared among states (e.g. recreational fisheries). They also provide a mechanism for inseason action to prevent or minimize impacts to other states or sectors. **The GMT therefore recommends continued use of HGs for management of recreational fisheries.** Use of HGs as a harvest specification to prevent overfishing is discussed in a separate report (Agenda Item B.3.b, Supplemental GMT Report 1).

#### **GMT Recommendations**

- 1. Adopt the updated preliminary set-asides for overfished and non-overfished species with the corrections shown in Tables 1, 4, and 5.**
- 2. Establish one set aside for each non-overfished and overfished species that includes anticipated catch of tribal, EFP, research, and incidental open access.**
- 3. Set precautionary research set asides, particularly for petrale and canary for 2011-2012.**
- 4. Establish overfished species set asides for EFPs that will accommodate the anticipated need for projects in 2011-2012.**
- 5. Use conservative set asides rather than ACTs to prevent exceeding ACLs and continue use of HGs for recreational fisheries.**

Table 4. GMT Recommended 2011 Set Aside for non-overfished species (corrections to values in Table 2-40 in Agenda Item B.3.b Attachment 2 are in **bold**).

Species/Species Group/Area	2011 PPA ACL	Tribal	EFP	Research	Incidental OA	Fishery HG	Trawl A21%	Non-trawl A21%	Trawl A21 mt	Non- Whiting A21 %	Whiting A21 %	Non- Whiting A21 mt	Whiting A21 mt	Non-trawl A21 mt
Lingcod N. of 42° N latitude (OR & WA)	2,330.0	250.0	0.0	5.0	16.0	2,059	45%	55%	927	99.7%	0.3%	924	3	1,132
Lingcod S. of 42° N latitude (CA)	2,102.0	0.0	0.0	0.0	7.0	2,095	45%	55%	943	99.7%	0.3%	940	3	1,152
Pacific Cod	1,600.0	400.0	0.0	0.0	0.0	1,200	95%	5%	1,140	99.9%	0.1%	1,139	1	60
Sablefish N of 36° N. lat.	4,961.0	496.1	0.0	16.0	17.2	4,426	52.5%	47.5%	2,322	98.2%	1.8%	2,281	42	
Sablefish S of 36° N. lat.	1,298.0	0.0	26.0	2.0	6.2	1,264	42%	58%	531	100.0%		531	0	733
Dover sole	17,560.0	1497.0	0.0	38.0	55.0	15,970	95%	5%	15,172	100.0%		15,172	0	799
English sole	19,761.0	91.0	0.0	5.0	4.0	19,661	95%	5%	18,678	99.9%	0.1%	18,659	19	983
<b>PETRALE SOLE</b>	976.0	45.4	6.0	10.0	43.2	871	95%	5%	828	100.0%		828	0	44
Arrowtooth flounder	15,174.0	2041.0	0.0	7.0	30.0	13,096	95%	5%	12,441	100.0%		12,441	0	655
Starry Flounder	1,352.0	2.0	0.0	0.0	5.0	1,345	50%	50%	673	100.0%		673	0	673
Other flatfish	4,884.0	60.0	0.0	13.0	125.0	4,686	90%	10%	4,217	99.9%	0.1%	4,213	4	469
<b>PACIFIC OCEAN PERCH</b>	180.0	10.9	0.1	1.8	<b>0.1</b>	167	95%	5%	159	The rest	17% or 30 mt	129	30	8
<b>WIDOW</b>	600.0	45.0	11.0	1.6	3.3	539	91%	9%	491	The rest	52.0%	235	255	49
Chilipepper (coastwide)	2,130.0	1.0		8.6	5.4	2,115	75%	25%	1,586	100.0%		1,586	0	529
Splitnose S. of 40°10' N lat.	1,461.0	0.0	0.0	7.0	0.0	1,454	95%	5%	1,381	100.0%		1,381	0	73
Yellowtail N. of 40°10' N lat.	4,364.0	490.0	2.0	4.0	3.0	3,865	88%	12%	3,401	The rest	300	3,101	300	464
Shortspine thornyhead N. of 34 27' N. lat.	1,573.0	38.0	0.0	5.0	2.0	1,528	95%	5%	1,452	99.9%	0.1%	1,450	1	76
Shortspine Thornyhead S. of 34 27' N. lat.	405.0	0.0	0.0	1.0	41.0	363	50 mt	The Rest	50	100.0%		50	0	313
Longspine thornyhead N. of 34 27' N. lat.	2,119.0	30.0	0.0	13.0	1.0	2,075	95%	5%	1,971	100.0%		1,971	0	104
<b>DARKBLOTCHED</b>	332.0	0.1	1.5	2.1	15.0	313	95%	5%	298	The rest	9% or 25 mt	271	27	16
Minor Slope Rockfish North 40°10' N lat.	1,160.0	36.0	2.0	10.9	19.0	1,092	81%	19%	885	98.6%	1.4%	872	12	207
Minor Slope Rockfish South 40°10' N lat.	626.0	0.0	2.0	8.0	17.0	599	63%	37%	377	100.0%		377	0	222

Bold text indicates overfished species with A:21 allocations. These set-asides were adopted by the Council April 2010

Table 5. GMT Recommended 2012 Set Aside for non-overfished species (corrections to values in Table 2-42 in Agenda Item B.3.b Attachment 2 are in **bold**).

Species/Species Group/Area	2012 PPA ACL	Tribal	EFP	Research	Incidental OA	Fishery HG	Non-Whiting Whiting Non-Whiting Whiting							
							Trawl A21%	Non-trawl A21%	Trawl A21 mt	A21 %	A21 %	A21 mt	A21 mt	Nontrawl A21 mt
Lingcod N. of 42° N latitude (OR & WA)	2,151.0	250.0	0.0	5.0	16.0	1,880	45%	55%	846	99.7%	0.3%	843	3	1,034
Lingcod S. of 42° N latitude (CA)	2,164.0	0.0	0.0	0.0	7.0	2,157	45%	55%	971	99.7%	0.3%	968	3	1,186
Pacific Cod	1,600.0	400.0	0.0	0.0	0.0	1,200	95%	5%	1,140	99.9%	0.1%	1,139	1	60
Sablefish S of 36° N. lat.	1,258.0	0.0	26.0	2.0	6.2	1,224	42%	58%	514	100.0%		514	0	710
Dover sole	17,560.0	1497.0	0.0	38.0	55.0	15,970	95%	5%	15,172	100.0%		15,172	0	799
English sole	10,150.0	91.0	0.0	5.0	4.0	10,050	95%	5%	9,548	99.9%	0.1%	9,538	10	503
<b>PETRALE SOLE</b>	1,160.0	45.4	6.0	10.0	43.2	1,055	95%	5%	1,003	100.0%		1,003	0	53
Arrowtooth flounder	12,049.0	2041.0	0.0	7.0	30.0	9,971	95%	5%	9,472	100.0%		9,472	0	499
Starry Flounder	1,360.0	2.0	0.0	0.0	5.0	1,353	50%	50%	677	100.0%		677	0	677
Other flatfish	4,884.0	60.0	0.0	13.0	125.0	4,686	90%	10%	4,217	99.9%	0.1%	4,213	4	469
<b>PACIFIC OCEAN PERCH</b>	183.0	10.9	0.1	1.8	0.1	170	95%	5%	162	The rest	17% or 30 mt	132	30	9
<b>WIDOW</b>	600.0	45.0	11.0	1.6	3.3	539	91%	9%	491	The rest	52.0%	235	255	49
Chilipepper (coastwide)	1,924.0	1.0		8.6	5.4	1,909	75%	25%	1,432	100.0%		1,432	0	477
Splitnose S. of 40°10' N lat.	1,538.0		0.0	7.0	0.0	1,531	95%	5%	1,454	100.0%		1,454	0	77
Yellowtail N. of 40°10' N lat.	4,371.0	490.0	2.0	4.0	3.0	3,872	88%	12%	3,407	The rest	300	3,107	300	465
Shortspine thornyhead N. of 34 27' N. lat.	1,556.0	38.0	0.0	5.0	2.0	1,511	95%	5%	1,435	99.9%	0.1%	1,434	1	76
Shortspine Thornyhead S. of 34 27' N. lat.	401.0		0.0	1.0	41.0	359	50 mt	The Rest	50	100.0%		50	0	309
Longspine thornyhead N. of 34 27' N. lat.	2,064.0	30.0	0.0	13.0	1.0	2,020	95%	5%	1,919	100.0%		1,919	0	101
<b>DARKBLOTCHED</b>	329.0	0.1	1.5	2.1	15.0	310	95%	5%	295	The rest	9% or 25 mt	268	27	16
Minor Slope Rockfish North 40°10' N lat.	1,160.0	36.0	2.0	10.9	19.0	1,092	81%	19%	885	98.6%	1.4%	872	12	207
Minor Slope Rockfish South 40°10' N lat.	626.0	0.0	2.0	8.0	17.0	599	63%	37%	377	100.0%		377	0	222

# GROUND FISH MANAGEMENT TEAM REPORT ON FISHERY SPECIFIC MANAGEMENT MEASURES FOR 2011-2012 FISHERIES

## Updated Model Runs Given the Correction to the Sablefish ACL

The error in the calculation of the 40-10 adjustment to the Council's sablefish PPA changes the bycatch projected impacts for the non-nearshore fixed gear and non-whiting trawl sectors. We update those projections here. We also note that these projections will differ if the Council alters its decision from the PPA by, for example, altering the option for apportioning biomass to the northern and southern areas. However, such a change would fall within the range of bycatch impacts bracketed by these updates and the previous projections provided in Agenda Item B.3.b Attachment 1.

## *Non-Nearshore Fixed Gear – Open Access and Limited Entry*

Table 1. Updated non-nearshore bycatch projections. References to revised tables refer to Agenda Item B.3.a, Attachment 1.

### **Revised non-nearshore bycatch tables for Alternatives 1 and 2 (Revising Tables 4-21, 4-22, 4-27, 4-28)**

Option 1: With status quo RCA boundaries: Columbia-Eureka to Cascade Head at 125 fm

	2011			2012		
	LE	OA	Total	LE	OA	Total
Bocaccio	0.0	0.0	0.0	0.0	0.0	0.0
Canary rockfish	2.1	0.3	2.4	2.1	2.1	4.1
Darkblotched rockfish	3.8	0.8	4.6	4.3	4.3	8.6
Pacific ocean perch	0.3	0.1	0.4	0.3	0.3	0.7
Widow rockfish	0.0	0.0	0.1	0.1	0.1	0.1
Yelloweye rockfish	0.7	0.1	0.8	0.7	0.7	1.4

Option 2: With RCA boundaries N. of 40° 10' N. Latitude at 100 fm

	2011			2012		
	LE	OA	Total	LE	OA	Total
Bocaccio	0.0	0.0	0.0	0.0	0.0	0.0
Canary rockfish	1.9	0.3	2.2	1.8	0.3	2.1
Darkblotched rockfish	3.5	0.8	4.3	3.4	0.8	4.2
Pacific ocean perch	0.3	0.1	0.4	0.3	0.1	0.4
Widow rockfish	0.1	0.0	0.1	0.1	0.0	0.1
Yelloweye rockfish	0.8	0.1	0.9	0.7	0.1	0.8

**Revised non-nearshore bycatch tables for Alternatives 3 (Revising Tables 4-46, 4-48, 4-50, 4-51, 4-53)**

Option 1: With RCA N. of Pt. Chehalis > 150 fm

	2011			2012		
	LE	OA	Total	LE	OA	Total
Bocaccio	0.0	0.0	0.0	0.0	0.0	0.0
Canary rockfish	0.6	0.1	0.7	0.6	0.1	0.7
Darkblotched rockfish	4.0	0.8	4.8	3.7	0.8	4.6
Pacific ocean perch	0.2	0.0	0.3	0.2	0.0	0.3
Widow rockfish	0.1	0.0	0.1	0.1	0.0	0.1
Yelloweye rockfish	0.5	0.1	0.6	0.5	0.1	0.6

Option 2: With proportional reduction to sablefish harvest

	2011			2012		
	LE	OA	Total	LE	OA	Total
Bocaccio	0.0	0.0	0.0	0.0	0.0	0.0
Canary rockfish	0.8	0.1	0.9	0.9	0.2	1.0
Darkblotched rockfish	2.3	0.5	2.8	2.6	0.6	3.2
Pacific ocean perch	0.2	0.0	0.2	0.2	0.2	0.4
Widow rockfish	0.0	0.0	0.0	0.0	0.0	0.0
Yelloweye rockfish	0.3	0.0	0.3	0.3	0.1	0.4



## Non-Whiting Trawl Fishery

**Table 2.** Non-whiting LE Trawl target species' trip limits and ACL attainment under the High-ACL scenario for 2011. Revises Tables 4-15, 16, and 17 on pages 19, 20 and 21 of Agenda Item B.3.a Attachment 1.

2-month period	RCA lines (fm)		2-month cumulative-poundage limits							
	shallow	deep	sable-fish	long-spine	short-spine	Dover sole	petrale sole	arrow-tooth	other flatfish	slope rockfish
<b>N. of 40°10' N lat.</b>										
Large/small footrope limits										
1	75	250	16,000	20,000	18,000	120,000	6,000	150,000	110,000	6,000
2	75	200	16,000	20,000	18,000	120,000	6,000	150,000	110,000	6,000
3	75	200	16,000	20,000	18,000	120,000	5,000	150,000	110,000	6,000
4	100	200	16,000	20,000	18,000	120,000	5,000	150,000	110,000	6,000
5	75	200	16,000	20,000	18,000	120,000	5,000	150,000	110,000	6,000
6	75	250	16,000	20,000	18,000	120,000	6,000	150,000	110,000	6,000
Selective gear limits										
1	75	250	8,000	5,000	5,000	65,000	5,000	90,000	60,000	
2	75	200	8,000	5,000	5,000	65,000	5,000	90,000	60,000	
3	75	200	8,000	5,000	5,000	65,000	5,000	90,000	60,000	
4	100	200	8,000	5,000	5,000	65,000	5,000	90,000	60,000	
5	75	200	8,000	5,000	5,000	65,000	5,000	90,000	60,000	
6	75	250	8,000	5,000	5,000	65,000	5,000	90,000	60,000	
<b>38° - 40°10' N lat.</b>										
1	100	150	16,000	20,000	18,000	120,000	5,000	10,000	110,000	15,000
2	100	150	16,000	20,000	18,000	120,000	5,000	10,000	110,000	15,000
3	100	150	16,000	20,000	18,000	120,000	5,000	10,000	110,000	15,000
4	100	150	16,000	20,000	18,000	120,000	5,000	10,000	110,000	15,000
5	100	150	16,000	20,000	18,000	120,000	5,000	10,000	110,000	15,000
6	100	150	16,000	20,000	18,000	120,000	5,000	10,000	110,000	15,000
<b>S. of 38° N lat.</b>										
1	100	150	16,000	20,000	18,000	120,000	5,000	10,000	110,000	55,000
2	100	150	16,000	20,000	18,000	120,000	5,000	10,000	110,000	55,000
3	100	150	16,000	20,000	18,000	120,000	5,000	10,000	110,000	55,000
4	100	150	16,000	20,000	18,000	120,000	5,000	10,000	110,000	55,000
5	100	150	16,000	20,000	18,000	120,000	5,000	10,000	110,000	55,000
6	100	150	16,000	20,000	18,000	120,000	5,000	10,000	110,000	55,000

**Table 3.** Comparison of non-whiting LE trawl ACLs and projected trawl catches (mt) under the limits above, for major target and rebuilding species.

	ACL	LET	Proj.
Sablefish N of 36° N. lat.	5,515	2,588	2,569
Longspine N. of 34 27' N. lat.	2,119	1,971	1,337
Shortspine N. of 34 27' N. lat.	1,573	1,450	1,418
Dover sole	17,560	15,172	14,109
Arrowtooth flounder	15,174	12,441	4,675
Petrale sole	976	833	833
English sole	19,761	18,659	443
Other flatfish	4,884	4,213	854
Minor Slope Rockfish North	1,160	872	170
Minor Slope Rockfish South	626	377	234

	ACL	LET	Proj.
Canary rockfish	107	22.5	11.3
Pacific ocean Perch	180	129.0	45.0
Darkblotched rockfish	332	271.0	116.9
Widow rockfish	600	235.0	9.3
Yelloweye rockfish	20	0.7	0.2
Bocaccio	263	29.6	6.0
Cowcod	4	3.4	0.3

#### Evaluation of the Council's Preliminary Preferred Alternative for Overfished Species Two Year Allocations

Table 4, Table 5, and Table 6 evaluate the projected overfished species impacts from the model runs for each fishery sector and integrated alternative relative to the Council's preliminary preferred alternative for two year overfished species – bocaccio, canary, cowcod, and bocaccio. **The GMT requests guidance from the Council on whether to affirm or modify the preliminary preferred overfished species two year allocations.** Any further analysis that might be needed as a result of a modified allocation could be provided on Thursday, depending on the magnitude of the change.

#### Yelloweye rockfish sharing in the Open Access Directed Fisheries

During the April 2010 meeting, the Council chose a preliminary preferred sector specific catch sharing option for yelloweye rockfish. Included in that decision was the sharing percentages for the two components of the directed open access (OA) fishery – the nearshore fishery and the daily trip limit (DTL) fishery. The preliminary preferred sharing was 73% for the nearshore fishery and 27% for the DTL fishery (Table 2). This was not analyzed in the draft EIS. Historically, the catch sharing between these sectors has been 87.5% for the nearshore fishery and 12.5% for the DTL fishery. This second sharing (Table 3) was analyzed in the draft EIS. **The GMT would like Council clarification on their intended split.**

Table 2. 2011 and 2012 Sector Specific yelloweye rockfish catch sharing adopted as the preliminary preferred alternative. OA: Directed split between nearshore and DTL (73% nearshore:27% DTL), which was not analyzed in the draft EIS.

		2009-2010 SPEX EIS											
Alternative	Status Quo	Alt. 1		Alt. 2		Alt. 3		Alt. 4		Alt. 5		Alt. 6	
	April 2010 (17 mt)	2011 (0 mt)	2012 (0 mt)	2011 (9 mt)	2012 (9mt)	2011 (13 mt)	2011 (13 mt)	2011 (17 mt)	2012 (17 mt)	2011 (20 mt)	2012 (20 mt)	2011 (20 mt)	2012 (21 mt)
Year (mt)													
LE Trawl- Non-Whiting	0.6	0	0	0.1	0.1	0.4	0.4	0.6	0.6	0.7	0.7	0.7	0.8
LE Trawl- Whiting	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OA: Directed	1.3	0	0	0.2	0.2	0.6	0.6	1.0	1.0	1.3	1.3	1.3	1.4
Nearshore						0.4	0.4	0.7	0.7	0.9	0.9		
DTL						0.2	0.2	0.3	0.3	0.4	0.4		
LE Fixed Gear	0.9	0	0	0.3	0.3	0.8	0.8	1.3	1.3	1.7	1.7	1.7	1.8
Rec: WA	2.7	0	0	0.6	0.6	1.6	1.6	2.6	2.6	3.3	3.3	3.3	3.5
Rec: OR	2.4	0	0	0.6	0.6	1.5	1.5	2.4	2.4	3.0	3.0	3.0	3.3
Rec: CA	2.8	0	0	0.6	0.6	1.6	1.6	2.6	2.6	3.4	3.4	3.4	3.7

Table 3. 2011 and 2012 Sector Specific yelloweye rockfish catch sharing based on the historical split. OA: Directed split between nearshore and DTL (87.5% nearshore:12.5% DTL), which was analyzed in the draft EIS.

		2009-2010 SPEX EIS											
Alternative	Status Quo	Alt. 1		Alt. 2		Alt. 3		Alt. 4		Alt. 5		Alt. 6	
	April 2010 (17 mt)	2011 (0 mt)	2012 (0 mt)	2011 (9 mt)	2012 (9mt)	2011 (13 mt)	2011 (13 mt)	2011 (17 mt)	2012 (17 mt)	2011 (20 mt)	2012 (20 mt)	2011 (20 mt)	2012 (21 mt)
Year (mt)													
LE Trawl- Non-Whiting	0.6	0	0	0.1	0.1	0.4	0.4	0.6	0.6	0.7	0.7	0.7	0.8
LE Trawl- Whiting	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OA: Directed	1.3	0	0	0.2	0.2	0.6	0.6	1.0	1.0	1.3	1.3	1.3	1.4
Nearshore						0.5	0.5	0.9	0.9	1.1	1.1		
DTL						0.1	0.1	0.1	0.1	0.2	0.2		
LE Fixed Gear	0.9	0	0	0.3	0.3	0.8	0.8	1.3	1.3	1.7	1.7	1.7	1.8
Rec: WA	2.7	0	0	0.6	0.6	1.6	1.6	2.6	2.6	3.3	3.3	3.3	3.5
Rec: OR	2.4	0	0	0.6	0.6	1.5	1.5	2.4	2.4	3.0	3.0	3.0	3.3
Rec: CA	2.8	0	0	0.6	0.6	1.6	1.6	2.6	2.6	3.4	3.4	3.4	3.7

### Limited entry and Fixed Gear Sablefish South of 36° N. latitude

Sablefish south of 36° N lat has not been formally allocated to the limited entry and open access fisheries under Amendment 6 (unlike north of 36° N lat.). Generally speaking, limited entry sectors have higher trip limits than open access sectors. For sablefish in the Conception Area, the weekly trip limits in the limited entry and open access sectors have been set at similar levels. In 2009-10, the sablefish OY in the Conception Area increased significantly, which led to an increased volume of inseason requests for higher trip limits. **The GMT requests Council guidance on whether or not it would like the limited entry sector to have greater access than open access (i.e, differential trip limits for the sector).** This would facilitate future inseason requests for trip limit modifications.

### **GMT Recommendations**

1. The GMT would like Council clarification on their intended split of yelloweye rockfish sharing in the open access directed fisheries.
2. The GMT requests guidance from the Council on whether to affirm or modify the preliminary preferred overfished species two year allocations.
3. The GMT requests Council guidance on whether or not it would like the limited entry sector to have greater access than open access (i.e, differential trip limits for the sector).

**Table 4.** Projected impacts, harvest guideline, percentage of harvest guideline represented by projected impacts and residual yield between the projected impacts and the harvest guideline for each sector under the preliminary preferred overfished species ACL alternative.

Sector	Yelloweye				Canary				Bocaccio				Cowcod			
	Impacts	HG	% HG	Residual	Impacts	HG	% HG	Residual	Impacts	HG	% HG	Residual	Impacts	HG	% HG	Residual
Limited Entry Non-Whiting Trawl	0.2	0.7	28.6%	0.5	11.1	21.3	52.1%	10.2	5.2	29.6	17.6%	24.4	0.3	1.9	16%	1.6
Limited Entry Fixed Gear	0.7	1.7	41.2%	1.0	1.7	2.5	80.0%	0.5	0.0	32.2	0.0%	32.2	NA	NA	NA	NA
Sablefish Open Access DTL	0.1	0.4	25.0%	0.3	0.3				0.0	26.0	1.2%	25.7	NA	NA	NA	NA
Nearshore Fixed Gear	0.9	0.9	100.0%	0.0	2.3	3.6	63.9%	1.3	0.3				NA	NA	NA	NA
Washington Recreational	2.5	3.3	75.8%	0.8	0.7	4.9	14.3%	4.2	NA	NA	NA	NA	NA	NA	NA	NA
Oregon Recreational	2.8	3.0	93.3%	0.2	3.1	16.0	19.4%	12.9	NA	NA	NA	NA	NA	NA	NA	NA
California Recreational	3.1	3.4	91.2%	0.3	9.1	22.9	39.7%	13.8	55.0	161.8	34.0%	106.8	0.2	1.9	11%	1.7
Limited Entry Whiting Trawl																
Catcher Processor	NA	NA	NA	NA	1.9	4.8	39.6%	2.9	NA	NA	NA	NA	NA	NA	NA	NA
Trawl Mothership	NA	NA	NA	NA	1.4	3.4	41.2%	2.0	NA	NA	NA	NA	NA	NA	NA	NA
Trawl Shoreside	NA	NA	NA	NA	2.4	5.9	40.7%	3.5	NA	NA	NA	NA	NA	NA	NA	NA
Total Residual	3.1				51.3				189.1				3.3			

**Table 5.** Projected impacts, harvest guideline, percentage of harvest guideline represented by projected impacts and residual yield between the projected impacts and the harvest guideline for each sector under the intermediate overfished species ACL alternative.

Sector	Yelloweye				Canary				Bocaccio				Cowcod			
	Impacts	HG	% HG	Residual	Impacts	HG	% HG	Residual	Impacts	HG	% HG	Residual	Impacts	HG	% HG	Residual
Limited Entry Non-Whiting Trawl	0.2	0.6	33%	0.4	9.7	19.3	50%	9.6	9.7	19.3	50%	9.6	0.3	1.4	21%	1.1
Limited Entry Fixed Gear	0.7	1.3	54%	0.6	1.7	2.3	87%	0.9	0.0	12.3	0%	12.3	NA	NA	NA	NA
Sablefish Open Access DTL	0.1	0.3	33%	0.2	0.3				0.0	9.9	3%	9.6	NA	NA	NA	NA
Nearshore Fixed Gear	0.7	0.7	100%	0.0	2.1	3.3	64%	1.2	0.3				NA	NA	NA	NA
Washington Recreational	2.5	2.6	96%	0.1	0.5	4.4	11%	3.9	NA	NA	NA	NA	NA	NA	NA	NA
Oregon Recreational	2.4	2.4	100%	0.0	2.1	14.5	14%	12.4	NA	NA	NA	NA	NA	NA	NA	NA
California Recreational	2.4	2.6	92%	0.2	7.4	17.7	42%	10.3	52.2	65.8	79%	13.6	0.2	1.4	14%	1.2
Limited Entry Whiting Trawl																
Catcher Processor	NA	NA	NA	NA	1.2	4.3	27.9%	3.1	NA	NA	NA	NA	NA	NA	NA	NA
Trawl Mothership	NA	NA	NA	NA	0.9	3	30.0%	2.1	NA	NA	NA	NA	NA	NA	NA	NA
Trawl Shoreside	NA	NA	NA	NA	1.5	5.3	28.3%	3.8	NA	NA	NA	NA	NA	NA	NA	NA
Total Residual				1.5				47.3				45.1				2.3

**Table 6.** Projected impacts, harvest guideline, percentage of harvest guideline represented by projected impacts and residual yield between the projected impacts and the harvest guideline for each sector under the low overfished species ACL alternative.

Sector	Yelloweye				Canary				Bocaccio				Cowcod				
	Impacts	HG	% HG	Residual	Impacts	HG	% HG	Residual	Impacts	HG	% HG	Residual	Impacts	HG	% HG	Residual	
Limited Entry Non-Whiting Trawl	0.1	0.4	25%	0.3	7.3	8	91%	0.7	4.5	4.7	96%	0.2	0.2	0.9	0	0.7	
Limited Entry Fixed Gear	0.5	0.8	63%	0.3	0.6	0.9	89%	0.5	0	5.1	0%	5.1	NA	NA	NA	NA	
Sablefish Open Access DTL	0.1	0.2	50%	0.1	0.2				0	4.1	5%	3.9	NA	NA	NA	NA	
Nearshore Fixed Gear	0.4	0.4	100%	0.0	0.9	1.4	64%	0.5	0.2	NA	NA	NA	NA	NA	NA	NA	
Washington Recreational	1.6	1.6	100%	0.0	0.5	1.8	28%	1.3	NA			NA	NA	NA	NA	NA	NA
Oregon Recreational	1.5	1.5	97%	0.1	1.7	6	28%	4.3	NA			NA	NA	NA	NA	NA	NA
California Recreational	1.5	1.6	94%	0.1	7.6	9.6	79%	2.0	26.6	27.6	96%	1	0.03	0.9	0	0.9	
Limited Entry Whiting Trawl																	
Catcher Processor	NA	NA	NA	NA	0.5	1.8	28%	1.3	NA	NA	NA	NA	NA	NA	NA	NA	
Trawl Mothership	NA	NA	NA	NA	0.4	1.3	31%	0.9	NA	NA	NA	NA	NA	NA	NA	NA	
Trawl Shoreside	NA	NA	NA	NA	0.7	2.4	29%	1.7	NA	NA	NA	NA	NA	NA	NA	NA	
				0.9				13.2				10.2				1.6	

## OREGON DEPARTMENT OF FISH AND WILDLIFE REPORT ON ADDITIONAL PROPOSED RCA MODIFICATIONS

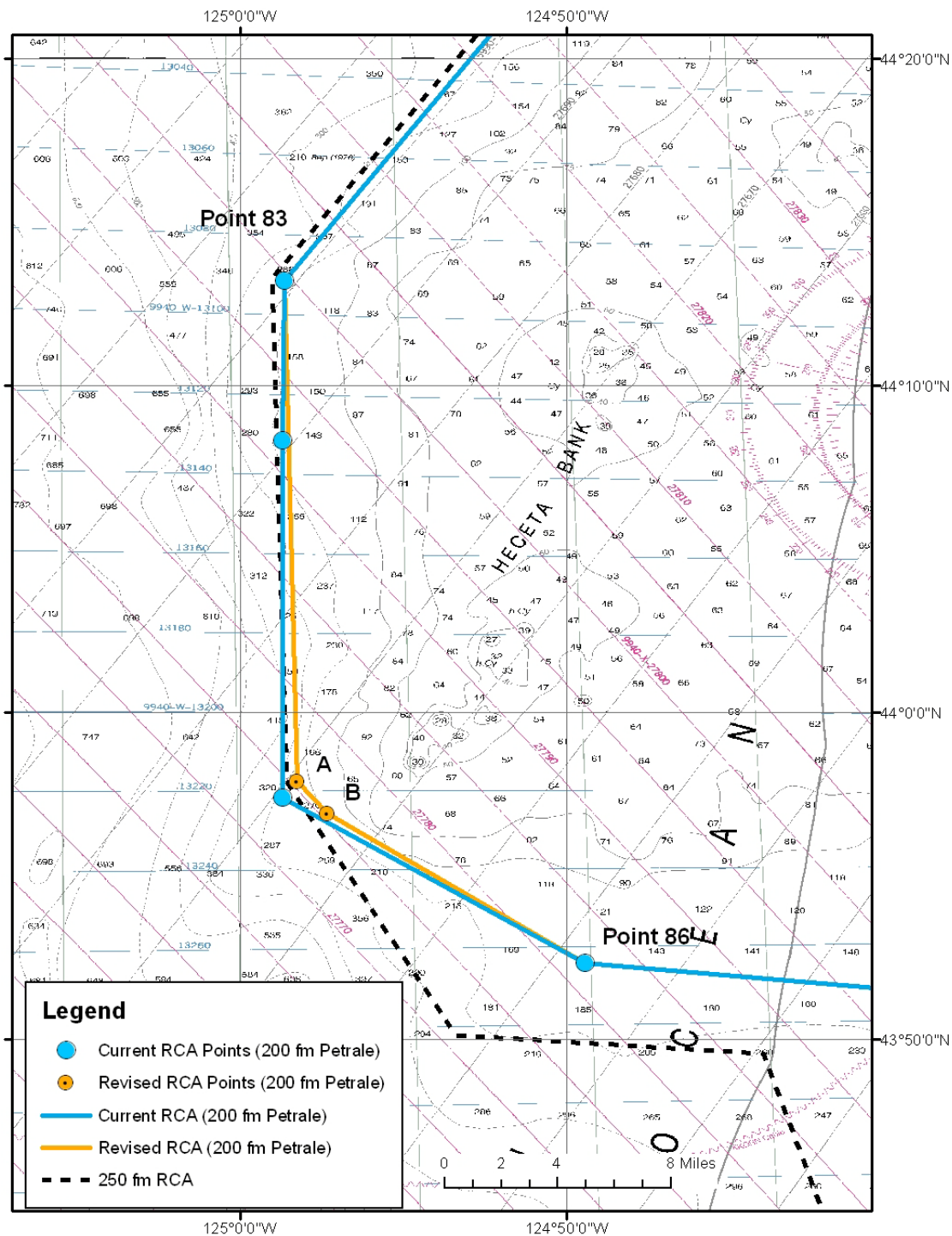
### ***Modification of the 200- fm petrale RCA near Heceta Bank***

- Oregon proposes a modification of the 200-fm modified petrale RCA near Heceta Bank (Figure 1). This adjustment will affect Oregon limited entry non-whiting trawl fishermen who fish seaward of the RCA. Currently, the modified 200 fm petrale RCA line is deeper than the 250-fm RCA, and in some cases crosses 400 fm depth contour (Figure 1). The fishing industry has requested to modify the 200-fm petrale RCA at this location so it is not deeper than the 250 fm RCA in this area. We propose removing two points from the current modified 200-fm petrale RCA (points 84 and 85) and adding to two points (points 79 and 80 taken from the current modified 250-fm petrale RCA). This modification may increase opportunities for Dover sole while having minimal additional impact petrale sole. We note that some areas seaward of the proposed RCA are as shallow as 100 fm whereas others remain as deep as 300 fm. Additional points could be added to better represent the 200 fm contour if requested.

Table 1. ODFW-proposed changes to the 200-fm petrale RCA near Heceta Bank.

Fathom Line	Proposed Coordinates						Action	Long Change	Original Coordinates Published in the Federal Register			
	Point	Lat		Long		Lat			Long			
		Deg	Min	Deg	Min	Deg			Min	Deg	Min	
200-fm petrale	83	44	13.19	124	58.66	Retain	None	44	13.19	124	58.66	
200-fm petrale	84					Delete		44	8.3	124	58.72	
200-fm petrale	85					Delete		43	57.37	124	58.71	
200-fm petrale	A	43	57.88	124	58.25	Addition	Shoreward					
200-fm petrale	B	43	56.89	124	57.33	Addition	Shoreward					
200-fm petale	86	43	52.32	124	49.43	Retain	None	43	52.32	124	49.43	

**Figure 1. ODFW-proposed changes to 200-fm petrale RCA near Heceta Bank. Blue Line = current 200-fm petrale RCA; Gold Line = proposed 200-fm petrale RCA; Dashed Line = 250-fm RCA. XXXX = proposed revision of the 200-fm petrale RCA.**





OREGON DEPARTMENT OF FISH AND WILDLIFE REPORT ON THE TENTATIVE  
ADOPTION OF THE 2011-2012 RECREATIONAL AND COMMERCIAL GROUNDFISH  
FISHERY SPECIFICATIONS AND MANAGEMENT MEASURES

*Advice from the Oregon Sport Advisory Committee*

The Oregon Department of Fish and Wildlife (ODFW) met with members of its Sport Advisory Committee (SAC) on June 1, 2010 to discuss the proposed management measures for the 2011-2012 Oregon recreational groundfish fishery. As an advisory committee, SAC provides management advice specific to the sport groundfish and halibut fisheries, and is comprised of representatives of the charter and private sectors of the sport fishery, as well as a representative of port commissions. Membership is distributed coastwide in an effort to have representation of each of the coast areas and includes members from inland areas along the Willamette Valley and areas south.

At this meeting, ODFW staff summarized the Pacific Fisheries Management Council (Council) preferred harvest levels for species that constrain the Oregon sport groundfish fishery (primarily yelloweye rockfish and cabezon) and the range of management measures that are proposed for this fishery. The comments received from the series of public meetings that were held in mid-May were also detailed (Agenda Item B.3.b; ODFW Report), and the same questions posed to the public in those meetings were asked of SAC. Figure 1 shows four options for the recreational groundfish fishery structure, including the option of allowing groundfish retention during the all-depth Pacific halibut openings. Figure 2 shows bag and sub-bag options for decreasing the cabezon impacts from the ocean boat portion of the recreational fishery. The following summary represents the discussion by SAC members.

1. How should the season be structured? If more yelloweye rockfish impacts are allowed, how should they be used; more all-depth months or groundfish retention during the all-depth halibut days?

Members of SAC discussed the options presented in Figure 1, however, did not come to a consensus. Most of the discussion centered on Options 2 and 3, assuming the Council's preliminary preferred yelloweye Annual Catch Limit (ACL) of 20 mt. All members of SAC would like to see more opportunities for anglers; however, they differed on if those opportunities should come in the form of fewer depth-restricted months or allowing groundfish retention during the Central Oregon all-depth Pacific halibut openings.

Removing the 40-fathom depth restriction during the month of April would allow for more offshore opportunities, during a time period when few if any other fishing opportunities are available. While removing the 40-fathom restriction during September would provide additional groundfish fishing opportunities, in most years, salmon and/or tuna opportunities are available during September. Additionally SAC discussed that weather affects the north coast and the south coast of Oregon differently, which would affect anglers ability to utilize additional months not restricted by depth.

The discussion on allowing groundfish retention during the all-depth halibut openings focused on the difference between anglers retaining truly incidentally caught groundfish and anglers targeting groundfish while halibut fishing. Given the recent, and anticipated continuing decrease in the Area 2A halibut quota, it is believed that there will be fewer all-depth halibut days, and potentially less yelloweye rockfish impacts, than are currently occurring. However, there was still concern over changes in angler behavior such as: fishing in different locations (locations that are currently avoided to avoid groundfish bycatch); or stopping on the way in from halibut fishing to fill bag limits of marine fish, that are not predictable in a model.

If the Council chooses a yelloweye rockfish coastwide ACL less than 20 mt, SAC expressed a desire to have the fishery as close to status quo as possible, in terms of bag limits, seasonal depth restrictions and other regulations.

## 2. How should cabezon impacts be reduced?

SAC discussed the need to reduce impacts to cabezon, given the new Oregon stock assessment, and the need to reduce all Oregon impacts to 48 mt by 2012. Currently cabezon is managed by a state harvest cap of 47.1 mt for commercial and ocean boat recreational fisheries. The shore and estuary recreational fishery and discard mortality account for an additional ~3.0 mt of impacts. SAC suggested that the shore and estuary and discard impacts be taken off the top of the ACL, then recreational and commercial fisheries allocated based on the current percentages of the state harvest cap. Most SAC members thought a partial year sub-bag limit would work as a way to decrease cabezon impacts, and still allow for a year-round fishery. SAC disagreed with public comment somewhat on the length of time for a sub-bag limit. The public requested the sub-bag limit go into affect for the same months as the depth restrictions, for ease of regulations. SAC would rather see the sub-bag limit in affect only in months necessary to keep total harvest below the recreational allocation. A minority of SAC members suggested status quo management (no sub-bag limit, go to non-retention of cabezon when the recreational allocation is achieved).

## 3. Other Comments from SAC

- reiterate the desire from the public meetings to allow (limited) canary rockfish retention. There is concern that as this species rebuilds, recreational fisheries are not allowed to show additional impacts, while other sectors are. This may lead to issues with future allocations between sectors. Additionally, anglers are reporting a large amount of canary rockfish bycatch, even while trying to avoid them, and it is a shame to have to release all of them.
- would like ODFW to provide more information and instruction on rockfish release devices and methods
- would like ODFW to improve education and education materials on identification of rockfish, specifically the orange and red rockfish
- agree with the public comments on developing an improved rockfish stock assessment survey
- set regulations in a manner that allows ODFW to have more flexibility managing the recreational fishery inseason

Option	J	F	M	A	M	J	J	A	S	O	N	D	Est. Yelloweye Impacts (mt)		Est. Canary Impacts (mt)	
													Status quo	GF in halibut	Status quo	GF in halibut
1	Open all depths			Open < 40 fm						Open all depths			2.1	2.5	2.4	2.8
2	Open all depths			Open < 40 fm						Open all depths			2.3	2.6	2.5	3.0
3	Open all depths			Open < 40 fm						Open all depths			2.5	2.8	2.7	3.1
4	Open all depths				Open < 40 fm			Open all depths				2.9	3.21*	2.9	3.4	

\* exceeds the projected 3.0 mt yelloweye allocation, under the Preliminary Preferred Alternative (20 mt ACL)

Figure 1. Oregon recreational fishery seasonal depth structure and projected yelloweye and canary rockfish impacts with and without groundfish retention during the all-depth halibut openings, for 2011-2012.

													Ocean Boat Cabezon
Option	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Impacts (mt)
1	7												20.0
2	3												19.7
3	2												19.3
4	1												3.8
5	7					1		7					15.0
6	7					1			7				12.0
7	7				1				7				8.8
8	7			1						7			6.1

Figure2. Oregon ocean boat recreational fishery cabezon impacts modeled under varying seasonal bag/sub-bag limits.

### *Advice from the Oregon Commercial Nearshore Fishery Advisory Panel*

The Oregon Department of Fish and Wildlife (ODFW) met with members of its Commercial Nearshore Fishery Advisory Panel (CNFAP) on June 1, 2010 to discuss potential inseason management measures for 2010 and upcoming groundfish specifications and management measures under consideration for 2011-2012. As an advisory panel, the CNFAP provides management advice specific to the commercial nearshore fishery. The panel is made up of fishermen that participate in the state-permitted limited entry commercial nearshore fishery for rockfish, cabezon and greenling species as well as buyers of fish caught by this sector. The CNFAP members come from most of the ports along the Oregon coast where landings from this fishery are made, represent all gear types used in the fishery, and include those with interests in both the live fish and fresh fish markets.

At this meeting ODFW staff summarized information regarding the potential in-season 2010 changes and the 2011-2012 management options that will be evaluated at the Pacific Fisheries

Management Council (PFMC) meeting in June. Input from industry members was solicited for four specific items:

1. 2010 in-season management options to reduce yelloweye rockfish impacts
2. 2011-2012 management options for the nearshore fishery
3. Measures to reduce cabezon impacts
4. State management options for the above three items

### **Response of Participants:**

#### *2010 In-Season Management Options for the Nearshore Fishery:*

Staff discussed measures that may be necessary to be implemented inseason in response to the recent court decision on reducing the yelloweye rockfish optimum yield for 2010. There was a strong agreement among the participants that the nearshore fishery should not be required to further reduce their take of any species. Reasons included that the fishery had been significantly downsized initially and that the large reductions necessary to see significant reductions in impacts to yelloweye rockfish would inevitably force the fishermen and their associated industries out of business. In terms of the management options presented, a majority of participants would prefer to reduce trip limits and the overall cap in order to keep the fishery open as long as possible, rather than fishing at the current rates and forcing an in-season closure. They pointed out that it would be more practical to have a constant, if reduced, supply of fish for the buyers and processors. Some participants suggested that a slight decrease in cabezon would not adversely affect them, but others disagreed. It was also suggested that some could give up black rockfish, particularly for those on the south coast, where black rockfish is not a focus of the live-fish fishery, but those that fish primarily black and blue rockfish did not agree with this option. Participants repeatedly stressed the importance of the nearshore fishery as a stop-gap during tough times in the fishing industry coast-wide and one participant noted that this was the only fishery in which he participated in.

Certain participants thought that reducing other nearshore rockfish (ONSR) might be a viable option to reduce impacts. However, there was also the feeling that black rockfish would not be enough to sustain the fishery and that in order to maintain current income levels the fish captured for the live-fish fishery shouldn't be reduced. Participants from the north coast pointed out that they rely heavily on black rockfish because there is no market for live-fish, and that there would need to be extremely large reductions of the black/blue rockfish quota to significantly reduce yelloweye rockfish impacts. Participants also stressed that lost income from a reduced nearshore fishery of any kind could not be made up through other fisheries. Participants were frustrated that decisions regarding the fishery were, in essence, out of ODFW's hands (PFMC's as well) and in the hands of the court.

It was noted that Oregon and Washington had already eliminated their research quotas in order to reduce yelloweye rockfish impacts, and participants expressed conflicting views with this particular point. Some pointed out that a further reduction in the knowledge utilized for stock assessments could lead to long-term negative effects within the nearshore fishery, while others expressed that research should be the "first thing to go".

### *2011-2012 Management Options:*

Staff discussed alternatives for management of this fishery in 2011-2012. Information provided included a description of the modeling approach that has been taken and the need for a large range of alternatives. Staff noted that although there will be a new federal annual catch limit (ACL) set for cabezon which would likely require a reduction from the present Oregon landing cap, yelloweye rockfish impacts were likely to be a more constraining factor for the fishery. It was pointed out that the GMT model was based on the average catch over the last 3 years and that Oregon landing caps for both black rockfish and ONSR catch were higher in 2009 than in the previous two years. Thus the “Status quo” presented to Council was roughly a 21 mt (16%) reduction for black rockfish catch from 2009 catch levels and the options being examined by the Council showing 33 – 69% percent reductions in black rockfish and greenling catch and 44 – 79% reductions in catch for other species in order to reduce impacts to yelloweye rockfish were reductions from the 3-year average, not from the present landing caps or 2009 catch. The group discussed the management tools available for this fishery and provided the following comments:

### *Gear Concerns:*

Gear was a reoccurring theme in the discussion, although some felt that it should be less of an issue because a diversity of gear kept the fishery strong. There was significant frustration expressed with use of longline gear. It was suggested that longlines should be banned or restricted in this fishery, due to potentially higher rates of yelloweye bycatch. Participants suggested that it was less experienced longliners that increased yelloweye impacts for the entire fleet, and that the more experienced longline fishermen knew how to avoid yelloweye rockfish when fishing. Some participants did not feel a complete ban on the gear was necessary or fair and suggested that a hook limit might be enforceable, but that it might not actually reduce overall effort. Other participants did not feel that discussion of gear was appropriate and that by limiting longline, effort would shift to other parts of the fishery.

### *Data quality and management:*

There was significant frustration with the quality of the federal observer program data and a certain amount of confusion with the correct way to fill out the fish tickets. Several fishermen expressed frustration with the lack of options for recourse with respect to the observer data and that many observers were inaccurate when recording certain species, particularly yelloweye rockfish, and the depth and location of fishing operations. Participants also expressed concern about the accuracy of the nearshore model being utilized by the Groundfish Management Team (GMT) to calculate yelloweye impacts based on observer data. One participant felt that bycatch of yelloweye was lower in relation to cabezon than for most other species rather than higher as the GMT model predicts. Participants were encouraged to fish as they would normally regardless of having observers on board, as this will increase the quality of the data. Fish tickets were also brought up, with confusion on how to specify the type of gear used, particularly with longlines.

### *Management measures:*

Similar to discussions about 2010 inseason management measures, there was strong agreement among panel members that the nearshore fishery should not be required to further reduce their take of any species. The social and economic impacts from the large reductions in catch of targeted species required for the relatively small reductions in impacts to yelloweye rockfish predicted by the model were deemed unacceptable. Several participants noted the relatively

small portion of yelloweye rockfish allocated to the commercial nearshore to start with compared to some other fishery sectors.

Most participants felt that if reductions to targeted catch were implemented, keeping the fishery open throughout the year by lowering 2-month trip limits was preferable than shutting the fishery down early or for closing selected periods during the year. The consistent availability of fish for market, whether for the live fish or fresh fish market, was clearly stated to be important to the viability of businesses. One participant suggested that impacts to yelloweye rockfish would be reduced with a closure during certain months; others disagreed and suggested that yelloweye rockfish were more likely to be encountered in specific areas throughout the year. Closures during the year were also considered to be problematic by the fish buyers who depend on a reliable supply for market.

SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON TENTATIVE ADOPTION  
OF HARVEST SPECIFICATIONS, REBUILDING PLAN REVISIONS, AND  
MANAGEMENT MEASURES FOR 2011-2012 FISHERIES

The Scientific and Statistical Committee (SSC) reviewed proposed management for 2011-2012 groundfish fisheries. Mr. John DeVore of the Council staff presented the harvest specification alternatives.

The SSC endorses the acceptable biological catch (ABCs) in the proposed specifications with the following caveats: overfishing limits (OFLs) and ABCs should be set for the minor rockfish sub-complexes. These sub-complexes are functionally equivalent to complexes. According to National Standard 1 (NS1) Guidelines, OFLs and ABCs must be set for actively managed complexes. The SSC notes that once a group of species is identified which requires an aggregate annual catch limit (ACL), then an OFL and ABC should also be set for that group, since the grouping represents an independent unit for management and is actively managed.

The SSC recommends that OFLs and ABCs be set at the smallest groupings practicable. OFLs cannot reasonably be set at the species level within the sub-complexes as these species lack status determination criteria (SDC), are infrequently caught, and currently are not monitored adequately to identify catch to species. In each of the two geographic areas, the species within each sub-complex are caught together at similar depths (near-shore, shelf or slope), largely to the exclusion of species in the other sub-complexes. Therefore, managing at the larger minor rockfish complex level is not recommended. The SSC notes that the question of which species should be grouped together in complexes ought to be revisited before the next management cycle within a workshop or Stock Assessment Review-panel-like review that would also address vulnerability analyses and methods for identifying OFLs for tier 2 and 3 stocks.

Ideally, ABCs for complexes should be set by using the  $\sigma$  from the assigned category for each species along with a single  $P^*$  for the entire complex. However, the current preferred alternative for setting ABCs, i.e. assuming that all species in a complex are in category 3, is acceptable. NS1 guidelines suggest that complexes be managed to the most vulnerable species within the complex. The SSC recommends that this should be achieved by adjusting  $P^*$  to achieve the appropriate level of risk. Additionally, uncertainty in the actual distribution of species within the catch can be addressed by adjusting ACLs.

For rebuilding plans, there is no compelling constraint that requires a constant fishing mortality rate (F). However, a constant F policy is intended to allow for constant effort and therefore stability in the catch of species which co-occur with rebuilding species. The SSC also notes that economic analysis would be useful in the discussion of rebuilding plans in future annual specification documents. Such analysis would help clarify the short term costs and long term benefits of alternative rebuilding options.

### **Proposed 2011-2012 Tribal Management Measures**

Black Rockfish - The 2011 and 2012 tribal harvest guidelines will be set at 30,000 pounds for the management area between the US/Canada border and Cape Alava, and 10,000 pounds for the management area located between Destruction Island and Leadbetter Point. No tribal harvest restrictions are proposed for the management area between Cape Alava and Destruction Island.

Sablefish - The 2011 and 2012 tribal set asides for sablefish will be set at 10 percent of the Monterey through Vancouver area ACL minus 1.6 percent to account for estimated discard mortality. Allocations among tribes and among gear types, if any, will be determined by the tribes.

Pacific cod - The tribes will be subject to a 400 mt harvest guideline for 2011 and 2012.

For all other tribal groundfish fisheries the following trip limits will apply:

Thornyheads - Tribal fisheries will be restricted to 17,000 lbs/2 months for shortspine thornyheads and 22,000 lbs/2 months for longspine thornyheads. Those limits would be accumulated across vessels into a cumulative fleetwide harvest target for the year. The limits available to individual fishermen will then be adjusted inseason to stay within the overall harvest target as well as estimated impacts to overfished species

Canary Rockfish - Tribal fisheries will be restricted to a 300 pound per trip limit.

Other Minor Nearshore, Shelf and Slope Rockfish - Tribal fisheries will be restricted to a 300 pound per trip limit for each species group, or the Limited Entry trip limits if they are less restrictive than the 300 pound per trip limit.

Yelloweye Rockfish - The tribes will continue developing depth, area, and time restrictions in their directed Pacific halibut fishery to minimize impacts on yelloweye rockfish. Tribal fisheries will be restricted to 100 pounds per trip.

Lingcod - Tribal fisheries will be subject to a 250 mt harvest guideline for 2009 and 2010.

Spiny Dogfish – Tribal fisheries for dogfish in 2011 and 2012 would be restricted to 200,000 lbs/2 months. Targeting of dogfish by treaty fishermen in 2011 and 2012 would be conducted while staying within current estimates of impacts on overfished species.

Full Retention - The tribes will require full retention of all overfished rockfish species as well as all other marketable rockfishes during treaty fisheries.



## **Makah Trawl Fisheries for 2011 and 2012**

Midwater Trawl Fishery - Treaty midwater trawl fishermen will be restricted to a cumulative limit of yellowtail rockfish, based on the number of vessels participating, not to exceed 180,000 lbs/2 month period for the entire fleet. Their landings of widow rockfish must not exceed 10 percent of the cumulative poundage of yellowtail rockfish landed by a given vessel for the year. The tribe may adjust the cumulative limit for any two-month period to minimize the incidental catch of canary and widow rockfish, provided the average cumulative limit does not exceed 180,000 pounds for the fleet.

Bottom Trawl Fishery - Treaty fishermen using bottom trawl gear will be subject to trip limits similar to those applied to the limited entry fishery for shortspine and longspine thornyhead, Dover sole, English sole, rex sole, arrowtooth flounder, and other flatfish in 2009-2010. These are 110,000 lbs/2 months for Dover sole, English sole, and Other Flatfish; 150,000 lbs/2 months for arrowtooth flounder; 17,000 lbs/2 months for shortspine thornyhead; and 22,000 lbs/2 months for longspine thornyhead. For Dover sole, longspine thornyheads, and arrowtooth flounder, these bi-monthly limits in place at the beginning of the season will be combined across periods and the fleet to create a cumulative harvest target. The limits available to individual fishermen will then be adjusted inseason to stay within the overall harvest target as well as estimated impacts to overfished species. For petrale sole, fishermen would be restricted to 50,000 pounds per two month period for the entire year. Because of the relatively modest expected harvest, all other trip limits for the tribal fishery will be those in place at the beginning of the season in the limited entry fishery and will not be adjusted downward, nor will time restrictions or closures be imposed, unless in-season catch statistics demonstrate that the tribe has taken  $\frac{1}{2}$  of the harvest in the tribal area. Fishermen will be restricted to small footrope ( $\leq 8$  inches) trawl gear. Exploration of the use of selective flatfish trawl gear may be conducted in 2010.

Observer Program - The Makah Tribe has an observer program in place to monitor and enforce the limits proposed above.

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE REPORT ON MANAGEMENT  
MEASURE ALTERNATIVES FOR THE 2011-2012 WASHINGTON RECREATIONAL  
GROUNDFISH FISHERIES

The Washington Department of Fish and Wildlife (WDFW) held public meetings on December 10, 2009; February 11, 2010; March 31, 2010; and May 7, 2010 to develop and discuss recreational bottomfish proposals for 2011 and 2012. The intent of the proposed alternatives is to maintain low levels of incidental catch of overfished rockfish, primarily yelloweye, when anglers are targeting halibut and lingcod, while providing for quality recreational fishing experiences.

Depth restrictions and area closures have been used for several years to keep the fishery focused in shallower water and away from known yelloweye rockfish areas. This has resulted in reduced catches of both yelloweye and canary rockfish, and increased survivability of released rockfish.

Based on the input provided, WDFW would like to offer the following as preferred alternatives for the Council's consideration:

**Coastwide (Marine Catch Areas 1-4)**

Status quo seasons and sublimits for lingcod (two per angler per day) and rockfish (10 per angler per day) would remain in place.

Relative to the aggregate bottomfish limit, WDFW prefers Alternative 2, which is to reduce the bag limit to 12 bottomfish. While the current limit is 15, angler interview data indicate that 99.9% of the anglers do not retain more than 12 bottomfish.

Cabazon are subject to the aggregate bottomfish limit, but currently do not have a separate sublimit in coastal waters; however, there is a sublimit of two cabazon inside Puget Sound (i.e., east of the Bonilla-Tatoosh line and in Marine Catch Areas 5-13). As the status of cabazon off Washington is unknown and catches have recently increased on the coast, WDFW would prefer to place a sublimit of two cabazon per angler per day, which would promote consistency between the coast and Puget Sound.

**North Coast (Marine Catch Areas 3 and 4)**

WDFW prefers Alternative 2, which is: Prohibit retention of bottomfish seaward of 20 fms from June 1 through September 30 in Areas 3 and 4A, and seaward of 20 fms in Area 4B year-round, except on days halibut fishing is open; cannot fish for, retain, or possess bottomfish or halibut in YRCA.

## **South Coast (Marine Catch Area 2)**

WDFW prefers Alternative 2, which is: Prohibit retention of bottomfish, except rockfish, seaward of 30 fms from March 15 through June 15, except sablefish and Pacific cod retention is allowed May 1 through June 15; no retention of bottomfish, except lingcod, during primary halibut season; no retention of lingcod south of 46 deg. 58' and seaward of 30 fms on Fridays and Saturdays from July 1 through August 31; and cannot fish for, retain, or possess bottomfish or halibut in South Coast YRCA and Westport Offshore YRCA.

## **Columbia Area (Marine Catch Area 1)**

Minimal amounts (i.e., less than 0.1 mt) of yelloweye and canary rockfish are caught in Marine Catch Area 1; therefore, WDFW prefers to keep the status quo bottomfish fishing regulations in place through 2011 and 2012.

WDFW believes that the range of management measure alternatives presented above is sufficient to stay within the state harvest targets or guidelines for yelloweye and canary rockfish. We are committed to monitoring our catch inseason and will take action as appropriate to ensure our harvest targets or guidelines are not exceeded.

----- Original Message -----

**Subject:**Public comment

**Date:**Tue, 11 May 2010 08:45:21 -0700

**From:**Kevin B Mc Grath <[kevinb@humboldt.net](mailto:kevinb@humboldt.net)>

**To:**[pfmc.comments@noaa.gov](mailto:pfmc.comments@noaa.gov)

I ask that the Petrale sole be delisted as a federally managed groundfish. As a deep water fish it should be placed with Pacific Halibut and other flatfish. Please consider this logical request

Kevin Mc Grath

P.O. Box 1

Redway,CA

95560

707-223-1939

----- Original Message -----

**Subject:**Rockfish regulations in Northern California

**Date:**Fri, 21 May 2010 17:57:25 -0700

**From:**Tim <[reelsteel@humboldt1.com](mailto:reelsteel@humboldt1.com)>

**To:**[pfmc.comments@noaa.gov](mailto:pfmc.comments@noaa.gov)

My name is Tim Klassen and my wife Sherry and I own a charter fishing business in Eureka California. There are about 10 other charter operators in our region. In 2008 and 2009 we all relied primarily on rockfish for our income since issues with Sacramento Chinook salmon prevented us from fishing for salmon. Due to yelloweye rockfish restrictions, the rockfish season here is 3 to 4 months long. In other words, nearly all of our income comes in 3 to 4 months. This year we will have a reasonable salmon season which will put less pressure on rockfish. I am greatly concerned that if salmon seasons are restricted like the last two years that we will have to rely on rockfish again. If rockfish is restricted any further it would have a devastating impact to our industry. The season length has a direct correlation to our ability to earn a living. If the season were shortened by one month then that would reduce our income by 25%, if two months then the impact would be 50% and so on. Please consider this when allocation of yelloweye are made. Also, Marine Protected Areas that are currently being proposed for our area should help to reduce yelloweye bycatch. Thank you for your consideration. Sincerely, Tim Klassen Reel Steel Sportfishing

----- Original Message -----

**Subject:**Yelloweye Testimony

**Date:**Wed, 26 May 2010 08:29:38 -0700

**From:**Terry Kennedy <[goldbeachfishing@gmail.com](mailto:goldbeachfishing@gmail.com)>

**To:**[pfmc.comments@noaa.gov](mailto:pfmc.comments@noaa.gov)

5/26/2010

My name is Terry Kennedy and I fish the commercial nearshore fishery out of Gold Beach and Port Orford, Oregon. I am also a river guide on the Rogue River so I interact with tourist frequently.

I have grave concerns about the reduction of the Yelloweye by-catch. In order for us to continue to stay in business, our fishery cannot afford any more cutbacks. A lot of our costs of operation continue on even when we are not fishing. We have to be able to supply an ample amount of fish to our buyers in order to keep them in business as well. This fishery is a vital part of our economy on the South Oregon coast. It is a huge draw for an oceanfront community to have locally caught fish in our restaurants and local markets for the tourists to enjoy.

I am requesting that you not reduce our Yelloweye catch.

Thank you,

Terry Kennedy  
95676 Quail Mt Rd  
Gold Beach, OR 97444

----- Original Message -----

**Subject:**quota cuts

**Date:**Tue, 25 May 2010 22:19:23 -0400 (EDT)

**From:**[Tedboattime@aol.com](mailto:Tedboattime@aol.com)

**To:**[pfmc.comments@noaa.gov](mailto:pfmc.comments@noaa.gov)

As a participant in the nearshore live fisherie, I find the proposed cuts to the catch quota a lame duck way of going about things. All of your info comes from computer generated programs and not real time info. I have been a commercial fisher for over 30 years in one aspect or another and have to deal with bad information. Before you decide on anything maybe the board members need to get a first hand look at what goes on than what is on a computer screen. First hand information is needed now more than ever.

Ted A Johnson

----- Original Message -----

**Date:** Tue, 25 May 2010 18:15:02 -0700  
**From:** Wayne Van Waveren <[vandrifter@charter.net](mailto:vandrifter@charter.net)>  
**To:** [pfmc.comments@noaa.gov](mailto:pfmc.comments@noaa.gov)

Council

I am a Black and Blue nearshore fisherman. We fish mostly inside 20 fathoms. We catch very few yellow eye and are able to return most of them. We have been cut back with quota so we can make very little money. To further restrict us would be a disaster financially.  
Thank you

Drifter 2

----- Original Message -----

**Subject:** Nearshore testimony  
**Date:** Tue, 25 May 2010 13:48:00 -0700  
**From:** [pescadito@charter.net](mailto:pescadito@charter.net)  
**To:** [pfmc.comments@noaa.gov](mailto:pfmc.comments@noaa.gov)

My name is David Smith. I am a commercial fisherman, in the 'Nearshore fishery' and have been fishing the Dawn Treader II for 8 years.

I am against further changes in the status quo of this fishery. We simply cannot survive with a 25% reduction, as proposed. Fuel prices, quota reductions, buyer problems, and the new Yellow-eye proposal, would simply make this a losing battle.

I have never caught a Yellow-eye in all my years in the nearshore fishery. Those that do, fish in deeper waters, such as trawlers, and many longliners from Port Orford. I would much more be inclined towards a hook reduction for longliners, that would discourage more bycatch of Yellow eye.

Please consider the economic impact of the 25% reduction.

Sincerely,

David Smith  
F/V Dawn TreaderII

----- Original Message -----

**Subject:**nearshore fish

**Date:**Tue, 25 May 2010 12:21:00 -0700

**From:**johnandjane <[johnandjane@charter.net](mailto:johnandjane@charter.net)>

**To:**[pfmc.comments@noaa.gov](mailto:pfmc.comments@noaa.gov)

John Fisher

You have made it impossible to make a living with the quotas that are in place now so cutting back more on the smallest guys quotas isn't even close to acceptable! This is from a fisherman that has made a living at fishing for salmon and snapper with hook and line for 33 years and you guys are putting us into the broke mode just to appease some more bigger qultons of the sea!!!

----- Original Message -----

**Subject:**Serious about Yelloweye

**Date:**Mon, 24 May 2010 23:43:56 -0700

**From:**Harry Whisman <[telsta860@gmail.com](mailto:telsta860@gmail.com)>

**To:**[pfmc.comments@noaa.gov](mailto:pfmc.comments@noaa.gov)

Hello,

I recently purchased a nearshore permit and was disappointed to hear some of the things said at the Port Orford metting recently. My understanding is that we need to get serious about cutting down the yelloweye mortality due to commercial fishing and my suggestion would be to cut down on the activities that kill the yelloweye the most. I have made 7 landings so far and before that, I went out on another nearshore boat for 5 other landings. In each case we fished with rods and reels in water less than 17 fathoms and the whole time I've been out there, I've seen 2 canaries caught and zero yelloweye. My understanding is that the yelloweye live in the deeper water so this is not at all unusual. At the meeting I was looking at numbers which didn't reflect my own observations and I must say I'm a little confused. Perhaps it has something to do with the the fact that perhaps boats that go out with thousands of baited hooks, maybe have a greater effect on the yelloweye than I do??!! Certainly the boats that go out with thousands of baited hooks set in deep water where the yelloweye live, have a much larger effect than guys like me who fish with jigs in the shallow water. It was stated at the meeting that the quota for black cod was actually going to be increased!! More fishing where the yelloweye mortality is the highest and less for those of us in the shallow water?? Am I missing something here??

The idea set forth of cutting out the nearshore fishery during November and December was presented by fishermen who crab during that time frame. I don't have a crab permit so naturally I don't think that's a fair solution either.

If you want to get serious about saving the yelloweye and you have to curtail something, then for crying out loud...curtail those activities which effect the yelloweye the most and leave those of us who have little to no effect alone.

Please!!

Harry Whisman

----- Original Message -----

**Subject:**Yellow Eye Impact

**Date:**Mon, 24 May 2010 23:00:32 -0700 (PDT)

**From:**Mike Tamalonis <[miketskyway@yahoo.com](mailto:miketskyway@yahoo.com)>

**To:**[pfmc.comments@noaa.gov](mailto:pfmc.comments@noaa.gov)

I fish commercial nearshore species out of Port Orford, Oregon and have watched the quota be cut every year since I have started 7 years ago. When is this going to end ? The price of fuel, tackle, parts, maintenance fees, dock fees, licenses and permits, and everything else has gone up at a steady rate. The only problem is the quota is going down at a steady rate. The fish buyers are not paying anymore than they were 3 years ago, but the operating costs still go up and the quota goes down.

Someone should really consider an ACCURATE STOCK ASSESSMENT. I talk to a lot of the old time veteran divers and they tell me there are more fish then ever. Has anyone ever thought of actually looking in the ocean to see what is there, instead of just watching what is caught and returned to the dock ??? Instead of sending observers out to count the time you drop a jig in the water, send a diver out with an urchin diver and take an accurate look at what is really there ! !

Any further cuts will have a great negative impact on the economy around the coast. Us commercial fisherman are trying to make a living. Take the cuts from the sport fishermen, that work all week and come out once in a blue moon to Play in the ocean and catch a couple fish

MIKE T - Silver Fox II



----- Original Message -----

**Subject:**Yelloweye Rockfish by-catch

**Date:**Mon, 24 May 2010 15:52:44 -0600

**From:**Mark Ludes <[foghorn@hughes.net](mailto:foghorn@hughes.net)>

**To:**[pfmc.comments@noaa.gov](mailto:pfmc.comments@noaa.gov)

Pacific Fishery Management Council

Re: Council meeting 2010 in-season Yelloweye reduction

To all it may concern;

Thank you in advance for reading and considering this comment. I am a commercial fisherman on the southern Oregon coast. I have been involved in the Nearshore (Live Fish) since 1997. For the past eight years I and many others have had to adjust to reductions of catch for one reason or another. Each reduction has been and is detrimental to my livelihood. This proposed reduction will impact us in not only the lessor of fish caught but also making it impossible economically for the fish buyer in our area to stay in business. Which again will impact most of the Nearshore fishermen with not having a place to sell their fish.

Currently I am forced to fish inside the 20 fm line. Generally I fish in 15 fm and shallower. I never see yelloweye rockfish. Eighty percent of Oregon's Nearshore Fishing is caught by live fish fishermen. The nearshore live fishing fleet are professionals at keeping fish alive and any unwanted species that are caught are quickly released alive back into the ocean.

Oregon's nearshore fishery is only allotted a very small amount of yelloweye by-catch, therefore any further reductions in our fishery would actually be minimal in the impact of yelloweye by-catch. I feel that there would be lessor by-catch of Yelloweye if the reduction was obtained from the Sportfishing Industry, ie: Lingcod, where the allotment is three times greater than the Nearshore Fishery. They are also aloud a greater area to fish due to no restrictions until they reach the 40 fm line.

I would request that there are no further cut backs or reductions of our Nearshore fish quotas currently inforced. Thank you for your consideration in this matter.

Sincerely,

Mark Ludes  
F/V ASTRID  
[foghorn@hughes.net](mailto:foghorn@hughes.net)



KEN FRANKE  
PRESIDENT

## SPORTFISHING ASSOCIATION OF CALIFORNIA

5000 N. Harbor Drive, Suite 100  
San Diego, CA 92106  
(619) 307-5834  
Email: kfranke2@san.rr.com

RECEIVED

APR 19 2010

PFMC

April 1, 2010

Mr. David Ortmann, Chairman  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, OR 97220-1384

Dear Chairman Ortmann,

In our letter dated March 5, regarding proposed changes to rules within the Cow Cod Conservation Area, there was an error in the text. The request was to permit retention of shelf rockfish, not slope rockfish. We believe this will reduce the work load of the wardens, as their attention would be focused on ensuring protection of Cow Cod, the true intent of this area. Please accept my apology for the error.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Ken Franke', is written over a horizontal line.

Ken Franke  
President  
Sportfishing Association of California



**MARINA del REY SPORTFISHING, INC.**

Mr. David Ortmann, Chairman  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, OR 97220-1384

5 APRIL 10

RECEIVED

APR 08 2010

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Sincerely,

  
Rick Ortmann, President

**J & T Sport-fishing Inc.**  
**SPITFIRE**  
13759 Fiji Way  
Marina Del Rey, CA. 90292  
(818)585-1959

**RECEIVED**

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7700 NE Ambassador Place, Suite 101  
Portland, OR 97220-1384

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Sincerely,

ERNEST A. PRIETO  
OWNER / CAPTAIN

Chubasco Sportfishing

Mr. David Ortmann, Chairman  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, OR 97220-1384

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Sincerely,

*Chris Piqua*  
"owner; Sea Jay Sportfishing"



Mr. David Ortmann, Chairman  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, OR 97220-1384

RECEIVED

APR 19 2010

April 6, 2010

PFMC

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Sincerely,

Mike Hansen

President

Dana Wharf Sportfishing



## AMERICAN ANGLER

The Finest in Long Range Sportfishing

Mr. David Ortmann, Chairman  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, OR 97220-1384

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APR 19 2010

PPMC

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Sincerely,

SAM PATELLA/BRIAN KIYOKAWA  
OWNER/OPERATORS

1403 Scott Street • San Diego, California 92106 • Phone (619) 223-5414 • Fax (619) 223-3296

E-mail: [office@americananglerssportfishing.com](mailto:office@americananglerssportfishing.com) • [www.americananglerssportfishing.com](http://www.americananglerssportfishing.com)



RECEIVED

APR 19 2010

PFMC

Mr. David Ortmann, Chairman  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, OR 97220-1384

April 5 2010

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Sincerely,



James Allen - Owner  
San Diego Sport Fishing, Inc.  
1403 Scott St.  
San Diego CA 92106

# INDIAN SPORTFISHING

1170 LOCUST ST SAN DIEGO CA. 92106 (619) 523-8862

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7700 NE Ambassador Place, Suite 101  
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Sincerely,

A handwritten signature in black ink, appearing to read "Thomas Scott Pottinger". The signature is fluid and cursive, with a large, stylized "T" and "P".

12190 Rockstream Road, Lakeside, CA 92040

**W**ESTPORT CHARTERBOAT ASSOCIATION  
P. O. BOX 654 • WESTPORT, WASHINGTON 98595

May 14, 2010

Pacific Fishery Management Council  
David Ortmann, Chairman  
7700 NE Ambassador Place  
Suite 101  
Portland, OR 97220-1384

RECEIVED

MAY 17 2010

PFMC

Re: 2011-2012 Groundfish Specs  
June, 2010 briefing book

Dear Chairman Ortmann,


The Westport Charterboat Association endorses the proposals submitted to you by the Washington Department of Fish & Wildlife under the Groundfish agenda item for "Harvest specs., Mgmt Measures & Rebuilding plans" scheduled to begin Monday, June 14.

Although we don't usually favor management changes that reduce bag limits, it is apparent that no one is catching more than the proposed new limits. In addition, there are generally no stock assessments for stocks that might fall in the range between current catches and overall limits. We support precautionary management because it enhances the continuation of sustainable fisheries.

With regard to the potential allowance for fishing for Rockfish outside 30 fathoms during the mid-March – mid-June closed period, we are very supportive. The vast majority of Yelloweye encounters are experienced when targeting Lingcod. We agree with the continuance of restriction on Lingcod fishing outside 30 fathoms. Trips taken outside 30 would be targeting Yellowtail Rockfish which are abundant.

Thank you for your consideration.

Respectfully yours,



Larry Giese  
Washington charterboat representative / GAP  
Secy-Treasurer, Westport Charterboat Association

May 24, 2010

To:  
Pacific Marine Management Council

Dear Committee,

In the last few years, longliners have come into the near shore targeting cabezon due to the salmon closure and other factors. The problem with this is that methods of fishing used for midwater and depths greater than twenty fathoms are aggressive and impact yellow eye rockfish, canary rockfish, and juvenile rockfish that are spawned and live inside the twenty- fathom area.

Therefore, we respectfully ask that the Pacific Marine Fisheries Committee to consider a limit on the number of hooks to be used inside the twenty- fathom area, in order to minimize "by-catch" and juvenile mortality.

In a second issue, the Oregon Department of Fish and Wildlife introduced the fact that the PMFC is seeking a twenty-five percent (25%) reduction in the overall catch for near shore fishermen. This comes five months after we were hit with a 35% increase in license fees. Fuel costs, slip rentals, and overall expenses have all increased. We therefore say "NO!" to this reduction. Such a reduction will deeply affect fishermen, buyers, wholesalers, and the consumer.

While fishermen are receiving no more income from their work, these increases and proposed cuts put us one step closer to going out of business. Again, we say "NO!"

Respectfully Submitted,

Signature Don Webb 5/25/10

Printed Name Don WEBB

Name of Vessel NAVANAX

May 24, 2010

To:  
Pacific Marine Management Council

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Respectfully Submitted,

Signature 

Printed Name Joey Sanders

Name of Vessel Shotgun Annie

May 24, 2010

To:  
Pacific Marine Management Council

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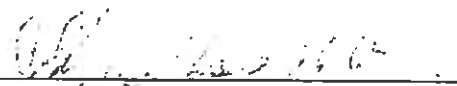
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Respectfully Submitted,

Signature



Printed Name

Christopher M. Jones

Name of Vessel

138-230000



May 25, 2010

To:

The Pacific Marine Management Council

And All Concerned.....

Dear Committees,

I feel that being charged with increased permit license fees (35% this year alone) for 2010, coupled with already reduced quotas on certain species, that more reduction on catch quota is not the answer to saving struggling fish species. Instead, I believe more reductions for those species would further cripple the already struggling near shore fisherie.

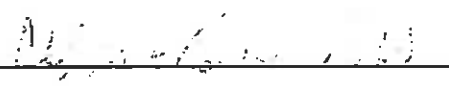
I would like to propose a uniform hook limitation-stipulation, not to exclude anyone; not long-line, hook and line, or cable gear. All boats fishing inside the 20-30 fathom line should be limited to 150 hooks per boat, per day, being fished at any time. This, instead of the suggested reductions, would create a more level playing field for all concerned.

This proposal helps reduce by-catch numbers, and promotes the return of healthier fish of all species to the reef. This in turn helps increase fish populations that sustain an entire fisherie, commercial and public alike, for years to come.

The hook limit solution could have a positive impact on the environment ,the reef itself, the by-catch quotas, and the near shore live fish industry especially, that depends so heavily on the near shore boundary and regulations to make a living.

Less hooks means less soak time. Less soak time means lower mortality rates for all species, harvestable and protected alike.

Respectfully,

Signature 

Printed Signature Charles R. Moore

Fishing vessel NOV-0151200

May 25, 2010

To:

The Pacific Marine Management Council

And All Concerned.....

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Signature Michael McGrath

Printed Signature Michael McGrath

Fishing vessel The Princess

May 24, 2010

To:  
Pacific Marine Management Council

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Respectfully Submitted,

Signature William J. Harrison

Printed Name William J. Harrison - Captain

Name of Vessel UC Pisano

MAY 25 2010

CHAIRMAN ORTMANN:

Including all Council members

AS A COMMERCIAL FISHERMAN HERE IN  
PORT ORFORD OREGON, AND OWNER-OPERATOR  
OF A PERMITTED NEAR SHORE ROCKFISH VESSEL I FEEL  
COMPULSED TO WRITE TO YOU & YOUR GROUP  
STATING MY FEAR THAT YOU WILL LOWER OUR  
QUOTA OR CURTAIL OUR FISHING METHODS OR  
BOTH IN ORDER TO SAVE MORE YELLOWEYE-  
ROCKFISH - WE IN PORT ORFORD HAVE DONE EVERYTHING  
IN OUR POWER TO LIMIT INTERACTION WITH THESE  
FISH - YOU CAN LOOK AT YOUR OWN OBSERVER DATA -  
MY OWN EXPERIENCE OF THE PAST THREE YEARS FISH-  
ING WITH & WITHOUT AN OBSERVER (OBSERVER DAYS  
IN THREE YEARS 78 DAYS) I'VE CAUGHT ONE YELLOW-  
EYE & 22 CANARIES AND CAN SAY ALL BUT  
ONE CANARY WERE RELEASED ALIVE & WELL.  
I UNDERSTAND YOU'VE BEEN SUED, AND HAVE A  
RESPONSIBILITY TO PROTECT, BUT I FEEL IF YOU  
PICK ON THE COMMERCIAL ROCKFISH NEARSHORE  
FISHER'S TO SAVE YELLOWEYE YOU MAY PUSH  
US INTO BANKRUPTCY, YOU HAVE AN ECONOMIC  
RESPONSIBILITY TO COMMUNITIES & THEIR COMMERCIAL  
FISHERS AS WELL (MAC-STAVENS ACT) PLEASE USE  
COMMON SENSE - WE FISHERS HAVE BEEN  
PUSHED TO THE LIMIT ALREADY -

THANKS

SIGN OF DISTRESS

MIKE DSHDOWN

F/V IRISH - ROSE -

Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, Oregon 97220-1384

May 25, 2010

Comments prepared for the June 2010 meeting of the Pacific Fishery Management Council

Ladies and Gentleman of the Council,

We have a problem. It manifests itself in the Supplemental Report of the Science and Statistical Committee, "An approach to Quantifying Scientific Uncertainty in West Coast Stock Assessments." I asked a distinguished colleague to review this document. He is unfamiliar with the Council but he is well qualified to speak to the issue of "Best Available Science."

Here is what he said, "The idea that we will ignore some key uncertainties and then adjust the decision for that oversight is silly. It is usually more important to understand (and characterize) what you don't know than it is to refine an analysis of the things you do know. Statisticians tend to focus on the latter because that is where the data are."

Actually, I think we have two problems. The first is a problem of inappropriate framing. The second is a misuse of probability theory.

Inappropriate framing is the root cause of most bad decisions in any field. People often refine the answer to the wrong problem. The Council has framed the allowable catch problem as a fishery science problem. It is a management science problem.

The Council is charged with making an important decision on behalf of the American tax payer. The decision is how many fish should we allow fishers to catch? The applicable best available science for making this decision should be management science, supported by the best available biological and physical science. It is not biological and physical science alone.

Management science begins with the decision, not with the data. Decisions require us to look forward. When we make decisions we usually don't have adequate data about the future. It is not appropriate to base these decisions entirely on statistical data. The right approach is to begin by clearly framing the decisions to be made and clarifying the objectives. Then we can start modeling and collecting information. The modeling and the information collection are guided by what is important for improving the decisions. For example, we expect that marine protected areas and ocean zoning will affect our estimates of fish population dynamics. Decisions about marine protected areas and ocean zoning should not be treated as an afterthought.

Information and modeling are expensive so we need to gather and analyze information efficiently. In the case of the Council, the cost includes not only the cost of the SSC, but also the cost of the time of all the people who are involved. Not to mention the cost of bad decision making.

The second problem is with the SSC's use of probability theory. Management scientists rarely rely on raw statistics. Instead they rely on informed judgment, guided by all the relevant information that is available. It's called the Bayesian approach. The Bayesian approach is normative. It is what we should do, not a description of what we usually do. The SSC appears to regard Bayes rule as optional, a choice for them to make. It is not a choice, it is a fundamental law of the calculus of probabilities. We don't ignore the laws of physics when we don't understand them or they are difficult to use. It means we have to make the decision based on the best available information, judgment, insights from models, data, experts, etc. Whether we have historical data is not the issue.

Uncertainties are represented by probabilities. According to the laws of probability theory there are strict rules for updating our information as we learn more, i.e., Bayes rule. Management science has developed ways of determining the economic value of new information. They rely on the use of Bayes rule. Fishery science using classical statistics has no way of placing an economic value on information. As near as I can ascertain, none of this science is being applied by the SSC.

The SSC is constrained by what they know, classical statistics. Classical statistics is good for testing scientific theories. It is only marginally useful for making strategic resource decisions. The perspective of the SSC appears to be, If they are uncertain about something (usually because they have no data) then it doesn't exist. But then when they are finished analyzing they change their philosophy radically and arbitrarily start assigning probabilities. The methodology they use for assessing probabilities is definitely not best available science. The SSC paper is clear evidence of why classical statistics is not best available

science in this situation. The big idea is summarized in the question: Is it better to be precisely wrong or approximately right? The SSC and the Council are acting as though it is better to be precisely wrong.

Management science is about process as well as tools. The modeling process should begin with simple, transparent models. The addition of more complexity is guided by sensitivity analysis and the needs of the decision makers. We add complexity if it is going to improve our ability to make decisions. We don't add more detail purely for the purpose of increasing precision.

The models that the SSC uses were not built using any management science discipline. Consequently we now have models that are metaphorically like white elephants. They are big, unwieldy, and they have big appetites for expensive data. Furthermore they are not transparent. The SSC appears to have lost track of why the models were created: to inform decision makers and stakeholders.

I could go on about what is wrong with the existing system. The root cause is that best available science is not being applied. The best available science is management science, supported by the best available fishery science.

On June 8, 2008, I testified before this body while I was a member of the Groundfish Advisory Panel. My testimony follows:

*"I recommend that the Council develop a normative framework for making total allowable catch, stock assessment, and information collection decisions. The framework should include the costs and benefits of raising or lowering catch limits (preferably expressed in dollars. ) The framework should also include the uncertainties in fish stock estimates. In developing this approach NMFS should rely on the extensive literature and experience related to the science and engineering of decisions under uncertainty.*

*Such a framework would improve the Council's decisions and would provide more defensible arguments. As a welcome side benefit it would prevent many unproductive discussions about the precautionary approach. A normative quantitative framework would enable us to talk in a constructive way about how much precaution is appropriate in each situation.*

*Anyone interested in learning more about normative decision making should consult the vast literature on decision analysis or consult Steve Barrager, GAP Conservation Seat.*

*Development of this normative framework should have a high priority. It is not currently in the Research and Data plan."*

What has the Council done to address this issue in the last 2 years? Where do we go from here? Innovation is not going to come from doing more of the same. As Albert Einstein said, "Insanity is doing the same thing over and over and expecting a different result." I think we are going to have to take a new approach.

In summary, the objectives of all of all our analytical efforts are understanding, learning and efficiency. Does the current way of doing things help the Council understand the important issues and how they relate to decision making? Are we learning how to do things better or are we stuck in the same old pointless debates and political thumb wrestling? Are we getting value for our money?

This testimony is posted on my blog at BakerStreetPublishing.com. The address is <http://bakerstreetpublishing.com/blog/> . I welcome comments.

Thank you for your kind consideration.

Stephen Barrager, PhD  
Publisher  
[www.BakerStreetPublishing.com](http://www.BakerStreetPublishing.com)



TO Chairman Ortman  
Pacific Fisheries Management Council  
(503) 820-2299  
7700 NE Ambassador Pl St 101  
Portland OR 97220

My name is Scott Spencer and I work for a seafood company in Port Orford, OR. And as someone who makes a living from the live fish industry I'm very concerned and dismayed at the possible closure of this fishery. Even any limits beyond what are already such small quotas could severely hurt this market.

I've worked in the live seafood industry for over ten years and seen it grow and develop. It is highly sustainable due to its low impact environmentally. Fishermen are able to target species, and avoid others, without the mortality rates associated with other techniques of fishing.

Also the economic effects on the entire community should be taken into account. We employ truck drivers, service men for our equipment not to mention the fishermen, deck hands, barbers, boat mechanics, crane operators, dock workers and all the others involved in some or all, making a living from the live fish industry.

There must be a better answer than shutting us down. Maybe individual quotas, not statewide limits, that lump everyone together regardless of impact.

It seems like more study is needed before any decision is made, and keep everyone informed.  
Thank You for your time.

Scott Spencer  
(541) 332-7633 HM  
-7069 WK

Dear Mr Ortunann

My name is Jimbo Jennings owner operator  
FV/my Girl Nearshore fishing boat. Our job  
is to catch and deliver live rock fish to Norcal  
fish buyers, there for venting many spp of rock fish  
every fishing day, and any by-catch released.

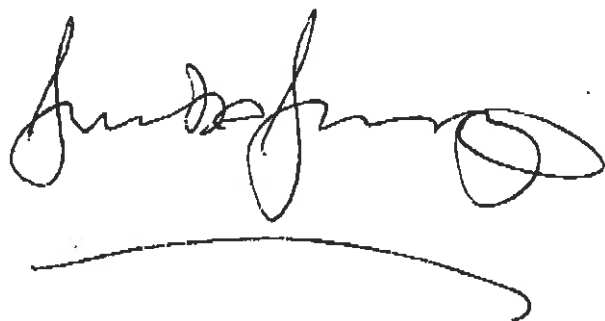
Question with continued fathern restrictions,  
reserve areas, catch restrictions, current bad  
economic conditions, a winter that wont  
quit, in a small community where every cent  
spent here counts, what next?

Why would you chose a perfectly viable  
and sustainable fishery on account of a  
spp of fish that by all accounts is on the  
recovery-expanding its area in fact, or  
opt. for a sport fishing only world where  
only the few are allowed our resources

shouldering us for the 3rd

could put the last straw on the  
camels back and break the Fish Buyers  
and ergo the whole live fish industry.  
By the way, you "sporties" can thank  
us for showing you how to vent and  
keep fish alive, too bad you forgot

When do we get something back?  
how about some recognition of a job  
well done, shouldering the current regs  
and witnessing the recovery of yellow  
eye + canary and the senching up tight  
and tighter on the pocket strings + poundage,  
and gear type and on and on...

A stylized, cursive handwritten signature, possibly reading "Jude", followed by a long horizontal flourish line.

Dear Mr. Urtmann

I have fished out of Port Oford  
for the last 18<sup>+</sup> years. We watched  
the fish restrictions tighten so developed  
a better market "Live Fishing" to sustain  
a fishery that was still profitable. At  
this time more restrictions and less money  
will most likely put a large # of fishermen  
backhand's and the Only livefish Buyer  
out of Business. Which would have a devastating  
impact on a coastal fishing community  
like and including Port Oford

Sincerely

Mark McClelland  
F/V Miss Emily

Linden Skoog + V Rock n Roll Gold Beach OR.

**RECEIVED** Trout + Cabazon Quota's Out of Whack!

MAY 24 2010

**PFMC**

Live-Fishing for rockfish using a 6 ounce lead jig with one treble hook placed of minimal strain on the Yelloweye by-catch quota.

When it comes to Live-Fishing, the reason for yelloweye by-catch can largely be blamed on the escalating use of longlines.

The larger boats in other ports were frustrated by not harvesting the full 2500 lb cabazon quota each period. (Just like jig fishers)

So like the excellent fishermen they are, they adopted new methods in order to realize the uncought portion. This led to longer lines with more boats and more boats fishing those lines. Last year it also resulted in the first early closure for cabazon in my 13 years of commercial fishing. And likewise more yelloweye by-catch, as these lines are usually fished in deeper water (outside 20 fathoms)

I believe if the Cabazon quota was decreased and the Seatrout quota increased, until they met in the middle, the yelloweye by-catch would quickly show signs of slowing.

Linden Skoog  
Thank You.



Oregon State Chapter

May 26, 2010

Dave Ortmann, Chairman  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, Oregon 97220-1384  
Email: [pfmtc.comments@noaa.gov](mailto:pfmtc.comments@noaa.gov)

Dear Chairman Ortmann and members of the Council,

We have been informed of a recent court decision requiring, among other issues, an inseason adjustment from 17 to 14 metric tons of yelloweye rockfish impacts for the remainder of the 2010 season. In addition an order is seen to revisit the yelloweye rebuilding plan including economic rationale for setting allowed impacts for this species to be completed within one year from order.

RFA-Oregon urges the Council to recommend an appeal to this court ruling. We feel it could be shown that this is a setting of fishery quotas by the bench which is outside of the normal court function of interpreting law. It is true, as well; that a thorough and comprehensive analysis of economic factors can be shown that includes all of the cumulative impacts from all regulatory constraints, not just those of one rebuilding species. The point can be made that some fishing communities are at a financial "tipping point" with regard to fishery support infrastructure. Small economic impacts could result in the collapse of a port's ability to support a fleet if these fixed costs cannot be met.

For 2010 inseason adjustments we recommend an 18% downward adjustment for all sectors where practical. We urge all future investments remain at a functional level such as research and EFP's. Research and EFP's are the only known vehicles that have any promise of helping fisheries better survive these constraints in the future. The court document does describe joint management with Canada which should be explored as well.

Sincerely,

John Holloway  
Recreational Fishing Alliance, Oregon Chapter  
Oregon Anglers

## ***Marine Protected Areas May Reduce Uncertainty and Precautionary Buffers***

Ocean Innovations  
Environmental Defense Fund  
Contact: Rod Fujita, Ph.D  
Tel: 415 293 6050 Email: rfujita@edf.org

May 25, 2010

### **Summary**

Uncertainty in fisheries management is unavoidable. Many factors contribute to uncertainty, including our inability to predict environmental conditions, sampling error, assessment error, and our inability to accurately predict fisherman response to management measures (management uncertainty). The high degree of variability that is characteristic of many fish populations also increases uncertainty.

Marine protected areas (MPAs) that restrict fishing sufficiently to allow depleted populations to rebuild and age structure to recover may provide a hedge against, and possibly reduce, these uncertainties in fisheries management. Like more conventional controls on fishing mortality such as allowable catch levels and effort controls, MPAs reduce fishing mortality on spawning stock – but it may be possible to quantify the amount of spawning stock protected in an MPA more precisely and accurately than it is to specify the spawning stock protected with other types of measures, if the MPAs are sampled well.

MPAs may provide a hedge against uncertainty in larval production and recruitment. Many fish populations, particularly those that have been depleted, exhibit age structure within MPAs that include higher proportions of megaspawners (large fish) relative to fishing grounds. These megaspawners are often exponentially more fecund than smaller fish, and in some cases, egg and larval viability is greater relative to the eggs and larvae of smaller fish. Hence, the “extra” (i.e., unaccounted for) recruitment expected as a result of these MPA effects may be considered to be a hedge or reduction in uncertainty.

The fisheries under PFMC jurisdiction span a large region rich in MPAs of various kinds, including MPAs with significant restrictions on fishing mortality which would be expected to yield the benefits discussed here. Examples may include the no-take and limited-take reserves of California’s MPA network and the Rockfish Conservation Areas. The paucity of monitoring data for the RCAs and various EFH designations make it difficult to determine whether these may be producing the MPA effects that would be important in reducing uncertainty. Conceptually, however, it may be possible to compute the effects of certain kinds of MPAs (where fishing is significantly restricted and for which data are available) on scientific and management uncertainty and adjust precautionary buffers to be applied to assessment reference points to generate Annual Catch Limits (ACLs) and Annual Catch Targets (ACTs).

### **Types of Uncertainty**

Uncertainty, or unknown variables, can be divided into two distinct, but interdependent categories: objective and subjective (Stergiou 2002). Objective uncertainties relate to variance in stochastic processes such as growth, larval dispersal, natural mortality, and recruitment. Here, such uncertainties, and the factors that increase them, are labeled natural/biological uncertainties.

Subjective uncertainties refer to the lack of sufficient knowledge regarding many of the above biological processes as well as deficiencies in population estimates or stock dependency correlations in current research and data. For the purposes of this paper these unknowns are labeled as assessment-based uncertainties. Finally, we recognize that uncertainties in each of the first two categories often manifest in management arenas, and thus create the need for a third category labeled management uncertainties. It is important to note that these three categories (natural/biological, assessment-based, and management) are interdependent and often cause, or are caused by, one another. Therefore, areas in which MPAs can reduce uncertainties in any one category may have beneficial effects within another. For example, MPAs may reduce variance in fisheries yield by increasing survivorship of limiting age classes.

#### *Natural/Biological Uncertainty*

Natural environmental uncertainties such as spatial and temporal variations in water temperature, salinity, nutrient availability, disturbance mechanisms (e.g., hurricanes, typhoons), and the effects of climate change cause impacts that are difficult to predict or detect. Biological uncertainties such as natural mortality, recruitment rates, fecundity, home ranges, and larval dispersal distances concerning target populations are also difficult to measure. Additionally, temporal variations between populations, sub-populations, and cohorts, as well as limited scientific knowledge concerning the genetic structure of target stocks add further uncertainties to this category (Grafton and Kompas 2005; FAO 2006). The effects of fishing practices, highlighted within the assessment-based and management sections below, create even greater difficulties in understanding natural factors such as mortality, nutrient availability, and recruitment rates. Together, all of these unknowns increase complexity and uncertainty, and reduce the stability of a fishery. Due to these complex interactions between fish stocks, ecosystem variables, and human actions, natural/biological parameters are often inexact and create significant fisheries management uncertainties even under data-rich scenarios.

#### *Assessment-based Uncertainty*

Due to lack of data, inaccurate data, inconsistent data, or structural errors (i.e., misunderstanding of functional relationships and processes), conventional and alternative stock assessments often contain a considerable amount of uncertainty. Uncertainties in data from biological processes can hamper assessment models and stock abundance measures, and increase difficulty in predicting predation and competition rates among species (Stergiou 2002). In combination with this, and even when sufficient data is available, human measurement error during data-gathering surveys also increases uncertainty levels within these models (Halpern et al. 2006). If estimates of population abundance and size (Lauck et al. 1998) and fishing mortality (Mangel 2000) are only approximate references, these factors can create misinformed stock assessments and poorly determined annual catch limits (ACLs).



Additional assessment-based uncertainties may result from illegal, unreported, and unregulated fishing, ghost fishing, bycatch, and discards, which affect fishing mortality rates and further influence stock biomass calculations (Mangel 2000; Lauck et al. 1998). Overfishing, unless extreme, can take years to detect, and hence sometimes results in severely depleted fish populations before clear signals appear in stock assessments. In addition, assessment references may simply be outdated, resulting in inaccurate snapshots of target stocks (Lauck et al. 1998). Other factors, such as high costs of some traditional stock assessments, may also lead to the use of less accurate models and an inconsistency of reporting due to lack of funding (Lauck 1998).

### *Management Uncertainty*

In addition to biological and assessment-based uncertainty, management actions (or lack thereof) can also increase uncertainty levels. Habitat degradation due to fishing gear, noncompliance of fisheries regulations, non-reporting of landings, and point and non-point source pollution alter the status of target populations but are often difficult to measure and regulate (Lauck et al. 1998). Difficulty controlling exploitation of fisheries due to insufficient human resources, political will, or funding, and little or no stakeholder support, may also greatly affect fishing mortality, which in turn increases uncertainty in stock biomass and appropriate ACLs. Market volatility and rapid responses by fishermen to changes in price signals may also contribute to management uncertainty.

Additionally, many management variables are compounded by natural/biological and assessment-based uncertainty. Some uncertainties such as larval dispersal and natural mortality rates may be omitted or miscalculated in stock assessment models and lead to inappropriate managerial actions and fishing regulations. Such factors increase the need to reduce ambiguities in both the above categories in order to better inform managerial tactics and reduce uncertainty.

## **Effects of Marine Protected Areas**

### *Natural/Biological Uncertainty*

Given the quantity and variety of uncertainty inherent in fisheries assessment and management, diversifying management actions through the use of marine protected areas may help hedge against depleted populations and possible stock collapse. By protecting a portion of the stock, MPAs encourage population persistence, help reduce biomass and harvest variation, often increase stock productivity, and can lead to a higher level of catch (Grafton and Kompas 2005; Mangel 2000; Lauck et al. 1999). MPAs have also been shown to reduce bycatch and protect ocean biodiversity and population structures of important commercial species (Lauck et al. 1998). Well-placed MPAs also protect connectivity of marine populations by preserving larval sink-source dynamics.

Surveys taken inside and outside MPAs reveal strong increases in individual fish size and overall fish abundance and biomass within MPA borders (Hilborn et al. 2004). Increases in size translates to an increase in overall fecundity as older, larger female spawners produce a greater number of eggs (Berkeley et al. 2004). Once population biomass and fecundity within the MPA

improve, spillover of larvae and adults from the reserve into open areas may improve stock resilience, which improves the quality of catch and allows target stocks to recover faster after a negative shock (Roberts et al. 2001; Grafton et al. 2005), though empirical evidence at scale is lacking. Even when nested within fisheries with extreme exploitation rates, MPAs can help stabilize and maintain higher levels of recruitment and spawning biomass in fished waters (Guenette and Pitcher 1999). These MPA effects may help reduce biological/natural uncertainty.

#### *Assessment-based Uncertainty*

MPAs can hedge against assessment-based uncertainty in several ways. Since fish populations can be severely depleted before signals appear in stock assessments, MPAs help buffer against these potential miscalculations by protecting a portion of stock biomass, and thus increasing the resilience of the fished population (Grafton et al. 2005). Protected marine reserves can also establish a control setting for important baseline research, including proxies for unfished biomass. This strengthens the accuracy of estimated biological parameters such as natural mortality, fecundity, and population abundance important for assessments, and can help improve assessment models for data-poor fisheries (Wilson et al. 2010). Better assessment models allow managers to gauge the success of traditional management techniques such as permit regulation and ACLs, and thus enhance fishery sustainability and economic security (Lauck et al. 1998).

#### *Management Uncertainty*

As previously stated, MPAs can help hedge against biological, natural, and assessment-based uncertainties by diversifying fisheries management. The combination of greater spillover to fished waters due to the presence of larger, more fecund females inside the reserve, protection of important habitat, and increased baseline and life history characteristic data allows managers to better assess and sustainably manage target stocks. Even if a fishery is rich in data and optimally managed, due to environmental stochasticity, the addition of MPAs or a MPA network into the management framework may generate higher economic payoff than traditional management without MPAs (Grafton et al. 2005). Additionally, MPAs provide a refuge for data-poor or unassessed species, and are often a preferred management technique for sedentary species due to smaller home ranges (Hastings and Botsford 1999).

### **Conclusions**

Fisheries management is an uncertain enterprise. Uncertainty in life-history characteristics, natural stochasticity, human error, stock assessments, and in management can lead to overfishing, excessive bycatch, or even stock collapse. Under the new federal ACL mandate, Councils must account for scientific uncertainty by adjusting allowable biological catch levels downward with a precautionary buffer, and they must account for management uncertainty by further adjustment downward with another buffer.

The PFMC's area of jurisdiction is rich in MPAs of many kinds, some of which may restrict fishing and be of sufficient size to increase target and bycatch species biomass, fecundity, and recruitment levels enough to have a significant effect on scientific and management uncertainty. Yet these MPA effects are not accounted for in the buffers used to generate ACL and ACT

levels. Accounting for the effects of the sizeable MPAs within the PFMC's jurisdiction may result in more science-based (and potentially smaller) precautionary buffers and in more accurate ACL and ACT levels.

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Sedentary Nearshore Species that Uses Marine Protected Areas as a Reference. *Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science*, 2: 14-27.

----- Original Message -----

**Subject:**CCA restructuring

**Date:**Wed, 02 Jun 2010 20:58:35 -0700

**From:**Frank Ursitti <[fursitti@roadrunner.com](mailto:fursitti@roadrunner.com)>

**To:**[pfmc.comments@noaa.gov](mailto:pfmc.comments@noaa.gov)

Mr. David Ortmann, Chairman  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, OR 97220-1384

Dear Chairman Ortmann,

In 2001 the Cow Cod Conservation Area (CCA) was created, and in doing so set aside over 4,500 square miles of ocean to protect Cow Cod. It is now 2010 and quite a bit of research has been completed regarding this species.

The CCA creation was a necessary reaction with regards to protecting Cow Cod. It was, at the time of creation, extremely restrictive.

After almost a decade of monitoring, studies suggest Cow Cod thrive in a much deeper environment than originally determined. It would not seem unreasonable at this point to move the depth of access within the CCA to a level above their typical habitat. Additionally, the original ruling prohibited retention of shelf rockfish within the CCA. Not only is this ruling extreme and overly restrictive, one must consider the absolute waste of the shelf rockfish resource while complying with current regs within the region.

Fishing activities and access to this resource are essential to my livelihood. These same activities are an important part of the local economy.

During the last decade, we have used blanket closures as a management tool; it would seem appropriate to reopen areas when studies logically indicate impact to the resource and or the intended protected species will be nonexistent or minimal at best.

The purpose of this letter is therefore to respectfully request that the Council consider two items.

1. Staff consideration be given to study the viability of opening those areas of the CCA shallower than Cow Cod reside.
2. To permit retention of shelf rockfish when fishing in waters shallower than it is determined Cow Cod reside within the CCA.

In closing, the purpose of the CCA was to protect Cow Cod. Current studies suggest much more area was closed than necessary. Allowing access to the area shallower than Cow Cod thrive, and permitting the lawful take of shelf rockfish within this region, would restore a critical fishing area to the Sportfishing community at large.

Sincerely,

Frank T. Ursitti  
Ranger 85 & Coral Sea Sportfishing

Dear Council members,

I am writing to request a small line change to the current RCA in central California. I ask that you move the line in to conform to the outer boundaries of the current EFH that encompasses the Cordell Bank.

The current RCA lines have eliminated all H&L landings of shelf rockfish in this district. The drifting regulations along with the depth of water these fish live in has created a situation where fishermen are afraid to fish. Myself included.

The trawl sector is currently enjoying exclusive rights to fish for shelf rock fish, (Chillie Pepper), while the H&L boats are eliminated. I look forward to any solution you can find to mend this injustice.

Josh Churchman

Box 5 OP

Bolinas Ca. 94824

<b>Management Measures 2011 and 2012</b>	
<b>55/45 Yelloweye Catch Sharing</b>	
2006-2008 avg landings; 20 fm between 42 and 40 10' only, status quo north and south	
<b>OREGON</b>	
NORTH OF 42 N. LAT.	
BLACK ROCKFISH	74
BLUE ROCKFISH	7
CABEZON	14
KELP GREENLING	14
LING COD	28
OTHER MINOR NEARSHORE ROCKFISH	10
<b>CALIFORNIA</b>	
42 TO 40 10' N. LAT.	
BLACK ROCKFISH	130
BLUE ROCKFISH	7
CABEZON	7
KELP GREENLING	0
LING COD	15
OTHER MINOR NEARSHORE ROCKFISH	6
SOUTH OF 40 10' N. LAT.	
BLACK ROCKFISH	3
BLUE ROCKFISH	7
CABEZON	63
DEEPER NEARSHORE ROCKFISH	29
KELP GREENLING	1
LING COD	21
SHALLOW NEARSHORE ROCKFISH	51
<b>OVERFISHED SPECIES</b>	
BOCACCIO	0.3
CANARY ROCKFISH	2.9
WIDOW ROCKFISH	0.3
YELLOW EYE ROCKFISH	0.9

## Proposed Management Measures for Recreational Groundfish

### Fishery in 2011 and 2012

Mr. Ortmann and Esteemed Council Members,

Thank you for the opportunity to address the Council on this critical subject matter.

California Angers last enjoyed a full season of fishing in the year 2000. Upon the declaration of various species being overfished and promulation of the RCA, our fishing opportunities have been dramatically reduced in the Northern California coastal area. We currently experience a four month groundfish season in the north and a three month season in the north central area as a result of the RCA and YRCA closures and restriction to fish within 20 fm. This has had a severe economic effect on our coastal communities.

Historically, our fleets have been split 90% commercial and 10% recreational. The peak of the commercial fishery was back in the early 1980 with 6908 commercial vessels in CA of which 3200 were in the north, now having been reduced to only 375 active vessels in the north. The tonnage of fish caught reduced in Humboldt County from 38 MT down to 13 MT in the same time frame. Revenues have reduced commercially from 15 million to 14 million, not factoring in inflation. In 2007 and 2008, the fleet has been reduced by 30% statewide and 42% in the north area. Eureka had only 137 active vessels land fish in 2009.

Recreationally, we have about 8,000 vessels registered in the north area, most of which sit idle due to lack of opportunity. The groundfish season was cut to two months in 2008 and with no salmon season in 2009 we have seen the closure of many businesses and severe economic loss to all other marine businesses. Historically, the resource areas of fishing, agriculture and forestry produced two thirds of our employment. Those areas provide only 30% employment currently. Fishing tourism is a critical part of our economy. As an illustration, 12,000 fishing visitors came to the small town of Trinidad in 2007. Fishing tourists dropped to a fraction of that level in the 2008 rockfish closure season. The uncertainty of fishing is witnessed in cancelled vacations and travelers not willing to schedule in advance not knowing if there will be any fishing during their reservation period. The reduced seasons are costing our area tens of millions of dollars in lost revenue that cannot be supplemented by other methods. Our current unemployment in the north has topped 14%.

The recent court decision lowering the YE incidental by catch to 14MT has heightened



this anxiety where the local fishing communities don't know when the season will be closed. As such, captains are taking unnecessary risks in dangerous bar conditions and rough water conditions to make the 25 mile run down to Cape Mendocino for groundfish while the opportunity to fish still exists. We live in an area with an abundance of groundfish while being restricted from fishing for that resource. Shelter Cove, in particular, has abundant fish biomass, but also has the only deep pinnacles and canyons close to shore, that happens to be a favored habitat of YE. They have only a 90 day season.

We appreciate the management levels as put forth in Alternative 1 by the CDFG. The latitude line proposed at Viscaino to separate that area from the 40 degree 10 minute area and north should lessen some of the anxiety of our charter fleet and recreational fisherman. Economically, the Eureka area recreationally generates about \$7 million per month through local and visiting fishing vessels. The northern area normally has about 13,500 anglers per month throughout the season. We have seen a 42% drop in revenue in the last two years due to fishing closures and loss of opportunities. To say this is a crisis for us is not an exaggeration. We are witnessing a fishing community in rapid decline. The Shelter Cove launch owner has shut down all the facilities for this 2010 year due to the lack of economic activity. The short 90 day season, weather restrictions, uncertainty and probable regulation detrimental to his profitability caused him to shut down his facilities. He is the sole marine business launch facility in this small community.

To repeat, the effects of the YE restrictions are having severe adverse affects on our local communities. The Goals and Objectives of the FMP were specifically designed to prevent this kind of aggressive conservation action to the detriment of local communities. Conservation goal #3, Economic Goals # 6 & 7, and Social Factors #15, 16 and 17 speak directly to such aggressive rebuilding action. We would ask the Council to adopt management measures for the 2011 and 2012 years taking the FMP goals into consideration and support the Alternative 1 Management Measures for the Recreational Groundfish Fishery as presented by the CDFG in Agenda item B.3.a Supplemental CDFG Report 2. Alternatives 2 and 3 create such short seasons in the north central area that they effectively eliminate fishing opportunity when the weather constraints are factored in with the YE and RCA constraints. Our smaller coastal communities are bearing the brunt of conditions caused by other fleets or nationalities. That is both unfair and in contravention to goals as written in the FMP. We implore the Council to be fair and reasonable when setting these new regulations for the next two year cycle.

Thank you for this opportunity to address the Council.

Tom Marking  
Humboldt Area Saltwater Anglers  
GAP sports fishing representative



June 12, 2010

Mr. David Ortmann, Chair  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, OR 97220-1384

**RE: Agenda Item B.3: Tentative Adoption of Harvest Specifications, Rebuilding Plan Revisions, and Management Measures for 2011-2012 Fisheries**

Dear Chairman Ortmann and Council Members,

Shortbelly rockfish (*Sebastes jordani*) are a critically important forage species in the California Current ecosystem, as prey for many species including for Chinook salmon. It has come to our attention that the management of shortbelly rockfish, however, does not recognize and account for the important ecosystem services they provide. We are writing to urge the Council to prohibit a directed fishery and prevent any increases in bycatch of this species unless and until a full ecosystem analysis can be completed through the Ecosystem Fishery Management Plan, and it can be demonstrated that current allowable catch levels are not impacting ecosystem health and the services shortbelly rockfish provide. Such an action would build on and have a similar scientific and management rationale to the Council's precautionary precedent-setting action to protect krill from directed harvest.

Shortbelly rockfish have been recognized for decades as a primary prey item for marine mammals, seabirds, Chinook salmon, and other commercially important fishes (Markel 1957, Chess 1988, Lowry and Carretta 1999, Sydeman et al. 2001; Field et al. 2007; Roth et al. 2008). Yet its importance as forage is not currently taken into account in the setting of Optimum Yield (OY). Shortbelly rockfish are currently designated as a Category 2 species in the Groundfish FMP and the 2010 OY and ABC were set at 6,950 metric tons.<sup>1</sup> While there is no directed fishery for shortbelly rockfish, there is a potential for one to evolve in the future (Love et al. 2002).

Shortbelly have been the most abundant juvenile rockfish on the West Coast for several decades, though have been declining in recent years (see Attachment). Merkel (1957) reported that juvenile shortbelly rockfish were an important prey for Chinook salmon along the central California coast in late spring and summer, accounting for more than 60% of their prey identified to the species level. What is more, juvenile rockfishes and northern anchovy are the two most important prey items for Chinook salmon in the San Francisco Bay region (Healey 1991). For many breeding California seabirds, as much as 90% of their diet is composed of pelagic stages of juvenile (age 0) rockfish during the late spring and early summer breeding seasons, and unexploited species (such as shortbelly) generally account for more than two thirds of the juvenile rockfish identified (Ainley et al. 1993; Sydeman et al. 2001; Miller and Sydeman 2004). Shortbelly rockfish are described as important prey to thresher sharks (Preti 2004), longnose skate (Robinson et al. in press), and jumbo squid (Field et al. in review), among others. They are also eaten by other rockfish species, including bocaccio and chilipeppers (Love 1996). Furthermore, a forthcoming analysis (Field et al., in press) confirms a significant relationship between juvenile rockfish

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<sup>1</sup> Agenda Item B.3.a, Attachment 2. Description of Harvest Specifications Alternatives, Rebuilding Alternatives, and 2011-2012 Management Measures. June 2010 Briefing Book.

abundance (particularly shortbelly rockfish) and seabird breeding productivity. Consequently, shortbelly rockfish are an important forage species to a wide range of predators throughout the California Current ecosystem, and generally have a trophic position and life history traits more similar to forage fishes than most other *Sebastes*.

In recent years (from 2007-2010), the OY has been set equal to the ABC, which does not account its value as a forage species. The ABC (and OY) was lowered (from 13,900 mt to 6,950 mt) in 2009 based on a new stock assessment showing a declining stock (PFMC 2009). In terms of catch and bycatch, based on total mortality reports from the West Coast Groundfish Observer Program (2005-2008), the mortality ranged from 1-12 mt per year, almost all discarded (Hastie and Bellman 2006, 2007; Bellman et al. 2008, 2009). Therefore, less than 1% of the OFL is currently being taken.

Given the documented importance of shortbelly rockfish as a forage species, our limited understanding of this species, and lack of a directed fishery, we propose the Council “freeze the catch” of this species, which would both prevent a directed fishery and ensure the bycatch of this species does not increase. We recommend the Council do this by setting the 2011-2012 ACLs less than or equal to the maximum catch of this species over the last 5 years, and maintaining this ACL unless and until a comprehensive analysis of the ecosystem services rendered by shortbelly rockfish that could inform the ACL is completed within the Ecosystem FMP process.

Such a proactive measure by the Council, while having little to no economic impact on existing fisheries, would be a great continued step toward meeting NMFS’ stated intents for the Councils to incorporate ecosystem considerations and maintain adequate forage for all components of the ecosystem, as indicated in the NS1 Final Rule<sup>2</sup>. In particular, it could help ensure adequate forage for Sacramento River Chinook salmon, which have historically relied heavily on shortbelly rockfish as forage (Merkel 1957; Healey 1991). We urge the Council to use the 2011-2012 biennial specifications process as an opportunity to take a bold step toward ecosystem-based management by recognizing the importance of shortbelly rockfish as a forage species in the California Current.

Thank you for considering these comments.

Sincerely,



Geoffrey G. Shester, Ph.D.  
California Program Director

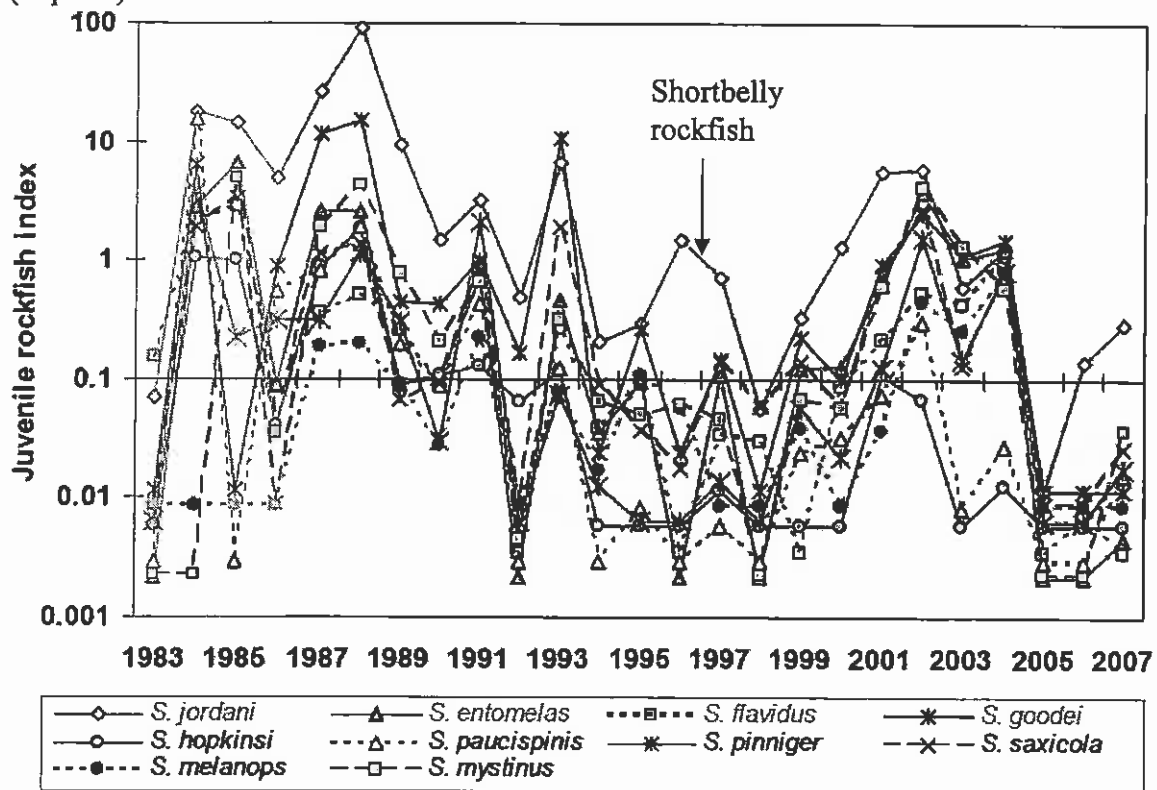
Attachments

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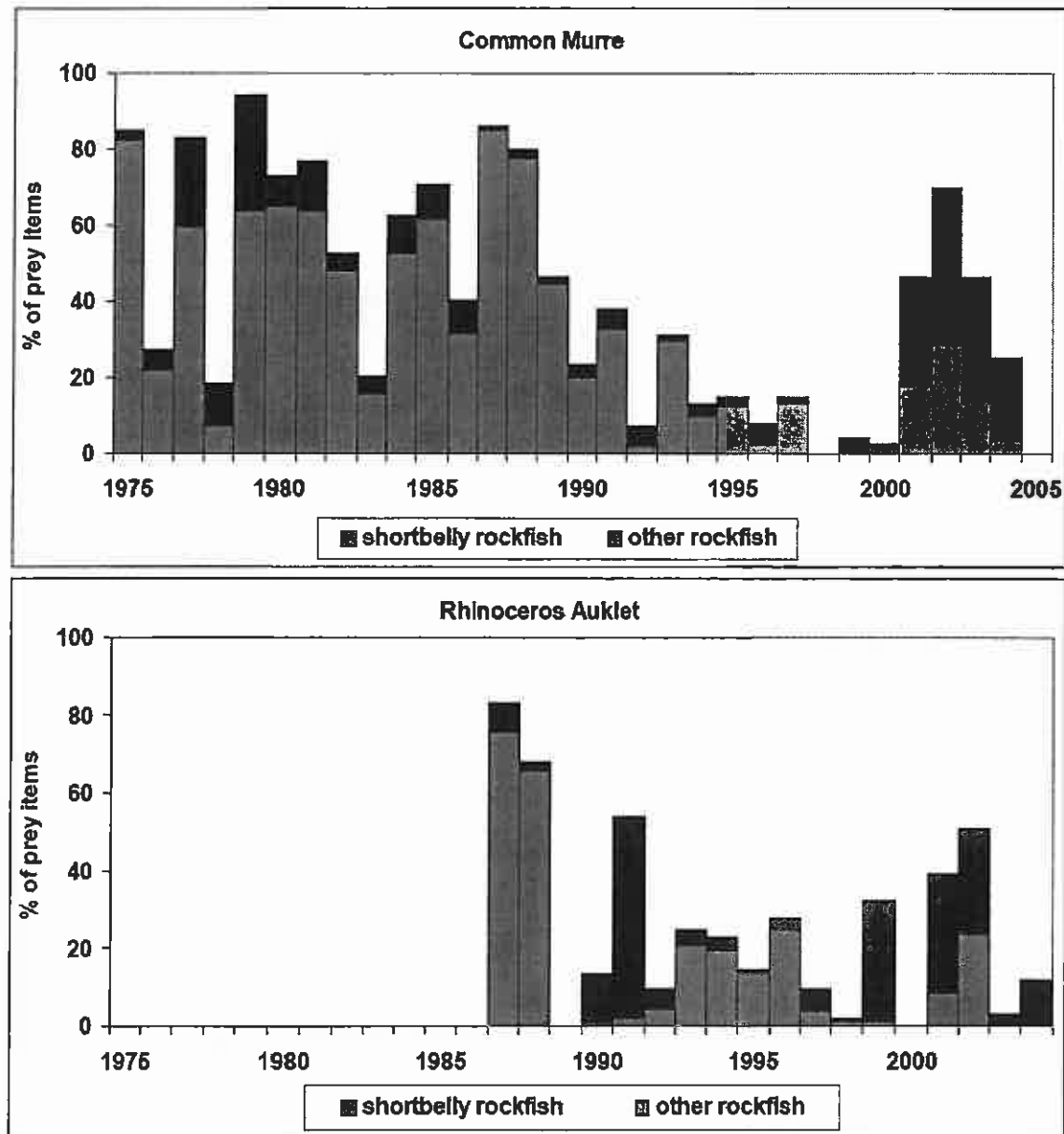
<sup>2</sup> 74 FR 11 at 3207 and 3185 (January 16, 2009).

**Attachments:**

**Figure 1:** Standardized relative abundance (in log scale) of the ten most frequently encountered species of juvenile rockfish (*Sebastes*) from the juvenile rockfish survey, 1983-2007. From Field, J.C., MacCall, A.D., Bradley, R.W., and Sydeman, W.J. 2010. Estimating the impacts of fishing on dependent predators: a case study in the California Current. *Ecological Applications* (in press).



**Figure 2.** Proportion of juvenile shortbelly rockfish in the diets of Common Murres (1975-2004) and Rhinoceros Auklets (1987-2004) on the Southeast Farrallon Islands, data courtesy of Point Reyes Bird Observatory. The  $R^2$  for the proportion of shortbelly rockfish (following treatment by binomial GLM) among the two time series is 0.70. From NOAA Tech Memo: NOAA-TM-NMFS-SWFSC-405. April 2007.



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## **Agenda Item B.3- Part 1**

**Handed out to Council Members on 6/14/10; 10:27 am**

**Council Action: Bullet list of decision steps and relevant reports for each decision step**

### **1) Decide non-overfished species harvest specs**

- Reaffirm the PPA or
- Recommend a new PPA, GMT has highlighted the following spp. for your consideration (Attachment 2 tables on pages 1-76; GMT Report 1; Supp. GMT Report 2; Supp. SSC Report; Supp. GAP Report)
  - Sablefish
    - Correction to the PPA ACL – calculation error under Option 2 (Supp. GMT Report 2; Supp. GAP Report)
    - Apportionment issue – swept area average or variance weighted (Supp. GMT Report 2; Supp. GAP Report)
  - Chilipepper – coastwide specification and emerging issues related to initial allocation of trawl allocation (Supp. GMT Report 2)
  - Subcomplex issues ((Attachment 2 tables on pages 54-76; GMT Report 1; Supp. GMT Report 2; Supp. SSC Report; Supp. GAP Report)
    - Minor nearshore rockfish
    - Blue rockfish
    - Gopher rockfish
    - Blackgill
    - Splitnose, greenstripe, and yellowtail

### **2) Adopt rebuilding plans**

- Overarching Court ruling (Attachment 2 pages 39-52; Supp. SSC Report (last paragraph); Supp. GMT Report 2; Supp. GAP Report)
- Confirm or modify the PPA rebuilding plans for bocaccio, canary, cowcod, darkblotched, yelloweye, petrale, POP, & widow (Attachment 2 pages 1-52; Supp. GMT Report 2; Supp. GAP Report).  
Specific actions include
  - adopt t-target,



## Council Action Agenda Item B.3 – Part 2

### 3) Consider integrated alternatives which include the overfished species ACL including management measures

#### \*\*Overarching references

- Attachment 3: Appendix F: Historical Landings and Revenue
- Attachment 4: Update of the 06 Community Vulnerability Analysis
- Supp Attachment 8: Economic impacts of the integrated alternatives, including an Excel spreadsheet with revenue data
- Supp Attachment 9: Analysis of alternatives relative to protected resources

#### Action Steps

- Adopt or modify the PPA SPRs and ACLs for overfished species (Supp GMT Report 2 – Table 2, page 17; Attachment 1 starting on pages 1, 18, 36, 48; Attachment 2 – Tables 2-8, 2-9, 2-11, 2-12) Please note the differing alternative numbers. Please speak to the report, page number, and table.
- Overfished species set-asides (Supp GMT Report 3 – Table 1, page 3)
- Non-overfished species set-asides (Supp GMT Report 3 – Tables 4 and 5, pages 5 and 6)
- Consider an annual catch target (ACT) and/or harvest guideline (HG) (Supp GMT Report 3- page 3, bottom of page)
- Modify or adopt the PPA decision on two year allocations of overfished species – bocaccio, cowcod, canary, and yelloweye rockfish (Supp GMT Report 4, Tables, 4, 5, and 6)
  - Consider new model runs for the limited entry fixed gear, open access sablefish fixed gear, and limited entry trawl to inform the corrected sablefish PPA ACL (Supp GMT Report 4, Pages 1-4, Tables 1-3).
  - For commercial nearshore: provide guidance on the sharing of yelloweye rockfish between California and Oregon (Supp GMT Report 4, page 5, Tables 2 and 3)
  - Provide guidance on south of 36° N. latitude sablefish for LE FG and OA (Supp GMT Report 4, page 5)
- Rationalized trawl fishery (Thursday only – no materials for Monday)
  - Considerations for a rationalized shoreside whiting trawl fishery
  - RCA – considerations for trawl gear and fixed gear under the gear switching provision
  - Trip limits for non-IFQ species
  - Fishing with mid-water gear
  - Carry-over provision

NOTE: This motion may or may not have been modified on the Council floor. See the Final June 2010 Council Minutes and Voting Log for the final motion.

Agenda Item B.3.d  
Supplemental WDFW Motion  
June 2010

### WASHINGTON DEPARTMENT OF FISH AND WILDLIFE MOTION B.3

I move the Council tentatively confirm its preliminary preferred alternative for annual catch limits (ACLs) for 2011 and 2012 for the following overfished species: petrale sole; canary rockfish; Pacific ocean perch; widow rockfish; and yelloweye rockfish, as described in Chapter 2 (Agenda Item B.3.a, Attachment 2), Table 2-1 on page 1, and tentatively adopt ACLs for bocaccio, cowcod, and darkblotched rockfish that are different than those in the preliminary preferred alternative.

Specifically, tentatively adopt the following:

Species	TTarget	Med Time to Rebuild	2011 ACL	2012 ACL	SPR
Bocaccio	2026	2022	263	274	77.7%
Canary	<b>2027</b>	2027	102	107	88.7%
Cowcod	2072	2068	3	3	82.7%
Darkblotched	2028	2025	298	296	64.9%
Pacific ocean perch*	<b>2020</b>	2020	180	183	86.4%
Widow	2015	2010	600	600	constant catch
Yelloweye**	2084	2084	20	20	72.8%
Petrale Sole	Tmax 2021	2016	976 mt	1,160 mt	ABC in 2011; 25:5 rule thereafter

\*For POP, the ACL would be set at 180 mt in 2011 and 183 mt in 2012 with an annual catch target (ACT) of 150 mt. The ACT would apply to total mortality from all harvest sources and the intent would be to limit harvest to stay within the ACT by adopting the appropriate management measures. The purpose of the 30-33 mt difference between the ACT and the ACL would be to provide a buffer for management uncertainty associated with all harvest sources, including commercial, recreational, tribal, and research catches.

\*\*For yelloweye, the ACL would be set at 20 mt with an ACT of 17 mt. The ACT would apply to total mortality from all harvest sources and the intent would be to limit harvest to stay within the ACT by adopting the appropriate management measures. The purpose of the 3 mt difference between the ACT and the ACL would be to provide a buffer for management uncertainty associated with all harvest sources, including commercial, recreational, tribal, and research catches.

Through this action, the median time to rebuild would replace the current TTarget values in the rebuilding plans.

With regard to petrale, because the intersector allocations adopted through Amendment 21 are suspended when a species either becomes overfished or is rebuilt, I would like to request the GMT review the non-trawl allocation of petrale of 5% as compared to recent harvest levels so the Council could consider whether to revise its trawl/non-trawl petrale allocations.

The intent of the motion is to provide guidance to the GMT, so they can review and discuss the management measures associated with these preliminary preferred ACLs with the GAP, and provide time for the Council to review the economic and protected resources data that we have recently received. The Council would then consider final approval of the actions taken under Agenda Item B.3 on Thursday under Agenda Item B.7.

PPMC

06/15/10

## STOCK ASSESSMENT PLANNING FOR 2013-2014 FISHERY GUIDANCE

The Council approved Amendment 17 to the Pacific Coast Groundfish Fishery Management Plan (FMP) as a means of providing for a biennial management cycle, more opportunity for public input, regulatory efficiencies, and various improvements in the management process, such as a clear expectation of when new stock assessment information would be considered and when not. In this process there is a year in which assessments are done to inform decisions for the following biennial management cycle, followed by a year for deciding the new groundfish harvest specifications and management measures. This agenda item concerns planning for new groundfish stock assessments that are anticipated to be done in 2011 and adopted in late 2011 for use in 2012 to decide the harvest specifications and management measures for 2013 and 2014 groundfish fisheries.

In March, the Council adopted for public review a preferred list of groundfish species for assessment next year to inform management in 2013 and beyond. Besides Pacific whiting, which is assessed annually, the following species were recommended for a full assessment: widow rockfish, petrale sole, Pacific ocean perch, blackgill rockfish, sablefish, Dover sole, spiny dogfish, rex sole, and greenspotted rockfish. Further, the Council requested the National Marine Fisheries Service (NMFS) explore the data available for possible assessments of China rockfish, quillback rockfish, and copper rockfish; nearshore species considered to have a high relative vulnerability to overexploitation. The list of species recommended for an updated assessment next year include bocaccio, canary, darkblotched, and yelloweye rockfish. A status report for cowcod is also expected to be prepared since the Scientific and Statistical Committee (SSC) has judged there is not enough data to justify a full or updated assessment. The NMFS Northwest Fisheries Science Center has taken this guidance and provided their feedback to the Council in Agenda Item B.4.b, NMFS Report.

The Council also adopted for public review a revised terms of reference for the groundfish stock assessment and review process for 2011-2012 with the incorporation of SSC and Groundfish Management Team (GMT) modifications, as well as a definition of a status report. This revised terms of reference is provided in Agenda Item B.4.a, Attachment 1. Likewise, a draft terms of reference for groundfish rebuilding analyses is provided in Agenda Item B.4.a, Attachment 2. Agenda Item B.4.a, Attachment 3 provides a list of issues Council staff recommends be considered when deciding the final stock assessment terms of reference.

The Council is tasked at this meeting with final adoption of a list of full and updated stock assessments to be done in 2011; final adoption of a terms of reference for the groundfish stock assessment and review process for 2011-2012; final adoption of a groundfish rebuilding analysis terms of reference; and providing guidance on a schedule of Stock Assessment Review (STAR) panels to review new full assessments (the SSC will review updated assessments). The Council should consider advice from the NMFS science centers, advisory bodies, and the public before making these decisions.

**Council Action:**

1. **Adopt a Final List of Full and Updated Groundfish Stock Assessments to be Done in 2011.**
2. **Adopt a Final Terms of Reference for the Groundfish Stock Assessment and Review Process for 2011-2012.**
2. **Adopt a Final Terms of Reference for Groundfish Rebuilding Analyses.**
3. **Provide guidance on a schedule of STAR panel meetings for next year.**

**Reference Materials:**

1. Agenda Item B.4.a, Attachment 1: Draft Terms of Reference for the Groundfish Stock Assessment and Review Process for 2011-2012.
2. Agenda Item B.4.a, Attachment 2: Draft Terms of Reference for Groundfish Rebuilding Analyses.
3. Agenda Item B.4.a, Attachment 3: Considerations for a New Stock Assessment Terms of Reference.
4. Agenda Item B.4.b, NMFS Report: Possible Schedule for West Coast Groundfish Assessments in 2011.
5. Agenda Item B.4.d, Public Comments.

**Agenda Order:**

- a. Agenda Item Overview
- b. Stock Assessment Options
- c. Reports and Comments of Advisory Bodies and Management Entities
- d. Public Comment
- e. **Council Action:** Adopt Final Terms of Reference, Stock Assessments, and Assessment Schedule for 2011

**John DeVore**  
**Elizabeth Clarke**

PFCM  
05/26/10

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# TERMS OF REFERENCE

FOR THE

GROUND FISH  
STOCK ASSESSMENT AND REVIEW  
PROCESS FOR 2011~~09~~-2012~~0~~

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DRAFT

~~DECEMBER~~ MAY 21, 2012~~08~~

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~~Poster published~~Published by the Pacific Fishery Management Council pursuant to National Oceanic and Atmospheric Administration contract number NA05NMF4410008.

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**TERMS OF REFERENCE FOR THE  
GROUNDFISH STOCK ASSESSMENT AND REVIEW PROCESS FOR 201109-20120**

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**Introduction**

The purpose of this document is to outline the guidelines and procedures for the Pacific Fishery Management Council's groundfish stock assessment review (STAR) process and to clarify~~envey~~ expectations and responsibilities ~~for of the~~ various participants, ~~in the groundfish stock assessment review (STAR) process, and outline the guidelines and procedures for a peer review process for the Pacific Fishery Management Council.~~ The STAR ~~panel~~ process ~~is~~ has been designed to establish a procedure for peer review ~~process~~ as referenced in the 2006 Reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act (RMSA), which states that ~~"~~the Secretary and each Regional Fishery Management Council may establish a peer review process for that Regional Fishery Management Council for scientific information used to advise the Regional Fishery Management Council about the conservation and management of the fishery (see Magnuson-Stevens Act section 302(g)(1)(E)).~~"~~ If a peer review process is established, it should investigate the technical merits of stock assessments and other scientific information used by the Council's Scientific and Statistical Committee (SSC). The peer review process is not a substitute for the SSC and should work in conjunction with the SSC.<sup>22</sup> This document will be included in the Council's Statement of Organization, Practices and Procedures as documentation ~~part~~ of the review process that will ~~verify~~ underpin the scientific advice from the SSC.

Parties involved in implementing the peer review process described here are the Pacific Fishery Management Council members (Council); Council staff; ~~and members of the Council's~~ Advisory Bodies, including the SSC, the Groundfish Management Team (GMT), ~~and~~ the Groundfish Advisory ~~P~~Subpanel (GAP); the National Marine Fisheries Service (NMFS); state agencies; and interested persons. The STAR process is a key element in an overall process designed to review the technical merits of stock assessments and other relevant scientific information used by the SSC. This process will allow the Council to make timely use of new fishery and survey data, ~~to~~ analyze and understand these data as completely as possible, ~~to~~ provide opportunity for public comment, ~~and to~~ assure that the results are as accurate and error-free as ~~possible~~ possible, and provide the best available science for management decisions.

This current edition of the ~~Terms of Reference~~terms of reference reflects many recommendations from previous participants in the STAR process, including STAR panel members, SSC members, stock assessment teams (STATs), Council staff, and Council advisory groups. Nevertheless, no set of guidelines can be expected to deal with every contingency, and all participants should anticipate the need to be flexible and ~~to~~ address new issues as they arise.

Hilborn and Walters (1992)<sup>1</sup> define stock assessments as ~~involving~~ "the use of various statistical and mathematical calculations to make quantitative predictions about the reactions of fish populations to alternative management choices." In this document, the term "stock assessment" includes activities, analyses and reports, beginning with data collection and continuing through to scientific recommendations ~~and information~~ presented to the Council and its advisors. Stock assessments provide the fundamental basis for management decisions on groundfish harvests. To best serve that purpose, stock assessments should attempt to identify and quantify major uncertainties, balance realism and parsimony, ~~and~~ and make best use of the available data.

In this document, a "benchmark" (or full) assessment is defined as a new assessment or an assessment that is substantially different from the previous assessment. Changes could include a new or revised model or inclusion of data not previously available or used. It is recognized, however, that there is a finite limit on the number of assessments that can be conducted in one assessment cycle. Additionally, some assessment models are stable with few modeling or data issues, the population dynamics of some species change very slowly, and some stocks have little or no new available data. To this end, it may not be necessary to construct completely new models requiring a full STAR panel review during every assessment cycle and an update or status report may be preferable.— An "uUpdate" is defined as an assessment that has included the most recent catch-and/or, -abundance index, biological and/or environmental data to provide updated status determinations or quota recommendations. It must carry forward its fundamental structure from a model that was previously reviewed and endorsed by a STAR panel. A "sStatus rReport" is requires even less detail, for species for which the only new data is catch, and for which a

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<sup>1</sup> Hilborn, R., and C. J. Walters. 1992. Quantitative fisheries stock assessment: Choice, dynamics and uncertainty. Chapman and Hall.

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simpler write-up on the perceived progress given those catch levels is needed. Updates and status reports are to be reviewed by the SSC groundfish subcommittee. Tier 2 and Tier 3 “data poor” assessments and data reports will be reviewed by the SSC groundfish subcommittee or during a special STAR panel convened specifically for this purpose.

The RMSA changed the terminology and process for determining harvest levels. The previous Allowable Biological Catch (ABC) has been replaced by the Overfishing Level (OFL). However, the largest allowable harvest level is still the ABC (now meaning “Acceptable Biological Catch”) which is buffered from the OFL based on the risk of overfishing adopted by the Council (which must be less than 50%). The P\* approach uses a probability of overfishing (which the Council has set to be less than or equal to 45% or 0.45) and a measure of uncertainty in the assessment of current status ( $\sigma$  – the standard error of biomass in log space) to determine the appropriate buffer and therefore reduction in harvest level from the OFL to the ABC (see the SCC document: “An approach to Quantifying Scientific Uncertainty in West Coast Stock Assessments”). The Annual Catch Limit (ACL) is equivalent to the old annual OY, with the 40:10 harvest control rule (and new 25:5 rule for flatfish) being retained to reduce catches from the ABC to an upper limit for the ACL. The Annual Catch Target (ACT) is the targeted catch level, representing a further reduction from the ACL to account for management/implementation uncertainty. Only the OFL is given in the stock assessment (along with, in some cases,  $\sigma$ ). The ABC is determined from the OFL given  $\sigma$  and P\*, defined as xxx and will be reviewed by xxx...

## History of the STAR process

Prior to 1996, stock assessments were examined at a very early stage during ad-hoc stock assessment review meetings (one per year). SSC and GMT members often participated in these ad-hoc meetings and provided additional review of completed stock assessments during Council meetings. In July 1995, NMFS convened an independent, external review of West Coast Groundfish Assessments. The report concluded that: 1) uncertainties associated with assessment advice were understated; 2) technical review of groundfish assessments should be more structured and involve more outside peers; and 3) the distinction between scientific advice and management decisions was blurred. In response, in 1996, the groundfish stock assessment review process was expanded to include: 1) terms of reference for the review meeting; 2) an outline for the contents of stock assessments; 3) external anonymous reviews of previous assessments; and 4) a review meeting report. In 1997, the process was further expanded. At a planning meeting in December 1996, it was agreed that agencies (including NMFS and state agencies) conducting stock assessments were responsible for assuring assessments were technically sound and adequately reviewed. A Council-oriented review process was developed that included agencies, the GMT, GAP and other interested members of the Council family. The process was jointly funded by the Council and NMFS, with NMFS hosting the newly-termed STAR panel meetings. In November 1998, a joint session of the SSC, GMT and GAP produced a list of recommended changes for 1999, including: 1) increasing the SSC’s involvement; 2) limiting the number of assessments to be reviewed; 3) increasing the involvement of external participants; 4) guidelines for timeliness in completing and submitting assessments; and 5) guidelines for the duration of STAR panel meetings and the time required to adequately review assessments. ....

## **STAR Goals and Objectives**

The goals and objectives for the groundfish assessment and review process are to:

- a) Ensures that groundfish stock assessments are the "best available" scientific information and facilitate the use of this information by the Council. In particular, provide information that will allow the Council to adopt OFLs, ABCs and ACLs.
- b) Meet the Magnuson-Stevens Fisheries Conservation and Management Act (MSA) and other legal requirements.
- c) Follow a detailed calendar and explicit responsibilities for all participants to produce required outcomes and reports.
- c) Ensure that groundfish stock assessments provide the quality and full range of information required by the Council process.
- d) Provide an independent external review of groundfish stock assessment models. Ensure that groundfish stock assessments are the "best available" scientific information and facilitate use of the information by the Council.

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- f) Use assessment and review resources effectively and efficiently.
  - g) Increase understanding of the groundfish stock assessment and review process by all members of the Council family.
  - h) Identify research needed to improve assessments, reviews, and fishery management in the future.
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- ~~a) Ensure that groundfish stock assessments provide the kinds and quality of information required by the Council process.~~
  - ~~b) Satisfy the Magnuson-Stevens Fisheries Conservation and Management Act (MSA) and other legal requirements.~~
  - ~~c) Provide a well defined, Council oriented process that ensures groundfish stock assessments are the "best available" scientific information, and facilitates use of the information by the Council. In this context, "well defined" means with a detailed calendar, explicit responsibilities for all participants, and specified outcomes and reports.~~
  - ~~d) Provide an independent external review of groundfish stock assessment work.~~
  - ~~e) Increase understanding and acceptance of groundfish stock assessment and review work by all members of the Council family.~~
  - ~~f) Identify research needed to improve assessments, reviews, and fishery management in the future.~~
  - ~~g) Use assessment and review resources effectively and efficiently.~~

All parties have a stake in assuring adequate technical review of stock assessments. NMFS, as the designee of the Secretary of Commerce, must determine that the best scientific advice has been used when it approves fishery management recommendations made by the Council. The Council uses advice from the SSC to determine whether the information on which it will base its recommendation is the "best available" scientific advice. Fishery managers and scientists providing technical documents to the Council for use in management need to assure that the work is technically correct. Program reviews, in-depth external reviews, and peer-reviewed scientific publications are used by federal and state agencies to provide quality assurance for the basic scientific methods used to produce stock assessments. However, the time-frame for this sort of review is not suited to the routine examination of assessments that are, generally, the primary basis for a harvest recommendation.

The Council and the ~~Secretary~~ Secretary of Commerce have primary responsibility to create and foster a successful STAR process. The Council will oversee the process and involve its standing advisory committees, especially the SSC. NMFS will provide a coordinator to facilitate and assist in overseeing the process. Together they will consult with all interested parties to plan, prepare terms of reference, and develop a calendar of events and a list of deliverables for final approval by the Council. NMFS and the Council will share fiscal and logistical responsibilities and both should ensure that there are no conflicts of interest in the process<sup>2</sup>.

## **Stock Assessment Priorities**

Stock assessments for west coast groundfish are conducted to assess abundance, trends, and appropriate harvest levels for these species. Assessments use statistical population models to analyze and integrate a variety of survey,

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<sup>2</sup> The proposed NS2 guidelines state: "Peer reviewers who are federal employees must comply with all applicable federal ethics requirements. Peer reviewers who are not federal employees must comply with the following provisions. Peer reviewers must not have any real or perceived conflicts of interest with the scientific information, subject matter, or work product under review, or any aspect of the statement of work for the peer review. For purposes of this section, a conflict of interest is any financial or other interest which conflicts with the service of the individual on a review panel because it: (A) Could significantly impair the reviewer's objectivity; or (B) Could create an unfair competitive advantage for a person or organization. (C) Except for those situations in which a conflict of interest is unavoidable, and the conflict is promptly and publicly disclosed, no individual can be appointed to a review panel if that individual has a conflict of interest that is relevant to the functions to be performed. Conflicts of interest include, but are not limited to, the personal financial interests and investments, employer affiliations, and consulting arrangements, grants, or contracts of the individual and of others with whom the individual has substantial common financial interests, if these interests are relevant to the functions to be performed. Potential reviewers must be screened for conflicts of interest in accordance with the procedures set forth in the NOAA Policy on Conflicts of Interest for Peer Review subject to OMB's Peer Review Bulletin."

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fishery, and biological data. Due to the large number of groundfish species that have never been assessed, it is the goal of the Council to substantially increase ~~substantially~~ the number of assessed stocks. A constraint on reaching that objective is the Council's multi-year management regime, which limits primary assessment activities to odd years only (e.g., 2011~~09~~), with the exception of Pacific hake.

In April 2006, the SSC recommended, and the Council adopted, a new process to develop criteria to prioritize species for stock assessment based on: 1) economic or social importance of the species, 2) overfished status, 3) vulnerability and resilience, 4) time elapsed since the last assessment (NMFS advises assessments to be updated at least every 5 years), 5) amount of data available, 6) potential risk to the stock from the current or foreseeable management regime, and 7) qualitative trends from surveys (if available), etc. Overfished stocks that are under rebuilding plans should be evaluated to ensure adequate progress towards achieving stock recovery.  
~~The SSC recommended and the Council adopted in April 2006 a new process to initiate development of criteria for prioritizing stock assessments that may include such factors as: 1) economic or regional importance, 2) overfished status, 3) demographic sensitivity, 4) time elapsed since the last assessment (NMFS encourages assessments be updated at least once every 5 years), 5) data richness, 6) potential risk to the stock from the current or foreseeable management regime, and 7) qualitative trends from fishery-independent surveys (if available), etc. In establishing stock assessment priorities a number of factors are considered, including:~~

The proposed stocks for assessment should be discussed by the Council at least a year in advance to allow sufficient time for assembly of relevant assessment data and for arrangement of STAR panels. Any stock assessment that is considered for use in management should be submitted through normal Council channels and reviewed at STAR panel meetings, and therefore must be completed in time for that process to occur.

- ~~1. Assessments should take advantage of new information, especially indices of abundance from fishery-independent surveys.~~
- ~~2. Overfished stocks that are under rebuilding plans should be evaluated to ensure that progress towards achieving stock recovery is adequate.~~
- ~~3. Any stock assessment that is considered for use in management should be submitted through normal Council channels and reviewed at STAR panel meetings.~~
- ~~4. The proposed stocks for assessment should be discussed by the Council at least a year in advance to allow sufficient time for assembly of relevant assessment data and for arrangement of STAR panels.~~

## **Terms of Reference for STAR panels and Their Meetings**

The objective of the STAR panel is to complete a detailed evaluation of a stock assessment to advance the best available scientific information to the Council. The responsibilities of the STAR panel include:

1. Review draft stock assessment documents, data inputs, and analytical models along with other pertinent information (e.g., previous assessments and STAR panel reports, when available);
2. Discuss the technical merits and deficiencies of the input data and analytical models during the open review panel meeting and work with the STATs- ~~Work with~~ STATs to correct deficiencies ~~ensure assessments are reviewed properly.~~
3. Document meeting discussions; and
4. Provide complete STAR panel reports for all reviewed species.

The STAR panel chair has, in addition, the responsibility to:

5. Review revised stock assessment documents and STAR panel reports before they are forwarded to the SSC.

~~The principal responsibilities of the STAR panel are to review stock assessment documents, data inputs, analytical models, and to provide complete STAR panel reports for all reviewed species. The objective of the STAR panel review is to complete a detailed evaluation of the results of a stock assessment, which puts the panel in a good position to advance the best available scientific information to the Council. The STAR panel's work includes:~~

- ~~1. reviewing draft stock assessment documents and any other pertinent information (e.g., previous~~

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- assessments and STAR panel reports, if available);
- ~~2. working with STAT Teams to ensure assessments are reviewed as needed;~~
- ~~3. documenting meeting discussions; and~~
- ~~4. reviewing revised stock assessment documents before they are forwarded to the SSC.~~

In most circumstances, a STAR Panel will include a chair appointed from the SSC's Groundfish Subcommittee and three other experienced stock assessment analysts. Of these three other members, at least one should be familiar with west coast groundfish stock assessment practices and at least one should be appointed from the Center for Independent Experts (CIE). Selection of STAR panelists should aim for balance between outside expertise and in-depth knowledge of west coast fisheries, data sets available for those fisheries, and modeling approaches applied to west coast groundfish species. Reviewers should not have financial or personal conflicts of interest, either current to the meeting, within the previous year (at minimum), or anticipated. The majority of panelists should be experienced stock assessment scientists (i.e., individuals who have done stock assessments using current methods). STAR panelists should be knowledgeable about the specific modeling approaches being reviewed, which in most cases will be statistical age- and/or length-structured assessment models. Every attempt should be made to identify one reviewer that can consistently attend all panels in an assessment cycle. It is recognized that the pool of qualified reviewers is limited, and that staffing of STAR panels is subject to constraints that may make it difficult to achieve these objectives. In addition to panel members, STAR meetings will include GMT and GAP advisors with responsibilities described in their terms of reference and a Council staff member to help advise the STAR panel and assist in recording meeting discussions and results.

STAR panels normally meet for one week and, in

~~In general, review~~ no more than ~~two2 full benchmark assessments, of Tier 1 (i.e. data-rich) assessments will be reviewed by a STAR panel.~~ In exceptional circumstances this number may be exceeded, if the SSC and NMFS Stock Assessment Coordinator (SAC) conclude that it is advisable, feasible, and/or necessary to do so. ~~When completely~~ separate assessments are conducted at the sub-stock level (i.e., black rockfish) each assessment will be considered a full assessment for review purposes. Contested assessments, in which alternative assessments are brought forward by competing STATs using different modeling approaches, will typically require additional time (and/or panel members) to review adequately, and should be scheduled accordingly. While contested assessments are likely to be rare, they can be accommodated in the STAR panel review process. STAR panels should thoroughly evaluate each analytical approach, comment on the relative merits of each, and, when conflicting results are obtained, ~~attempt to~~ identify the reasons for the differences. STAR panels are charged with selecting a preferred base model, which will be more difficult when there are several modeling approaches from which to choose.

The STAR panel chair is responsible for: 1) developing an agenda for the STAR panel meeting, 2) ensuring that STAR panel members and STATs follow the ~~Terms of Reference~~terms of reference, 3) participating in the review of the assessment, 4) guiding endeavoring to guide the STAR panel and STAT to mutually agreeable solutions, and 5) coordinating review of final assessment documents.

The STAR panel, STAT, GAP and GMT advisors, and all interested parties are legitimate meeting participants that must be accommodated in discussions. It is the STAR panel chair's responsibility to manage discussions and public comment so that work can be completed.

The STAR panel's terms of reference solely concern technical aspects of the stock assessment. It is therefore important that the panel should strive for a risk neutral perspective in its reports and deliberations. Assessment results based on model scenarios or data that have a flawed technical basis, or are questionable on other grounds, should be identified by the panel and excluded from the set upon which management advice is to be developed. It is recognized that no model scenario or data set will be perfect or issue free; therefore, a broad range of results should be reported to better define the scope of the accepted model results. The STAR panel should comment on the degree to which the accepted model ~~scenarios~~ describe and quantify the major sources of uncertainty, and the degree to which the probabilities associated with these model scenarios are technically sound. The STAR panel may also provide qualitative comments on the probability of various model results, especially if the panel does not ~~believe~~ think that the probability distributions calculated by the STAT capture all major sources of uncertainty.

Recommendations and requests to the STAT for additional or revised analyses must be clear, explicit and in writing. STAR panel recommendations and requests to the STAT should reflect the consensus opinion of the



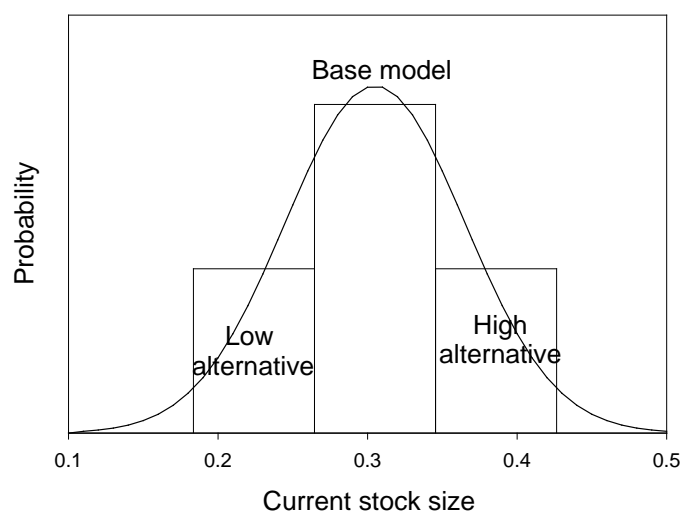
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entire Panel and not the minority view of a single individual or individuals on the Panel. –A written summary of discussion on significant technical points and lists of all STAR panel requests and recommendations and requests to the STAT are required in the STAR panel’s report. ~~This, which~~ should be completed (at least in draft form) prior to the end of the meeting. It is the chair and panel’s responsibility to carry out any follow-up review work that is required.

The STAT and STAR panel should strive to reach a mutual consensus on a single base model. In any case, it is essential that uncertainty in the analysis be captured and communicated to managers. A useful way of accomplishing this objective is to bracket the base model along what is deemed to be the dominant dimension of uncertainty (e.g., spawner-recruit steepness, the virgin level of recruitment or  $R_0$ , natural mortality rate, survey catchability, recent year-class strength, weights on conflicting CPUE series, etc.). Alternative models should show contrast in their management implications, which in practical terms means that they should result in different estimates of current stock size, stock depletion, and the overfishing limit (OFL), and acceptable biological catch (ABC).

MCMC integration, where possible, is an alternate method for reporting uncertainty about the base case model. However, point estimates from the (insert MLE or MCMC) MLE -should be used for status determinations even when MCMC runs are available.

Once a base model has been bracketed on either side by alternative model scenarios, which capture the overall degree of uncertainty within the assessment, a 2-way decision table analysis (states-of-nature versus management action) is the preferred way to present the repercussions of uncertainty to management. An attempt should be made to develop alternative model scenarios such that the base model is considered twice as likely as the alternative models, i.e., the ratio of probabilities should be 25:50:25 for the low stock size alternative, the base model, and the high stock size alternative (Figure 1). Potential methods for assigning probabilities include using the statistical variance of the model estimates of stock size, posterior Monte Carlo simulation, or expert judgment, but other approaches are encouraged as long as they are fully documented. Bracketing of assessment results could be accomplished in a variety of ways, but as a matter of practice the STAR panel should strive to identify a single preferred base model ~~when possible~~, so that averaging of extremes doesn’t become the *de facto* choice of management. An ideal bracketing of the base model is one for which the geometric mean of the high and low stock size alternative model final biomass levels approximates the base model biomass level. If the bracketing models are far from this ideal, the three levels should be reconsidered and either one or more of them adjusted, or a justification of the non-lognormal structure of alternatives be given. Similarly, if more than one dimension is used to characterize uncertainty, resulting in, for example, a 3 by 3 uncertainty table, careful consideration of how the complete table brackets the uncertainty should be undertaken.



**Figure 1.** Example of assigning probabilities to alternative models using uncertainty in the estimate of current stock



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size (in log space).

To the extent possible, analyses required ~~in the stock assessment~~ by the STAR panel should be completed by the STAT during the STAR panel meeting. It is the obligation of the STAR panel chair, in consultation with other panel members, to prioritize requests for additional ~~STAT Team~~ analyses. Moreover, in situations where a STAT arrives with a well-considered, thorough assessment, it may be that the panel can conclude its review in less time than has been allotted to the meeting (i.e., early dismissal of a STAT is an option for well-constructed assessments). If follow-up work by the STAT is required after the review meeting (Such as MCMC integration of an alternative model created during the STAR panel meeting), then it is the panel's responsibility to track STAT progress. In particular, the chair is responsible for communicating with STATs (by phone, e-mail, or any convenient means) to determine if the revised stock assessment and documents are complete and ready to be used by managers ~~in the Council family~~. If stock assessments and reviews are not complete at the end of the STAR panel meeting, then the work must be completed prior to the SSC meeting where the post-STAR draft assessment is reviewed. Any post-STAR drafts of the stock assessment must be reviewed by the STAR panel or the chair if delegated that authority by the STAR panel. Assessments cannot be given to Council staff for distribution unless first endorsed by the STAR panel chair. Likewise, the final draft that is published in the Council's Stock Assessment and Fishery Evaluation (SAFE) document must also be approved by the STAR panel chair prior to being accepted by Council staff.

The STAR panel's primary duty is to conduct a peer review of an assessment that is presented by a STAT; STAR panel meetings are not workshops. In the course of this review, the panel may ask for a reasonable number of sensitivity runs, additional details of existing assessments, or similar items from the STAT. It would not be unusual for this evaluation to result in a change to the initial base model, provided both the STAR panel and the STAT agree. The STAR panels are expected to be judicious in their requests of the STATs, recognizing that some issues uncovered during review are best flagged as research priorities, and dealt with more effectively and comprehensively between assessments. The STAR panel may also request additional analysis based on an alternative approach. However, the STAR panel is not authorized to conduct an alternative assessment representing its own views that are distinct from those of the STAT, nor can it impose an alternative assessment on the Team. Similarly, the panel should not impose as a requirement their preferred methodologies when such is a matter of professional opinion. Rather, if the panel finds that an assessment is inadequate, it should document and report that opinion and, in addition, suggest remedial measures that could be taken by the STAT prior to the scheduled mop-up panel review to rectify whatever perceived shortcomings may exist. In all cases, the SSC will make a final recommendation on whether an assessment should be reviewed during the mop-up panel.

Large changes in data (such as wholesale removal of large data sets) or analytical methods recommended by the STAR panel, even if accepted by the STAT, will often result in such great changes to the assessment that it cannot adequately be reviewed during the course of the STAR panel meeting. Therefore caution should be exercised in making such changes, and in many cases those changes should be relegated to future research recommendations. If the STAR panel feels the changes are necessary and the assessment is not otherwise acceptable, a recommendation for further review at the mop-up panel is warranted. Similarly, if the STAR panel believes that the results of the stock assessment strongly indicate that current Fmsy and/or target and limit points are inappropriate, the STAR panel should identify this issue in its report and recommend any further analysis needed to support a change to more appropriate values.

The SSC will make a final recommendation on whether an assessment should be reviewed during the mop-up panel.

STATs and STAR panels are required to make a ~~good faith~~ honest attempt to resolve any areas of disagreement during the meeting. Occasionally, fundamental differences of opinion remain between the STAR panel and STAT that cannot be resolved by discussion. In such cases, the STAR panel must document the areas of disagreement in its report. In exceptional circumstances, the STAT may choose to submit a supplemental report supporting its view, but in the event that such a step is taken, an opportunity must be given to the STAR panel to prepare a rebuttal. These documents will then be appended to the STAR panel report as part of the record of the review meeting. Likewise, STAR panel members may have fundamental disagreements that cannot be resolved during the STAR panel meeting. In such cases, STAR panel members may prepare a minority report that will become part of the record of the review meeting. The SSC will then review all information pertaining to STAR panel or STAR panel/STAT disputes, and issue its recommendation.

The STAR panel report must be available for review by the STAT(s) with adequate time prior to the briefing book deadline (i.e. a week in most circumstances, but at minimum full 24 hours, in those cases where the time period

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between the STAR panel and the deadline is particularly compressed) so that the STAT can comment on issues of fact or differences in interpretation. If differences of opinion come up after review of the STAR panel report, the STAR panel and STAT should attempt to resolve them. Otherwise the areas of disagreement must be documented in the final STAR panel report.

The SAC, STAR panel chair and Council staff will have an opportunity to pre-review each assessment, determine if it appears sufficiently complete according to Appendix B, and decide whether to forward the assessment to the STAR panel. The STAR panel, however, ~~is~~ has an opportunity to conduct a more complete review of the document, and is responsible for identifying determining if a stock assessment document is sufficiently complete according to Appendix B. It is also the panel's responsibility to identify assessments that cannot be reviewed or completed for any reason. The panel's decision that an assessment is complete and reviewable should be made by consensus. If a panel cannot reach agreement, then the nature of the disagreement must be described in the panel's report. Moreover, ~~if~~ if a stock assessment is deemed to be stable in its approach to data analysis and modeling, the STAR panel should recommend that the assessment be considered as an update during the next stock assessment cycle.

For some species the available data will be insufficient to calculate reliable estimates of  $F_{MSY}$  ~~(or its proxy)~~ and  $B_{MSY}$  (or their proxies), ending ~~biomass or and/or~~ unfished biomasses, etc. Typically, results from a "data-poor" assessment are unable to produce all of the required reporting elements outlined in Appendix B ~~(Outline for Groundfish Stock Assessment Documents)~~. In particular, estimation of current exploitable biomass and/or stock depletion may be impossible, although both quantities are essential components of the Council's current 40-10 ~~(or 25-5)~~ groundfish harvest policy. Nonetheless, information that is potentially useful to management is often generated in a data-poor assessment, e.g., current spawning potential ratio (SPR). Therefore, in situations where the STAT is unable to produce a full-benchmark assessment with all the model outputs required by the Council's default harvest control rule, a "Data Report" can be developed that summarizes all the pertinent findings of the stock assessment. To the extent practicable Appendix B will serve as a guide to the contents of a Data Report ~~Report~~.

It is the responsibility of the STAR panel, in consultation with the STAT, to consider the validity of inferences that can be drawn from an analysis presented in a Data Report. If useful but incomplete results have been developed, the panel should review the reliability and appropriateness of the methods used to draw conclusions about stock status and/or exploitation potential and either recommend or reject the analysis on the basis of its ability to introduce useful information into the management process. If the STAR panel believes that important ~~information has been developed~~ results have been generated, it should forward its findings and conclusions to the SSC and Council for consideration during the setting of OFLs, ABCs and optimum yields (OYs) ~~ACLs~~. The current harvest control rule cannot be applied using the results from a Data Report, ~~but these~~. However, ~~these~~ results can be used for management decision-making. For example, a Data Report could provide information on the trend in abundance and hence changes from status quo management. A key section of the Data Report is that on research needed to improve the assessment. Highlighting research priorities in a Data Report should increase the likelihood that future stocks assessments will satisfy the Groundfish Stock Assessment ~~Terms of Reference~~ terms of reference.

~~The~~ STAR panel chair is expected to attend Council-SSC meetings and GMT meetings ~~(when requested)~~ and where stock assessments and harvest projections are discussed (as well as the relevant portions of the Council meetings, if requested), ~~to~~ explain the reviews and provide ~~other~~ technical information and advice. The chair, in coordination with the STAT, is responsible for providing the Stock Assessment Coordinator and Council staff with a suitable electronic version of the panel report.

### **Suggested Template for STAR Panel Report**

- Summary of the STAR panel meeting containing:
  - Names and affiliation of STAR panel members;
  - List of analyses requested by the STAR panel, the rationale for each request, and a brief summary of the STAT response to the request; and
  - Description of base model and alternative models used to bracket uncertainty.
- Comments on the technical merits and/or deficiencies in the assessment and recommendations for remedies.
- ~~Explanation of a~~ Areas of disagreement regarding STAR panel recommendations:

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(a)—Among STAR panel members (including concerns raised by GAP and GMT representatives); and

A.

~~B.~~ Between the STAR panel and STAT ~~Team(s)~~.

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4. Unresolved problems and major uncertainties, e.g., any special issues that complicate scientific assessment, questions about the best model scenario.
5. Management, data, or fishery issues raised by the GMT or GAP representatives during the STAR panel.
6. Prioritized recommendations for future research and data collection.

While identifying areas of disagreement the following questions should be discussed at the STAR panel:

- a) Are there any differences in opinion about the use of/inclusion or exclusion of data?
- b) Are there any differences in opinion about the choice of base model?
- c) Are there any differences in opinion about the characterization of uncertainty (through bracketing models or Bayesian integration)?

After the STAT has had a chance to comment on the STAR panel report, it should also be determined whether there are differences in opinion regarding how the STAR panel report characterizes any of the recommendations. The STAR panel chair is responsible for finalizing edits to the STAR Panel Report and submitting it to the Council in a timely fashion (i.e. by briefing book deadlines).

### **Terms of Reference for Groundfish STATs**

In order to be sufficient for peer review, the STAT ~~should~~will carry out its work according to these terms of reference and the calendar for groundfish stock assessments. All STAT members should also attend the relevant stock assessment workshops, if possible.

In the assessment document the STAT should discuss all data sources for the species assessed, identify the ones being used in the assessment, and provide the rationale for data sources being excluded. The STAT is expected to initiate contact with the GAP representative at an early stage in the process, keep the GAP representative informed of the data being used and be prepared to respond to concerns about the data that might be raised. The STAT should also contact the GMT representative for information about changes in fishing regulations that may influence data used in the assessment.

STATs are strongly encouraged to develop assessments in a collaborative environment by forming working groups, holding pre-assessment workshops, and consulting with other stock assessment scientists. STATs should coordinate early in the process with state representatives and other data stewards to ensure timely requests of data. STATs are also encouraged to organize independent meetings with industry and interested parties to discuss issues, questions, and data. Each STAT should appoint a representative to coordinate with the STAR panel. Barring exceptional circumstances, all STAT members should attend the STAR panel meeting.

Each STAT conducting a ~~full~~ benchmark assessment should appoint a representative who will be available to attend the Council meeting where the SSC is scheduled to review the assessment and give presentations of the assessment to the SSC and to other Council advisory bodies. In addition, the STAT should be prepared to respond to GMT requests for model projections during the GMT's development of ACL alternatives.

STATs must consider and respond to research recommendations of prior STAR panels, and must make a good faith effort to address the issues raised in those reports, to the extent practicable.

The STAT is responsible for preparing three versions of the stock assessment document:

- 1) A "draft" including an executive summary (except for decision tables) for discussion at the stock assessment review meeting;
- 2) A "revised draft" for distribution to the Council and advisory bodies for discussions about preliminary OFLs, ABCs and ACLs.
- 3) A "final version" to be published in the SAFE report.

~~All relevant stock assessment workshops should be attended by all STAT team members. The STAT Team shall~~

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include in both the STAR panel draft and final assessment all data sources that include the species being assessed, identify which are used in the assessment, and provide the rationale for data sources that are excluded. The STAT Team is obliged to keep the GAP representative informed of the specific data being used in the stock assessment. The STAT team is expected to initiate contact with the GAP representative at an early stage in the process, and to be prepared to respond to concerns about the data that might be raised. The STAT Team should also contact the GMT representative for information about changes in fishing regulations that may influence data used in the assessment.

STAT teams are strongly encouraged to develop assessments in a collaborative environment, such as by forming working groups, holding pre-assessment workshops, and consulting with other stock assessment scientists. STAT teams are also encouraged to also organize independent meetings with industry and interested parties to discuss issues, questions, and data. Each STAT Team will appoint a representative to coordinate work with the STAR panel. Barring exceptional circumstances, all STAT team members should attend the STAR panel meeting.

Each STAT Team conducting a full assessment will appoint a representative who will be available to attend the Council meeting where the SSC is scheduled to review the assessment, and will typically give presentations of the assessment to the SSC and to other Council advisory bodies. In addition, the STAT Team should be prepared to respond to GMT requests for model projections during the GMT's development of ABC and OY alternatives.

The STAT Team is responsible for preparing three versions of the stock assessment document: 1) a complete "draft" including an executive summary (except for decision tables) for discussion at the stock assessment review meeting; 2) a "revised draft" for distribution to the Council and advisory bodies for discussions about preliminary ABC and OY levels; 3) a "final" version to be published in the SAFE report. Post-STAR panel drafts must be reviewed by the STAR panel prior to being submitted to Council staff, ~~but, these reviews are limited to editorial issues, verifying that the required elements are included according to the Terms of Reference~~ terms of reference, and confirming that the document reflects the discussions and decisions made during the STAR panel. Other than changes authorized by the SSC, only editorial and other minor alterations should be made between the "revised draft" and "final" versions.

The STAT should provide a draft assessment document to the STAR panel chair, Council staff, and the NMFS SAC no less than three full weeks prior to the STAR panel meeting to allow timely review of the draft assessment and to determine if it is sufficient for review according to the terms of reference. The draft assessment document should include all elements listed in Appendix B except for the: 1) population abundance tables, 2) point-by-point responses to current STAR panel recommendations, and 3) acknowledgements. If the draft assessment is judged complete, the NMFS groundfish SAC will distribute the draft assessment and relevant supporting materials to the STAR panel, Council staff, the SSC Groundfish subcommittee, and GMT and GAP representatives two weeks prior to the STAR panel meeting. It is the STAT's responsibility to make sure the document is complete and complies with these terms of reference. If the assessment document is determined during the pre-review to be not sufficiently complete, a list of deficiencies should be provided to the STAT to allow completion of the draft assessment prior to distribution to the STAR panel. If the assessment document provided two weeks prior to the STAR panel does not meet minimum criteria it will not be reviewed. Incomplete assessments or those provided after the requisite deadlines in Appendix A will be either moved to the mop-up panel, or postponed to a subsequent assessment cycle. Generally, the mop-up panel will not be able to review more than two assessments; therefore, the options are limited for assessments that are not completed on time.

The STAT is responsible for bringing data in digital format and model files to the review meeting so that they could be analyzed on site. STATs should have several models ready to present to the STAR panel and be prepared to discuss the merits of each. The STAT also should identify a candidate base model, fully-developed and well-documented in the draft assessment, for STAR panel review.

In most cases, the STAT should produce a revised draft of the assessment document within three weeks of the end of the STAR panel meeting (including any internal agency review). The assessment document must be finalized before the briefing book deadline for the Council meeting, at which the assessment is scheduled for review.

The STAT and the STAR panel may disagree on technical issues regarding an assessment, and a complete stock assessment document must include a point-by-point response of the STAT to each of the STAR panel's recommendations. Assessment model estimates and projections representing all sides of the disagreement need to be presented to, reviewed by, and commented upon by the SSC.

The STAT Team will provide "draft" assessment documents to the STAR panel chair, Council staff, and the NMFS

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SAC three weeks in advance of the STAR panel meeting to allow timely review of the draft assessment to ensure the required elements of a draft assessment are included according to the Terms of Reference. If the draft assessment is judged complete, the NMFS groundfish SAC will distribute the draft assessment and relevant supporting materials to the STAR panel, Council staff, the SSC Groundfish subcommittee, and GMT and GAP representatives at least two weeks prior to the STAR panel meeting.

Complete, fully developed assessments are critical to the STAR panel process. Draft assessments will be evaluated for completeness prior to the STAR panel meeting, and assessments that do not satisfy minimum criteria will not be reviewed. The full draft assessment document should be available for distribution three weeks prior to the STAR panel meeting to determine if it is sufficient for review. The STAR panel chair, Council staff, and the NMFS SAC will make an initial recommendation, which will then be reviewed by the SSC Groundfish Subcommittee members, if it is determined that the draft assessment is not sufficiently complete. In such cases, a list of deficiencies will be provided to the STAT Team to allow completion of the draft assessment prior to distribution to the STAR panel. The draft document should include all elements listed in Appendix B except the: 1) decision table, 2) harvest projections, 3) population abundance tables, 4) point-by-point responses to current STAR panel recommendations, and 5) acknowledgements. Incomplete assessments or those provided after the requisite deadlines in Appendix A will be either moved to the mop-up panel, or postponed to a subsequent assessment cycle. In general, the mop-up panel will not be able to review more than two assessments, so the options are limited for assessments that are not completed on time.

The STAT Team is responsible for bringing computerized data and working assessment models to the review meeting in a form that can be analyzed on site. STAT Teams should take the initiative in building and selecting candidate models and should have several complete models ready to present to the STAR panel and be prepared to discuss the merits of each. The STAT team should identify a candidate base model, fully documented in the draft assessment, for STAR panel consideration. Fully developed assessments that are properly documented should require less time to review and approve than poorly constructed, incomplete assessments.

In most cases, the STAT Team should produce a complete draft of the assessment within three weeks of the end of the STAR panel meeting, including any internal agency review. In any event, the STAT Team must finalize the assessment document before the briefing book deadline for the Council meeting at which the assessment is scheduled for review.

The STAT Team and the STAR panel may disagree on technical issues regarding an assessment, but a complete stock assessment must include a point-by-point response by the STAT Team to each of the STAR panel's recommendations. Estimates and projections representing all sides of the disagreement need to be presented to, reviewed by, and commented upon by the SSC.

For stocks that are projected to fall below overfished thresholds, the STAT must complete a rebuilding analysis according to the SSC's ~~Terms of Reference~~terms of reference for Groundfish Rebuilding Analyses. It is recommended that this analysis be conducted using the rebuilding software developed by Dr. Andre Punt (aepunt@u.washington.edu). The STAT is also responsible for preparing a document that summarizes the results of the rebuilding analysis. Usually, these will be reviewed at the "mop-up" panel, and therefore complete rebuilding documents (see the "Terms of Reference for Rebuilding Analyses") should be submitted to the Council for review two full weeks prior to the first day of that panel.

Electronic versions of final assessment documents, rebuilding analyses, parameter files, data files, and key output files will be sent by the STATs to Council staff and the SAC for inclusion in a stock assessment archive. Any tabular data that are inserted into the final documents in an object format should also be submitted in alternative forms (e.g., spreadsheets), which allow selection of individual data elements.

STATs whose models are not chosen as the base model by a STAR panel should, in most cases, provide the pre-STAR draft assessments or corrected or updated (as agreed upon with the STAR panel) versions thereof to the Council by the briefing book deadline. If the STAR panel requests the results of certain runs from the not chosen models to be used as sensitivity runs to bracket uncertainty, the results of those runs should be appended to the draft assessments provided to the Council and its advisory bodies.



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### **Terms of Reference for Stock Assessment Updates**

The STAR process is designed to provide a comprehensive, independent review of a stock assessment. ~~In other~~ However, when a model has already been critically examined and is simply updated by incorporating the most recent data, a ~~situations a less comprehensive rigorous limited~~ review of assessment results is desirable, particularly in situations where a “model” has already been critically examined and the objective is to simply update the model by incorporating the most recent data is required. In this context a model refers not only to the population dynamics model *per se*, but to the particular data sources that are used as inputs to the model, the statistical framework for fitting the data, and the analytical treatment of model outputs used in providing management advice, including reference points, the ~~OFL and ABC and OY~~. These terms of reference establish a procedure for a limited but still rigorous review for stock assessment models that fall into this latter category. However, it is recognized that what in theory may seem to be a simple update, may in practice result in a situation that is impossible to resolve in an abbreviated process. In these cases, it may not be possible to update the assessment—~~rather, and~~ the assessment may need to be revised ~~and reviewed as a benchmark assessment in during~~ the next ~~full~~ assessment review cycle.

#### *Qualification*

The SSC will determine whether a stock assessment qualifies as an update under these terms of reference. Recommendation by a STAR panel or the SSC that a ~~full benchmark~~ assessment is suitable for an update will be a principal criterion in this determination. To qualify, a stock assessment must carry forward its fundamental structure from a model that was previously reviewed and endorsed by a STAR panel. ~~In practice this means similarity~~ A stock assessment update is appropriate in situations where no substantial change has occurred in: a) the particular sources of data used, b) the analytical methods used to summarize data prior to input to the model, c) the software used in programming the assessment, d) the assumptions and structure of the population dynamics model underlying the stock assessment, e) the statistical framework for fitting the model to the data and determining goodness of fit, f) the procedure for weighting of the various data components, and g) the analytical treatment of model outputs in determining management reference points, including  $F_{MSY}$ ,  $B_{MSY}$ , and  $B_0$ .— A stock assessment update is appropriate in situations where no significant change in these seven factors has occurred, other than extending time series of data elements within particular data components used by the model (e.g., adding information from a recently completed survey and an update of landings). Extending CPUE time series based on fitted models (i.e., GLM models) will require refitting the model and updating all values in the time series. Assessments using updated CPUE time series qualify as updates if the CPUE standardization models follow applicable criteria for assessment models described above. In practice there will always be valid reasons for altering a model, as defined in this broad context, although, in the interests of stability, such changes should be resisted as much as possible. Instead, significant alterations should be addressed in the next subsequent ~~full benchmark~~ assessment and review.

In certain cases no new informative data, other than estimates of catch biomass, will be available. In these cases (e.g. for cowcod in 2011), a status report rather than an update would likely be appropriate, as an update would simply be running the same model with the same data with one more year of catch. If the catch is near the value projected in the previous rebuilding analysis, no new information would be gained by composing a new update assessment.

#### *Composition of the Review panel*

The Groundfish Subcommittee of the SSC will conduct the review of a stock assessment update. A lead reviewer for each updated assessment will be designated by the chair of the Groundfish Subcommittee from among its membership, and it will be the lead reviewer’s responsibility to ensure the review is completed properly and that a written report of the proceedings is produced. In addition, the GMT and the GAP will designate one person each to participate in the review.

#### *Review Format*

All stock assessment updates will be reviewed during a single meeting of the SSC Groundfish Subcommittee ~~scheduled~~ early in the assessment cycle. ~~This meeting may precede or follow a normally scheduled SSC meeting. The review process will be as follows. The~~ For the review, the ~~STAT team~~ preparing the update will distribute the updated stock assessment to the review panelists ~~at least~~ two weeks prior to the review meeting. ~~In addition,~~ Council staff will provide panelists with a copy of the last stock assessment reviewed under the full STAR process;

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as well as the previous along with the STAR panel report. Review of stock assessment updates is not expected to require analytical requests or model runs during the meeting, although large or unexpected changes in model results may necessitate some model exploration. The review will focus on two crucial questions: 1) Has the assessment complied with the terms of reference for stock assessment updates? -and 2) Are new input data and model results sufficiently consistent with previous data and results that the updated assessment can form the basis of Council decision-making? If ~~either of these criteria is not met~~ the answer to either of these two questions is negative, then a ~~full~~ benchmark stock assessment ~~would~~ be required.

### *STAT Deliverables*

~~Since there will be limited opportunities for revision during the review meeting, it is the~~ The STAT team's is responsible to provide the panel with a completed update at least two weeks prior to the meeting. To streamline the review process, the team can reference whatever material it chooses, including that presented in the previous stock assessment (e.g., a description of methods, data sources, stock structure, etc.). However, it is essential that any new information being incorporated into the assessment be presented in enough sufficient detail, so that the Groundfish Subcommittee can determine whether the update ~~satisfactorily~~ meets the Council's requirement to use the best available scientific information. ~~Of particular importance will~~ There must be a retrospective analysis showing the performance of the model with and without the updated data streams. ~~Likewise, as well as~~ a decision table that highlights the consequences of alternative states of nature that would be useful to the Council in adopting annual specifications. The decision table, in most circumstances, should be the same format as in the previous assessment, and in all cases a decision table that mimics that included in the previous assessment should be presented for comparison. Similarly, if any If minor changes to the "model" structure are adopted, ~~above and beyond updating specific data streams, a~~ sensitivity analysis is to those changes ~~are will also~~ be required. The

~~In addition to documenting changes in the performance of the model, the~~ STAT Team will be required to present key assessment outputs in tabular form. ~~Specifically, the STAT Team's~~ The final update document should include the following:

1. Title page and list of preparers;
2. Executive Summary (see Appendix C);
3. Introduction;
4. Documentation of updated data sources;
5. Short description of overall model structure;
6. Complete base-run results, including ~~a tabular summary of total and spawning stock biomass and recruitment time series~~ a time series of total, 1+ (if age 1s are in the model), summary, and spawning biomass (and/or spawning output), depletion relative to  $B_0$ , recruitment and fishing mortality or exploitation rate estimates (table and figures);
7. Uncertainty analysis, including retrospective analysis, decision table, etc.; and
8. 10 year harvest projections under the default harvest policy.

### *Groundfish Subcommittee Report*

The Groundfish Subcommittee will issue a report that will include the following items:

- ~~1. Name and affiliation of panelists;~~
- ~~2.~~ 1. Comments on the technical merits and/or deficiencies of the update;
- ~~3.~~ 2. Explanation of areas of disagreement ~~among panelists and~~ between the ~~panel~~ groundfish subcommittee and STAT, ~~and;~~ and
- ~~4.~~ 3. Recommendations regarding the adequacy of the updated assessment for use in management.

## **Council Staff Responsibilities**

A Council staff officer will be assigned to coordinate, monitor and document the STAR process. The Council staff officer will be responsible for timely issuance of meeting notices and distribution of stock assessment documents, stock summaries, meeting minutes, and other appropriate documents. The Council staff officer will monitor compliance with the ~~Terms of Reference~~ terms of reference for the 2011-09-120 groundfish STAR process. The

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Council staff officer will coordinate materials and presentations for Council meetings relevant to final Council adoption of groundfish stock assessments. Council staff will also collect and maintain file copies of reports from each STAR Panel (containing items specified in the STAR Panel ~~Terms of Reference~~terms of reference), the outline for groundfish stock assessment documents, SSC, GMT, and GAP comments and reports, letters from the public, and any other relevant information. At a minimum, the stock assessments (~~STAT reports~~Assessment documents, STAR Panel reports, and stock summaries) should be published and distributed in the Council annual SAFE document.

A primary role for the Council staff officer assigned to the ~~2009-10~~2011-12 STAR process ~~will be~~is to monitor STAR Panel and SSC activities to ensure compliance with these ~~Terms of Reference~~terms of reference. The Council staff officer will coordinate with the STAR Panel chair and the NMFS SAC in a review of STAT documents to assure they are received on time, ~~are~~ consistent with the ~~Terms of Reference~~terms of reference, and ~~are~~ complete. If the STAT materials are ~~obviously~~ not in compliance with the ~~Terms of Reference~~terms of reference, the Council staff officer will return the materials to ~~STAT assessment~~ authors with ~~either a~~ list of deficiencies, a notice that the deadline has expired, or both. The Council staff officer will attend all STAR panel meetings to ensure continuity and adherence to the Stock Assessment ~~Terms of Reference~~terms of reference. The Council staff officer will identify inconsistencies with the ~~Terms of Reference~~terms of reference that occur during STAR Panels and work with the STAR Panel chair to develop solutions ~~and~~ to correct them. The Council staff officer will review the Executive Summary for consistency with the ~~Terms of Reference~~terms of reference. ~~When inconsistencies are identified, and the assessment authors will be requested to make appropriate revisions in time for the appropriate SSC and GMT meetings, when an assessment is considered.~~ When inconsistencies are identified, and the assessment authors will be requested to make appropriate revisions in time for the appropriate SSC and GMT meetings, when an assessment is considered. The Council staff officer will also coordinate and monitor SSC review of stock assessments and STAR Panel reports to ensure compliance with these ~~Terms of Reference~~terms of reference and the independent review requirements of Council Operating Procedure 4. The Council staff officer will also identify ~~a one~~ STAR Panel member with experience conducting west coast groundfish stock assessments.

### **National Marine Fisheries Service Responsibilities**

NMFS Northwest Fisheries Science Center (NWFSC) will provide a SAC to work with the Council, other agencies, groups, or interested persons that carry out assessment work ~~or to~~ assist in organizing the STAT and STAR Panels. Since most assessments are conducted by NMFS STATs, the SAC will work with ~~assessment authors~~STATs to develop a draft list of assessments to be considered by the Council. The SAC also will develop a draft STAR Panel schedule for review by the Council. The SAC will identify two independent STAR panelists following criteria for reviewer qualifications. The SAC will make every effort to identify one independent reviewer that can attend all STAR Panels to provide consistency among reviews. The costs associated with these two reviewers will be borne by NOAA Fisheries. The SAC will coordinate with ~~STAT authors~~ to facilitate delivery of materials by scheduled deadlines and in compliance with other requirements of these ~~Terms of Reference~~terms of reference, to the extent possible and with the assistance of the assigned Council staff officer and the STAR Panel chair.

Following any modifications to the stock assessments resulting from STAR Panel reviews and prior to SSC review, the SAC will assist the Council staff officer in reviewing the Executive Summary for consistency with the ~~Terms of Reference~~terms of reference. ~~When inconsistencies will be identified, and the authors will be requested to make appropriate revisions in time for the appropriate SSC and GMT meetings.~~ When inconsistencies are identified, and the authors will be requested to make appropriate revisions in time for the appropriate SSC and GMT meetings.

### **STAT Responsibilities**

The STAT is responsible for conducting a complete and technically sound stock assessment that conforms to accepted standards of quality, ~~and make sure that work is carried out in a timely fashion according to the calendar and terms of reference and in accordance with these terms of reference.~~ The STAT will conduct its work and activities in accordance with the Terms of Reference for Groundfish STAT Teams. The final product of the STAT will be a stock assessment document that follows the outline specified in Appendix B. The terminal year for a stock assessment should be the year in which the stock assessment is conducted. For the 2011 stock assessments, therefore, the status should be reported as of the beginning of 2011.

### **GMT Responsibilities**



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The GMT is responsible for identifying and evaluating potential management actions based on the best available scientific information. In particular, the GMT makes ~~ACL BC and OY~~ recommendations to the Council based on ~~estimated stock status, uncertainty about stock status, the OFL and ABC that arise from the estimated status, uncertainty about that status, and P\*, as well as~~ and socioeconomic and ecological factors. The GMT will use stock assessments, STAR panel reports, and other information ~~in making to make~~ their recommendations. The GMT's preliminary ABC ~~and ACL recommendation recommendations~~ will be developed at a meeting that includes representatives from the SSC, STATs, STAR panels, and GAP. A GMT representative(s) will be appointed by the chair of the GMT to track each stock assessment, and will serve as advisor to the STAT and STAR panel. The GMT representative will participate in review discussions, but will not serve as a member of the panel. The GMT representative should be prepared to advise the STAT and STAR panel on changes in fishing regulations that may influence data used in the assessment and the nature of the fishery in the future.

The GMT will not seek revision or additional review of the stock assessments after they have been reviewed by the STAR panel. The GMT chair will communicate any unresolved issues to the SSC for consideration. Successful separation of scientific (i.e., STAT and STAR panels) from management (i.e., GMT) work depends on stock assessment documents and STAR reviews being completed by the time the GMT meets to discuss preliminary ~~OFL, ABC and OY ACL~~ levels. However, the GMT can request additional model projections, ~~based on reviewed model scenarios~~, in order to develop a full evaluation of potential management actions.

### **GAP Responsibilities**

The chair of the GAP will appoint a representative to track each stock assessment and attend the STAR panel meeting. The GAP representative will serve as advisor to the STAT and STAR panel. It is especially important that the GAP representative be included in the STAT's discussion and review of all the data sources being used in the assessment, prior to development of the stock assessment model. It is the responsibility of the GAP representative to insure that industry concerns ~~about the~~ regarding the adequacy of data being used by the STAT are expressed at an early stage in the process. The GAP representative will participate in review discussions as an advisor to the STAR panel, in the same capacity as the GMT advisor. The GAP representative may provide appropriate data and advice to the STAR panel and GMT and will report the GAP on STAR panel and GMT meeting proceedings.

The GAP representative, along with STAT and SSC representatives, will attend the GMT meeting at which ~~OFL and ABC~~ recommendations are made. The GAP representative will also attend subsequent GMT, Council, and other necessary meetings where the assessment is discussed.

~~The GAP representative may provide appropriate data and advice to the STAR panel and GMT and will report to the GAP on STAR panel and GMT meeting proceedings.~~

### **SSC Responsibilities**

The SSC will participate in the stock assessment review process and ~~will~~ provide the Council and its advisory bodies with technical advice related to the stock assessments and the review process. The SSC will assign one of its members to act as chair of each STAR panel. Following the STAR panel meeting, the STAR panel chair will review the revised stock assessment and STAR panel report for consistency with the ~~Terms of Reference~~ terms of reference. ~~The chair is member is not only~~ expected to attend the assigned STAR panel meeting, ~~but also~~ the GMT meeting at which ~~ACL BC~~ recommendations are made ~~(should the need arise)~~, and Council meetings when groundfish stock assessment agenda items are discussed (see calendar in Appendix A). ~~Specifically, if requested,~~ the STAR panel chair will present the STAR panel report to the GMT ~~and assist with if it requires assistance in~~ interpreting the results of a stock assessment. In addition, the chair will present the panel's report at SSC and Council meetings. However, to insure independence in the SSC's review of stock assessments and STAR panel proceedings, SSC members who served on a STAT or STAR panel for a particular stock assessment are required to recuse themselves when that stock assessment is reviewed by the SSC, except to answer questions or present factual information. Other SSC members will be assigned the roles of discussion lead and rapporteur. The SSC's review constitutes a final independent check of the stock assessment that takes into consideration both the stock assessment and the STAR panel report.

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The SSC is responsible for making OFL and ABC recommendations to the Council. The SSC is also responsible for assigning each species in the FMP to a category (or tier) given the categories as outlined below. ~~These categories are outlined below.~~ Most stock assessments that are deemed acceptable after the STAR process and SSC review will be assigned to tier 1, although some STAR-panel reviewed stock assessments may be assigned to tier 2d (Table 1) due to greater uncertainty, lack of adequate data or data that are in conflict. The SSC will provide a rationale for each STAR-panel reviewed stock assigned to tier 2d. ~~some will be assigned to tier 2d due to intrinsic uncertainty due to lack of good or complete data or due to conflicting data.~~ At the end of the SSC review of each stock assessment, the SSC should make the category (tier) determination. It is also the SSC's responsibility to determine when it is appropriate to make changes to standard proxies or the use of ~~estimated values~~estimated values of such parameters as  $F_{MSY}$  and  $B_{MSY}$ .

It is the SSC's responsibility to review and endorse any additional analytical work requested by the GMT after the stock assessment has been reviewed by the STAR panels. In addition, the SSC will review and advise the GMT and Council on projected OFLs, ABCs and ~~OYs~~ACLs and, in addition, will serve as arbitrator to resolve disagreements between the STAT and the STAR panel.

## Table 1

### **Proposed Definitions of Species Categories**

Category 3: Data poor. OFL derived from historical catch.

Category 3a. No reliable catch history. No basis for establishing OFL.

Category 3b. Reliable catches estimates only for recent years. OFL is average catch during a period when stock is considered to be stable and close to  $B_{MSY}$  equilibrium on the basis of expert judgment.

Category 3c. Reliable aggregate catches during period of fishery development and approximate values for natural mortality. Default analytical approach DCAC.

Category 3d. Reliable annual historical catches and approximate values for natural mortality and age at 50% maturity. Default analytical approach DB-SRA.

Category 2: Data moderate. OFL derived from model output (or natural mortality).

Category 2a.  $M^*$  survey biomass assessment (as in Rogers 1996).

Category 2b. Historical catches, fishery-dependent trend information only. An aggregate population model is fit to the available information.

Category 2c. Historical catches, survey trend information, or at least one absolute abundance estimate. An aggregate population model is fit to the available information.

Category 2d. Full age-structured assessment, but results are substantially more uncertain than assessments used in the calculation of the  $P^*$  buffer. The SSC will provide a rationale for each stock placed in this category. Reasons could include that assessment results are very sensitive to model and data assumptions, or that the assessment has not been updated for many years.

Category 1: Data rich. OFL based on  $F_{MSY}$  or  $F_{MSY}$  proxy from model output. ABC based on  $P^*$  buffer.

Category 1a. Reliable compositional (age and/or size) data sufficient to resolve year-class strength and growth characteristics. Only fishery-dependent trend information available. Age/size structured assessment model.

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Category 1b. As in 1a, but trend information also available from surveys. Age/size structured assessment model.

Category 1c. Age/size structured assessment model with reliable estimation of the stock-recruit relationship.

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**Appendix A: ~~2009-2011~~ Stock Assessment Review Calendar**

Panel	Dates	Location	Species 1	Species 2	Pre-STAR Draft Deadline a/	Post-STAR Briefing Book Deadline b/
Whiting*	<del>Feb. 3-6</del>	<del>Seattle, WA</del>	<del>Pacific Whiting</del>	<del>NA</del>	<del>Jan. 12</del>	<del>Feb. 18</del>
1	<del>May 4-8</del>	<del>Newport, OR</del>	<del>Petrale sole</del>	<del>Splitnose</del>	<del>Apr. 13</del>	<del>May 27</del>
Updates	<del>June 10-11</del>	<del>June Council meeting</del>	<del>POP, Darkblotched</del>	<del>Canary, Cowcod</del>	<del>NA</del>	<del>May 27</del>
2	<del>July 13-17</del>	<del>Santa Cruz, CA</del>	<del>Bocaccio</del>	<del>Widow</del>	<del>June 22</del>	<del>Aug. 26</del>
3	<del>July 27-31</del>	<del>Seattle, WA</del>	<del>Lingcod</del>	<del>Cabezon</del>	<del>July 6</del>	<del>Aug. 26</del>
4	<del>Aug. 3-7</del>	<del>Seattle, WA</del>	<del>Yelloweye</del>	<del>Greenstriped</del>	<del>July 13</del>	<del>Aug. 26</del>
Mop-Up	<del>Sept. 28- Oct. 1</del>	<del>Seattle, WA</del>	<del>TBD</del>	<del>TBD</del>	<del>Sep. 7</del>	<del>Oct. 14</del>
<p>a/ Pre-STAR draft assessments are due to Council staff and the NMFS SAC three weeks in advance of the STAR meeting. This allows one week to correct deficiencies prior to distribution to the STAR panel members two weeks in advance of the STAR panel.</p> <p>b/ Post-STAR draft assessments to be reviewed by the SSC are due to Council staff two weeks in advance of the SSC meeting. This due date is a guideline since, in some cases (e.g., Pacific whiting), there is not enough time to prepare the post-STAR draft in time for the briefing book deadline.</p>						

\*Note that the Pacific hake (whiting) assessment is conducted jointly with Canada, and may or may not be conducted under an international treaty with that country in 2011. If so, these terms of reference will be superseded by the treaty. If not, in the spirit of the treaty, modifications to these terms of reference or alternate terms of reference may be developed jointly with Canada for that species alone.

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**Appendix B: Outline for Groundfish Stock Assessment Documents**

This is an outline of items that should be included in stock assessment reports for groundfish managed by the Pacific Fishery Management Council. The outline is a working document meant to provide assessment authors with flexible guidelines about how to organize and communicate their work. All items listed in the outline may not be appropriate or available for each assessment. Also, items ~~flagged~~ with asterisks (\*) are optional for draft assessment documents prepared for STAR panel meetings but should be included in the final document. In the interest of clarity and uniformity of presentation, stock assessment authors and reviewers are encouraged (but not required) to use the same organization and section names as in the outline. It is important that time ~~trends~~ ~~series~~ of catch, abundance, harvest rates, recruitment and other key quantities be presented in tabular form to facilitate full understanding and follow-up work.

- A. Title page and list of preparers – the names and affiliations of the stock assessment team (STAT) either alphabetically or as first and secondary authors
- B. Executive Summary (see attached template and example in Appendices C and D respectively).
- C. Introduction
  - 1. Scientific name, distribution, the basis for the choice of stock structure, including regional differences in life history or other biological characteristics that should form the basis of management units.
  - 2. A map depicting the scope of the assessment and identifying boundaries for fisheries or data collection strata.
  - ~~3. Description of fisheries for this species off Canada or Alaska, including references to any recent assessments of those stocks.~~
  - ~~4.3.~~ Important features of life history that affect management (e.g., migration, sexual dimorphism, bathymetric demography).
  - ~~5.4.~~ Important features of current fishery and relevant history of fishery.
  - ~~6.5.~~ Summary of management history (e.g., changes in mesh sizes, trip limits, or other management actions that may have significantly altered selection, catch rates, or discards).
  - ~~7.6.~~ Management performance – a table or tables comparing acceptable biological catches, optimum yields, landings, and catch (i.e., landings plus discard) for each area and year
  - ~~7. —Description of fisheries for this species off Canada, Alaska and/or Mexico, including references to any recent assessments of those stocks.~~
- D. Assessment
  - 1. Data
    - a. Landings by year and fishery, historical catch estimates, discards (generally specified as a percentage of total catch in weight and in units of mt), catch-at-age, weight-at-age, abundance indices (typically survey and CPUE data), data used to estimate biological parameters (e.g., growth rates, maturity schedules, and natural mortality) with coefficients of variation (CVs) or variances if available. Include complete tables and figures and date of extraction.
    - b. Sample size information for length and age composition data by area, year, gear, market category, etc., including both the number of trips and fish sampled.
    - c. All data sources that include the species being assessed, which are used in the assessment, and provide the rationale for data sources that are excluded.
  - 2. History of modeling approaches used for this stock – changes between current and previous assessment models
    - a. Response to STAR panel recommendations from the most recent previous assessment.
    - b. Report of consultations with GAP and GMT representatives regarding the use of various data sources in the stock assessment.
  - 3. Model description
    - a. Complete description of any new modeling approaches.
    - b. Definitions of fleets and areas.
    - d. Assessment program with last revision date (i.e., date executable program file was compiled).
    - e. List and description of all likelihood components in the model.
    - f. Constraints on parameters, selectivity assumptions, natural mortality, ~~assumed level~~ ~~treatment~~ of age read ~~in~~ ~~ger~~ ~~agreement or assumed ageing error (if applicable)~~ bias and/or imprecision, and other

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- ~~assumed~~fixed parameters.
- g. Description of stock-recruitment constraints or components.
- h. Description of how the first year that is included in the model was selected and how the population state at the time is defined (e.g.,  $B_0$ , stable age structure, etc.).
- i. Critical assumptions and consequences of assumption failures.
- 4. Model selection and evaluation
  - a. Evidence of search for balance between model realism and parsimony.
  - b. Comparison of key model assumptions, include comparisons based on nested models (e.g., asymptotic vs. domed selectivities, constant vs. time-varying selectivities).
  - c. Summary of alternate model configurations that were tried but rejected.
  - d. Likelihood profile for the base-run (or proposed base-run model for a draft assessment undergoing review) configuration over one or more key parameters (e.g.,  $M$ ,  $h$ ,  $Q$ ) to show consistency among input data sources.
  - e. Residual analysis for the base-run configuration (or proposed base-run model in a draft assessment undergoing review) e.g., residual plots, time series plots of observed and predicted values, or other approaches. Note that model diagnostics *are* required in draft assessments undergoing review.
  - f. Convergence status and convergence criteria for the base-run model (or proposed base-run).
  - g. Randomization run results or other evidence of search for global best estimates.
  - h. Evaluation of model parameters. Do they make sense? Are they credible?
  - i. Are model results consistent with assessments of the same species in Canada and Alaska? Are parameter estimates (e.g., survey catchability) consistent with estimates for related stocks?
- 5. Point-by-point response to the STAR panel recommendations.\* (Not required in draft assessment undergoing review.)
- 6. Base-run(s) results
  - a. Table listing all explicit parameters in the stock assessment model used for base runs, their purpose (e.g., recruitment parameter, selectivity parameter) and whether or not the parameter was actually estimated in the stock assessment model.
  - b. Population numbers at age  $\times$  year  $\times$  sex (if sex-specific  $M$ , growth, or selectivity) (May be provided as a text file).\* (Not required in draft assessment undergoing review.)
  - c. Time-series of total, 1+ (if age 1s are in the model), summary, and spawning biomass (and/or spawning output), depletion relative to  $B_0$ , recruitment and
  - fishing mortality or exploitation rate estimates (table and figures).
  - d. Selectivity estimates (if not included elsewhere).
  - e. Stock-recruitment relationship.
  - f. OFL , ABC and ACL (and/or ABC and OY or HG) for recent years
  - g. Clear description of units for all outputs.
  - h. Clear description of how discard is included in yield estimates.
- 7. Uncertainty and sensitivity analyses. The best approach for describing uncertainty and the range of probable biomass estimates in groundfish assessments may depend on the situation. Important factors to consider include:
  - a. Parameter uncertainty (variance estimation conditioned on a given model, estimation framework, data set choice, and weighting scheme), including likelihood profiles of important assessment parameters (e.g., natural mortality). This also includes expressing uncertainty in derived outputs of the model and estimating CVs by an appropriate methods (e.g., bootstrap, asymptotic methods, Bayesian approaches, such as MCMC). Include the CV of spawning biomass in the first year for which an OFL has not been specified (typically end year +1 or +2).
  - b. Sensitivity to data set choice and weighting schemes (e.g., emphasis factors), which may also include a consideration of recent patterns in recruitment.
  - c. Sensitivity to assumptions about model structure, i.e., model specification uncertainty.
  - d. Retrospective analysis, where the model is fitted to a series of shortened input data sets, with the most recent years of input data being dropped.
  - e. Historical analysis (plot of actual estimates from current and previous assessments).
  - f. Subjective appraisal of the magnitude and sources of uncertainty.
  - g. If a range of model runs is used to characterize uncertainty it is important to provide some qualitative or quantitative information about relative probability of each.
  - h. If possible, ranges depicting uncertainty should include at least three runs: (a) one judged most

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probable; (b) at least one that depicts the range of uncertainty in the direction of lower current biomass levels; and (c) one that depicts the range of uncertainty in the direction of higher current biomass levels. The entire range of uncertainty should be carried through stock projections and decision table analyses.

E. Reference points (biomass and exploitation rate).

1. Unfished spawning stock biomass, summary age biomass, and recruitment, along with unfished spawning stock output (in billions of eggs, if spawning output is other than linearly related to spawning biomass, or in billions of egg equivalents if maternal age effects on egg quality are taken into account).
2. Reference points based on  $B_{40\%}$  for rockfish and roundfish and on  $B_{25\%}$  for flatfish (spawning biomass and/or output, SPR, exploitation rate, equilibrium yield).
3. Reference points based on default SPR proxy (spawning biomass and/or output, SPR, exploitation rate, equilibrium yield).
4. Reference points based on MSY (if estimated) (spawning biomass and/or output, SPR, exploitation rate, equilibrium yield).
5. Equilibrium yield curve showing various  $B_{MSY}$  proxies (see attached example).

F. Harvest projections and decision tables\* (Not required in draft assessment undergoing review.)

1. Harvest projections and decision tables (i.e., a matrix of states of nature versus management action) should cover the plausible range of uncertainty about current biomass and the full range of candidate fishing mortality targets used for the stock or requested by the GMT. These should at least include calculation of the ABC-OFL based on  $F_{MSY}$  (or its proxy) and the maximum OY-ACL that is implied

under the

\_\_\_\_\_ Council's  
\_\_\_\_\_ 40:10 harvest policy. Include OFL(encountered), OFL(retained) and OFL(dead) if different  
\_\_\_\_\_ due to discard and discard mortality. Ideally, the alternatives described in the decision table will be  
\_\_\_\_\_ drawn from a  
\_\_\_\_\_ probability distribution which describes the pattern of uncertainty regarding the status of  
\_\_\_\_\_ the stock and  
\_\_\_\_\_ the consequences of alternative future management actions. Where alternatives are not  
\_\_\_\_\_ formally  
\_\_\_\_\_ associated with a probability distribution, the document needs to present sufficient  
\_\_\_\_\_ information to  
\_\_\_\_\_ guide assignment of approximate probabilities to each alternative. Decision tables  
\_\_\_\_\_ should follow the format of the example Executive Summary for canary rockfish (Appendix D of this  
document) in which the columns represent the states of nature and the rows the management decisions.  
In most cases, management decisions will represent the sequence of catches obtained by applying the  
Council 40-10 harvest policy to each state of nature; however other alternatives may be suggested by  
the GMT as being more relevant to Council decision-making. For example, when recent catches are  
much less than the OY or ACL OY, there may be more interest in status quo projections.- 2. Information presented should include biomass, stock depletion, and yield projections of ABC and  
OY OFL, ABC and ACL for ten years into the future, beginning with the first year for which  
management action could be based upon the assessment.

G. Regional management considerations.

1. For stocks where current practice is to allocate harvests by management area, a recommended method of allocating harvests based on the distribution of biomass should be provided. The GMT advisor should be consulted on the appropriate management areas for each stock.
24. Discuss whether a regional management approach make sense for the species from a biological perspective.
32. If there are insufficient data to analyze a regional management approach, what are the research and data needs to answer this question?

H. Research needs (prioritized).

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- I. Acknowledgments-include STAR panel members and affiliations as well as names and affiliations of persons who contributed data, advice or information but were not part of the assessment team. \* (Not required in draft assessment undergoing review.)
- J. Literature cited.
- K. An appendix with the complete parameter and data in the native code of the stock assessment program. (For a draft assessment undergoing review, these listings can be provided as text files or in spreadsheet format.)



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**Appendix C: Template for Executive Summary Prepared by STATs**

Stock: species/area, including an evaluation of any potential biological basis for regional management

Catches: trends and current levels-include table for last ten years and graph with long term data

Data and assessment: date of last assessment, type of assessment model, data available, new information, and information lacking

~~Unresolved problems and major uncertainties: any special issues that complicate scientific assessment, questions about the best model scenario, etc.~~

~~Reference points: management targets and definition of overfishing, including the harvest rate that brings the stock to equilibrium at  $B_{40\%}$  (the  $B_{MSY}$  proxy) and the equilibrium stock size that results from fishing at the default harvest rate (the  $F_{MSY}$  proxy).~~

Stock biomass: trends and current levels relative to virgin or historic levels, description of uncertainty-include table for last 10 years and graph with long term estimates

Recruitment: trends and current levels relative to virgin or historic levels-include table for last 10 years and graph with long term estimates

Exploitation status: exploitation rates (i.e., total catch divided by exploitable biomass, or the annual SPR harvest rate) – include a table with the last 10 years of data and a graph showing the trend in fishing mortality relative to the target (y-axis) plotted against the trend in biomass relative to the target (x-axis).

Reference points: management targets and definition of overfishing, including the harvest rate that brings the stock to equilibrium at  $B_{40\%}$  (the  $B_{MSY}$  proxy) and the equilibrium stock size that results from fishing at the default harvest rate (the  $F_{MSY}$  proxy). Include a summary table that compares estimated reference points for SSB, SPR, Exploitation Rate and Yield based on SSBproxy for MSY, SPRproxy for MSY, and estimated MSY values (table i. on page 35 of attached Canary rockfish executive summary).

Management performance: catches in comparison to OFL, ABC and OY/ACL values for the most recent 10 years (when available), overfishing levels, actual catch and discard. Include OFL(encountered), OFL(retained) and OFL(dead) if different due to discard and discard mortality.

Unresolved problems and major uncertainties: any special issues that complicate scientific assessment, questions about the best model scenario, etc.

~~Forecasts: ten year forecasts of catch, summary biomass, spawning biomass, and depletion.\* (Not required in draft assessments undergoing review.)~~

Decision table: projected yields (OFL, ABC and ACL~~OY~~), spawning biomass, and stock depletion levels for each year.\* (Not required in draft assessments undergoing review.)

Research and data needs: identify information gaps that seriously impede the stock assessment.

Rebuilding Projections: reference to the principal results from rebuilding analysis if the stock is overfished.\* This section should be included in the Final/SAFE version assessment document but is not required for draft assessments undergoing review. See Rebuilding Analysis ~~Terms of Reference~~terms of reference for detailed information on rebuilding analysis requirements.

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Summary Table: as detailed in the attached example.

**Hilborn, R., and C. J. Walters. 1992. Quantitative fisheries stock assessment: Choice, dynamics and uncertainty. Chapman and Hall.**

## Appendix D: Example of a Complete Stock Assessment Executive Summary

Executive Summary*Stock*

This assessment reports the status of the canary rockfish (*Sebastes pinniger*) resource off the coast of the United States from southern California to the U.S.-Canadian border using data through 2006. The resource is modeled as a single stock. Spatial aspects of the coast-wide population are addressed through geographic separation of data sources/fleets where possible and consideration of residual patterns that may be a result of inherent stock structure. There is currently no genetic evidence that there are distinct biological stocks of canary rockfish off the U.S. coast and very limited tagging data to describe adult movement, which may be significant across depth and latitude. Future efforts to specifically address regional management concerns will require a more spatially explicit model that likely includes the portion of the canary rockfish stock residing in Canadian waters off Vancouver Island.

*Catches*

Catch of canary rockfish is first reported in 1916 in California. Since that time, annual catch has ranged from 46.5 mt in 2004 to 5,544 in 1982 and totaled almost 150,000 mt over the time-series. Canary rockfish have been primarily caught by trawl fleets, on average comprising ~85% of the annual catches, with the Oregon fleet removing as much as 3,941 mt in 1982. Historically just 10% of the catches have come from non-trawl commercial fisheries, although this proportion reached 24% and 358 mt in 1997. Recreational removals have averaged just 6% of the total catch, historically, but have become relatively more important as commercial landings have been substantially reduced in recent years. Recreational catches reached 59% of the total with 30 mt caught in 2003. Total catches after 1999 have been reduced by an order of magnitude in an attempt to rebuild a stock determined to be overfished on the basis of the 1999 assessment.

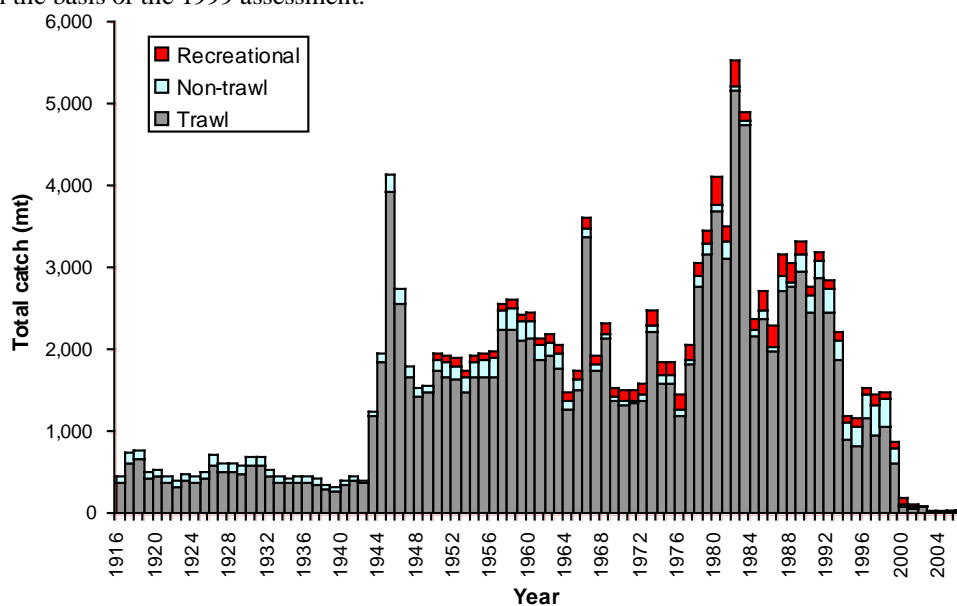


Figure a. Canary rockfish catch history by major source, 1916-2006.

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Table a. Recent commercial fishery catches (mt) by fleet.

Year	Southern California trawl	Northern California trawl	Oregon trawl	Washington trawl	Southern California non-trawl	Northern California non-trawl	Oregon- Washington non-trawl	At-sea whiting bycatch
1997	31.96	142.66	589.85	203.44	29.78	73.80	254.42	3.63
1998	8.41	149.45	716.05	203.01	23.33	57.25	250.13	5.47
1999	7.36	96.25	387.85	139.97	8.53	28.59	123.97	5.63
2000	1.71	11.24	46.62	32.66	2.52	5.50	10.25	2.35
2001	1.44	9.43	33.13	19.65	1.60	4.96	11.00	4.05
2002	0.36	14.62	32.60	33.29	0.02	0.08	3.15	5.24
2003	0.23	0.31	5.02	6.24	0.00	0.08	6.89	0.93
2004	0.61	1.95	7.67	7.73	0.02	0.06	4.68	5.22
2005	0.72	2.84	4.91	25.90	0.06	0.09	1.79	1.44
2006	3.57	2.28	2.91	15.64	0.00	0.00	3.11	1.09

*Data and Assessment*

This assessment used the Stock Synthesis 2 integrated length-age structured model. The model includes catch, length- and age-frequency data from 11 fishing fleets, including trawl, non-trawl and recreational sectors. Biological data is derived from both port and on-board observer sampling programs. The National Marine Fisheries Service (NMFS) triennial bottom trawl survey and Northwest Fisheries Science Center (NWFSC) trawl survey relative biomass indices and biological sampling provide fishery independent information on relative trend and demographics of the canary stock. The Southwest Fisheries Science Center (SWFSC)/NWFSC/Pacific Whiting Conservation Cooperative (PWCC) coast-wide pre-recruit survey provides a source of recent recruitment strength information.

New analysis of the triennial survey data led to separating the series into two parts (1980-1992, 1995-2004) to allow for potential changes in catchability due to timing of survey operations. Accommodation of potential changes in fishery selectivity due to management actions including the adoption of canary-specific trip limits in 1995, small-footrope requirements in 1999, closure of the RCA in 2002 and use of selective flatfish trawl starting in 2005 was also added in this assessment. These and other changes have resulted in a change in the estimate of current stock status and large increase in the perception of uncertainty regarding this quantity in comparison to the most recent 2005 and earlier assessments.

The base case assessment model includes parameter uncertainty from a variety of sources, but underestimates the considerable uncertainty in recent trend and current stock status. For this reason, in addition to asymptotic confidence intervals (based upon the model's analytical estimate of the variance near the converged solution), two alternate states of nature regarding stock productivity (via the steepness parameter of the stock-recruitment relationship) are presented. The base case model (steepness = 0.51) is considered to be twice as likely as the two alternate states (steepness = 0.35, 0.72) based on the results of a meta-analysis of west coast rockfish (M. Dorn, personal communication). In order to best capture this source of uncertainty, all three states of nature will be used as probability-weighted input to the rebuilding analysis.

*Stock biomass*

Canary rockfish were relatively lightly exploited until the early 1940's, when catches increased and a decline in biomass began. The rate of decline in spawning biomass accelerated during the late 1970s, and finally reached a minimum (13% of unexploited) in the mid 1990s. The canary rockfish spawning stock biomass is estimated to have been increasing since that time, in response to reductions in harvest and above average recruitment in the preceding decade. However, this trend is very uncertain. The estimated relative depletion level in 2007 is 32.4% (~95% asymptotic interval: 24-41%, ~75% interval based on the range of states of nature: 12-56%), corresponding to 10,544 mt (asymptotic interval: 7,776-13,312 mt, states of nature interval: 4,009-17,519) of female spawning biomass in the base model.

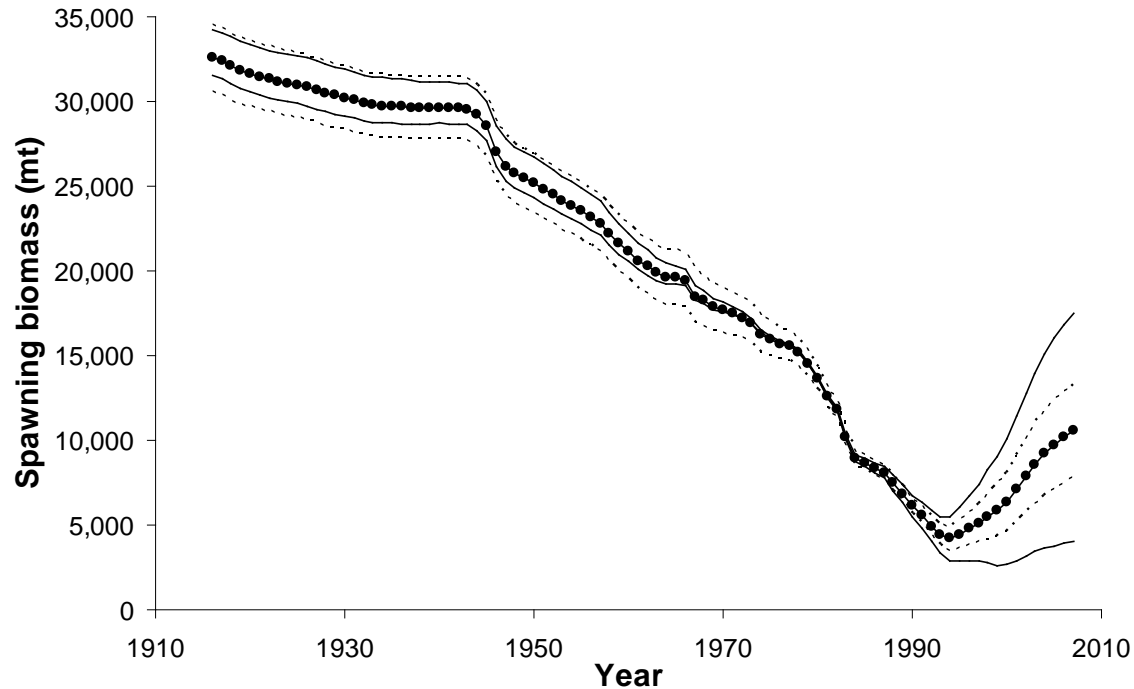


Figure b. Estimated spawning biomass time-series (1916-2007) for the base case model (round points) with approximate asymptotic 95% confidence interval (dashed lines) and alternate states of nature (light lines).

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Table b. Recent trend in estimated canary rockfish spawning biomass and relative depletion level.

Year	Spawning biomass (mt)	~95% confidence interval	Range of states of nature	Estimated depletion	~95% confidence interval	Range of states of nature
1998	5,499	4,177-6,820	2,761-8,241	16.9%	NA	8.1-26.2
1999	5,826	4,296-7,357	2,610-9,073	17.9%	NA	7.6-28.8
2000	6,364	4,618-8,111	2,644-10,144	19.5%	NA	7.7-32.2
2001	7,149	5,190-9,109	2,918-11,477	22.0%	NA	8.5-36.4
2002	7,910	5,750-10,070	3,184-12,779	24.3%	NA	9.3-40.6
2003	8,603	6,264-10,942	3,417-13,985	26.4%	NA	10.0-44.4
2004	9,226	6,736-11,715	3,628-15,076	28.3%	NA	10.6-47.9
2005	9,749	7,140-12,359	3,795-16,019	29.9%	NA	11.1-50.9
2006	10,183	7,482-12,884	3,918-16,825	31.3%	23.1-39.4	11.4-53.4
2007	10,544	7,776-13,312	4,009-17,519	32.4%	24.1-40.7	11.7-55.6

*Recruitment*

The degree to which canary rockfish recruitment declined over the last 50 years is closely related to the level of productivity (stock-recruit steepness) modeled for the stock. High steepness values imply little relationship between spawning stock and recruitment, while low steepness values cause a strong correlation. After a period of above average recruitments, recent year-class strengths have generally been low, with only 1999 and 2001 producing large estimated recruitments (the 2007 recruitment is based only on the stock-recruit function). There is little information other than the pre-recruit index to inform the assessment model about recruitments subsequent to 2002, so those estimates will likely be updated in future assessments. As the larger recruitments from the late 1980s and early 1990s move through the population in future projections, the effects of recent poor recruitment will tend to slow the rate of recovery.

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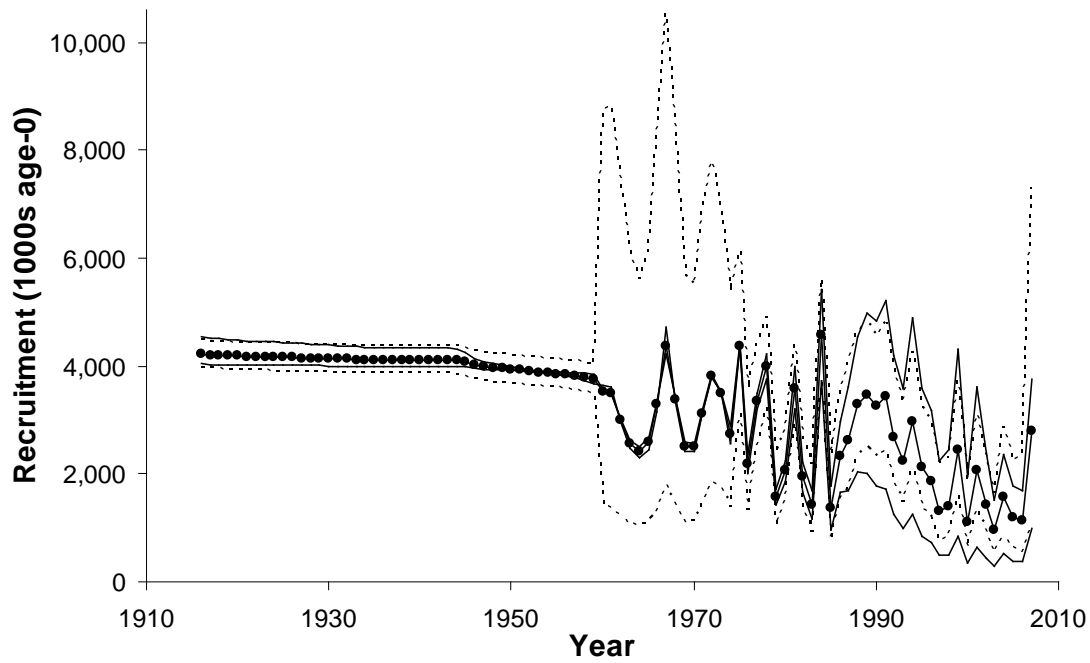


Figure c. Time series of estimated canary rockfish recruitments for the base case model (round points) with approximate asymptotic 95% confidence interval (dashed lines) and alternate states of nature (light lines).

Table c. Recent estimated trend in canary rockfish recruitment.

Year	Estimated recruitment (1000s)	~95% confidence interval	Range of states of nature
1998	1,391	841-2,299	484-2,453
1999	2,449	1,606-3,735	841-4,318
2000	1,099	638-1,893	351-1,938
2001	2,061	1,359-3,124	643-3,613
2002	1,432	905-2,267	447-2,383
2003	955	547-1,667	302-1,515
2004	1,565	854-2,869	520-2,373
2005	1,182	627-2,231	390-1,771
2006	1,144	548-2,389	367-1,699
2007	2,807	1,078-7,313	991-3,745

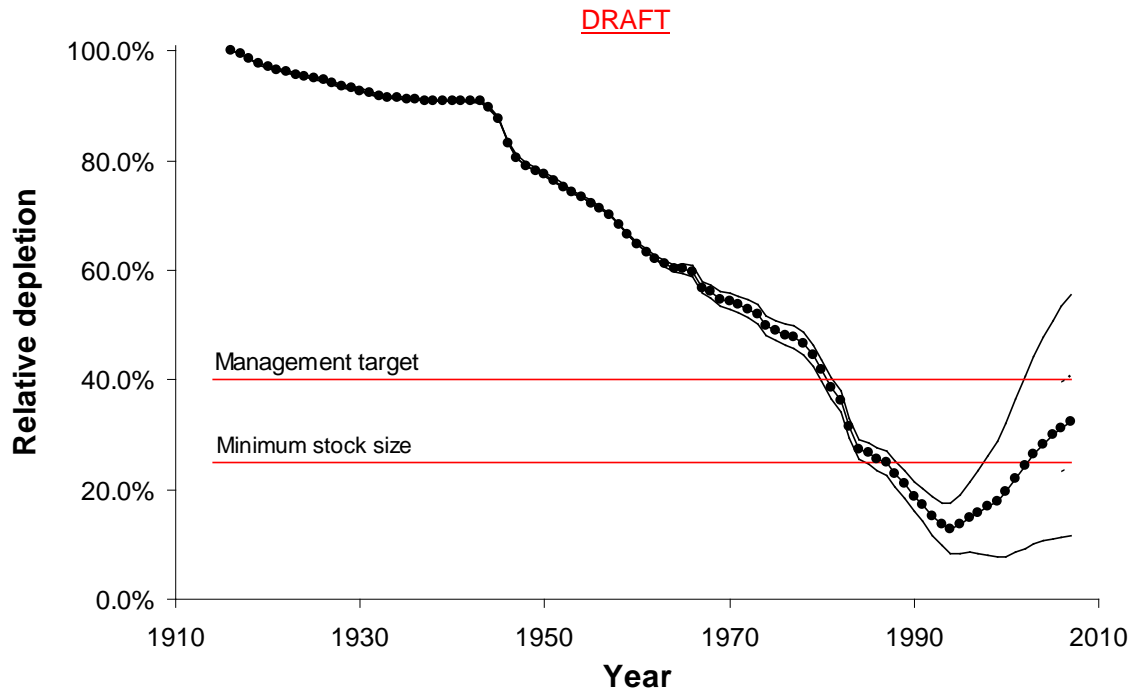


Figure d. Time series of depletion level as estimated in the base case model (round points) with approximate asymptotic 95% confidence interval (2006-2007 only, dashed lines) and alternate states of nature (light lines).

#### *Reference points*

Unfished spawning stock biomass was estimated to be 32,561 mt in the base case model. This is slightly smaller than the equilibrium value estimated in the 2005 assessment. The target stock size ( $SB_{40\%}$ ) is therefore 13,024 mt. Maximum sustained yield (MSY) applying current fishery selectivity and allocations (a 'bycatch-only' scenario) was estimated in the assessment model to occur at a spawning stock biomass of 12,394 mt and produce an MSY catch of 1,169 mt (SPR = 52.9%). This is nearly identical to the yield, 1,167 mt, generated by the SPR (54.4%) that stabilizes the stock at the  $SB_{40\%}$  target. The fishing mortality target/overfishing level (SPR = 50.0%) generates a yield of 1,161 mt at a stock size of 11,161 mt.

When selectivity and allocation from the mid 1990s (1994-1998) was applied, to mimic reference points under a targeted fishery scenario, the yield increased to 1,578 mt from a slightly smaller stock size (12,211 mt), but a similar rate of exploitation (SPR=52.5%). This is due to higher relative selection of older and larger fish when the fishery was targeting instead of avoiding canary rockfish. These values are appreciably higher than those from previous assessment models due primarily to the difference in steepness.

#### *Exploitation status*

The abundance of canary rockfish was estimated to have dropped below the  $SB_{40\%}$  management target in 1981 and the overfished threshold in 1987. In hindsight, the spawning stock biomass passed through the target and threshold levels at a time when the annual catch was averaging more than twice the current estimate of the MSY. The stock remains below the rebuilding target, although the spawning stock biomass appears to have been increasing since 1999. The degree of increase is very sensitive to the value for steepness (state of nature), and is projected to slow as recent (and below average) recruitments begin to contribute to the spawning biomass. Fishing mortality rates in excess of the current F-target for rockfish of  $SPR_{50\%}$  are estimated to have begun in the late 1970s and persisted through 1999. Recent management actions appear to have curtailed the rate of removal such that overfishing has not occurred since 1999, and recent SPR values are in excess of 95%. Relative exploitation rates (catch/biomass of age-5 and older fish) are estimated to have been less than 1% since 2001. These patterns are largely insensitive to the three states of nature.



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Table d. Recent trend in spawning potential ratio (SPR) and relative exploitation rate (catch/biomass of age-5 and older fish).

Year	Estimated SPR (%)	Range of states of nature	Relative exploitation rate	Range of states of nature
1997	31.6%	16.9-41.9	0.0889	0.0607-0.1652
1998	33.2%	16.8-44.3	0.0873	0.0576-0.1778
1999	48.9%	26.1-61.0	0.0506	0.0323-0.1146
2000	84.0%	65.7-89.7	0.0112	0.0070-0.0271
2001	89.7%	76.5-93.5	0.0067	0.0041-0.0165
2002	92.2%	81.9-95.1	0.0050	0.0031-0.0126
2003	95.4%	88.3-97.2	0.0023	0.0014-0.0058
2004	96.3%	90.6-97.8	0.0020	0.0012-0.0051
2005	96.3%	90.5-97.7	0.0021	0.0013-0.0055
2006	96.5%	90.7-97.9	0.0019	0.0011-0.0049

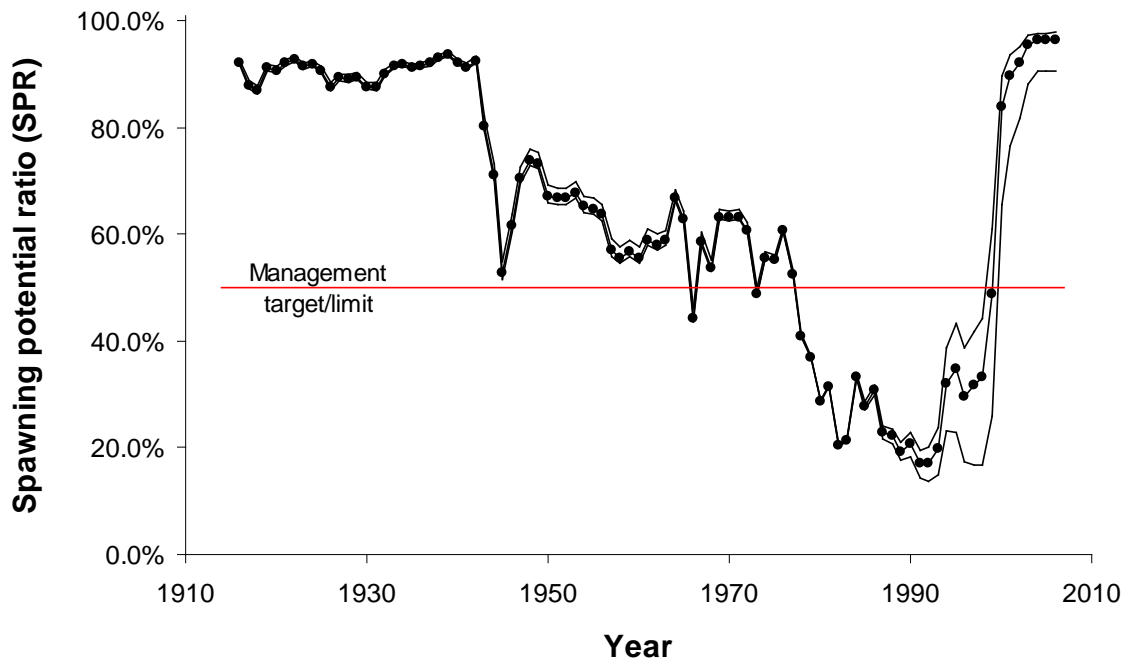


Figure e. Time series of estimated spawning potential ratio (SPR) for the base case model (round points) and alternate states of nature (light lines). Values of SPR below 0.5 reflect harvests in excess of the current overfishing proxy.

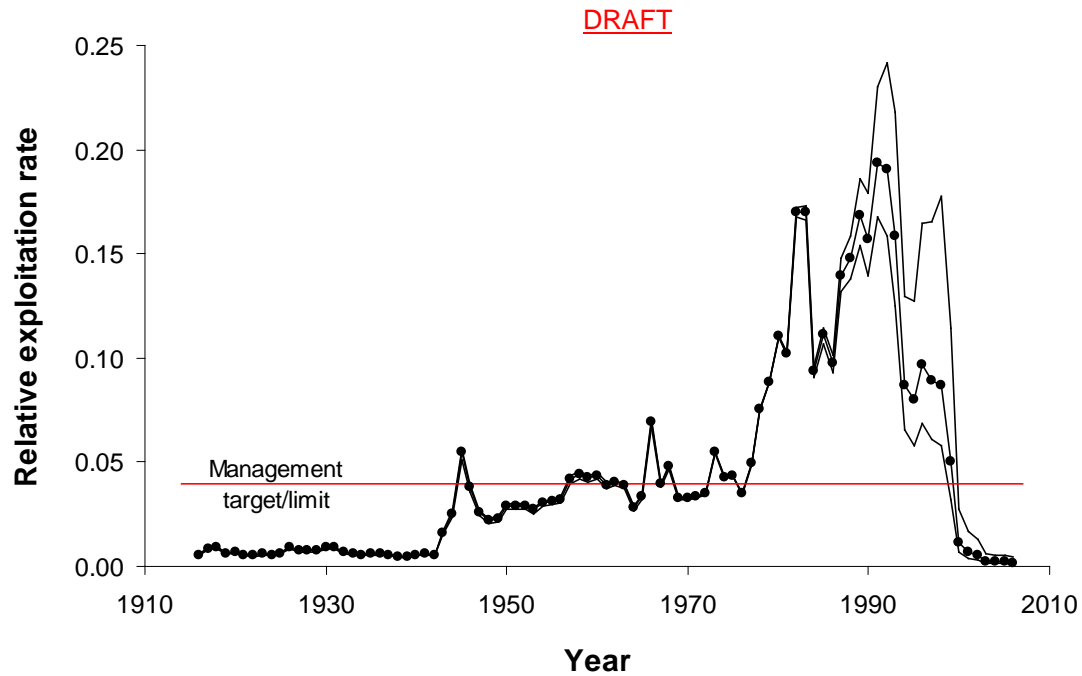


Figure f. Time series of estimated relative exploitation rate (catch/age 5 and older biomass, lower panel) for the base case model (round points) and alternate states of nature (light lines). Values of relative exploitation rate in excess of horizontal line are above the rate corresponding to the overfishing proxy from the base case.

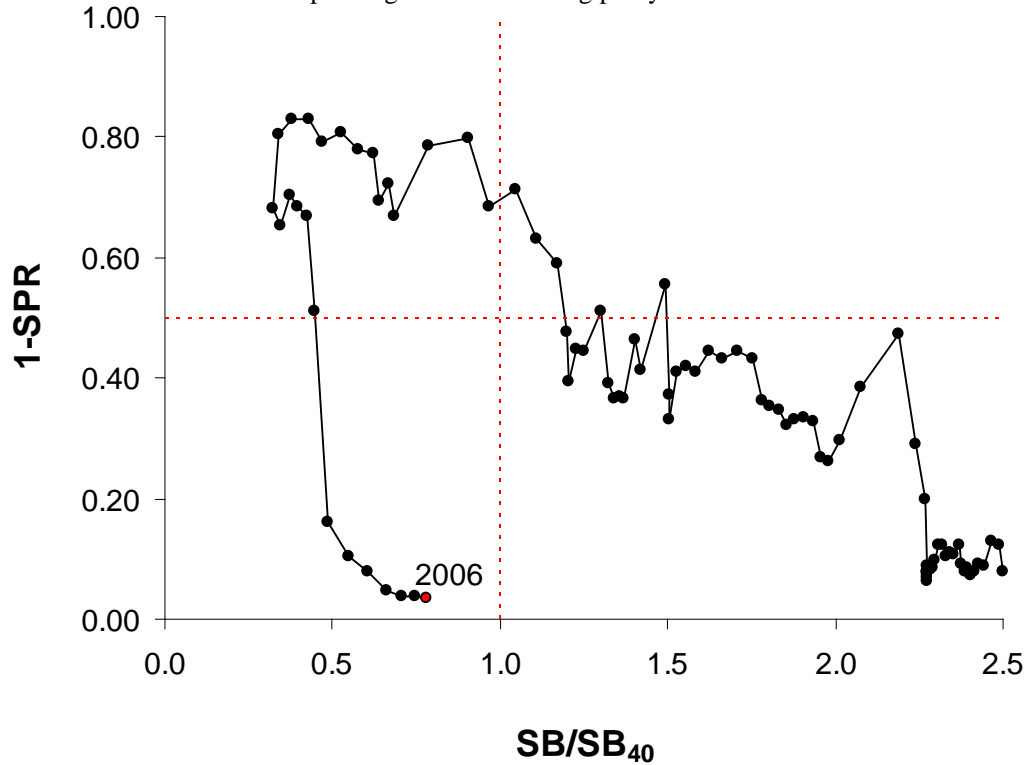


Figure g. Estimated spawning potential ratio relative to the proxy target of 50% vs. estimated spawning biomass relative to the proxy 40% level from the base case model. Higher biomass occurs on the right side of the x-axis, higher exploitation rates occur on the upper side of the y-axis.

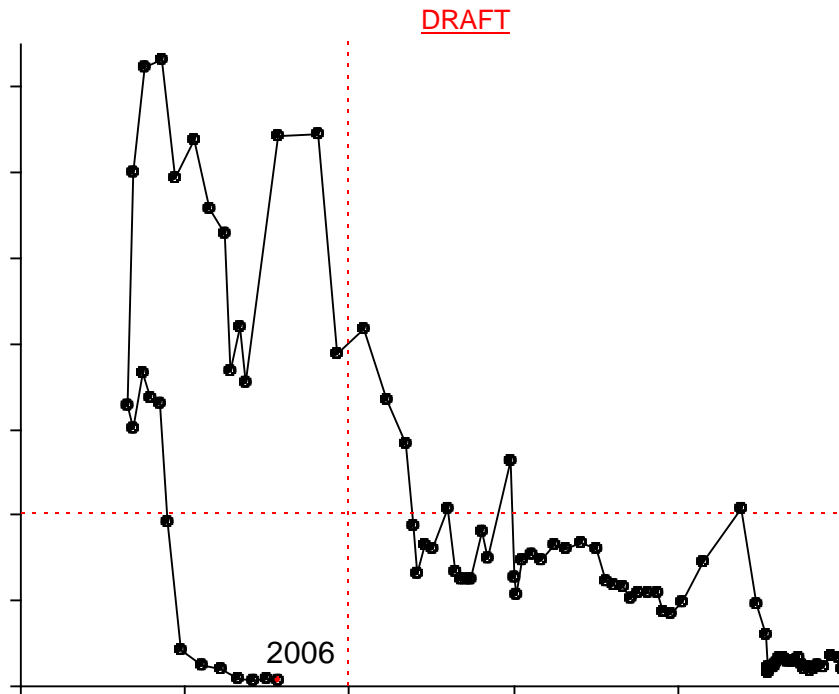


Figure g. Phase plot of estimated fishing intensity vs. relative spawning biomass for the base case model. Fishing intensity is the relative exploitation rate divided by the level corresponding to the overfishing proxy (0.040). Relative spawning biomass is annual spawner abundance divided by the 40% rebuilding target.

#### *Management performance*

Following the 1999 declaration that the canary rockfish stock was overfished the canary OY was reduced by over 70% in 2000 and by the same margin again over the next three years. Managers employed several tools in an effort to constrain catches to these dramatically lower targets. These included: reductions in trip/bag limits for canary and co-occurring species, the institution of spatial closures, and new gear restrictions intended to reduce trawling in rocky shelf habitats and the coincident catch of rockfish in shelf flatfish trawls. In recent years, the total mortality has been near the OY, but well below the ABC. Since the overfished determination in 1999, the total 7-year catch (644 mt) has been only 13% above the sum of the OYs for 2000-2006. This level of removals represents only 35% of the sum of the ABCs for that period. The total 2006 catch (47 mt) is <1% of the peak catch that occurred in the early 1980s.

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Table e. Recent trend in estimated total canary rockfish catch and commercial landings (mt) relative to management guidelines.

Year	ABC/ <u>OFL</u> (mt)	OY/ <u>ACL</u> (mt)	Commercial landings (mt) <sup>1</sup>	Total Catch (mt)
1997	1,220 <sup>2</sup>	1,000 <sup>2</sup>	1,113.8	1,478.8
1998	1,045 <sup>2</sup>	1,045 <sup>2</sup>	1,182.4	1,494.2
1999	1,045 <sup>2</sup>	857 <sup>2</sup>	665.7	898.0
2000	287	200	60.6	208.4
2001	228	93	42.8	133.6
2002	228	93	48.6	106.8
2003	272	44	8.5	51.0
2004	256	47.3	10.7	46.5
2005	270	46.8	10.9	51.4
2006	279	47	8.2	47.1

<sup>1</sup>Excludes all at-sea whiting, recreational and research catches.

<sup>2</sup>Includes the Columbia and Vancouver INPFC areas only.

*Unresolved problems and major uncertainties*

Parameter uncertainty is explicitly captured in the asymptotic confidence intervals reported throughout this assessment for key parameters and management quantities. These intervals reflect the uncertainty in the model fit to the data sources included in the assessment, but do not include uncertainty associated with alternative model configurations, weighting of data sources (a combination of input sample sizes and relative weighting of likelihood components), or fixed parameters. Specifically, there appears to be conflicting information between the length- and age-frequency data regarding the degree of stock decline, making the model results sensitive to the relative weighting of each. This issue is explored in the assessment, but cannot be fully resolved at this time. The relationship between the degree of dome in the selectivity curves and the increase in female natural mortality with age remains a source of uncertainty that is included in model results, as it has been in previous assessments for canary rockfish. Uncertainty in the steepness parameter of the stock-recruitment relationship is significant and will likely persist in future assessments; this uncertainty is included in the assessment and rebuilding projections through explicit consideration of the three states of nature.

*Forecasts*

The forecast reported here will be replaced by the rebuilding analysis to be completed in September-October 2007 following SSC review of the stock assessment. In the interim, the total catch in 2007 and 2008 is set equal to the OY (44 mt). The exploitation rate for 2009 and beyond is based upon an SPR of 88.7%, which approximates the harvest level in the current rebuilding plan. Uncertainty in the rebuilding forecast will be based upon the three states of nature for steepness and random variability in future recruitment deviations for each rebuilding simulation. Current medium-term forecasts predict slow increases in abundance and available catch, with OY values for 2009 and 2010 increasing by nearly four times the value of 44 mt from the 2005 assessment. This is largely attributable to the revised perception of steepness, based on meta-analysis of other rockfish species. The following table shows the projection of expected canary rockfish catch, spawning biomass and depletion.

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Table f. Projection of potential canary rockfish ABC, OY, spawning biomass and depletion for the base case model based on the SPR= 0.887 fishing mortality target used for the last rebuilding plan (OY) and  $F_{50\%}$  overfishing limit/target (ABC). Assuming the OY of 44 mt is met in 2007 and 2008.

Year	<u>ABC/ OFL</u> (mt)	<u>OY/ACL</u> (mt)	Age 5+ biomass (mt)	Spawning biomass (mt)	Depletion
2007	973	44	25,995	10,544	32.4%
2008	978	44	26,417	10,840	33.3%
2009	981	162	26,859	11,072	34.0%
2010	980	162	26,995	11,194	34.4%
2011	992	164	27,018	11,254	34.6%
2012	1,026	169	27,440	11,266	34.6%
2013	1,074	177	27,985	11,260	34.6%
2014	1,124	185	28,656	11,280	34.6%
2015	1,171	193	29,445	11,368	34.9%
2016	1,214	200	30,332	11,545	35.5%
2017	1,253	207	31,297	11,812	36.3%
2018	1,290	213	32,317	12,156	37.3%

*Decision table*

Because canary rockfish is currently managed under a rebuilding plan, this decision table is only intended to better compare and contrast the base case with uncertainty among states of nature. The results of the rebuilding plan will integrate these three states of nature as well as projected recruitment variability. Further, various alternate probabilities of rebuilding by target and limit time-periods as well as fishing mortality rates will be evaluated in the rebuilding analysis. Relative probabilities of each state of nature are based on a meta-analysis for steepness of west coast rockfish (M. Dorn, AFSC, personal communication). Landings in 2007-2008 are 44 mt for all cases. Selectivity and fleet allocations are projected at the average 2003-2006 values.

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Table g. Decision table of 12-year projections for alternate states of nature (columns) and management options (rows) beginning in 2009. Relative probabilities of each state of nature are based on a meta-analysis for steepness of west coast rockfish (M. Dorn, AFSC, personal communication). Landings in 2007-2008 are 44 mt for all cases. Selectivity and fleet allocations are projected at the average 2003-2006 values.

			State of nature					
			Low steepness (0.35)		Base case (steepness = 0.51)		High steepness (0.72)	
Relative probability			0.25		0.5		0.25	
Management decision	Year	Catch (mt)	Depletion	Spawning biomass (mt)	Depletion	Spawning biomass (mt)	Depletion	Spawning biomass (mt)
Rebuilding SPR 88.7% catches from low steepness state of nature	2009	56	12.0%	4,099	34.0%	11,072	59.0%	18,583
	2010	56	12.0%	4,100	34.5%	11,236	60.1%	18,932
	2011	56	11.9%	4,078	34.8%	11,339	60.8%	19,156
	2012	59	11.8%	4,042	35.0%	11,396	61.2%	19,270
	2013	62	11.7%	4,003	35.1%	11,436	61.3%	19,313
	2014	65	11.6%	3,979	35.3%	11,502	61.4%	19,343
	2015	67	11.6%	3,984	35.7%	11,638	61.7%	19,423
	2016	70	11.7%	4,025	36.4%	11,866	62.2%	19,590
	2017	72	12.0%	4,102	37.4%	12,188	63.0%	19,852
	2018	74	12.3%	4,209	38.7%	12,591	64.1%	20,199
Rebuilding SPR 88.7% catches from base case	2009	162	12.0%	4,099	34.0%	11,072	59.0%	18,583
	2010	162	11.8%	4,058	34.4%	11,194	60.0%	18,890
	2011	164	11.7%	3,994	34.6%	11,254	60.5%	19,069
	2012	169	11.4%	3,914	34.6%	11,266	60.8%	19,138
	2013	177	11.2%	3,831	34.6%	11,260	60.7%	19,135
	2014	185	11.0%	3,762	34.6%	11,280	60.7%	19,118
	2015	193	10.9%	3,719	34.9%	11,368	60.8%	19,150
	2016	200	10.8%	3,710	35.5%	11,545	61.2%	19,266
	2017	207	10.9%	3,733	36.3%	11,812	61.8%	19,475
	2018	213	11.0%	3,781	37.3%	12,156	62.8%	19,767
Rebuilding SPR 88.7% catches from high steepness state of nature	2009	273	12.0%	4,099	34.0%	11,072	59.0%	18,583
	2010	271	11.7%	4,014	34.2%	11,150	59.8%	18,845
	2011	272	11.4%	3,905	34.3%	11,164	60.3%	18,978
	2012	277	11.0%	3,780	34.2%	11,130	60.3%	19,001
	2013	285	10.7%	3,654	34.0%	11,079	60.2%	18,951
	2014	293	10.3%	3,542	34.0%	11,055	60.0%	18,891
	2015	300	10.1%	3,459	34.1%	11,100	59.9%	18,880
	2016	307	9.9%	3,408	34.5%	11,235	60.2%	18,953
	2017	313	9.9%	3,389	35.2%	11,461	60.7%	19,122
	2018	319	9.9%	3,394	36.1%	11,763	61.5%	19,374
Status quo (catch = 44 mt)	2009	44	12.0%	4,099	34.0%	11,072	59.0%	18,583
	2010	44	12.0%	4,104	34.5%	11,241	60.1%	18,937
	2011	44	11.9%	4,088	34.9%	11,349	60.8%	19,166
	2012	44	11.8%	4,057	35.0%	11,411	61.2%	19,285
	2013	44	11.7%	4,024	35.2%	11,456	61.4%	19,334
	2014	44	11.7%	4,005	35.4%	11,529	61.5%	19,371
	2015	44	11.7%	4,018	35.8%	11,673	61.8%	19,459
	2016	44	11.9%	4,069	36.6%	11,911	62.3%	19,635
	2017	44	12.1%	4,157	37.6%	12,244	63.2%	19,908
	2018	44	12.5%	4,277	38.9%	12,660	64.3%	20,268

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### *Research and data needs*

Progress on a number of research topics would substantially improve the ability of this assessment to reliably and precisely model canary rockfish population dynamics in the future and provide better monitoring of progress toward rebuilding:

1. Expanded Assessment Region: Given the high occurrence of canary rockfish close to the US-Canada border, a joint US-Canada assessment should be considered in the future.
2. Many assessments are deriving historical catch by applying various ratios to the total rockfish catch prior to the period when most species were delineated. A comprehensive historical catch reconstruction for all rockfish species is needed, to compile a best estimated catch series that accounts for all the catch and makes sense for the entire group.
3. Habitat relationships: The historical and current relationship between canary rockfish distribution and habitat features should be investigated to provide more precise estimates of abundance from the surveys, and to guide survey augmentations that could better track rebuilding through targeted application of newly developed survey technologies. Such studies could also assist determining the possibility of dome-shaped selectivity, aid in evaluation of spatial structure and the use of fleets to capture geographically-based patterns in stock characteristics.
4. Meta-population model: The spatial patterns show patchiness in the occurrence of large vs. small canary; reduced occurrence of large/old canary south of San Francisco; and concentrations of canary rockfish near the US-Canada border. The feasibility of a meta-population model that has linked regional sub-populations should be explored as a more accurate characterization of the coast-wide population's structure. Tagging of other direct information on adult movement will be essential to this effort.
5. Increased computational power and/or efficiency is required to move toward fully Bayesian approaches that may better integrate over both parameter and model uncertainty.
6. Additional exploration of surface ages from the late 1970s and inclusion into or comparison with the assessment model, or re-aging of the otoliths could improve the information regarding that time period when the stock underwent the most dramatic decline. Auxiliary biological data collected by ODFW from recreational catches and hook-and-line projects may also increase the performance of the assessment model in accurately estimating recent trends and stock size.
7. Due to inconsistencies between studies and scarcity of appropriate data, new data is needed on both the maturity and fecundity relationships for canary rockfish.
8. Re-evaluation of the pre-recruit index as a predictor of recent year class strength should be ongoing as future assessments generate a longer series of well-estimated recent recruitments to compare with the coast-wide survey index.
9. Meta-analysis or other summary of the degree of recruitment variability and the relative steepness for other rockfish and groundfish stocks should be ongoing, as this information is likely to be very important for model results (as it is here) in the foreseeable future.

### *Rebuilding projections*

The rebuilding projections will be presented in a separate document after the assessment has been reviewed in September 2007.

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Table h. Summary of recent trends in estimated canary rockfish exploitation and stock levels from the base case model; all values reported at the beginning of the year.

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Commercial landings (mt) <sup>1</sup>	1,182.4	665.7	60.6	42.8	48.6	8.5	10.7	10.9	8.2	NA
Total catch (mt)	1,494.2	898.0	208.4	133.6	106.8	51.0	46.5	51.4	47.1	NA
ABC (mt)	1,045 <sup>2</sup>	1,045 <sup>2</sup>	287	228	228	272	256	270	279	172
OY	1,045 <sup>2</sup>	857 <sup>2</sup>	200	93	93	44	47.3	46.8	47.0	44
SPR	33.2%	48.9%	84.0%	89.7%	92.2%	95.4%	96.3%	96.3%	96.5%	NA
Exploitation rate (catch/age 5+ biomass)	0.0873	0.0506	0.0112	0.0067	0.0050	0.0023	0.0020	0.0021	0.0019	NA
Age 5+ biomass (mt)	17,125	17,733	18,659	20,078	21,275	22,333	23,583	24,402	25,317	25,995
Spawning biomass (mt)	5,499	5,826	6,364	7,149	7,910	8,603	9,226	9,749	10,183	10,544
~95% Confidence interval	4,177-6,820	4,296-7,357	4,618-8,111	5,190-9,109	5,750-10,070	6,264-10,942	6,736-11,715	7,140-12,359	7,482-12,884	7,776-13,312
Range of states of nature	2,761-8,241	2,610-9,073	2,644-10,144	2,918-11,477	3,184-12,779	3,417-13,985	3,628-15,076	3,795-16,019	3,918-16,825	4,009-17,519
Recruitment (1000s)	1,391	2,449	1,099	2,061	1,432	955	1,565	1,182	1,144	2,807
~95% Confidence interval	841-2,299	3,735-1,606	638-1,893	3,124-1,359	2,267-905	547-1,667	854-2,869	627-2,231	548-2,389	7,313-1,078
Range of states of nature	484-2,453	841-4,318	351-1,938	3,613-643	2,383-447	302-1,515	520-2,373	390-1,771	367-1,699	991-3,745
Depletion	16.9%	17.9%	19.5%	22.0%	24.3%	26.4%	28.3%	29.9%	31.3%	32.4%
~95% Confidence interval	NA	NA	NA	NA	NA	NA	NA	NA	23.1-9.4	24.1-40.7
Range of states of nature	8.1-26.2	7.6-28.8	7.7-32.2	8.5-36.4	9.3-40.6	10.0-44.4	10.6-47.9	11.1-50.9	11.4-53.4	11.7-55.6

<sup>1</sup>Excludes all at sea whiting, recreational and research catches.

<sup>2</sup>Includes the Columbia and Vancouver INPFC areas only.



Table i. Summary of canary rockfish reference points from the base case model. Values are based on 1994-1998 fishery selectivity and allocation to better approximate the performance of a targeted fishery rather than a bycatch-only scenario.

Quantity	Estimate	~95% Confidence interval	Range of states of nature
Unfished spawning stock biomass ( $SB_0$ , mt)	32,561	30,594-34,528	34,262-31,498
Unfished 5+ biomass (mt)	86,036	NA	91,980-82,744
Unfished recruitment ( $R_0$ , thousands)	4,210	3,961-4,458	4,540-4,035
<b><u>Reference points based on <math>SB_{40\%}</math></u></b>			
MSY Proxy Spawning Stock Biomass ( $SB_{40\%}$ )	13,024	12,237-13,811	12,599-13704.7
SPR resulting in $SB_{40\%}$ ( $SPR_{SB40\%}$ )	54.4%	54.4-54.4	45.8-68.5
Exploitation rate resulting in $SB_{40\%}$	0.0457	NA	0.0277-0.0600
Yield with $SPR_{SB40\%}$ at $SB_{40\%}$ (mt)	1,574	1,477-1,672	996-2,034
<b><u>Reference points based on SPR proxy for MSY</u></b>			
Spawning Stock Biomass at SPR ( $SB_{SPR}$ )(mt)	11,161	10,487-11,835	1,654-14,053
$SPR_{MSY-proxy}$	50.0%	NA	NA
Exploitation rate corresponding to SPR	0.0528	NA	0.0524-0.0539
Yield with $SPR_{MSY-proxy}$ at $SB_{SPR}$ (mt)	1,572	1,476-1,668	238-1,962
<b><u>Reference points based on estimated MSY values</u></b>			
Spawning Stock Biomass at MSY ( $SB_{MSY}$ ) (mt)	12,211	11,529-12,893	9,524-15,042
$SPR_{MSY}$	52.5%	52.1-52.8	37.0-70.5
Exploitation Rate corresponding to $SPR_{MSY}$	0.0487	NA	0.0254-0.0794
MSY (mt)	1,578	1,481-1,675	1,002-2,104

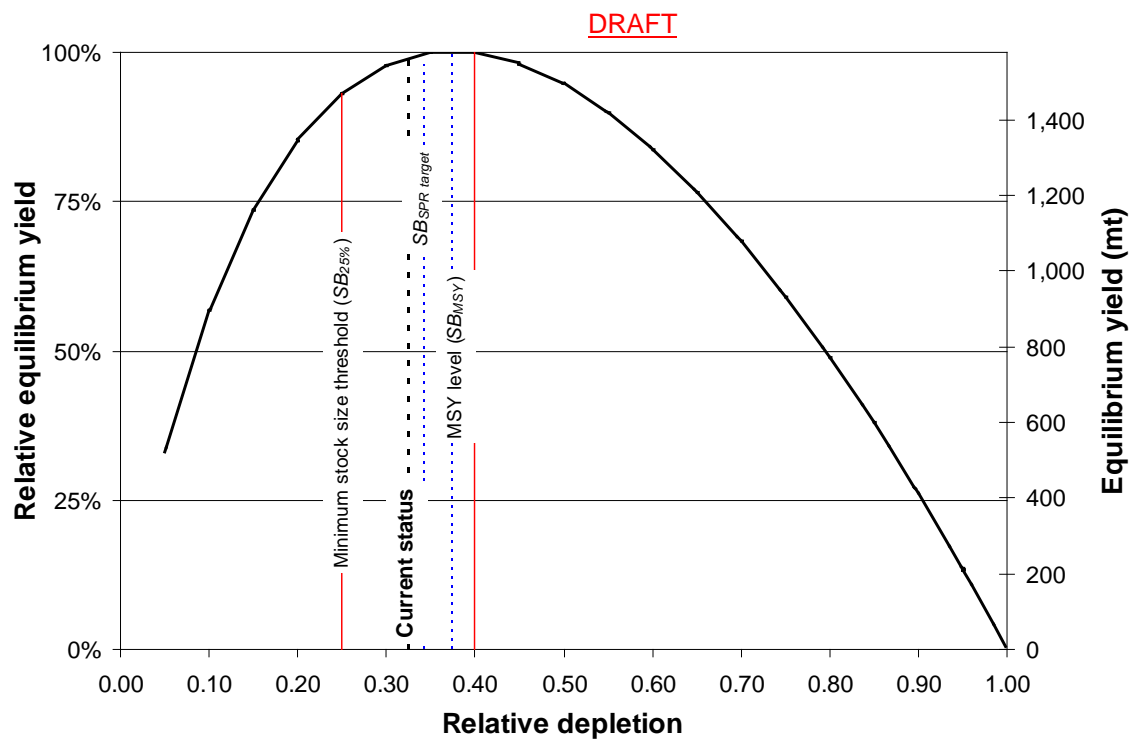


Figure h. Equilibrium yield curve (derived from reference point values reported in table i) for the base case model. Values are based on 1994-1998 fishery selectivity and allocation to better approximate the performance of a targeted fishery rather than a bycatch-only scenario.

**DRAFT  
SSC TERMS OF REFERENCE FOR GROUND FISH  
REBUILDING ANALYSIS**

**DRAFT REVISED VERSION  
(~~February~~ May 2010)**

**PACIFIC FISHERY MANAGEMENT COUNCIL  
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~~Note: This version of the Terms of Reference does not include any changes that might be needed owing to the implementation of ACLs, as how ACLs will be implemented is currently not known.~~

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# 1. Introduction

Amendment 11 to the Groundfish Fishery Management Plan (FMP) established a harvest control rule for determining optimum yields (OYs). The 40:10 policy was designed to prevent stocks from falling into an overfished condition. Part of the amendment established a default overfished threshold equal to 25% of the unexploited population size<sup>1</sup> ( $B_0$ ), or 50% of  $B_{MSY}$ , if known. By definition, groundfish stocks falling below that level are designated to be in an overfished state ( $B_{25\%} = 0.25 \times B_0$ <sup>2</sup>). To prevent stocks from deteriorating to that point, the policy specified a precautionary threshold equivalent to 40% of  $B_0$ . The policy required~~s~~ that OY, when expressed as a fraction of the allowable biological catch (formerly “ABC”), (ABC), be progressively reduced at stock sizes less than  $B_{40\%}$ . Because of this linkage,  $B_{40\%}$  has sometimes been interpreted to be a proxy measure of  $B_{MSY}$ , i.e., the stock biomass that results when a stock is fished at  $F_{MSY}$ . In fact, theoretical results support the view that a robust biomass-based harvesting strategy would be to maintain stock size at about 40% of the unfished level (Clark 1991, 2002). In the absence of a credible estimate of  $B_{MSY}$ , which can be very difficult to estimate (MacCall and Ralston 2002),  $B_{40\%}$  is a suitable proxy to use as a rebuilding target.

The recently revised Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires that U.S. fishery management councils avoid overfishing by setting annual catch limits (ACLs) rather than OYs. Stock assessments now will provide overfishing level (OFL) estimates and acceptable biological catch (ABC) will be derived from OFL by reducing OFL to account for scientific uncertainty. The ACL cannot exceed the ABC.

Following the 2008 assessment season, the Pacific Fishery Management Council (“Council”) revised the reference points for flatfish, as separate from other groundfish species. The new reference points include an MSY proxy fishing rate of  $F_{30\%}$ , a target spawning output (biomass or potential) of  $B_{25\%}$ , and an overfished threshold of  $B_{12.5\%}$ . Similarly, (it has been proposed ~~that~~ ~~that~~) the 40:10 policy has been replaced by a 25:5 policy for flatfish.

Under the ~~Magnuson-Stevens Act (MSA)~~, ~~it is required that~~ rebuilding plans ~~need to be developed~~~~are required~~ for stocks that have been designated to be in an overfished state.

<sup>1</sup> The absolute abundance of the mature portion of a stock is loosely referred to here in a variety of ways, including: population size, stock biomass, stock size, spawning stock size, spawning biomass, spawning output; i.e., the language used in this document is sometimes ~~inconsistent and/or~~ imprecise. However, the best fundamental measure of population abundance to use when establishing a relationship with recruitment is spawning output, defined as the total annual output of eggs (or larvae in the case of live-bearing species), accounting for maternal effects (if these are known). Although spawning biomass is often used as a surrogate measure of spawning output, for a variety of reasons a non-linear relationship often exists between these two quantities (Rothschild and Fogarty 1989; Marshall *et al.* 1998). Spawning output should, therefore, be used to measure the size of the mature stock when possible.

<sup>2</sup> Estimates of stock status are typically obtained by fitting statistical models of stock dynamics to survey and fishery data. In recent years, the bulk of stock status determinations have been based on Stock Synthesis H3, an age- and size-structured population dynamics model (Methot 2005, 2007). Stock assessment models can be fitted using Maximum Likelihood or Bayesian methods. For both types of estimation methods, a stock is considered to be in an overfished state if the best point estimate of stock size is less than 25% of unfished stock size. This corresponds to the maximum likelihood estimate for estimation methods based on Maximum Likelihood methods, to the maximum of the posterior distribution (MPD) for estimation methods in which penalties are added to the likelihood function, and to the mode of the posterior distribution for Bayesian analyses. The median of the Bayesian posterior is not used for determination of overfished status.

Amendment 12 of the Groundfish FMP provided a framework within which rebuilding plans for overfished groundfish resources could be established. Amendment 12 was challenged in Federal District Court and found not to comply with the requirements of the MSA because rebuilding plans did not take the form of an FMP, FMP amendment, or regulation. In response to this finding, the Council developed Amendment 16-1 to the Groundfish FMP which covered three issues, one of which was the form and content of rebuilding plans.

The Council approach to rebuilding depleted groundfish species, as described in rebuilding plans, was re-evaluated and adjusted under Amendment 16-4 in 2006 so they would be consistent with ~~a recent~~the opinion rendered by the Ninth Circuit Court of Appeals in *Natural Resources Defense Council, Inc. and Oceana, Inc. v. National Marine Fisheries Service, et al.*, 421 F.3d 872 (9<sup>th</sup> Cir. 2005), and with National Standard 1 of the MSA. The court affirmed the MSA mandate that rebuilding periods “be as short as possible, taking into account the status and biology of any overfished stocks of fish, the needs of fishing communities, recommendations by international organizations in which the United States participates, and the interaction of the overfished stock of fish within the marine ecosystem” (Section 304(e)). The court opinion also recognized that some harvest of overfished species could be accommodated under rebuilding plans to avoid disastrous economic impacts to West Coast fishing communities dependent on groundfish fishing. This harvest can only be incidental and unavoidable in fisheries targeting healthy stocks and, under Amendment 16-4 rebuilding plans, more emphasis was placed on shorter rebuilding times and the trade-off between rebuilding periods and associated socioeconomic effects.

Rebuilding Plans include several components, one of which is a rebuilding analysis. Simply put, a rebuilding analysis involves projecting the status of the overfished resource into the future under a variety of alternative harvest strategies to determine the probability of recovery to  $B_{MSY}$  (or its proxy  $B_{40\%}$ ) within a pre-specified time-frame.

## 2. Overview of the Calculations Involved in a Rebuilding Analysis

This document presents guidelines for conducting a basic groundfish rebuilding analysis that meets the minimum requirements that have been established by the Council’s Scientific and Statistical Committee (SSC), those of Amendment 16-1 of the Groundfish FMP, and those arising from the 9<sup>th</sup> Circuit Court decision. It also outlines the appropriate documentation that a rebuilding analysis needs to include. These basic calculations and reporting requirements are essential elements in all rebuilding analyses to provide a standard set of base-case computations, which can then be used to compare and standardize rebuilding analyses among stocks. The steps when conducting a rebuilding analysis are:

1. Estimation of  $B_0$  (and hence  $B_{MSY}$  or its proxy).
2. Selection of a method to generate future recruitment.
3. Specification of the mean generation time.
4. Calculation of the minimum possible rebuilding time,  $T_{MIN}$ .
5. Identification and analysis of alternative harvest strategies and rebuilding times.

The specifications in this document have been implemented in a computer package developed by Dr André Punt (University of Washington). This package can be used to perform rebuilding

analyses for routine situations. However, the SSC encourages analysts to explore alternative calculations and projections that may more accurately capture uncertainties in stock rebuilding than the standards identified in this document, and which may better represent stock-specific concerns. In the event of a discrepancy between the generic calculations presented here and a stock-specific result developed by an individual analyst, the SSC groundfish subcommittee will review the issue and recommend which results to use.

The SSC also encourages explicit consideration of uncertainty in projections of stock rebuilding, including comparisons of alternative states of nature using decision tables to quantify the impact of model uncertainty (see Section 8 below).

### 3. Estimation of $B_0$

$B_0$ , defined as mean unexploited spawning output, can be estimated from the fit of some form of spawner-recruit model or empirically using the estimates of recruitment from the stock assessment. Most of the recent assessments of west coast groundfish have been based on stock assessments that integrate the estimation of the spawner-recruit model with the estimation of other population dynamic parameters. These stock assessments therefore link the recruitments for the early years of the assessment period with the average recruitment corresponding to  $B_0$ . Estimates of  $B_0$  from empirical methods will not be the same as those estimated as an embedded parameter within an assessment model. As a result, the estimate of  $B_0$  from the stock assessment model should be the default for the  $B_0$  used in rebuilding analyses when the stock assessment integrates the spawner-recruit model. Justification for the use an empirical estimate of  $B_0$  is therefore needed when a direct estimate of  $B_0$  is available from a stock assessment model, and the difference in  $B_0$  estimates must also be documented. Stock assessment models which integrate the estimation of the spawner-recruit model also provide estimates of  $B_{MSY}$ . However, at this time, the SSC recommends that these estimates not be used as the target for rebuilding. Rather, the rebuilding target should be taken to be the agreed proxy for  $B_{MSY}$  (e.g.  $0.4B_0$  for most groundfish stocks) in all cases.

For the purpose of estimating  $B_0$  empirically, analysts should select a sequence of years, within which recruitment is believed to be reasonably representative of the natality from an unfished stock. The average recruitment for these years can then be multiplied by the spawning output-per-recruit in an unfished state (which depends on growth, maturity, fecundity and natural mortality) to estimate equilibrium unfished spawning output. In selecting the appropriate sequence of years, analysts have generally utilized years in which stock size was relatively large, in recognition of the paradigm that groundfish recruitment is positively correlated with spawning stock size (Myers and Barrowman 1996). Moreover, due to the temporal history of exploitation in the West Coast groundfish fishery (see Williams 2002), this has typically led to consideration of the early years from an assessment model<sup>3</sup>. Thus, for example, in the case of widow rockfish,

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<sup>3</sup> Individual recruitments estimated from age-structured stock assessment models do not all exhibit the same precision or accuracy. Recruitments estimated at the very beginning of the modeled time period may suffer from mis-specification of the initial condition of the population (e.g., an assumed equilibrium age structure). Likewise, recruitments estimated at the end of the sequence may be imprecise due to partial recruitment of recent year classes. Thus, it may be advisable to trim the beginning and/or ending year-classes to address this problem

the time period within which recruitments were selected when estimating  $B_0$  was 1958-62 (He *et al.* 2003).

An alternative view of the recruitment process is that it depends to a much greater degree on the environment than on adult stock size. For example, the decadal-scale regime shift that occurred in 1977 (Trenberth and Hurrell 1994) is known to have strongly affected ecosystem productivity and function in both the California Current and the northeast Pacific Ocean (Roemmich and McGowan 1995; MacCall 1996; Francis *et al.* 1998; Hare *et al.* 1999). With the warming that ensued, West Coast rockfish recruitment appears to have been adversely affected (Ainley *et al.* 1993; Ralston and Howard 1995). Thus, if recruitment was environmentally forced, it would be more sensible to use the full time series of recruitments from the stock assessment model to estimate  $B_0$ . These two explanatory factors are highly confounded for West Coast groundfish, i.e., generally high biomass/favourable conditions prior to 1980 and low biomass/unfavourable conditions combined with increasing fishing impacts on groundfish stocks thereafter. Using all recruitments to estimate  $B_0$  will therefore usually result in a lower value of  $B_0$  (and hence target spawning output) than when an abbreviated series of recruitments is taken from early in the time series.

There is no incontrovertible evidence to favour one of these two hypotheses over the other. For example, both theoretical and observational considerations support the view that groundfish recruitment will decline with spawning output (e.g., Myers and Barrowman 1996; Brodziak *et al.* 2001). On the other hand, recent advances in our understanding of the North Pacific Ocean indicate that profound changes have occurred in the marine ecosystem since the turn of the last century (PICES 2005). In fact, an argument can be made that the effects of environmental and density-dependent factors on the spawner-recruit relationship are additive (e.g., Jacobson and MacCall 1995), which may allow us to quantitatively determine the relative importance of these two factors in the future.

For each of these two empirical methods of estimating  $B_0$ , the actual distribution for  $B_0$  can be approximated by re-sampling recruitments, from which the probability of observing any particular stock biomass can be obtained. This approach was taken in the original bocaccio rebuilding analysis (MacCall 1999), where it was concluded that the first year biomass was unlikely to have occurred if the entire sequence of recruitments were used to determine  $B_0$ .

## 4. Selection of a Method to Generate Future Recruitment

One can project the population forward once the method for generating future recruitment has been specified, given the current state of the population from the most recent stock assessment (terminal year estimates of numbers at age and their variances) and the rebuilding target. There are several ways of generating future recruitment, but they fundamentally reduce to two basic kinds of approaches. These are: (1) base future recruitments on an empirical evaluation of spawner-recruit estimates and (2) use the results of a fitted spawner-recruit model (e.g., the Beverton-Holt or Ricker curves). To date, rebuilding analyses have been conducted using both approaches, and both are acceptable, as long as due consideration is given to the advantages and disadvantages of both. Ideally, reference points (e.g.,  $B_0$ ,  $B_{MSY}$  and  $F_{MSY}$ ) and the results from projections should be compared to better assess the actual extent of uncertainty associated with these quantities.



## 4.1 Fitting a Spawner-Recruit Model

It is possible generate future recruitments by fitting spawner-recruit models to the full time series of spawner-recruit data. SS32-based assessments all assume a structural spawner-recruit model, either estimating or pre-specifying the steepness of the curve<sup>4</sup>. Ideally, the use of spawner-recruit models allows the data (or prior information) to determine the extent of compensation rather than assuming either one of two extremes (constant recruitment or constant recruits/spawner), and is also more internally consistent if the original assessment assumed a particular form of spawner-recruit model. However, this approach can be criticized because stock productivity is constrained to behave in a pre-specified manner according to the particular spawner-recruit model chosen, and there are different models to choose from, including the Beverton-Holt and Ricker formulations. These two models can produce very different reference points, but are seldom distinguishable statistically. Moreover, there are statistical issues when a spawner-recruit model is estimated after the assessment is conducted, including: (1) time-series bias (Walters 1985), (2) the “errors in variables problem” (Walters and Ludwig 1981), and (3) non-homogeneous variance and small sample bias (MacCall and Ralston 2002). Thus, analyses based on a spawner-recruit model should include a discussion of the rationale for the selection of the spawner-recruit model used (e.g. estimated within the assessment model, estimated outside of the model based on the estimates of spawning output and recruitment), and refer to the estimation problems highlighted above and whether they are likely to be relevant and substantial for the case under consideration. A rationale for the choice of spawner-recruit model should also be provided. In situations where steepness is based on a spawner-recruit meta-analysis (e.g., Dorn 2002), the reliability of the resulting relationship should be discussed.

## 4.2 Empirical Approaches

There are two ways to use empirical estimates of recruitment from a stock assessment to generate future recruitment, both of which utilize estimates at the tail end of the time series (i.e., the most recent estimates). These two methods have formed the basis of several rebuilding analyses that have been accepted by the SSC.

- (1) Recent recruitment is standardized to the amount of the spawning output (recruits-per-spawner,  $R/S_i$ ). Annual  $R/S_i$  is then randomly re-sampled and multiplied by  $S_i$  to obtain year-specific stochastic values of  $R_i$ .
- (2) Recent recruitments are randomly re-sampled to determine the year-specific stochastic values of  $R_i$ .

Note that use of  $R/S_i$  as the basis for projecting the population forward ties recruitment values in a directly proportional manner to spawning output; if spawning output doubles, resulting recruitment will also double, all other things being equal. As the stock rebuilds, this becomes an increasingly untenable assumption because there is no reduction in reproductive success at very high stock sizes, which is to say there is no compensation (i.e., steepness = 0.2). In contrast, re-

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<sup>4</sup> The “steepness” of a spawner-recruit curve is related to the slope at the origin and is a measure of a stock’s productive capacity. It is expressed as the proportion of virgin recruitment that is produced by the stock when reduced to  $B_{20\%}$ , and ranges between 0.2 and 1.0.

sampling  $R_i$  values, results in errors in the opposite direction. Namely, recruitment does not increase as stock size increases as would be expected of most rebuilding stocks. This type of calculation effectively implies perfect compensation (i.e., steepness = 1). Thus, these two ways of projecting the population forward (using re-sampled  $R_i$  or re-sampled  $R/S_i$ ) bracket the range of population responses that are likely to occur in the real world. The method selected to generate future recruitment should ensure that potential recruitment values are consistent with stock sizes between the current level and the rebuilding target, i.e., they would be considered plausible throughout the duration of rebuilding projection.

## 5. Determination of the Minimum and Maximum Times to Recovery

The minimum time to recovery (denoted  $T_{\text{MIN}}$ ) is defined as the median time for a stock to recover to the target stock size, starting from the time when a rebuilding plan was actually implemented (usually the year after the stock was declared overfished) to when the target level is first achieved, assuming no fishing occurs. Next, the mean generation time should be calculated as the mean age of the net maturity function. A complication that can occur in the calculation of mean generation time, as well as  $B_0$  (see above), is when growth and/or reproduction have changed over time. In such instances, the parameters governing these biological processes should typically be fixed at their most recent, contemporary, values, as this best reflects the intent of “prevailing environmental conditions” as stated in the NMFS Guidelines for National Standard 1. Exceptions may occur if there are good reasons for an alternative specification (e.g., using growth and maturity schedules that are characteristic of a stock that is close to  $B_{\text{MSY}}$ ).

Although no longer used directly in Council decision-making for overfished stocks, rebuilding analyses should report the maximum time to recovery (denoted  $T_{\text{MAX}}$ ).  $T_{\text{MAX}}$  is ten years if  $T_{\text{MIN}}$  is less than 10 years. If  $T_{\text{MIN}}$  is greater than or equal to 10 years,  $T_{\text{MAX}}$  is equal to  $T_{\text{MIN}}$  plus one mean generation. Likewise, rebuilding analyses should report an estimate of the median number of years needed to rebuild to the target stock size if all future fishing mortality is eliminated from the first year for which the Council is making a decision about<sup>5</sup> ( $T_{\text{F}=0}$ ). This will typically differ from  $T_{\text{MIN}}$ .

Finally, when a stock rebuilding plan has been implemented for some time and recruitments have been estimated from an assessment, it may be that explicit, year-specific estimates of recruitment are available for the earliest years of the rebuilding time period. In such instances, rebuilding forecasts should be conducted setting the recruitments from the start of the rebuilding plan to the current year based on the estimates from the most recent assessment, rather than through re-sampling methods (see above).

## 6. Harvest During Rebuilding

The Council is required to rebuild overfished stocks in a time period that is as short as possible, but can extend this period to take into account the needs of fishing communities. The simplest rebuilding harvest strategy to simulate and implement is a constant harvest rate or “fixed F” policy. All rebuilding analyses should, therefore, consider fixed F strategies. Other strategies are

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<sup>5</sup> This year will generally not be the current year, but rather the year following the current two-year cycle.

possible, including constant catch and phase-in strategies, in which catch reductions are phased-in before the OYs transition to a fixed  $F$  strategy. In these latter cases, analysts should always assess whether fishing mortality rates exceed  $F_{MSY}$  (or its proxy), as this would constitute overfishing.

Analysts should consider a broad range of policy alternatives to give the Council sufficient scope on which to base a decision. The following represent a minimum set of harvest policies that should be reported:

1. The spawning potential ratio<sup>6</sup> listed in the Rebuilding Plan in the FMP (Amendment 16-4 for the stocks that are currently overfished) [only stocks already under rebuilding plans].
2. The spawning potential ratio corresponding to the optimum yields adopted for the current year (or biennium) [only stocks already under rebuilding plans].
3. The spawning potential ratio on which the current optimum yields were based [only stocks already under rebuilding plans; this spawning potential ratio will differ from that in 2) if the stock assessment has changed substantially since the last assessment].
4. The spawning potential ratio which will rebuild the stock to the target level with 0.5 probability by the  $T_{TARGET}$  specified in the FMP [only stocks already under rebuilding plans].
5. The spawning potential ratio which will rebuild the stock to the target level with 0.5 probability by the  $T_{MAX}$  specified in the FMP [only stocks already under rebuilding plans].
6. The spawning potential ratio which will rebuild the stock to the target level with 0.5 probability by the  $T_{MAX}$  calculated using the most recent biological and fishery information.
7. The **OFL**, ABC and 40:10 control rules.
8. No **future** harvest.
9. Spawning potential ratios which achieve recovery to the target level with 0.5 probability for years between  $T_{F=0}$  and  $T_{MAX}$ . These spawning potential ratios should be selected by calculating the median rebuilding times under the most conservative rebuilding strategy (i.e.,  $T_{F=0}$ ) and the most liberal, allowable rebuilding strategy (i.e.  $T_{MAX}$ ) and then selecting intermediate time intervals in even quartile increments. That is, if  $T_{F=0}$  is 20 years and  $T_{MAX} = 60$  years, then the intermediate alternatives would have rebuilding times of 30, 40 and 50 years, respectively.

**For all of these strategies, except for number 8, the median catch streams from each of these runs should be used as the harvest strategy in a follow-up run to evaluate the result of following the actual catch advice from the harvest policies above.**

These policies should be implemented within the projection calculations in the year for which the Council is making a decision. For example, for assessments conducted in 20**11**~~09~~ (using data up to 20**10**~~08~~), the harvest decisions pertain to OYs for 20**13**~~4~~ and 20**14**~~2~~. In this case, the catches for 20**11**~~09~~ and 20**12**~~0~~ should be set to the OYs established by the Council for those years.

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<sup>6</sup> The Spawning Potential Ratio (SPR) is a measure of the expected spawning output-per-recruit, given a particular fishing mortality rate and the stock's biological characteristics, i.e., there is a direct mapping of SPR to  $F$  (and *vice versa*). SPR can therefore be converted into a specific fishing mortality rate in order to calculate OYs.

Many other harvest policies could be implemented by the Council, based on whatever circumstances may mitigate against a constant harvest rate approach. Consequently, analysts should be prepared to respond to requests by the Council for stock-specific projections on an individual case-by-case basis.

## 7. Evaluating Progress Towards Rebuilding

There are no agreed criteria for assessing the adequacy of the progress towards rebuilding for species that are designated to be in an overfished state and are under a Rebuilding Plan. The SSC currently reviews each stock on a case-by-case basis, considering the following two questions: (1) have cumulative catches during the period of rebuilding exceeded the cumulative OY that was available, and (2) what is the difference between the year in which recovery is predicted to occur under the current SPR ( $T_{\text{REBUILD}}$ ) and the current adopted  $T_{\text{TARGET}}$ ? If the difference between  $T_{\text{REBUILD}}$  and  $T_{\text{TARGET}}$  is minor, progress towards rebuilding will be considered to be adequate. In contrast, if the difference between  $T_{\text{REBUILD}}$  and  $T_{\text{TARGET}}$  is major, it will be necessary to define a new  $T_{\text{TARGET}}$ . As an initial step in this direction, a new maximum time to rebuild  $T_{\text{MAX}}^N$  will be computed based on the specifications outlined in Section 5. Analysts will be asked to assess whether the currently adopted SPR will readily rebuild the stock before  $T_{\text{MAX}}^N$ .

Adequacy of progress will be evaluated when the SSC groundfish subcommittee reviews the draft rebuilding plans. Analysts should provide the information needed to address the two questions listed above. If the SSC agrees that progress is not sufficient, the draft rebuilding analysis documents will need to be updated to include  $T_{\text{MAX}}^N$  and the probability that the currently adopted harvest rate (SPR) will rebuild the stock before  $T_{\text{MAX}}^N$ .

## 8. Decision Analyses / Considering Uncertainty

The calculation of  $T_{\text{MIN}}$  and the evaluation of alternative harvest strategies involve projecting the population ahead taking account of uncertainty about future recruitment. There are several reasons for considering model and parameter uncertainty when conducting a rebuilding analysis. For example, if several assessment model scenarios were considered equally plausible by the assessment authors or, alternatively, one model was preferred by the assessment authors and another was preferred by the STAR Panel.

The uncertainty associated other parameters, such as the rate of natural mortality and the current age-structure of the population, can also be taken into account. This can be achieved in a variety of ways. For example, if the uncertainty relates to the parameters within one structural model, this uncertainty can be reflected by basing projections on a number of samples from a distribution which reflects this uncertainty (such as a Bayesian posterior distribution or bootstrap samples). Alternatively, projections can be conducted for each model and the results appropriately weighted when producing the final combined results if the uncertainty pertains to alternative structural models.

A decision table is an appropriate means to express the implications of uncertainty in model structure when an “integrated” approach, as outlined in the previous paragraph, is not adopted.

Construction of decision tables when projections are based on a constant harvest rate policy is, however, not entirely straightforward. One way to achieve this is to conduct projections for each alternative model in turn and record the median (or mean) time-trajectory of catches. The decision table is then based on projections with a set of pre-specified time-series of catches. If probabilities were assigned to each alternative model by the assessment authors and STAR Panel, these must be reported with the decision table.

## 9. Documentation

It is important for analysts to document their work so that any rebuilding analysis can be repeated by an independent investigator at some point in the future. Therefore, all stock assessments and rebuilding analyses should include tables containing the specific data elements that are needed to adequately document the analysis. Clear specification of the exact assessment scenario(s) used as the basis for the rebuilding analysis is essential. Therefore, linkages with the most recent stock assessment document should be clearly delineated (e.g., through references to tables or figures). This is important because assessments often include multiple scenarios that usually have important implications with respect to stock rebuilding.

The minimum information that should be presented in a rebuilding analysis is:

- Date on which the analysis was conducted, and specifications for the software used for the analysis (including the version number), along with an example of the program's input file, ideally for the base (most likely) case. Documentation and basis for the number of simulations on which the analyses are based should also be provided. The software and data files on which the rebuilding analyses are based should be archived with the stock assessment coordinator.
- Rebuilding parameters. For each alternative model, a table (see Table 1 for an example based on canary rockfish) should be produced which lists: (a) the year in which the rebuilding plan commenced, (b) the present year, (c) the first year that the evaluated harvest policy calculates OY, (d)  $T_{\text{MIN}}$ , (e) mean generation time, (f)  $T_{\text{MAX}}$ , (g)  $T_{\text{F=0}}$ , (h) the estimate of  $B_0$  and the target recovery level, (i) the current SPR, (j) the current  $T_{\text{TARGET}}$  and (k) the estimate of current stock size.
- Results of harvest policy projections (see, for examples, Tables 2-5; Figures 1-3). The following information should be provided for each harvest policy evaluated: (a) the year in which recovery to the target level occurs with 0.5 probability, (b) the SPR for the first year of the projection period, (c) the probability of recovery by the current  $T_{\text{TARGET}}$ , (d) the probability of recovery by the current  $T_{\text{MAX}}$ , (e) tables of median time-trajectories (from the present year to  $T_{\text{MAX}}$ ) of: (i) spawning output relative to the target level, (ii) probability of being at or above the target level, (iii) ABCOFL, and (iv) optimum-yieldABC. Median time-trajectories of SPR should be provided for the projection based on the 40:10 rule (as applied to the ABC) and any phase-in harvest policies that have been specified.
- The information needed to assess progress towards rebuilding (e.g. catches and OYs during the rebuilding period) and any additional information based on the review of adequacy of progress by the SSC (e.g.  $T_{\text{MAX}}^N$ ).
- Median and 95% intervals for: (a) summary / exploitable biomass, (b) spawning output (in absolute terms and relative to the target level), (c) recruitment, (d) catch, (e) landings

(if different from catch), (f) OFL, (g) ABC, and (hg) SPR for the actual harvest strategy selected by the Council.

- The rationale for the approach used to estimate  $B_0$  and to generate future recruitment.
- The biological information on which the projections are based (show results for each alternative model):
  - Natural mortality rate by age and sex.
  - Individual weight by age and sex.
  - Maturity by age.
  - Fecundity by age.
  - Selectivity-at-age by sex (and fleet).
  - Population numbers (by age and sex) for the year the rebuilding plan commenced.
  - Population numbers (by age and sex) for the present year.
  - How fishing mortality was allocated to fleet for rebuilding analyses based on multiple fleets.

Notes:

- Much of the biological information will be stored in the input file for the projection software and doesn't need to be repeated unless there is good reason to do so.
- For cases in which the projections take account of uncertainty about the values for the biological parameters (e.g., using the results from bootstrapping or samples from a Bayesian posterior distribution), some measure of the central tendency of the values (e.g., the mode or median) should be provided and the individual parameter values should be archived with the stock assessment coordinator.
- Rebuilding analyses may be based on selectivity-at-age vectors constructed by combining estimates over fleets. If this is the case, the rebuilding analysis needs to document how the composite selectivity-at-age vector was constructed.

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Table 1. Summary of rebuilding reference points for canary rockfish (based on Stewart (2007)).

Parameter	Values
Year declared overfished	2000
Current year	2007
First OY year	2009
$T_{\text{MIN}}$	2019
Mean generation time	22
$T_{\text{MAX}}$	2041
$T_{F=0}$ (beginning in 2009)	2019
$B_0$	32,561
Rebuilding target ( $B_{40\%}$ )	13,024
Current SPR	0.887
Current $T_{\text{TARGET}}$	2063
$SB_{2007}$	10,544

Table 2. Results of rebuilding alternatives for canary rockfish (based on Stewart (2007)).  
(This table now should include OFL, ABC and ACL).

	Run #			
	1	2	3	4
50% prob. recovery by:	2019	2021	2035	2041
$\text{SPR}_{\text{TARGET}}$	100%	88.7%	62.0%	59.2%
2009 OY (mt)	0.0	155.2	636.9	700.0
2009 ABC (mt)	936.9	936.9	936.9	936.9
2010 OY (mt)	0.0	155.0	623.1	683.1
2010 ABC (mt)	941.4	935.4	916.7	914.2
Probability of recovery				
2071 ( $T_{\text{MAX}}$ )	97.1%	84.6%	73.5%	70.0%
2048 ( $T_{\text{MIN}}$ )	76.4%	75.0%	64.8%	56.9%
2053 ( $T_{F=0}$ from 2007)	79.4%	75.3%	67.9%	61.3%
2063 ( $T_{\text{TARGET}}$ )	91.4%	78.8%	72.0%	66.8%



Table 3. Probability of recovery for four rebuilding alternatives for canary rockfish (based on Stewart (2007)). Note that after 25 years the table is compressed.

	Run #			
	1	2	3	4
2007	0.250	0.250	0.250	0.250
2008	0.250	0.250	0.250	0.250
2009	0.250	0.250	0.250	0.250
2010	0.250	0.250	0.250	0.250
2011	0.250	0.250	0.250	0.250
2012	0.250	0.250	0.250	0.250
2013	0.250	0.250	0.250	0.250
2014	0.250	0.250	0.250	0.250
2015	0.250	0.250	0.250	0.250
2016	0.251	0.250	0.250	0.250
2017	0.284	0.257	0.250	0.250
2018	0.407	0.288	0.250	0.250
2019	0.550	0.366	0.250	0.250
2020	0.660	0.473	0.256	0.251
2021	0.702	0.561	0.260	0.256
2022	0.732	0.633	0.267	0.261
2023	0.742	0.681	0.279	0.267
2024	0.746	0.707	0.290	0.275
2025	0.749	0.725	0.309	0.281
2026	0.749	0.735	0.321	0.293
2027	0.749	0.742	0.341	0.300
2028	0.750	0.746	0.358	0.313
2029	0.750	0.746	0.376	0.324
2030	0.750	0.747	0.402	0.336
2031	0.750	0.749	0.424	0.348
2041	0.750	0.750	0.586	0.500
2051	0.781	0.751	0.671	0.601
2061	0.895	0.776	0.714	0.660
2071	0.971	0.846	0.735	0.700

Table 4. Median spawning biomass (mt) for four rebuilding alternatives for canary rockfish (based on Stewart (2007)). Note that after 25 years the table is compressed.

	Run #			
	1	2	3	4
2007	10,544	10,544	10,544	10,544
2008	10,841	10,841	10,841	10,841
2009	11,073	11,073	11,073	11,073
2010	11,258	11,197	11,010	10,985
2011	11,383	11,260	10,880	10,831
2012	11,463	11,274	10,701	10,627
2013	11,524	11,268	10,501	10,403
2014	11,607	11,280	10,318	10,197
2015	11,751	11,351	10,186	10,041
2016	11,987	11,508	10,133	9,964
2017	12,328	11,765	10,163	9,969
2018	12,738	12,089	10,251	10,029
2019	13,181	12,432	10,357	10,113
2020	13,685	12,838	10,520	10,247
2021	14,236	13,293	10,721	10,419
2022	14,773	13,731	10,909	10,583
2023	15,350	14,210	11,130	10,775
2024	15,941	14,674	11,345	10,966
2025	16,500	15,133	11,515	11,105
2026	17,015	15,536	11,679	11,251
2027	17,517	15,959	11,852	11,391
2028	18,045	16,348	11,999	11,515
2029	18,600	16,811	12,211	11,699
2030	19,093	17,183	12,329	11,799
2031	19,528	17,519	12,432	11,877
2041	23,511	20,635	13,491	12,751
2051	26,282	22,743	14,238	13,357
2061	27,862	24,058	14,655	13,689
2071	28,903	24,832	15,097	14,073

Table 5. Median catches (mt) for four rebuilding alternatives for canary rockfish (based on Stewart (2007)). Note that after 25 years the table is compressed.

	Run #			
	1	2	3	4
2007	0.0	44.0	44.0	44.0
2008	0.0	44.0	44.0	44.0
2009	0.0	155.2	636.9	700.0
2010	0.0	155.0	623.1	683.1
2011	0.0	157.5	621.9	680.2
2012	0.0	163.7	635.4	693.4
2013	0.0	171.5	654.9	713.1
2014	0.0	179.7	675.9	734.4
2015	0.0	186.9	691.6	750.1
2016	0.0	193.4	705.3	763.1
2017	0.0	198.7	713.8	770.8
2018	0.0	205.1	724.3	780.5
2019	0.0	210.6	733.9	789.5
2020	0.0	216.8	744.3	798.9
2021	0.0	222.0	753.8	807.8
2022	0.0	228.3	765.2	818.8
2023	0.0	234.0	769.3	821.3
2024	0.0	239.0	778.8	830.7
2025	0.0	245.3	786.9	837.4
2026	0.0	250.0	795.2	845.3
2027	0.0	257.0	807.6	856.9
2028	0.0	261.7	814.0	862.9
2029	0.0	267.3	821.5	868.6
2030	0.0	272.3	830.5	877.2
2031	0.0	276.5	836.3	882.5
2041	0.0	318.0	897.1	938.2
2051	0.0	346.9	937.3	972.9
2061	0.0	365.2	967.1	1,002.9
2071	0.0	377.7	985.9	1,019.3

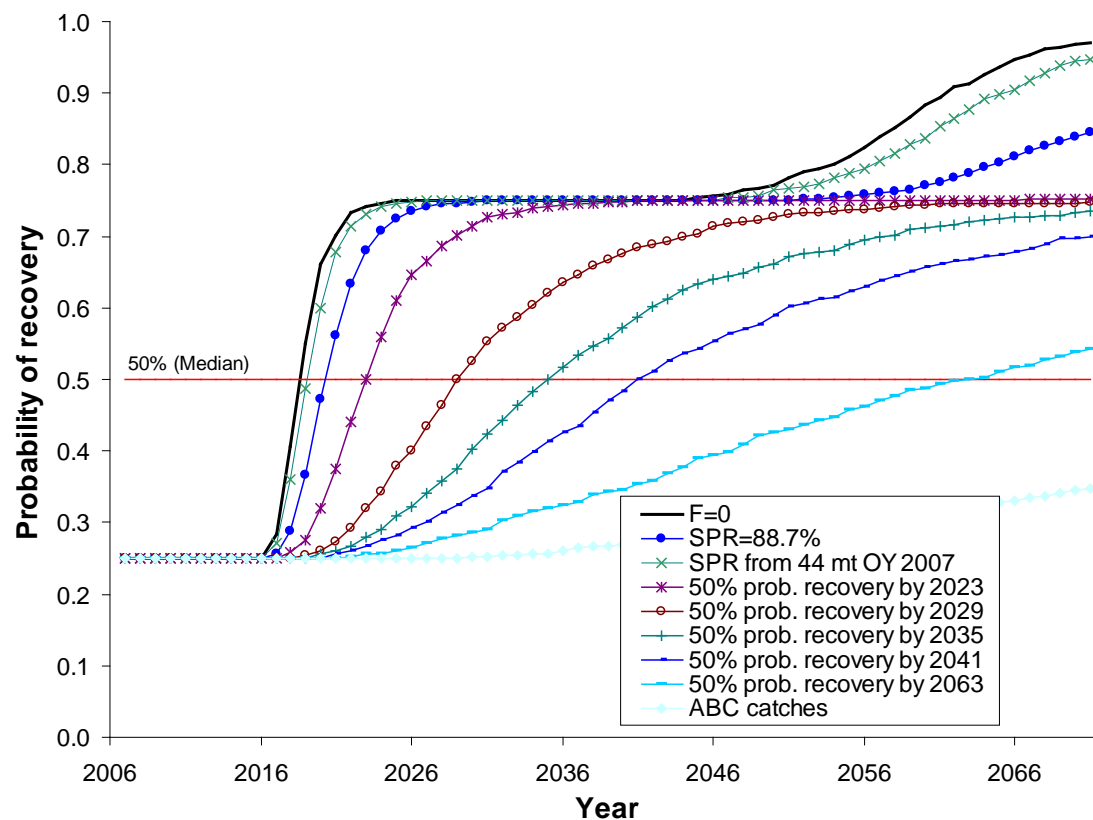


Figure 1. Probability of recovery for nine rebuilding alternatives for canary rockfish.

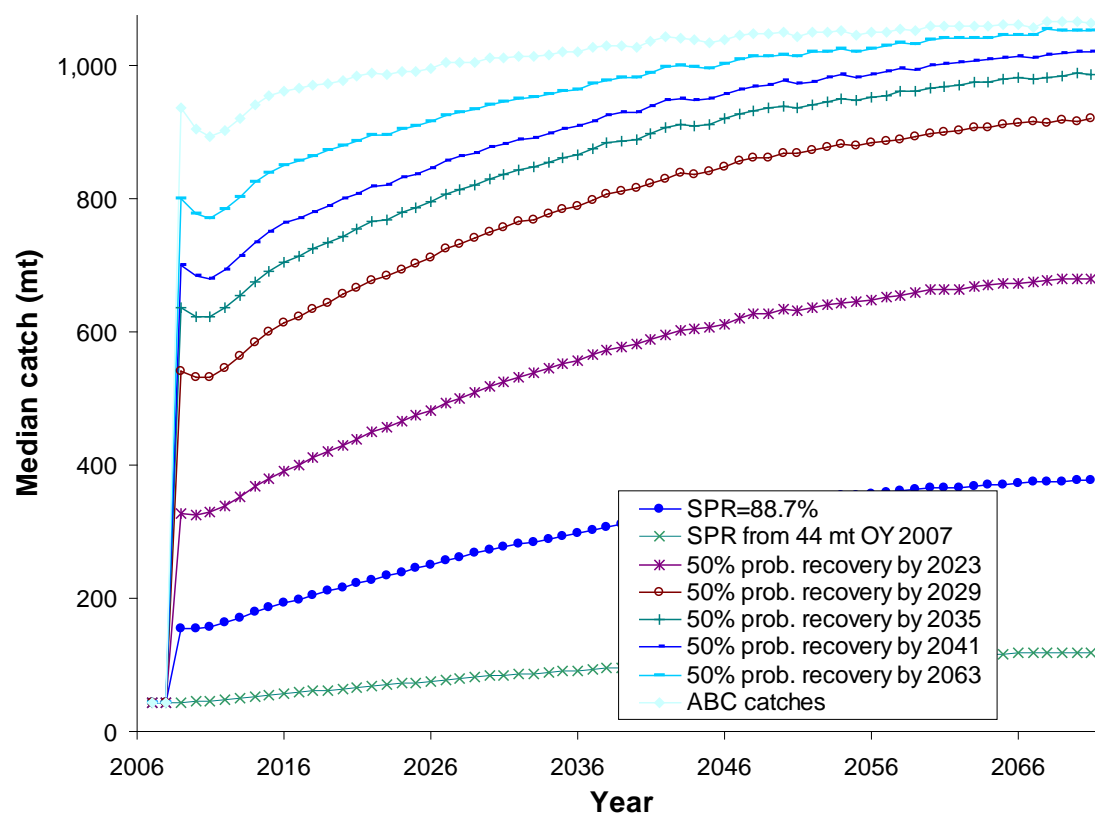


Figure 2. Projected median catch (mt) for nine rebuilding alternatives for canary rockfish.

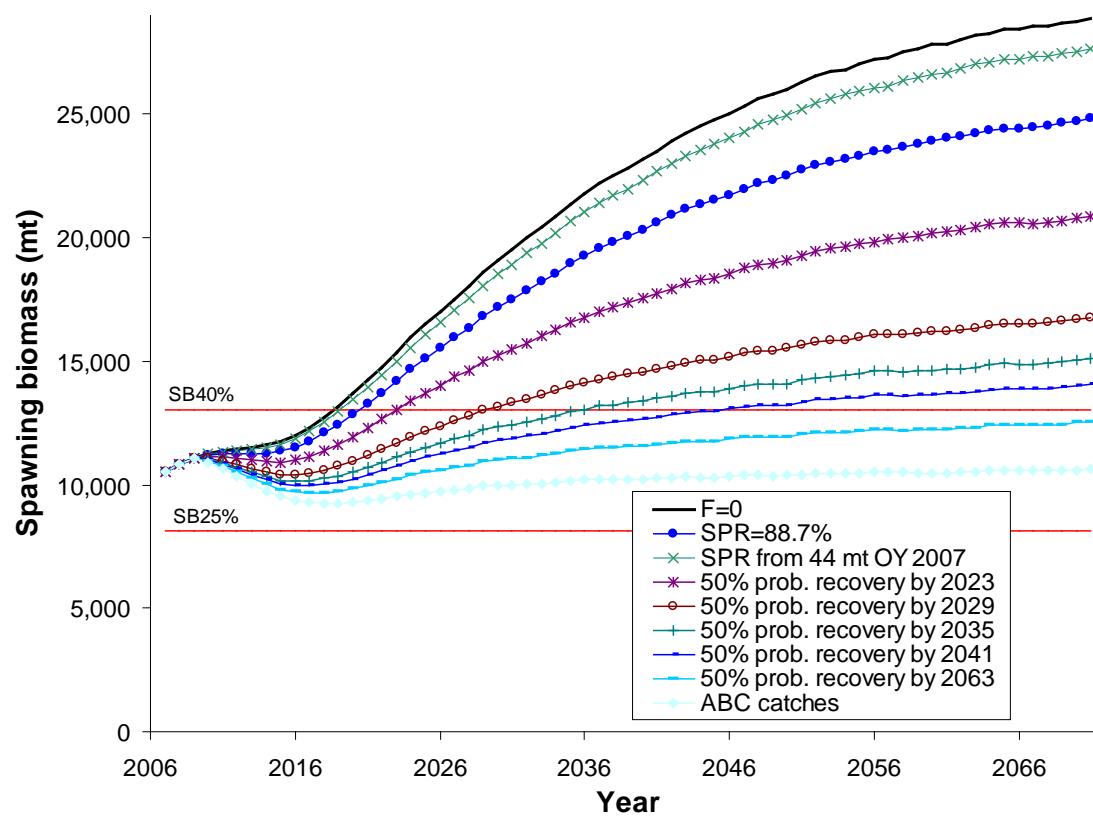


Figure 3. Projected median spawning biomass (mt) for nine rebuilding alternatives for canary rockfish.

## CONSIDERATIONS FOR A NEW STOCK ASSESSMENT TERMS OF REFERENCE

The draft terms of reference for the groundfish stock assessment and review process for 2011-2012 (Attachment 1) is a revised version of the previous terms of reference with proposed edits from the Scientific and Statistical Committee. While this draft of the new terms of reference addresses many relevant issues that have emerged in recent years, the Council staff notes a few issues that might benefit from further discussion and consideration. Council staff is recommending that Council advisors and Council members consider the following issues when recommending or deciding a final version of the stock assessment terms of reference.

- **Whiting Assessment Review:** It is possible this version of the terms of reference may be used to guide the Pacific whiting assessment and review process in 2011 and possibly 2012, if all of the necessities of the international treaty with Canada are not fully in place. Given the problems associated with the two competing assessment situation in 2010, and the potential problems of conducting a negotiation process with representatives of Canada at some point later this year if formal international solutions are not in place, should there be some consideration for the greater specificity in review process for the Pacific whiting assessment in the new terms of reference than what is shown in a footnote in Appendix A?
- **Estimating  $B_0$ :** The 2005 and 2009 petrale sole assessments considerably changed our understanding of stock status, largely driven by new estimates of unfished biomass ( $B_0$ ). The new estimates of  $B_0$  from these last two assessments were strongly influenced by highly uncertain estimates of historical catch as long ago as 1876. While the historic estimates were properly calculated given the state of the data at hand, it does underscore how highly uncertain historic catches directly influence assessment results. Should the terms of reference include a specific review of whether adding historic catch estimates many years ago actually improve the overall confidence in resulting  $B_0$  estimates? Notably, this issue is not limited to the petrale sole stock assessment.
- **STAR Reviews Should Not Be Workshops:** In the opinion of some of the participants and observers of the 2010 Pacific whiting assessment review, the review panel may have exceeded review standards in removing a substantial amount of data due to beliefs these data were biased. Further, new core analyses were added beyond the original submission during the Stock Assessment Review (STAR) process. While STAR panels often recommend some revision to assessments they are reviewing, the terms of reference recommend against a STAR panel doing a drastic overhaul of the assessment. Should more stringent language regarding the role of the STAR panel be considered for the terms of reference regarding STAR panel meetings being review panels, not workshops, beyond what is contained on pages 8-10 in the current draft?
- **Completeness of Pre-STAR Draft Assessments:** The completeness of draft assessments has improved in the last two cycles with more attention paid to critical elements that need to be included in pre-STAR draft assessments. Further, there has been the benefit of the internal review process that the Northwest Fisheries Science Center has used before distributing their assessments. However, further consideration of the consequences of receiving an incomplete assessment might be useful, beyond what is shown on pages 10 and 12 in the current draft.

## **POSSIBLE SCHEDULE FOR WEST COAST GROUND FISH ASSESSMENTS IN 2011**

At the Council's March meeting, the Northwest Fisheries Science Center (NWFSC) submitted an initial draft list of species for consideration in the upcoming assessment cycle, along with a potential schedule for STAR panels (Table 1). This draft list included benchmark, or full, assessments, which include STAR Panel review, for Pacific hake (whiting), Dover sole, Pacific ocean perch (POP), petrale sole, sablefish, spiny dogfish, blackgill rockfish, rex sole, greenspotted rockfish, and widow rockfish. The proposed lead for the first 6 species is the NWFSC, with the SWFSC leading the last 4. Three of these species have not previously been assessed. Spiny dogfish has been proposed previously and it received one of the highest vulnerability scores in the GMT's recently conducted analysis. The vulnerability score for greenspotted rockfish is at the high end of the GMT's precautionary range, and the SWFSC has already expended considerable effort in organizing and analyzing data for this species. Rex sole has a rather low vulnerability score; however, it is the prominent unassessed species in the Other Flatfish complex, for which considerable survey data are available. Blackgill rockfish is another highly vulnerable species, which is a major species in the Southern Slope Rockfish complex and has not been assessed since the first effort in 2005.

Both sablefish and Dover sole received low vulnerability scores from the GMT. However, they are critical species to the slope fisheries, and when last assessed in 2007 and 2005, respectively, their panels identified numerous modeling issues that should be addressed as early as possible. Additionally, the NWFSC shelf-slope survey data cannot be fully included for either species unless a full assessment is conducted. The three remaining proposed full assessments are for the rebuilding species petrale sole, Pacific ocean perch, and widow rockfish. Considerable interest was expressed during late 2009 in having another full assessment conducted for petrale sole in the next cycle, in order to address some unresolved data and modeling issues, as well as to explore the development of commercial CPUE indices. The last benchmark assessment for POP was conducted in 2003, and it is the only species with an individual ABC whose recent assessments have not been conducted using Stock Synthesis. A full assessment of widow rockfish was conducted in 2009, which indicated that the stock should be rebuilt soon. However the STAR panel identified further exploration of model properties and alternative formulations as a priority.

Aside from hake, only 9 species were proposed for the five available STAR panels. The Council's consideration of this agenda item in March, included discussion of the possibility of adding one of three nearshore species (copper, quillback, or China rockfish) to fill the remaining open slot. The GMT also noted that rougheye and shortraker rockfishes could warrant consideration, due to their high vulnerability ratings. Since then, the NWFSC requested information from the state agencies regarding the availability of data and assessment personnel for conducting an assessment for any of the three nearshore species. It appears that there may be sufficient data to develop a successful analysis of copper rockfish in California waters, though the other two species would be much more problematic. However, data sufficiency for any of the three for the remainder of the coast is relatively uncertain at this time.



Perhaps more importantly, California and Washington indicated that they would not be able to contribute assessment staff to next year's activities (and Oregon has not yet responded). As conveyed to the Council in March, the Northwest and Southwest Fishery Science Centers are not able to commit to leading any additional assessments, beyond those already identified. Therefore, the only apparent means of assessing one of these other rockfish in 2011 would be through substituting it for a species on the current draft list.

Given these full assessments, four assessment updates are anticipated, for the rebuilding species bocaccio, canary, darkblotched, and yelloweye rockfish. Since minimal new data will be available with which to assess cowcod status, the SWFSC will prepare a data report, in keeping with the SSC's recommendations in June 2009. Additionally, a NMFS Technical Memorandum addressing the status of bronzespotted rockfish is being prepared by the SWFSC.

There was discussion during the March Council meeting whether the species reviewed in single-species STAR Panel should be sablefish instead of Pacific ocean perch, given the complexity of the sablefish assessment and the range of issues raised during the 2007 STAR panel review. In response to this suggestion, Table 2 lays out an alternative schedule including a sablefish-only panel.

**Table 1. Potential Dates, Species Groupings, and Locations for 2011 STAR Panels (as presented in March).**

	<b>Dates</b>	<b>Species 1</b>	<b>Species 2</b>	<b>Location</b>
Whiting	Feb.	Pacific hake / Whiting	N/A	Seattle, WA
Panel 1	Early May	Widow rockfish	Spiny dogfish	Newport, OR
Panel 2	Late June	Pacific ocean perch	open	Seattle, WA
Panel 3	Mid-July	Petrable sole	Rex Sole	Santa Cruz, CA
Panel 4	Late July	Sablefish	Dover sole	Seattle, WA
Panel 5	Early August	Greenspotted rf	Blackgill rockfish	Santa Cruz, CA
Updates	mid-June	bocaccio, canary, cowcod (data report only), darkblotched, yelloweye rockfishes		TBD

**Table 2. Alternative schedule for 2011 STAR Panels, with a sablefish-only panel.**

	<b>Dates</b>	<b>Species 1</b>	<b>Species 2</b>	<b>Location</b>
Whiting	Feb.	Pacific hake / Whiting	N/A	Seattle, WA
Panel 1	Early May	Widow rockfish	Spiny dogfish	Newport, OR
Panel 2	Late June	Pacific ocean perch	Petrable sole	Seattle, WA
Panel 3	Mid-July	Dover sole	Rex Sole	Santa Cruz, CA
Panel 4	Late July	Sablefish	open	Seattle, WA
Panel 5	Early August	Greenspotted rf	Blackgill rockfish	Santa Cruz, CA
Updates	mid-June	bocaccio, canary, cowcod (data report only), darkblotched, yelloweye rockfishes		TBD

# Groundfish Stock Assessment Priorities for 2011

- Agenda Item B.4.b, NMFS Report
  - Species
  - General Schedule
  - Possibilities for other species

# Draft schedule submitted for the March PFMF meeting (Table 1)

	Dates	Species 1	Species 2	Location
Whiting	Feb.	Pacific hake	N/A	Seattle, WA
Panel 1	Early May	Widow	Spiny dogfish	Newport, OR
Panel 2	Late June	POP	open	Seattle, WA
Panel 3	Mid-July	Petrals	Rex Sole	Santa Cruz, CA
Panel 4	Late July	Sablefish	Dover sole	Seattle, WA
Panel 5	Early August	Greenspotted	Blackgill	Santa Cruz, CA
Updates	mid-June	bocaccio, canary, cowcod (data report only), darkblotched, yelloweye rockfishes		TBD
Mop-up	late-Sept. / early-Oct.	Species assigned, as needed		Seattle, WA

# Alternative draft schedule (Table 2)

	Dates	Species 1	Species 2	Location
Whiting	Feb.	Pacific hake	N/A	Seattle, WA
Panel 1	Early May	Widow	Spiny dogfish	Newport, OR
Panel 2	Late June	POP	Petrable sole	Seattle, WA
Panel 3	Mid-July	Dover sole	Rex Sole	Santa Cruz, CA
Panel 4	Late July	Sablefish	open	Seattle, WA
Panel 5	Early August	Greenspotted	Blackgill	Santa Cruz, CA
Updates	mid-June	bocaccio, canary, cowcod (data report only), darkblotched, yelloweye rockfishes		TBD
Mop-up	late-Sept. / early-Oct.	Species assigned, as needed		Seattle, WA

Since the March meeting,  
state agencies were asked about data  
for assessing 3 nearshore rockfish

**Data adequate for an assessment in 2011?**

- Copper rockfish: very likely
- Quillback rockfish: probably
- China rockfish: very unlikely

**However, none of the state agencies have  
staff available to lead an assessment**

- Adding one of these, or another, species  
would require removing one from the list

# Alternative draft schedule (Table 2)

	Dates	Species 1	Species 2	Location
Whiting	Feb.	Pacific hake	N/A	Seattle, WA
Panel 1	Early May	Widow	Spiny dogfish	Newport, OR
Panel 2	Late June	POP	Petrable sole	Seattle, WA
Panel 3	Mid-July	Dover sole	Rex Sole	Santa Cruz, CA
Panel 4	Late July	Sablefish	open	Seattle, WA
Panel 5	Early August	Greenspotted	Blackgill	Santa Cruz, CA
Updates	mid-June	bocaccio, canary, cowcod (data report only), darkblotched, yelloweye rockfishes		TBD
Mop-up	late-Sept. / early-Oct.	Species assigned, as needed		Seattle, WA

# Proposed “Oligatory” Assessments

Species	Last Assessment			2011		
	Year	Type	Model	Type	<i>Rbld Anal.</i>	Lead
<b>P. hake (Whiting)</b>	<b>2010</b>	<b>Full</b>	<b>SS v 3</b>			<b>NWFSC</b>
<b>Cowcod</b>	<b>2009</b>	<b>Update</b>	<b>SS v2</b>	<b>status report</b>		<b>SWFSC</b>
<b>Bocaccio rockfish</b>	<b>2009</b>	<b>Full</b>	<b>SS v 3</b>	<b>Update</b>	<b>X</b>	<b>SWFSC</b>
<b>Canary rockfish</b>	<b>2009</b>	<b>Update</b>	<b>SS v 3</b>	<b>Update</b>	<b>X</b>	<b>NWFSC</b>
<b>Yelloweye rockfish</b>	<b>2009</b>	<b>Full</b>	<b>SS v3</b>	<b>Update</b>	<b>X</b>	<b>NWFSC</b>
<b>Darkblotched rockfish</b>	<b>2009</b>	<b>Update</b>	<b>SS v3</b>	<b>Update</b>	<b>X</b>	<b>NWFSC</b>
<b>Widow rockfish</b>	<b>2009</b>	<b>Full</b>	<b>SS v3</b>	<b>Full</b>	<b>X</b>	<b>SWFSC</b>
<b>Pacific ocean perch</b>	<b>2009</b>	<b>Update</b>	<b>ADMB</b>	<b>Full</b>	<b>X</b>	<b>NWFSC</b>
<b>Petrale sole</b>	<b>2009</b>	<b>Full</b>	<b>SS v3</b>	<b>Full</b>	<b>X</b>	<b>NWFSC</b>
<b>Bronzespotted rockfish</b>				<b>* tech memo</b>		<b>SWFSC</b>



# Proposed “Discretionary” Full Assessments

Species	Last Assessment			2011	
	Year	Type	Model	Type	Lead
Blackgill rockfish	2005	Full	SS v2	Full	SWFSC
Sablefish	2007	Full	SS v2	Full	NWFSC
Dover sole	2005	Full	SS v2	Full	NWFSC
Greenspotted rockfish	Unassessed			Full	SWFSC
Spiny Dogfish	Unassessed			Full	NWFSC
Rex sole	Unassessed			Full	SWFSC

# Other species assessed recently

(not strong candidates for 2011)

Species	Last Assessment		
	Year	Type	Model
Chilipepper rockfish	2007	Full	SS v2
Arrowtooth flounder	2007	Full	SS v2
English sole	2007	Update	SS v2
Black rockfish - N	2007	Full	SS v2
Black rockfish - S	2007	Full	SS v2
Blue rockfish	2007	Full	SS v2
Longnose skate	2007	Full	SS v2
Cabazon	2009	Full	SS v3
Greenstriped rockfish	2009	Full	SS v3
Lingcod	2009	Full	SS v3
Splitnose rockfish	2009	Full	SS v3

# Select unassessed species and those with older assessments

Species	Last Assessment		
	Year	Type	Model
Sanddabs	Unassessed		
Copper rockfish	Unassessed		
Rougheyeye rockfish	Unassessed		
Bank rockfish	2000	"Full"	SS v1
Shortspine thornyhead	2005	Full	SS v2
Longspine thornyhead	2005	Full	SS v2
Starry flounder	2005	Full	SS v2
Cal. Scorpionfish	2005	Full	SS v2
Gopher rockfish	2005	Full	SS v2
Kelp greenling	2005	Full	SS v2
Yellowtail rockfish	2005	Update	SS v1

GROUND FISH ADVISORY SUBPANEL REPORT ON STOCK ASSESSMENT PLANNING  
FOR 2013-2014 FISHERIES

The Groundfish Advisory Subpanel (GAP) discussed stock assessment planning for the 2013-2014 fisheries and wishes to make the following recommendations:

- 1) The GAP recommends establishing pre-assessment workshops as early in the year as is possible. These workshops would be the most useful venue to address industry questions pertaining to data compilation and methodology.
- 2) Under Agenda Item B.4.b, NMFS report on stock assessment scheduling, the GAP recommends adopting the Table 2 schedule. We feel that sablefish should stand alone as an assessment, understanding that it will be a very comprehensive undertaking. As it is such a critically important species economically, it deserves full attention at a panel.
- 3) Under Agenda Item B.4.a, Attachment 3 on considerations for new stock assessments terms of reference, the GAP supports all of the recommendations contained within the document with the additional suggestions:
  - A) Please have the Scientific and Statistical Committee (SSC) identify Stock Assessment Review Panel Chairs as early as possible so as to provide for a point of contact for all interested parties.
  - B) The GAP feels very strongly that further discussions on estimating ~~to~~ continue. The GAP has serious concerns about some new estimates of historic catches, which may not be accurate as to species or quantities, and which are now older than 100 years in some cases. The GAP seeks review of whether adding historic catch estimates from many years ago actually improves the overall confidence of ~~B~~ estimates.

SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON STOCK ASSESSMENT  
PLANNING FOR 2013-2014 FISHERY GUIDANCE

The Scientific and Statistical Committee (SSC) reviewed the revised version of the Terms of Reference (TOR) for the groundfish stock assessment (Agenda Item B.4.a, Attachment 1) and discussed comments provided by Council staff regarding the TOR (Agenda Item B.4.a, Attachment 3).

In response to specific comments raised by the Council staff, the SSC agreed that separate Pacific whiting assessment TOR should be developed jointly with Canada. This recommendation should be added to the TOR Introduction (currently the Pacific whiting review process is discussed in a footnote to Appendix A table, page 23). The SSC also concluded that no additional requirements for evaluating the effect of historical catches on the estimate of  $B_0$  is necessary since the current TOR version already includes the requirement to evaluate model sensitivity to data set choice and model structure (TOR, Appendix 2, Section D.7). The SSC also noted that current TOR already emphasizes that the Stock Assessment Review (STAR) panels are not workshops (page 12), and that STAR panels should be very cautious about recommending large changes in data. No additional changes to the TOR are needed. Finally, the SSC agreed that three weeks prior to STAR panel is a reasonable deadline for a stock assessment draft; the text should be modified to remove “no less than” prior to “three full weeks” (page 15). The “harvest projections and decision tables” should be re-added to the list of elements exempt from a pre-STAR assessment document (page 15), as it was in the 2009-2010 TOR version.

The SSC reviewed the revised version of the TOR for groundfish rebuilding analysis (Agenda Item B.4.a, Attachment 2) and agreed that no additional changes were needed. Additional rebuilding runs may be needed to comply with recent judicial opinions, but these can be accommodated in the existing modeling framework.

The SSC agreed that the schedule for 2011 STAR panels with sablefish in a single-species STAR panel is preferable, given the anticipated changes in the assessment model as well as industry interest in the species.

Finally, the SSC again emphasizes that the timing of the assessment process for whiting is problematic (see SSC March minutes for details). To ensure full evaluation of data and successful collaboration of U.S. and Canadian Stock Assessment Teams, the timing of the whiting assessment process should be reconsidered.

**HAKE CONSORTIUM of BRITISH COLUMBIA**

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Parksville, British Columbia V9P 2S3 Canada

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**RECEIVED**

APR 19 2010

**PFMC**

Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, Oregon 97220-1384

Attention: Dr. Donald McIsaac, Executive Director

and

NMFS Northwest Fisheries Science Center  
2725 Montlake Blvd. East  
Seattle, WA 98112-2097

Attention: Dr. Elizabeth Clarke, Director, Fisheries Resource Analysis and  
Monitoring Division

Re: Trawl Hake Survey

Dear Sirs;

It is our understanding that the next acoustical trawl survey for Pacific Hake is not scheduled until the summer of 2011.

The 2009 acoustical survey experienced difficulty in differentiating hake from squid. As a result, members of the Star Panel decided not to use the results from both the 2009 Canadian and U.S. surveys.

Effectively that means no survey data from 2007 to 2011.

In addition, both science and management have expressed considerable uncertainty about the size, age and composition of hake stocks on the entire coast.

At this time, we strongly urge both countries to implement a Hake trawl survey in 2010.

Pacific Hake Fishery is a major economic generator for both Canada and the United States and the managers require accurate scientific data to make informed decisions.

Thank you in advance for your consideration of this request.



Rick Dunn,  
Hake Consortium of British Columbia

cc. Dr. Laura Richards, Pacific Biological Station, Canada  
Greg Workman, Pacific Biological Station, Canada  
Chris Grandin, Pacific Biological Station, Canada  
Paul Sproat, Fisheries and Oceans Canada  
Tamee Mawani, Fisheries and Oceans Canada  
Barry Ackerman, Fisheries and Oceans Canada  
Bruce Turris, Canadian Groundfish Resource Conservation Society  
Rod Moore, West Coast Seafood Processors Association

## CONSIDERATION OF INSEASON ADJUSTMENTS

Management measures for the 2010 groundfish season were set by the Council with the general understanding these measures would likely need to be adjusted throughout the biennial period to attain, but not exceed, the optimum yields (OYs). In particular for this Council meeting and due to the time pressures of a lengthy agenda, the Council provided notice to the public and Council Advisory Bodies that only significant changes should be considered at this meeting. Changes of minor magnitude would be taken up at the September Council meeting. This agenda item will consider inseason adjustments to ongoing 2010 fisheries. Potential inseason adjustments include adjustments to Rockfish Conservation Area boundaries, adjustments to commercial and recreational catch limits, and are, in part, based on catch estimate revisions and the latest information from the West Coast Groundfish Observer Program.

On April 23, 2010, the US District Court for the Northern District of California issued a ruling in response to the latest in a series of complaints filed in Natural Resources Defense Council v. Locke, challenging the rebuilding provisions in the groundfish Fishery Management Plan. As the ruling relates to 2010 inseason management under this agenda item, the Court ruled that the National Marine Fisheries Service (NMFS) violated the Magnuson-Stevens Act, Section 304(e)(4)(A)(i), by failing to rebuild cowcod, darkblotched rockfish, and yelloweye rockfish in a time period that is “as short as possible” when it implemented the 2009-2010 harvest specifications. The Court vacated the harvest specifications for these three species and set the 2010 optimum yields (OYs) at the most recent levels specified in the 2007-2008 harvest specifications and management process, which would be 330 mt for darkblotched and 4 mt for cowcod. For yelloweye rockfish, the Court ordered that the 2010 OY be set at 14 mt.

NMFS, consistent with the Court Order, plans to publish a final rule, possibly prior to the June Council meeting, to reduce the 2010 OY for yelloweye rockfish from 17 mt to 14 mt, and specify a 2010 darkblotched OY of 330 mt (2008 level) and a 2010 cowcod OY of 4 mt (Agenda Item B.5.b, NMFS Letter). NMFS requests that the Council, at its June meeting, develop inseason management measures for 2010 that are designed to keep the fishery within these levels, with the exception of darkblotched rockfish. NMFS recommends the Council adopt management measures to keep the fishery within 290 mt, which is equivalent to the 2007 darkblotched OY. The 2010 OY for cowcod remains 4 mt, which is equivalent to the 2008 OY.

A Groundfish Management Team (GMT) report outlines the inseason implications of the Court’s ruling and NMFS recommendations (Agenda Item B.5.b, GMT Report). The report contains an updated scorecard and evaluates projected impacts of cowcod, darkblotched, and yelloweye rockfish given the newly specified OYs.

Public comment specific to inseason that was received at the Council office by the June briefing book deadline are included in Agenda Item B.5.c, Public Comment. Since the recent Court Order also affects harvest specification and management measure decisions for the 2011-2012 fisheries,



public comment that may also be relevant to the inseason decision can be found under Agenda Item B.3.c, Public Comment.

The GMT and the Groundfish Advisory Subpanel (GAP) will meet prior to this agenda item to discuss and recommend inseason adjustments to 2010 groundfish fisheries. The Council may want to request additional analysis by the GMT and GAP. If further consideration is needed, this agenda item will be continued on Wednesday at which time the results for any requested analyses can be provided. After hearing advisory body advice and public comments, the Council will consider final inseason adjustments for 2010 fisheries.

**Council Action:**

**Consider information on the status of 2010 fisheries and adopt final inseason adjustments as necessary.**

**Reference Materials:**

1. Agenda Item B.5.b, NMFS Letter: Letter from Frank Lockhart regarding the Court Ruling.
2. Agenda Item B.5.b, GMT Report: Groundfish Management Team Report on Inseason Management Measures Related to the Court Ruling.
3. Agenda Item B.5.c, Public Comment.

**Agenda Order:**

- a. Agenda Item Overview
  - b. Reports and Comments of Advisory Bodies and Management Entities
  - c. Public Comment
  - d. **Council Action:** Adopt Final Recommendations for Adjustments to 2010 Groundfish Fisheries
- Kelly Ames**

PFMC  
05/21/10

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## GROUND FISH MANAGEMENT TEAM (GMT) REPORT ON 2010 INSEASON ADJUSTMENTS RELATED TO THE COURT RULING

The Groundfish Management Team (GMT) considered the U.S. District Court for the Northern District of California ruling in Natural Resources Defense Council v. Locke and the subsequent preliminary National Marine Fisheries Service (NMFS) guidance and provides the following evaluation relative to 2010 inseason management.

The GMT also received guidance from NMFS Northwest Region (NWR) regarding timing of implementation of inseason recommendations from this meeting. Given the high priority of implementing measures that affect projected impacts to yelloweye rockfish, NMFS anticipates implementing routine inseason adjustments to fishery management measure by July 1, 2010.

### **2010 Harvest Specifications for Cowcod**

The Court ordered that the 2010 optimum yield (OY) for cowcod be set at the 2008 OY, which is 4 mt; equivalent to the status quo OY. The GMT notes that current projections of cowcod are 1 mt (Attachment 1) thus no inseason action is recommended to further constrain catches.

### **2010 Harvest Specifications for Darkblotched**

The Court specified a darkblotched OY of 330 mt (2008 level) and NMFS recommended that the Council's management measures be designed to keep the fishery within 290 mt, which is equivalent to the 2007 OY. Since the April Council meeting, the non-whiting limited entry trawl model has been updated with the most recent West Coast Groundfish Observer Program (WCGOP) bycatch rates (2008). Projected impacts to darkblotched rockfish are 248.4 mt (Attachment 1). The GMT will be considering inseason adjustments to the non-whiting trawl fishery at the June Council meeting and should any of those adjustments impact darkblotched rockfish, recommendations will be made that constrain catch at or below 290 mt, per NMFS guidance.

### **2010 Harvest Specifications for Yelloweye Rockfish**

The Court ordered that the 2010 OY for yelloweye rockfish be reduced from 17 mt to 14 mt. The GMT has attached two scorecards to this statement; the first contains projected impacts through the end of 2010 prior to inseason action by the Council in June, and with the new darkblotched and yelloweye rockfish OYs of 14 mt and 330 mt, respectively (Attachment 1). The second scorecard contains projected impacts for yelloweye rockfish only, under various scenarios (Attachment 2).

## Pre-Inseason Scorecard Updates

### RESEARCH

In March 2010, the GMT received updates on proposed research activities for 2010 from NMFS NWR, Washington Department of Fish and Wildlife (WDFW), Oregon Department of Fish and Wildlife (ODFW), and the International Pacific Halibut Commission (IPHC) relative to projected research catches. The Council adopted a 3.3 mt set-aside for yelloweye rockfish for 2010 based on the projected impacts in Table 1.

Table 1. Yelloweye rockfish research projections for 2010, including updated impacts after the cancellation of the WDFW and ODFW Enhanced Rockfish Surveys.

Agency	Projected Impacts from March 2010 final Scorecard	Updated Projected Impacts for June 2010
IPHC Halibut Stock Assessment Survey	1.1	1.1
WDFW Enhanced Rockfish Survey	1.0	Cancelled
ODFW Enhanced Rockfish Survey	1.0	Cancelled
Other (including NMFS trawl survey)	0.2	0.2
<b>Total</b>	<b>3.3</b>	<b>1.3</b>

In response to the new, lower 2010 yelloweye rockfish OY, ODFW and WDFW cancelled their enhanced rockfish surveys, reducing the projected research catch by 2.0 mt, to 1.3 mt. While this cancellation of research may mitigate some of the fishery restrictions necessary to keep projected impacts to yelloweye rockfish below 14 mt, the GMT notes that this is a loss of the opportunity to collect valuable biological information that could be used to inform the yelloweye stock assessment. Due to retention of yelloweye rockfish in most fisheries being prohibited, and the NMFS trawl survey not operating in areas of yelloweye rockfish habitat, there is little new information being collected to inform stock assessments. The enhanced rockfish surveys are the most cost effective way to gather data and information on yelloweye (and other) rockfish, given the current budget climate. A yelloweye rockfish workgroup met during the winter of 2009-10 to discuss non-extractive survey techniques. Unfortunately the non-extractive survey techniques, such as ROV work, are currently cost prohibitive to be used on a large scale, temporally or geographically, or the technology is still being developed. Therefore, the enhanced rockfish surveys were determined by the workgroup to be the best option currently available to gather data on yelloweye rockfish. The June scorecard (Attachment 1) has been updated to reflect the survey cancellation (impacts reduced from 3.3 mt to 1.3 mt).

The IPHC survey is scheduled to start around June 30 and continue through August 20. Traditionally, IPHC has provided catch estimates after each trip which facilitates inseason tracking of constraining species, such as yelloweye. It is anticipated that the final survey estimate of yelloweye impacts will be provided in time for the September Council meeting.

### NON-WHITING EXEMPTED FISHING PERMITS (EFPs)

The Council recommended five non-whiting exempted fishing permits (EFPs) for 2010 at their November 2009 meeting (Table 2). On May 25, 2010, NMFS NWR informed Kathy Fosmark (Trolled Longline for Chilipepper Rockfish EFP) and Jim Martin (California Recreational Chilipepper EFP) that

their 2010 EFPs would not be issued in 2010. This decision was based on the need to reduce non-whiting EFP impacts to yelloweye rockfish, and the reason these two projects were chosen was based on their past performance (lack of participation, low target catch, lack of funding, etc.). NMFS continues to work with the remaining projects towards issuance of their 2010 EFPs and tracking of catch against the catch limits approved in November 2009, pending further decisions by the Council. NMFS provided guidance to the GMT that the remaining EFPs approved in November 2009 should be brought to the Council for consideration at this meeting in light of the recent Court decision, and the status of ongoing non-EFP fisheries. The GMT offers the following comments relative to the three remaining EFPs that may be permitted, or are already permitted with an EFP, in 2010.

Table 2. Council approved EFPs and Bycatch Caps for 2010 as updated based on NMFS action. Adjusted Total reflects the NWR cancellation of the following EFPs: Trolled longline for chilipeper in CA and the CA recreational chilipepper.

<b>EFP</b>	<b>bocaccio</b>	<b>canary</b>	<b>cowcod</b>	<b>darkblotched</b>	<b>POP</b>	<b>widow</b>	<b>yelloweye</b>
Trolled longline for chilipeper in CA	3.300	0.027	0.015	0.400	*	3.000	0.005
Morro Bay/Port San Luis regional fishing assoc.	5.000	0.023	0.200	1.000	0.136	2.000	0.068
OR recreational yellowtail	*	1.000	*	*	*	3.000	0.200
CA recreational chilipepper	2.700	0.200	0.023	0.100	*	3.000	0.023
ODFW yelloweye	*	*	*	*	*	*	0.060
<b>Total all EFP's</b>	<b>11.000</b>	<b>1.250</b>	<b>0.237</b>	<b>1.500</b>	<b>0.136</b>	<b>11.000</b>	<b>0.356</b>
<b>Adjusted Total</b>	<b>5.000</b>	<b>1.023</b>	<b>0.199</b>	<b>1.000</b>	<b>0.136</b>	<b>5.000</b>	<b>0.328</b>

Note: “\*” = no proposed EFP cap.

Of these permits, the Morro Bay and Port San Luis regional fishing association EFP has been issued and is currently underway. To date, there have been no yelloweye rockfish impacts reported since the start of this EFP project in 2008. If the Council chooses to recommend that no other EFPs are issued this year, the total this EFP yelloweye cap in the scorecard would be 0.1 mt.

The GMT notes that the ODFW yelloweye EFP was designed to allow retention of incidentally caught yelloweye rockfish in the recreational charter boat fishery for biological sampling purposes. Currently incidentally caught yelloweye rockfish in the Oregon recreational fishery have a 66% mortality rate applied, which is already included in the Oregon Recreational line in the GMT scorecard. The GMT notes that denying this particular EFP may mitigate some of the fishery restrictions necessary to keep

projected impacts to yelloweye rockfish below 14 mt, however this is another loss of opportunity to collect valuable biological information that could be used to inform stock assessments.

Additionally, the GMT notes that the Oregon recreational yellowtail EFP is designed to create an offshore recreational fishery that avoids yelloweye rockfish, while allowing opportunity to target underutilized yellowtail rockfish. It is anticipated that offshore fishing opportunities such as this may take some pressure off of the nearshore fishery, and species such as the minor nearshore rockfish, cabezon, greenlings and juvenile yelloweye and canary rockfish. In 2009, over 1,600 yellowtail rockfish were caught with zero catch of yelloweye rockfish. Therefore it may be possible to prosecute this EFP with a much lower yelloweye cap.

The GMT notes that if the three non-whiting EFPs continue, their total bycatch limit would be 0.328 mt of yelloweye rockfish. The GMT offers the following options for Council consideration relative to the three remaining EFPs:

1. Take no action – NMFS will issue EFPs for the three projects with the originally adopted bycatch caps for overfished species, including yelloweye rockfish, and the projected impacts from non-whiting EFPs in the scorecard will be 0.3 mt.
2. Reduce bycatch caps for some or all – NMFS will issue EFPs for the three projects with amended bycatch caps for yelloweye rockfish. The GMT can provide additional considerations for what bycatch caps may be appropriate under Agenda Item B.5 – Consideration of Inseason Adjustments. The projected impacts from EFPs to yelloweye rockfish will be updated in the scorecard at that time.
3. Disapprove some or all – Based on the Council's consideration and recommendations, NMFS will not issue EFPs or will discontinue current EFPs for some or all of the three projects. The projected impacts from EFPs to yelloweye rockfish will be updated as appropriate.

The Council could consider recommending to NMFS that the yelloweye bycatch caps are reduced or that some or all of the EFPs should be cancelled in order to stay within the 14 mt yelloweye OY.

### **2010 Management Measures for Yelloweye Rockfish**

The GMT offers the following considerations for potential changes to fishery management measures that could reduce the projected impacts to yelloweye rockfish at or below 14 mt. These fishery management measures would restrict fisheries that catch yelloweye rockfish incidentally, beginning on July 1, 2010.

#### **COMMERCIAL**

##### ***Limited Entry Non-Tribal Trawl Fishery***

The limited entry non-treaty whiting fisheries do not have impacts to yelloweye rockfish (Attachment 1). Based on the latest WCGOP bycatch rates, the limited entry non-whiting trawl fisheries have estimated impacts of 0.3 mt. The only available management measure to reduce yelloweye rockfish catch in the non-whiting trawl fishery is to implement a coastwide shoreward closure of the rockfish conservation area.

*Limited Entry Fixed Gear and Open Access Sablefish Daily Trip Limit Fishery (Non-nearshore Fixed Gear) North of 36° N. Latitude*

We attempt to manage yelloweye rockfish bycatch in the non-nearshore fixed gear fisheries using the non-trawl RCA boundaries. For 2009-2010, the Council considered bycatch encounter rates for four management areas north of 40°10' N. latitude with three seaward RCA boundary options for each: 100 fm, 125 fm, and 150 fm. In consideration of those possible RCA configurations and the associated bycatch estimates and fishery impacts, the Council chose the configuration depicted in Table 3. Under these status quo RCA configurations, held constant for the entire year, we estimate that 0.9 mt of yelloweye rockfish will be taken through the end of the year.

In light of the court order on yelloweye, the GMT anticipates that the Council may wish to revisit the seaward RCA boundaries and potentially increase their extent as one means of lowering expected yelloweye bycatch. Although we make our best effort here to estimate the effect of various RCA changes, we note that this non-nearshore fixed gear bycatch projection model has not been designed to model inseason changes.

Table 3. Current configuration of the seaward non-trawl RCA boundaries north of 36 N. lat. Blue fill indicates location of the RCA boundary.

	36° - 40° 10'	40°10' - 43°	43° - 45.064°	45.064° - 46.888°	46.888°
150 fm					
125 fm					
100 fm					

The model projects yelloweye bycatch with a simple application of yelloweye encounter rates (lbs of yelloweye) to the full fixed gear allocations for the northern sablefish OY (lbs of sablefish landed). We project the amount of effort that will occur in each area based on the 2002-2008 average from observed landings and then apply the applicable area and depth yelloweye encounter rates.

The model has no temporal feature (i.e., when the catch occurs does not change estimate of bycatch impacts). The best we can do for this situation is estimate the proportion of the sablefish catch that will have occurred by the time RCA adjustments could be in place (July 1) and adjust the annual estimates by our best estimate of the percentage of catch that has not yet occurred. To produce estimates of the impact that RCA changes may have between July 1 and the remainder of the fishing year, we must assume that yelloweye encounter rates and the proportion of catch between areas are constant.

Based on a review of landings of non-trawl caught sablefish by month for the years 2004-09, we assume that 50 percent of sablefish catch will have occurred by July 1, which is a slightly conservative assumption given the data (Table 4). Because the model applies a yelloweye bycatch rate to the landed sablefish, we also assume that 50% of the yelloweye mortality will also have occurred by July 1, or 0.4 mt.

Table 4. Percentage of the annual non-trawl sablefish total landings made through June in the years 2004-2009 for the area north of 36° N. latitude (i.e. the modeled area).

2004	2005	2006	2007	2008	2009
44.4%	32.4%	38.2%	41.0%	41.9%	46.9%

Table depicts three different RCA configuration scenarios for implementation on July 1, 2010 and the estimated savings of yelloweye bycatch for each, assuming that 50% of the yelloweye rockfish bycatch has already occurred through June. The estimated savings is based on the reduction in sablefish landings and thus yelloweye rockfish mortality, from keeping the status quo RCA boundaries, depicted in Table 3, for all of 2010.

Table 5. Three possible RCA boundary configurations and the estimated change in yelloweye projected impacts from the current boundaries.

	40°10' - 43°	43° - 45.064°	45.064° - 46.888°	N. of 46.888°	Est. Change
150 fm					(0.1)
125 fm					
100 fm					
	40°10' - 43°	43° - 45.064°	45.064° - 46.888°	N. of 46.888°	Est. Change
150 fm					(0.2)
125 fm					
100 fm					
	40°10' - 43°	43° - 45.064°	45.064° - 46.888°	N. of 46.888°	Est. Change
150 fm					(0.3)
125 fm					
100 fm					

The more restrictive RCA boundaries do not come without costs to fishing communities. We will discuss those impacts at the June Council meeting.

#### *Directed Nearshore Fishery*

Under status quo management, a 20 fm depth restriction is currently in effect between 43° N latitude and 40°10' N latitude to reduce yelloweye impacts. The GMT examined a variety of management measures (Table 6) that the Council could consider to further reduce yelloweye rockfish, including updating projected landings, additional depth restrictions, total fishery closures, and reductions in landed catch. The GMT notes that modifying the depth restriction south of 40°10' N lat will provide little (if any) additional yelloweye savings since this is an area of low yelloweye bycatch. Reductions to landed catch do not directly relate to the same reduction in trip limits (i.e., 50% reduction to landed catch ≠ 50% reduction to trip limit), therefore construction of new trip limit models (or updating current ones) would be required and could likely not be accomplished for a June Council action.

Table 6. Options to reduce impacts to yelloweye rockfish for 2010 in the nearshore commercial fisheries (LEFG and OA).

<b>Option</b>		<b>Management Action</b>	<b>YE (mt)</b>
<b>1. Status quo</b>		N of 40°10' N lat – 20 fm depth restriction between 43°N lat and 40°10' N lat	<b>1.3</b>
		S of 40°10' N lat – status quo depth restriction	
<b>2. Updated model landings</b>		N of 40°10' N lat – 20 fm depth restriction between 43°N lat and 40°10' N lat	<b>1.1</b>
		S of 40°10' N lat – status quo depth restriction	
<b>3. 20 fm depth statewide</b>		N of 40°10' N lat – 20 fm depth restriction between 43°N lat and 40°10' N lat	<b>1.1</b>
		S of 40°10' N lat – 20 fm depth restriction	
<b>4. Total closures, effective July 1, 2010</b>	<b>A</b>	N of 40°10' N lat – total fishery closures effective July 1, 2010	<b>0.5</b>
		S of 40°10' N lat – total fishery closures effective July 1, 2010	
	<b>B</b>	N of 40°10' N lat – total fishery closures effective July 1, 2010	<b>0.6</b>
		S of 40°10' N lat – status quo depth and trip limits	
<b>5. Total closures, effective August 1, 2010</b>	<b>A</b>	N of 40°10' N lat– total fishery closures effective August 1, 2010	<b>0.7</b>
		S of 40°10' N lat– total fishery closures effective August 1, 2010	
	<b>B</b>	N of 40°10' N lat– total fishery closures effective August 1, 2010	<b>0.7</b>
		S of 40°10' N lat– status quo depth and trip limits	
<b>6. Total closures, effective Sept 1, 2010</b>	<b>A</b>	N of 40°10' N lat– total fishery closures effective September 1, 2010	<b>0.8</b>
		S of 40°10' N lat– total fishery closures effective September 1, 2010	
	<b>B</b>	N of 40°10' N lat– total fishery closures effective September 1, 2010	<b>0.9</b>
		S of 40°10' N lat– status quo depth and trip limits	
<b>7. 25% reduction landed catch</b>		N of 40°10' N lat – 25% reduction in ALL landed catch	<b>1.0</b>
		S of 40°10' N lat – status quo depth and trip limits	
<b>8. 50% reduction landed catch</b>		N of 40°10' N lat – 50% reduction in ALL landed catch	<b>0.9</b>
		S of 40°10' N lat – status quo depth and trip limits	
<b>9. 75% reduction landed catch</b>		N of 40°10' N lat – 75% reduction in ALL landed catch	<b>0.7</b>
		S of 40°10' N lat – status quo depth and trip limits	

## RECREATIONAL

Table 7 contains the recreational harvest guidelines (HGs) for yelloweye rockfish specified in regulation under a 17 mt OY. Because the 2010 OY is reduced by 17.65%, the GMT applied that percentage



reduction to the original HGs to provide an informational alternative for recreational catch sharing under a 14 mt yelloweye rockfish OY.

Table 7. Proportional reduction of harvest guidelines applied to each state for a decreased yelloweye OY from 17 mt to 14 mt.

	HG under a 17 mt OY		<i>Proportional decrease to a 14 mt OY</i>	
Washington	2.7	5.1	2.2	4.2
Oregon	2.4		2.0	
California	2.8		2.3	

#### *Washington*

During the 2009-2010 harvest specifications and management measures process, WDFW estimated that recreational fishery projected impacts for yelloweye rockfish would be 2.5 mt for 2010. However, based on the final estimated impacts from 2009 the projected impacts for 2010 were revised to 1.9 mt. The reduction in yelloweye impacts is believed to be primarily a result of the implementation of coastwide discard mortality rates for yelloweye rockfish that are less conservative than discard rates used in Washington's recreational fishery harvest impact model for 2009-2010. The revised projected impacts for yelloweye rockfish would keep the Washington recreational fishery under a revised yelloweye rockfish HG, assuming a proportional reduction under a 14 mt OY, therefore no additional management measures are proposed at this time.

#### *Oregon*

Depth management is the main tool used for controlling yelloweye rockfish catch in the Oregon recreational fishery. There is a component to the Oregon recreational model for yelloweye impacts incurred during the recreational Pacific halibut fishery. The 2010 Pacific halibut quota for Area 2A is approximately 18 % less than it was in 2009, 2009 was 17 % less than the 2008 level used in the model. Based on this we anticipate reduced yelloweye interactions during the Pacific halibut fishery; however that level is not currently quantifiable, therefore projections in Table 8 are based on the 2008 quota level used in the original model. The majority of the Central Oregon all-depth halibut fishery will occur in May and June, after which time ODFW should have a better estimate on yelloweye savings due to the reduction in the Pacific halibut quota.

Table 8 shows projected yelloweye impacts for the Oregon recreational fishery under various depth restrictions scenarios, along with consequences of those depth restrictions. The current projection, if no actions are taken, is 2.2 mt, which is less than the 2.4 mt allocated to Oregon recreational fisheries under a 17 mt OY. That does not include any savings from the reduced halibut quota. Keeping the 40 fathom depth restriction throughout the remainder of the year, instead of removing the restriction for October-December, restricts the fall and winter access to more offshore species, such as lingcod. Any depth restriction scenario that limits the recreational fishery to inside of 20 fathoms will essentially shut down fishing (private and charter) out of several Oregon ports, including Garibaldi, Gold Beach and Port Orford. Allowing fishing to occur out to 30 fathoms opens up some grounds out of those ports; however, it will concentrate effort into smaller areas than already occur under the 40 fathom restrictions out of all Oregon ports.

Table 8. Seasonal depth restrictions, from status quo, anticipated yelloweye impacts and consequences to participants in the Oregon recreational bottomfish fishery.

Action	Total YE (mt)	Consequences
No Action	2.2	
inside 40 fm Oct-Dec	2.1	no access to offshore fisheries in the fall/winter (i.e. lingcod)
inside 30 fm July	2.2	allow some fishing grounds to remain open
inside 30 fm Aug	2.1	allow some fishing grounds to remain open
inside 20 fm July	2.1	close almost all fishing grounds out of many ports (Garibaldi, Gold Beach, Port Orford)
inside 20 fm Aug	2.0	close almost all fishing grounds out of many ports (Garibaldi, Gold Beach, Port Orford)
inside 30 fm Jul-Aug	2.0	allow some fishing grounds to remain open
inside 30 fm Jul-Sep	2.0	allow some fishing grounds to remain open
inside 30 fm Jul-Sep	2.0	allow some fishing grounds to remain open
inside 20 fm Jul-Aug	1.8	close almost all fishing grounds out of many ports (Garibaldi, Gold Beach, Port Orford)
inside 20 fm Jul-Sep	1.7	close almost all fishing grounds out of many ports (Garibaldi, Gold Beach, Port Orford)

### *California*

Management actions needed to reduce yelloweye impacts for California recreational fishery were not available for GMT review prior to the Briefing Book deadline. It is expected that they may be provided under a state report at the June Council meeting.

### **Summary**

The GMT has provided a summary table of actions and impacts to achieve a proportional reduction to all managed fisheries in order to stay under a 14 mt OY for yelloweye (Table 9). This table is for reference as the Council decides what inseason actions are best able to meet the OY while taking into account the needs of the fishing community. The same values are shown in Attachment 2 with comparisons against various pre-inseason amounts.

Table 9. Proportional reduction to all managed fisheries from reducing the OY from 17 mt to 14 mt.

<b>Set-aside/ Sector/Fishery</b>	<b>Description of Option</b>	<b>Estimated Impact to YE (mt)</b>
RESEARCH	Scorecard Update	1.3
TRIBAL FIXED GEAR	Status Quo	2.3
INCIDENTAL OPEN ACCESS (OA)	Status Quo	0.3
Non-Whiting EFPs	Status Quo caps for existing or potential permits	0.3
Non-whiting trawl	Proportional decrease to impacts	0.2
Non-nearshore fixed gear (sablefish) North of 36° N. lat.	Proportional decrease to impacts	0.7
Nearshore fixed gear	Proportional decrease to impacts	1.1
Recreational - Washington	Proportional decrease to the HG – no change to management measures	2.2
Recreational - Oregon	Proportional decrease to the HG – adjust depth restrictions as needed	2.0
Recreational - California	Proportional decrease to the HG – unknown	2.3
TOTAL		12.7 mt (90.7 % of 14 mt OY)

Note: ALL CAPS indicates a set-aside or sector where no inseason adjustments can be taken by the Council to reduce yelloweye rockfish impacts.

**Attachment 1.** Projected impacts (mt) of overfished groundfish species for 2010 updated based on the latest WCGOP bycatch data in the non-whiting trawl fishery and updated EFP impacts. Adjustments to the EFP impacts represent the cancellation of the following EFPs: Trolled longline for chilipeper in CA and the CA recreational chilipeper.

Fishery	Bocaccio b/	Canary	Cowcod	Dkbl	POP	Widow	Yelloweye
Limited Entry Trawl - Non-whiting	8.0	12.7	0.3	191.4	93.8	15.5	0.3
Limited Entry Trawl - Whiting							
At-sea whiting motherships a/		3.3		6.0	0.5	67.0	0.0
At-sea whiting cat-proc a/		4.8		8.5	0.5	95.0	0.0
Shoreside whiting a/		5.9		10.5	4.7	117.0	0.0
Tribal whiting		4.3		0.0	7.2	5.0	0.0
Tribal							
Midwater Trawl		3.6		0.0	0.0	40.0	0.0
Bottom Trawl		0.8		0.0	3.7	0.0	0.0
Troll		0.5		0.0	0.0		0.0
Fixed gear		0.3		0.0	0.0	0.0	2.3
Fixed Gear Sablefish	0.0	2.5	0.0	4.5	0.4	0.0	0.9
Fixed Gear Nearshore	0.3	3.6	0.0	0.0	0.0	0.3	1.3
Fixed Gear Other	5.0	0.0	0.0	9.0	0.0	0.7	0.0
Open Access: Incidental Groundfish	0.8	1.7	0.0	15.0	0.0	3.3	0.3
Recreational Groundfish e/							
WA		20.9					5.1
OR						1.0	
CA	67.3	22.9	0.3			6.2	2.8
EFPs	11.0	1.3	0.2	1.5	0.1	11.0	0.3
Research: Includes NMFS trawl shelf-slope surveys, the IPHC halibut survey, and expected impacts from SRPs and LOAs.							
	2.0	4.5	0.2	2.0	2.0	5.7	1.3
TOTAL	94.4	93.6	1.0	248.4	112.9	367.7	14.6
2010 OY f/	288	105	4.0	330	200	509	14
Difference	193.6	11.4	3.0	81.6	87.1	141.3	-0.6
Percent of OY	32.8%	89.1%	25.5%	75.3%	56.4%	72.2%	104.3%
Key		= either not applicable; trace amount (<0.01 mt); or not reported in available data sources.					
a/ Non-tribal whiting values for canary, darkblotched, and widow reflect bycatch limits for the non-tribal whiting sectors. All other species' impacts are projected from the GMT's whiting impact projection model. The Council may elect to change these bycatch limits when setting final whiting management measures in March 2010 or under any inseason action at any of their future meetings.							
b/ South of 40°10' N. lat.							
e/ Values in scorecard represent projected impacts for all species except canary and yelloweye rockfish, which are the prescribed harvest guidelines.							
f/ 2009 and 2010 OYs are the same except for darkblotched (330 mt in 2010), POP (200 mt in 2010), widow (509 mt in 2010), and yelloweye (14 mt in 2010).							

**Attachment 2.** Yelloweye rockfish impacts timeline and impacts relative to a proportional reduction.

<b>Projected mortality impacts (mt) of Yelloweye rockfish for 2010</b>	<b>April Post-Inseason</b>	<b>April Post-Inseason with Court Order Change</b>	<b>June Pre-Inseason</b>	<b>June Inseason Proportional Reduction</b>
<b>Limited Entry Trawl - Non-whiting</b>	0.6	0.6	<b>0.3</b>	<b>0.3</b>
<b>Limited Entry Trawl - Whiting</b>				
At-sea whiting motherships a/	0.0	0.0	0.0	0.0
At-sea whiting cat-proc a/	0.0	0.0	0.0	0.0
Shoreside whiting a/	0.0	0.0	0.0	0.0
Tribal whiting	0.0	0.0	0.0	0.0
<b>Tribal</b>				
Midwater Trawl	0.0	0.0	0.0	0.0
Bottom Trawl	0.0	0.0	0.0	0.0
Troll	0.0	0.0	0.0	0.0
Fixed gear	2.3	2.3	2.3	2.3
<b>Fixed Gear Sablefish</b>	0.9	0.9	0.9	<b>0.6</b>
<b>Fixed Gear Nearshore</b>	1.3	1.3	1.3	<b>1.1</b>
<b>Fixed Gear Other</b>	0.0	0.0	0.0	0.0
<b>Open Access: Incidental Groundfish</b>	0.3	0.3	0.3	0.3
<b>Recreational Groundfish e/</b>				
WA	5.1	5.1	5.1	<b>4.2</b>
OR				
CA	2.8	2.8	2.8	<b>2.3</b>
<b>EFPs</b>	0.4	0.4	<b>0.3</b>	<b>0.3</b>
<b>Research: Includes NMFS trawl shelf-slope surveys, the IPHC halibut survey, and expected impacts from SRPs and LOAs.</b>				
	3.3	3.3	<b>1.3</b>	<b>1.3</b>
<b>TOTAL</b>	17.0	17.0	14.6	12.7
<b>2010 OY f/</b>	17	<b>14</b>	<b>14</b>	<b>14</b>
<b>Difference</b>	0.0	-3.0	-0.6	1.3
<b>Percent of OY</b>	100.0%	121.4%	104.3%	90.7%



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
**NATIONAL MARINE FISHERIES SERVICE**  
Sustainable Fisheries Division F/NWR2  
7600 Sand Point Way N.E., Bldg. 1  
Seattle, WA 98115-0070

MAY 27 2010

Mr. David Ortmann, Chair  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, OR 97220

Dear Mr. Ortmann:

On April 23, 2010, in response to the latest in a series of complaints filed in Natural Resources Defense Council v. Locke, Civil Action No. C 01-0421 JL, challenging the rebuilding provisions in the groundfish fishery management plan (FMP), the U.S. District Court for the Northern District of California vacated the 2010 harvest specifications for darkblotched rockfish, cowcod, and yelloweye rockfish. The Court stated that "for the remainder of 2010, the most recent annual harvest levels (also known as optimum yields, or 'OYs') that National Marine Fisheries Service (NMFS) specified for darkblotched rockfish, cowcod, and yelloweye rockfish in its 2007-2008 Biennial Specifications and Managements for the Pacific Coast Groundfish Fishery are in effect. For yelloweye rockfish, the OY in 2010 is 14 metric tons."

To implement the Court's Order, NMFS is taking the following actions with respect to the 2010 groundfish regulations and management. NMFS will issue a final rule specifying that the 2010 OYs for three species are: darkblotched rockfish, 330 metric tons (mt); cowcod, 4 mt; and yelloweye rockfish, 14 mt. At the June, 2010 Council meeting under the inseason agenda item, the agency requests that the Council, through its inseason management process, recommend to the agency the appropriate management measures necessary to ensure that fishery impacts to these overfished species remain within these OY levels, consistent with the following guidance.

These OY amounts are based on a strict reading of the Court's Opinion and the subsequent Order on Remedy, Dkt. No. 342 (April 29, 2010). For darkblotched rockfish, NMFS notes that modifying the current 2010 OY of 291 mt by increasing it to the 2008 OY of 330 mt, as required by the Order, does not appear to be consistent with the Court's underlying reasoning in its Opinion. Thus, although NMFS is modifying the 2010 OY to be consistent with the Court's Order (an OY of 330 mt), NMFS is recommending that the Council's management measures be designed to keep the fishery within the 290 mt, which is equivalent to the 2007 OY level for darkblotched rockfish. According to the inseason scorecard prepared by the Groundfish Management Team during the April, 2010 Council meeting, fisheries are currently projected to harvest approximately 285 mt of darkblotched rockfish through the end of 2010, so restrictions to keep the fishery within the 290 mt OY may require little or no additional action.

The 2010 OY for cowcod remains 4 mt, which is the same OY specified in 2008. According to the inseason scorecard prepared by the Groundfish Management Team during the April, 2010

Council meeting, fisheries are currently projected to harvest approximately 2.2 mt of cowcod through the end of 2010, so restrictions to keep the fishery within the 4 mt OY may not require additional action.

The 2010 OY for yelloweye rockfish is reduced from 17 mt to 14 mt. Since this court order, Council staff worked diligently with NMFS and the states to identify areas where incidental bycatch of yelloweye rockfish can be minimized. The States of Washington and Oregon have indicated they are suspending the enhanced rockfish surveys planned for 2010 due to the Court Order affecting yelloweye rockfish. The estimated yelloweye harvests associated with these research programs was 2 mt, so there remains, as a bare minimum for the Council to address through proposed management measures, 1 mt of yelloweye rockfish.

Following the June Council meeting, NMFS will publish an inseason action, effective July 1, 2010, to implement the management measures and take any other actions necessary to keep the fisheries within the necessary OY levels.

If you have any questions on these matters, contact me at your convenience.

Sincerely,

A handwritten signature in black ink, appearing to read "Frank Lockhart", written in a cursive style.

Frank Lockhart

Assistant Regional Administrator

cc: Dr. Don McIsaac  
Eileen Cooney  
Mariam McCall  
M. Nickerson  
R. Schumacher

### **California Department of Fish and Game Recreational Inseason Update for 2010**

The California Department of Fish and Game (CDFG) reviewed the recreational bycatch estimates of yelloweye rockfish in 2008 and 2009 to evaluate expected bycatch in 2010. The management measures in effect in 2008 and 2009 are nearly identical to current management measures for 2010. In the three management areas most likely to encounter yelloweye rockfish (north of Pigeon Point), the 2010 season is open only three to four and a half months. The areas with the highest impacts are North of Point Arena where fishing is restricted to only 20 fms. Estimated statewide impacts in recent years ranged from 1.8 mt (2008) to 3.9 mt (2009).

While the existing management measures were originally crafted to keep impacts below a 2010 CA recreational harvest guideline of 2.8 mt, CDFG has considered other factors that are expected to result in even lower statewide recreational bycatch for 2010, due either to reduced mortality on encountered fish or reduced fishing effort.

- Yelloweye rockfish bycatch in Shelter Cove has been the highest of any California port in many months in recent years. CDFG expects fishing effort out of Shelter Cove to be reduced this year because their tractor launch operation is not in service, limiting the size of vessels that can fish from this port. Without the tractor launch, the magnitude of yelloweye rockfish catch accruing at this port in 2010 is expected to be greatly diminished.
- As of June 6, 2010 weekly tracking indicates that only 0.23 mt of yelloweye rockfish catch has been taken in the recreational fishery so far in 2010. This estimated bycatch is substantially lower than the estimate for this same time in both 2008 and 2009. Estimated impacts were twice as high at this time in 2008, a year that resulted in only 1.8 mt of bycatch, and three times as high at this time in 2009, a year that resulted in 3.9 mt of bycatch. CDFG will continue its weekly tracking of yelloweye rockfish catch during the season so that actions can be anticipated before monthly projections are available—as in the past two years.
- CDFG expects reduced mortality of yelloweye that are taken as bycatch compared with 2008 and 2009. In 2009, CDFG began extensive outreach and education efforts to help anglers identify yelloweye rockfish to prevent retention and improve release rates. This effort has continued in 2010. The current 20 fm depth restriction North of Point Arena equates to a mortality rate of less than 40 % when fish are released compared to the 100% mortality on retained fish. Therefore, fish released as a result of outreach efforts that otherwise would have been retained will result in lower impacts. In 2005, 18.5 % of yelloweye rockfish were retained while in 2008 and 2009 retention was only about 10% of the total impacts. So far in 2010 the retention rate is only 2.7%, suggesting the outreach efforts have succeeded in reducing overall mortality to yelloweye.



Outreach efforts included: mass mailing of copies of a yelloweye rockfish identification flyer informing anglers not to retain yelloweye, and a flyer on the use of descending devices to reduce mortality on released fish sent to license vendors, tackle shops and harbormasters to distribute to the public. In addition, CDFG personnel participated in season openers at key launch ramps by distributing information to anglers before fishing. These increased outreach efforts are continuing in 2010.

- Marine Protected Areas (MPAs) were implemented in 2010 in the North-Central Coast Area which protect nearshore rocky habitats and now prohibit recreational fishing for groundfish. The 21 MPAs include 86 square miles (11%) of state waters in the region between Alder Creek (near Point Arena) in Mendocino County and Pigeon Point in San Mateo County that are new “no take” areas. The closure of these areas is expected to result in reduced impacts to yelloweye in 2010 based on the distribution of prior yelloweye catch in the specific areas now closed, and expected reductions in overall groundfish fishing effort in the region. In addition, yelloweye impacts may be further reduced if additional effort declines occur due to infrastructure losses in communities and fishing ports in the region that could result from MPA implementation.

## GROUNDFISH ADVISORY SUBPANEL REPORT ON CONSIDERATION OF INSEASON ADJUSTMENTS

The Groundfish Advisory Subpanel (GAP) received an inseason report from Mr. John DeVore and Ms. Kelly Ames and has the following recommendations.

**Yelloweye scorecard reductions to meet 14 mt:** At the outset, the GAP wishes to note that even before this additional reduction, yelloweye limits and the constraining effect that has on target fisheries was causing hardship up and down the coast across all fisheries. A further reduction from 17 mt to 14 mt of yelloweye is nearly unbearable for many in the fleet and fishing communities. An example of this can be seen in Shelter Cove, a small community that relies in large part on recreational fishing to sustain itself where, due to reduced opportunity and future uncertainty, the owner has decided to no longer maintain his infrastructure, including launch facilities which are the only launch facilities in Shelter Cove. Furthermore, it is the ultimate in tragic irony that, in order to meet the 14 mt limit without putting more communities out of business, research catch, our investment in the future, will be curtailed. But, reducing research catch was the only available remedy without shutting down commercial and recreational fisheries on a wide swath of the coast.

The GAP recognizes that in order to comply with the court order we do need to reduce our yelloweye catch to 14 mt, so we offer the following recommendations for making targeted cuts with the minimum possible economic hardship. Reduce nearshore groundfish from 1.3 mt to 1.1 mt; reduce Washington and Oregon combined recreational from 5.1 mt to 4.9 mt; reduce California recreational from 2.8 mt to 2.7 mt; reduce exempted fishing permits (EFPs) from .3 mt to .2 mt. While the GAP has not yet heard from the Groundfish Management Team (GMT) regarding the specific effects of these recommended yelloweye reductions on the fisheries mentioned, the GAP believes this represents a relatively fair reduction across the board. The GAP offers the following rationale for the specific cuts mentioned.

- Nearshore groundfish is tracking such that it is unlikely to catch as much fish nor require as much bycatch as it has needed in the recent past. Inclement weather has prevented the fleet from fishing as much as in a normal year and even assuming good weather for the remainder of the year, the GAP does not believe nearshore will be unduly constrained by this reduction.
- The scorecard projection for Washington and Oregon recreational fisheries is combined so the .2 mt reduction recommended by the GAP essentially represents a .1 mt reduction for each state. The GAP feels that recreational fisheries can stay under this projection and in the event that catch appears to be running high, the Council has the ability to adopt depth restrictions to slow yelloweye catch. While the GAP believes this targeted cut can be met, it will cause effort shift onto other species which may themselves become constraining.
- As stated previously, the mechanical launch at Shelter Cove, one of the most significant yelloweye hotspots on the coast, will not be operational this year, thereby greatly

- reducing both effort and yelloweye catch in the California recreational fishery. It appears to the GAP that this reduction will not add additional constraint because effort has been reduced due to the economic collapse of some recreational ports caused by previous constraints.
- The author of the Oregon yellowtail EFP believes a .1 mt reduction can be accommodated based on the fact that there was no yelloweye catch last year. While this EFP was willing to make this sacrifice, it becomes less certain that it will be able to prosecute it throughout the year which again reduces important research into yelloweye avoidance.

Reductions in slope survey catch and non-whiting trawl catch already accounted for in GMT Report B.5.b reduce the projected yelloweye mortality from 17 mt to 14.6 mt. In the absence of additional analysis by the GMT, the GAP believes this is the best way to attain the additional .6 mt yelloweye reduction needed to meet the 14 mt mortality allowed by the court ruling.

PFMC  
6/15/10

## GROUNDFISH MANAGEMENT TEAM REPORT ON CONSIDERATION OF INSEASON ADJUSTMENTS

The Groundfish Management Team (GMT) considered the U.S. District Court for the Northern District of California ruling in *Natural Resources Defense Council v. Locke* as well as the most recent information on the status of ongoing fisheries and requests from industry and provides the following recommendations for 2010 inseason adjustments.

The GMT also received guidance from National Marine Fisheries Service (NMFS) Northwest Region (NWR) regarding timing of implementation of inseason recommendations from this meeting. Given the high priority of implementing measures that affect projected impacts to yelloweye rockfish as well as any additional conservation concerns, NMFS anticipates implementing routine inseason adjustments to fishery management measures by July 1, 2010. Adjustments to fishery management measures that are not directly related to preventing exceeding 2010 optimum yield (OYs) would be implemented for September 1, 2010.

Based on the implications of the recent court decision on inseason considerations, the GMT provided briefing book materials (Agenda Item G.5.b, GMT Report 1) so that the Council, advisory bodies, management entities, and the public would have information on some of the implications in advance of the meeting. The GMT believes that Report 1 contains sufficient information and model runs necessary for the Council to make their decision relative to this issue. Further, this report contains an additional model run that may inform the Council decision.

### ADDITIONAL MODEL RUN

#### Commercial Fisheries

##### *Open Access non-nearshore fishery*

The Groundfish Advisory Subpanel (GAP) requested two additional scenarios for the non-nearshore fixed gear fisheries. Results of the analysis are presented in Table 1.

Table 1. Estimated change in projected yelloweye bycatch impacts for two potential seaward non-trawl RCA configurations north of 40 10 N. latitude.

	40°10' - 43°	45.064° - 46.888°	N. of 46.888°	Est. Change
150 fm				(0.1)
125 fm				
100 fm				

	40°10' - 43°	45.064° - 46.888°	N. of 46.888°	Est. Change
150 fm				(0.2)
125 fm				
100 fm				

## GMT Recommendations

1. Adopt changes to management measures that will reduce projected impacts to yelloweye rockfish below the new 2010 OY of 14 mt.

## OTHER INSEASON ADJUSTMENTS

### Commercial Fisheries

#### *Limited Entry non-whiting trawl fishery*

Limited entry (LE) non-whiting trawl total fishery mortality was projected using the Trawl Bycatch Model (Hastie, 2003) for 2010 for major target and rebuilding species, using landings data from Periods 1 and 2 reported to PacFIN as of May 19th, 2010. Weighted average bycatch estimates used were calculated for years 2006 through 2009, from observer and fish ticket data.

#### Petrale sole and Sablefish

Model projections estimate overages of 48 metric tons (101.6 percent of LE trawl sablefish allocation) for sablefish (Table 2a) and 131 metric tons (7.8 percent of trawl guideline) for petrale sole. The proposed trip limit reductions reduce projected impacts beneath the LE trawl portion of the ACL (Table 2b). In the proposed action, sablefish and petrale sole trip limits were reduced directly from May 1, 2010 trip limits, along with Dover sole and other flatfish in periods 4, 5, and 6, in order to meet model targets (Tables 3). The RCA was not changed from the May 1, 2010 lines. **The GMT recommends that the Council adopt the proposed trip limits outlined in Table 3 for implementation by July 1, 2010 (with the exception of Period 1 slope rockfish) to keep projected impacts to sablefish within the trawl allocation and to keep total projected impacts to petrale sole below the 2010 petrale sole OY.**

#### Chilipepper rockfish South of 40° 10' N. lat.

A request was made by the GAP to increase chilipepper rockfish trip limits south of 40° 10' N. lat. from 12,000 pounds per 2 months to 20,000 pounds per two months. The trawl model bycatch estimates are not considered accurate for such a high trip limit, since they were produced with a much lower impact on chilipepper and with different target species. The GMT considered that there is some potential for increased impacts on bocaccio rockfish (a rebuilding species), since they co-occur; however, it is likely that only a few vessels will target chilipepper, and only in the area south of 38° N. lat., and there is considerable residual in the scorecard compared to the bocaccio OY. **The GMT recommends increasing the chilipepper bimonthly trip limit from 12,000 to 17,000 pounds per two months, to be implemented by September 1, 2010.**

Table 2a.--No action inseason LE groundfish trawl projected total fishing mortality for June, 2010.

	Projected Total Catch (mt)			Model Target (mt)	Proj. - HG (mt)	Proj. % of HG
	North of 40°10'	South of 40°10'	Projected Total			
<b>Sablefish</b>	2,621	382	3,003	2,955	48	101.6%
<b>Shortspine</b>	1,180	168	1,348	1,567	-219	86.0%
<b>Longspine</b>	1,210	302	1,512	2,129	-617	71.0%
<b>Dover sole</b>	13,080	1,337	14,417	16,093	-1,676	89.6%
<b>Petrale</b>	989	240	1,229	1,140	89	107.8%
<b>Arrowtooth</b>	5,168	13	5,181	9,755	-4,574	53.1%
<b>English</b>	515	83	598	9,645	-9,047	6.2%
<b>Other flatfish</b>	964	231	1,195	4,685	-3,490	25.5%
<b>Bocaccio</b>	1.5	6.4	7.9	16.1	-8.2	49.0%
<b>Canary</b>	11.2	1.6	12.8	21.3	-8.5	59.9%
<b>Cowcod</b>	0.0	0.3	0.3	1.5	-1.2	21.6%
<b>Widow</b>	7.3	8.5	15.7	21.6	-5.9	72.9%
<b>Yelloweye</b>	0.3	0.0	0.3	0.6	-0.3	44.9%
<b>Darkblotched</b>	174.4	20.4	194.8	230	-35.2	84.7%
<b>POP</b>	96.7	0.2	96.9	100.8	-3.9	96.2%

Table 2b.-- LE groundfish trawl projected total fishing mortality for June, 2010 under proposed trip limit adjustments.

	Projected Total Catch (mt)			Model Target (mt)	Proj. - HG (mt)	Proj. % of HG
	North of 40°10'	South of 40°10'	Projected Total			
<b>Sablefish</b>	2,539	376	2,915	2,955	-40	98.6%
<b>Shortspine</b>	1,168	166	1,335	1,567	-232	85.2%
<b>Longspine</b>	1,210	302	1,512	2,129	-617	71.0%
<b>Dover sole</b>	12,567	1,261	13,829	16,093	-2,264	85.9%
<b>Petrale</b>	904	207	1,111	1,140	-28	97.5%
<b>Arrowtooth</b>	5,168	13	5,181	9,755	-4,574	53.1%
<b>English</b>	515	83	598	9,645	-9,047	6.2%
<b>Other flatfish</b>	965	231	1,196	4,685	-3,489	25.5%
<b>Bocaccio</b>	1.4	6.1	7.5	16.1	-8.6	46.6%
<b>Canary</b>	10.8	1.5	12.3	21.3	-9.0	57.9%
<b>Cowcod</b>	0.0	0.3	0.3	1.5	-1.2	20.4%
<b>Widow</b>	7.1	8.3	15.4	21.6	-6.2	71.3%
<b>Yelloweye</b>	0.3	0.0	0.3	0.6	-0.3	43.6%
<b>Darkblotched</b>	170.5	19.7	190.2	230	-39.8	82.7%
<b>POP</b>	94.3	0.2	94.5	100.8	-6.3	93.8%

Table 3.--Proposed LE groundfish trawl adjusted cumulative trip limits (lbs), beginning July 1, 2010.

				2-month cumulative-poundage limits							
2-month period		RCA lines (fm)		sable-fish	long-spine	short-spine	Dover sole	petrale sole	arrow-tooth	other flatfish	slope rockfish
		shallow	deep								
N. of 40°10' N lat.											
Large/small footrope limits											
1	75	150	20,000	24,000	18,000	110,000	9,500	150,000	110,000	2,000 <sup>a/</sup>	
2	75	200	20,000	24,000	18,000	110,000	9,500	150,000	110,000	6,000	
3	75	150/200	24,000	24,000	18,000	110,000	9,500	150,000	110,000	2,000	
4	100	150/200	21,000	24,000	18,000	100,000	6,300	150,000	100,000	2,000	
5	75	200	21,000	24,000	18,000	100,000	6,300	150,000	100,000	2,000	
6	75	200	21,000	24,000	18,000	100,000	6,300	150,000	100,000	2,000	
Selective gear limits											
1	75	150	9,000	5,000	5,000	65,000	9,500	90,000	90,000		
2	75	200	9,000	5,000	5,000	65,000	9,500	90,000	60,000		
3	75	150/200	9,000	5,000	5,000	65,000	9,500	90,000	60,000		
4	100	150/200	9,000	5,000	5,000	65,000	6,300	90,000	60,000		
5	75	200	9,000	5,000	5,000	65,000	6,300	90,000	60,000		
6	75	200	9,000	5,000	5,000	65,000	6,300	90,000	60,000		
38° - 40°10' N lat.											
1	100	150	22,000	24,000	18,000	110,000	9,500	10,000	110,000	15,000	
2	100	150	22,000	24,000	18,000	110,000	9,500	10,000	110,000	15,000	
3	100	150	22,000	24,000	18,000	110,000	9,500	10,000	110,000	15,000	
4	100	150	21,000	24,000	18,000	100,000	6,300	10,000	100,000	15,000	
5	100	150	21,000	24,000	18,000	100,000	6,300	10,000	100,000	15,000	
6	100	150	21,000	24,000	18,000	100,000	6,300	10,000	100,000	15,000	
S. of 38° N lat.											
1	100	150	22,000	24,000	18,000	110,000	9,500	10,000	110,000	55,000	
2	100	150	22,000	24,000	18,000	110,000	9,500	10,000	110,000	55,000	
3	100	150	22,000	24,000	18,000	110,000	9,500	10,000	110,000	55,000	
4	100	150	21,000	24,000	18,000	100,000	6,300	10,000	100,000	55,000	
5	100	150	21,000	24,000	18,000	100,000	6,300	10,000	100,000	55,000	
6	100	150	21,000	24,000	18,000	100,000	6,300	10,000	100,000	55,000	

Note: \*Chilipepper rockfish trip limit = 17,000 pounds/2 months.

a/: The trip limit for slope rockfish N. or 40 10' N. lat. was increased from 2,000 lb per two months to 6,000 lb per two months on February 26<sup>th</sup>, 2010. Since the limit increased so late in the period, it is more representative for modeling fishery impacts to bycatch species using the lower limit than the higher one. The GMT is not recommending a change in this slope rockfish North trip limit in Period 1 even though it is shown here.

#### *Limited Entry Fixed-Gear Sablefish Daily trip limit (DTL) fishery North of 36° N. Latitude*

Available information indicates that catches in the Limited Entry Fixed-Gear Daily Trip Limit (LEFG-DTL) sablefish fishery have been substantially less than the allocations during the past six years (Table 1). Even though catches and the percentage of the allocation caught have generally increased over that period, this fishery has typically under-harvested its allocation (Table 4). Measures to remedy this problem were initiated in November 2009, when the GMT first presented a new model to predict landings by the LEFG-DTL fishery (Agenda Item G.4.b, Supplemental GMT Report, November 2009).

Table 4. Limited Entry Fixed Gear Sablefish DTL allocation, catch, and proportion of allocation for 2006 – 2009 north of 36° N. lat.

Year	Allocation (mt)	Catch (mt)	Proportion of Allocation
2004	367	79	0.22
2005	367	146	0.4
2006	356	104	0.29
2007	276	116	0.42
2008	276	150	0.54
2009	351	205	0.58
2010	321	.	.

The LEFG-DTL model uses only bi-monthly trip limits and bimonthly-calendar period as explanatory variables; daily and weekly limits did not significantly affect model results. Landings data used in this model were for the period January 1, 2004 through April 30, 2010. Model results were improved by applying a bias-correction to back-transformed data.

In general, patterns were similar between actual landings and landings predicted by this new model throughout the six-year period (Figure 1). We must point out, however, that actual landings were consistently higher than predicted landings during periods 1– 4 of 2009.

This model tracks catches close enough that the GMT suggests that it should be used to enable this fishery to fully prosecute its allocation. However, the GMT also notes that inseason monitoring is important to prevent this fishery from exceeding its annual allocation, especially leading up to the final period of each year where catches are typically highest (Figure 1).

Assuming that trip limits remain at 7,000 mt per two months for the rest of the year, the LEFG-DTL model predicts a total harvest of 236 mt of sablefish through the end of the year, which represents 73 percent of the allocation. Although this is an improvement relative to any of the previous years, adjustments are needed to enable this fishery to better achieve its harvest guideline.

**The GMT recommends a bimonthly cumulative sablefish limit increase from 7,000 pounds per two months to 8,500 pounds per two months beginning July 1, 2010 for periods 4 and 5, and 8,000 pounds per two months for period 6.**



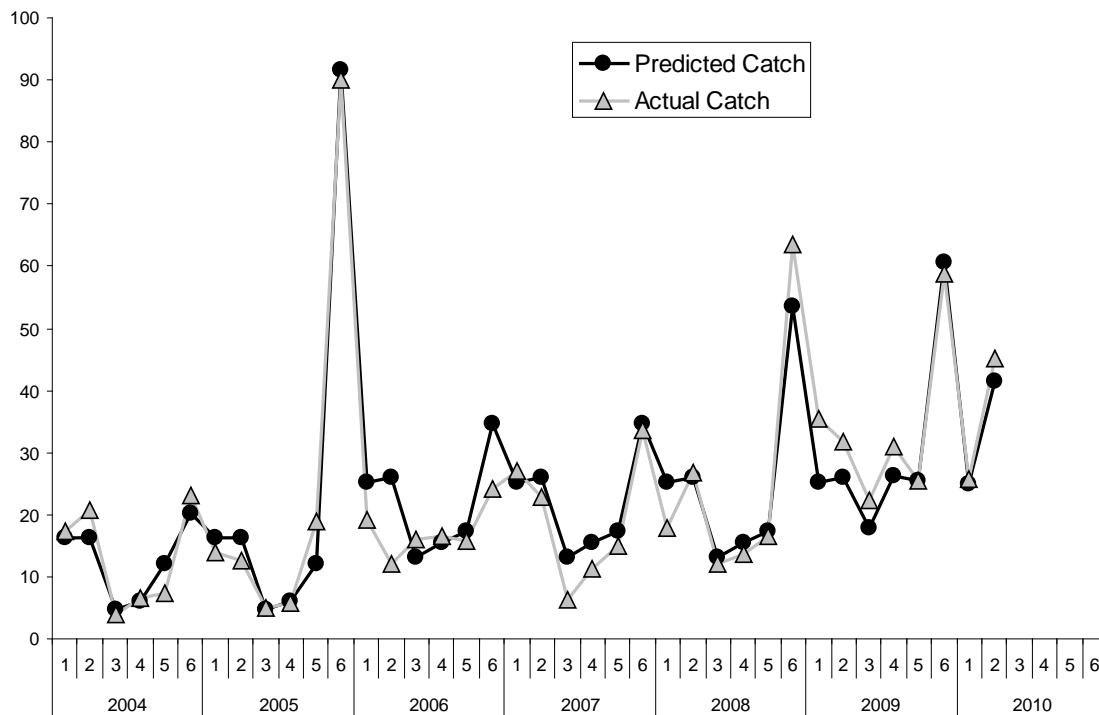


Figure 1. Actual versus predicted landings of sablefish for the Limited Entry Daily Trip Limit sablefish fishery, north of 36° N Lat.

*Open Access sablefish DTL fishery North of 36° N Latitude:*

The GMT received a request from the GAP to increase bimonthly trip limits for the Open Access DTL sablefish fishery north of 36° N. lat.

Catch in the first four months of the fishery have not been good predictors of annual landings in recent years, and weekly and bimonthly limits are already scheduled to increase on July 1, 2010. Also the fishery is on track to achieve their allocation. **The GMT does not recommend a further increase to the open access sablefish DTL trip limits north of 36° N. lat. at this time.**

*Incidental Catch of Lingcod in the Salmon Troll Fishery*

The GMT seeks clarification regarding the Councils intent for a regulation that limits the retention of lingcod for salmon troll fishermen. The current regulation, which was implemented 1 January 2009 states: “.....Salmon troll fishermen may retain and land up to 1 lingcod per 15 Chinook, plus 1 lingcod up to a trip limit of 10 lingcod, both within and outside of the RCA.....” Prior to 2009, salmon troll fishermen were prohibited from retaining lingcod if fishing within RCAs, but were allowed to retain lingcod under open access fixed-gear regulations, up to 400 lbs cumulative per month regardless of salmon catch if all fishing were conducted outside of the RCA.

This potential misinterpretation of Council intent was brought to our attention by industry through an Oregon Department of Fish and Wildlife (ODFW) Report (see Agenda Item B.3.b, Supplemental GMT Report 2, June 2010). The GMT subsequently examined the 2008

Preliminary Draft chapter 4 of the 2009-10 Groundfish Harvest Specifications and Management Measures Environmental Impact Statement (EIS) (Agenda Item F.4.a, Supplemental Attachment 2, June 2008), in which the analysis for this additional opportunity was completed. In this analysis, it was stated that options “were analyzed to change current regulations to allow retention of lingcod caught inside the RCA.” Furthermore, the Council meeting minutes that discussed this management measure (Minutes, June 6-13, 2008, 194th Council Meeting, Page 59 of 67) show that this “new” regulation may have been pursued to provide opportunities for salmon troll fishermen north of the Columbia River who had no choice but to troll within the RCA since it extended to the shore.

The GMT asks clarification whether the intent of this regulation was to expand opportunities inside of RCAs while still allowing troll fishermen that never enter RCA status quo regulations (i.e., the open access trip limits - 400 lb lingcod per month cumulative limit regardless of the amount of salmon retained).

**The GMT recommends (a) that Council provide clarification on this issue, and (b) consider allowing vessels that do not enter an RCA during a single trip be allowed to retain lingcod under current open access fixed gear fishery regulations with no additional restrictions except trip declarations and Vessel Monitoring System requirements.**

## **Recreational Fisheries**

### *California*

#### California Recreational Fishery Survey (CRFS)

Due to funding constraints, the CRFS program will not be sampling the beach and bank mode in 2010. Interactions with overfished species are extremely rare in this mode, as these species are predominantly found in deeper waters. Thus, overfished species impacts will not go unaccounted for. A proxy estimate of impacts to the species encountered in this mode will be provided.

## **GMT Recommendations:**

1. Increase the chilipepper bimonthly trip limit in the limited entry trawl fishery from 12,000 to 17,000 pounds per two months, to be implemented by September 1, 2010.
2. Adopt the proposed LE trawl trip limits outlined in Table 3 (with the exception of slope rockfish limit in Period 1 North) for implementation by July 1, 2010 to keep projected impacts to sablefish within the trawl allocation and to keep projected impacts to petrale sole below the 2010 petrale sole OY.
3. Increase the LE DTL bimonthly sablefish limit from 7,000 pounds per two months to 8,500 pounds per two months beginning July 1, 2010 for periods 4 and 5, and 8,000 pounds per two months for period.
4. For incidental retention of lingcod in the salmon troll fishery, clarify the original intent and consider allowing vessels that do not enter an RCA during a single trip be allowed to retain lingcod under current open access fixed gear fishery regulations.

PFMC

06/15/10

10:29 a.m.

----- Original Message -----

Subject:2010 in-season yelloweye reduction

Date:Sat, 22 May 2010 12:21:44 -0700 (PDT)

From:D Franks <[acousticasurfboards@yahoo.com](mailto:acousticasurfboards@yahoo.com)>

To:[pfmc.comments@noaa.gov](mailto:pfmc.comments@noaa.gov)

To whom it may concern,

Any reduction in quota to the already struggling commercial nearshore fishery could very well be it's demise. Please leave us with our current quota where we at least have a fighting chance.

Thank you,

Daniel Franks, Skipper of Oregon Nearshore Commercial F/V Kokomo

----- Original Message -----

Subject:nearshore quotas/Yellow Eye Rockfish

Date:Sat, 22 May 2010 17:37:41 -0700

From:[waterboy@nwtec.com](mailto:waterboy@nwtec.com)

To:[pfmc.comments@noaa.gov](mailto:pfmc.comments@noaa.gov)

Hello my name my name is Sean Roberts owner/operator of the f/v Aimless Wanderer. I am wanting to get my input in on the Yellow Eye rock fish reductions we are currently facing. the nearshore fishery is currently one of the cleanest fisheries we very low by catch mortality and it would be a very bad thing to have such a clean fishery cease to exist. the current quotas in this fishery are barely enough to keep us going as is and at least on my boat I do not think we can handle any further reductions of quotas.

Thank you for considering my input on this matter Sean

----- Original Message -----

Subject:yellow eye concerns

Date:Mon, 24 May 2010 09:37:56 -0500 (CDT)

From:[terryann11@verizon.net](mailto:terryann11@verizon.net)

To:[pfmc.comments@noaa.gov](mailto:pfmc.comments@noaa.gov)

To whom it may concern:

I am a commercial nearshore fisherman from port orford or.my fishery has almost no bi-catch of yellow eye. ANY REDUCTION of our fishing grounds or quotas would only cause economic hardship for our community. sincerely, steve hatfield

----- Original Message -----

Subject:2010 yelloweye reduction

Date:Fri, 21 May 2010 20:12:31 -0700

From:Gene Fowler <[geneandclaudia@gmail.com](mailto:geneandclaudia@gmail.com)>

To:[pfmc.comments@noaa.gov](mailto:pfmc.comments@noaa.gov)

To Members of the Pacific Fisheries Council;

This is in regards to the 2010 yelloweye reduction. Economically, the near shore commercial fisheries shouldn't have to take more reductions. We have already had our fishing grounds reduced. The quota's on several of our fish species have also been reduced. Further reductions for near shore commercial fisheries will have little impact on yelloweye. Fisheries in less than 20 fathoms shouldn't have to take any more reductions. The reduction that will make the most impact on yelloweye needs to come from fisheries operating in deeper water. That's where the yelloweye habitat is.

Sincerely,

Gene and Claudia Fowler

F/V Sea Hunt

F/V Alyssa

F/V Kaf-feine

From:  
Evan Locke <evanlocke96@yahoo.com>  
Date:  
Wed, 26 May 2010 18:27:16 -0700 (PDT)  
To:  
pfmc.comments@noaa.gov

Dear members of the council my name is Evan Locke. I,m a nearshore fisherman in Port Orford Oregon. I hava been fishing here for about three years, and during this time I have caught a very small number of Yelloweye Rockfish.. The reason I'm not catching the Yelloweye is because I'm jigging in fifteen fathoms or less nintynine percent of the time. If I fish near the twenty fathom line I do encounter an ocasional Yelloweye or Canary. If I do catch a Yelloweye I vent the fish send back to the bottom and leave the area. In the last five months I can only remember catching a couple of Yelloweye. I can't see how jigging has any impact at all on the Yelloweye so I don't see how cutting quotas or shutting down the fishery would have any benefit . I know there are a lot of Yelloweye in thirty to forty fathoms which is outside are fishery. I do think boats that longline in deeper water catch more of the species . If I catch one on my fishing pole I can simply move only catching that one fish. I must also say that a reduction or closer would have a devastating financial impact on my family. The nearshore fishery is the only fishery I partisipate in. I hope the counsil can find a way to save the Yelloweye and maintain the nearshore fishery because myself and other nearshore fisherman like me are simply not the problem .

Subject:  
Yelloweye Allocation  
From:  
Tom and Mary Marking <tmmarking@sbcglobal.net>  
Date:  
Wed, 26 May 2010 21:11:31 -0700 (PDT)  
To:  
pfmc.comments@noaa.gov

To: Mr. David Ortmann, Chair  
Pacific Marine Fishery Council  
7700 NE Ambassador Place, Suite 101  
Portland, Oregon 97220-1384

The Council took action at the April meeting to set the ACL for Yelloweye at 20 MT. This was an increase of three metric tons from the 2009 year, which was to allow for research in the three western coastal states. Unfortunately, the NRDC lawsuit has now forced the ACL to be set at 14 MT, a reduction of 6 MT from the Council action in April. This is of critical importance to the Northern California area, that has very restricted fishing seasons at present due to the YE issue. Currently, north of the 40 degree 10 minute line we are restricted to a 120 day groundfish season and Shelter Cove, the port area just below that latitide line, has only a 90 day season. The Cape Mendicino coastline has deep marine canyons and pinnacles that are excellent habitat for YE and the Punta Gorda area exceeded the YE bycatch last year by recreational fisherman. With the

lowered YE ACL, we suffer the risk of a shorter groundfish season or a closure for the entire year. That would be economically devastating to our region. We suffered an early closure in 2008 due to YE bycatch that conservatively cost the Eureka port over 7 million dollars per month and 52,000 lost fishing trips for the northern area. The YE issue has tremendous impact on our area and

this reduction will have major economic impact on our ports. Our area is suffering through the loss of the salmon season last year and further groundfish reductions will force more business out of our area. There are a few Management Control issues that could help alleviate the pressure we are under.

There are gear restriction methods that could help reduce the YE bycatch in this area and the institution of a new latitude line in the Viscaino area would isolate this particular coastline from the rest of California. A new latitude line would allow for reduction of YE catch in that area without affecting the rest of the State. This Management Regulation could have substantial impact on the northern area that is already under extreme economic pressure due to YE incidental catch.

Currently, we are in the MPA process that is proposed to shut off 20% of our coast but will target major groundfish areas. This is another regulatory blow that will cause more economic harm to our area. The Northern California area is only allowed to fish 120 days per year for groundfish less than 20 fathoms. Further restriction will only cause more economic damage.

We would encourage the Council to look at Management Methods that would isolate the affected areas. The NRDC lawsuit has exacerbated an already difficult situation. We would implore the Council to study this reduce ACL carefully and do whatever you can to relieve the economic stress in our region.

Thank you for consideration of this request.

Tom Marking,  
Humboldt Area Saltwater Anglers  
GAP sportfishing representative for California

# FV SEEADLER

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3059 Sherman Road  
Pebble Beach, CA 93953

Phone: (831) 373-5238  
Fax: (831) 373-0123  
E-mail [fvseeadler@aol.com](mailto:fvseeadler@aol.com)

RECEIVED

MAY 17 2010

PFMC

May 13, 2010

Mr. Dave Ortman  
Chairman  
Pacific Fishery Management Council  
77000 NE Ambassador Place, Suite 101  
Portland, OR 97220

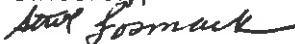
Dear Chairman Dave Ortmann and Members of the Council:

RE: Pending Exempted Fishing Permit for using longline for chilipepper rockfish

I would like to comment on a recent Court decision changing the 2010 yelloweye Optimum Yield from 17 metric tons to 14 metric tons. Because this Court decision, as well as the Council's pending decision on 2011-2012 harvest levels for yelloweye and canary, may have an incidental affect on EFPs, my concerns are as follows.

The EFP is intended as an alternative to provide a reasonable catch of an underutilized, healthy species while avoiding many species of concern such as yelloweye and canary. I am concerned that this EFP will be discontinued for 2010, to provide a very small amount of yelloweye back to the scorecard and will kill an opportunity to provide communities with needed fish. I am also concerned that in June when the Council considers setting the yelloweye and canary harvest levels for 2011-2012 it may find our EFP is unlikely to be approved for 2011 - 2012 due to the highly constraining nature of these species. I respectfully request that the Council consider the long term impacts of setting harvest levels so low that EFPs are not possible will prevent new and innovative fishing techniques to be developed that would provide income for fishermen and their communities, while protecting species that are rebuilding. Thank you for the opportunity to comment.

Sincerely,



Steve Fosmark  
FV SEEADLER



## Port Orford Ocean Resource Team

P.O. Box 679  
351 6<sup>th</sup> Street  
Port Orford, OR 97465  
P: 541.332.0627  
F: 541.332.1170

[info@oceanresourceteam.org](mailto:info@oceanresourceteam.org)  
<http://oceanresourceteam.org>

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May 24, 2010

Chairman Dave Ortmann  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, Oregon 97220-1384

Dear Mr. Ortmann:

We are writing to express our concern about the new yelloweye management requirement to reduce 3mt of by-catch. While we understand the necessity of finding more yelloweye savings, we are concerned that the fixed-gear fleet can't sustain further restrictions.

Our community took a hit for yelloweye when the RCA was moved in to 20 fathoms. This moved us off prime fishing grounds. Further restrictions to the nearshore fishery in our region could put us out of business.

We do not understand why the 20 fathom line, established to reduce yelloweye bycatch, is not extended to the recreation fishery? Would it be possible to find the required yelloweye by-catch savings there? You could also extend the 20 fathom line north of our region to bring the coast in to the same line that we are fishing inside.

Be assured we understand the need to conserve yelloweye as the fishery rebuilds. We do hope that any savings of yelloweye by-catch could be managed equitably and not imposed on one user group.

Presently, twenty-five percent of the jobs in our community are directly connected to commercial fishing. There are thirty-eight nearshore fishermen working out of Port Orford. Our community is dependent on the nearshore fishery and we need to keep these fishermen on the water, working to support their families.

Sincerely,

A handwritten signature in dark ink that reads "Leesa Cobb".

Leesa Cobb  
Director



May 24-2010

Dear Chairman Oetmann:

In a small town like Port Orford the fishing industries is very important.

The Rock Fish play a big part of the fisherman income. Because of the already low quotas the only way to make any money at rock fishing is to live fish. Because of the higher price for the live fish.

But if you again cut the quotas on the rock fish it may not be worth the cost of keeping live fish in Port Orford.

As a live buyer it cost alot to maintain a live fish market in Port Orford and then truck to the Bay area for marketing. At this time it is already hard to have a year round supply of live rock fish with the quotas we have now.

All of the live rock fishing done around here do all that they can to avoid yellow eye. And if by chance they do catch a yellow eye, all the fishermen know how to release the fish unharmed.

I cannot say that about sport fishing or any fish caught by trawl. So why punish the ones that

unpack the yellow eye the  
least. Don't take what little  
fishing we have left.

NOR Cal Seafood Inc  
P.O. Box 430  
Port Orford, OR 97465

Kerrin Lee

May 24, 2010

Chairman Dave Ortmann  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, Oregon 97220-1384

Dear Mr. Ortmann:

I am a second generation commercial fisherman working out of Port Orford. I writing to you today because I am concerned about the requirement for the Council to find 3mt more of yelloweye to cover our fishing this year.

I have been moved into 20 fathoms for nearshore fishing. This has reduced my opportunity to catch china, copper, and quillback rockfish. But I'm making this work, because I understand it is important that we minimize bycatch of yelloweye. If you are trying to prevent yelloweye bycatch, I am confused about why you continue to allow recreation fishermen to fish out to 40 fathoms? It seems clear to me that you could move recreation fishermen into 20fathoms and have considerable savings of yelloweye bycatch. I propose you consider this change to find your necessary savings of yelloweye bycatch. You could also extend the 20fathom line north of our region.

I believe the commercial fishermen have taken a big hit over the years on this yelloweye issue and I do not support any further gear restrictions for the commercial fleet. Let's share this new problem with all of the fishermen who encounter yelloweye – not just nearshore commercial fishermen.

Nearshore fishermen do an excellent job of handling bycatch of all species. This is our job, and our livelihood, and we try to take care of and protect our resource.

Sincerely,

Jeff Miles

*Jeff Miles F/V TOP G-w*



JIM MARTIN  
WEST COAST REGIONAL DIRECTOR  
THE RECREATIONAL FISHING ALLIANCE  
P.O. Box 2420  
Fort Bragg, CA 95437  
(707) 357-3422

NATIONAL OFFICE:  
PO Box 3080  
NEW GRETN NJ 08224  
(888) 564-6732

Wednesday, May 26, 2010

To: Mr. Dave Ortmann, Chairman  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, Oregon 97220-1384  
Phone: 503-820-2280 Toll Free: 1-866-806-7204 Fax: 503-820-2299  
Email: [pfmtc.comments@noaa.gov](mailto:pfmtc.comments@noaa.gov)

Dear Chairman Ortmann and members of the Council,

It is our understanding that a recent court decision instigated by the Natural Resources Defense Council (NRDC) has resulted in a court-ordered management decision to reduce the yelloweye rockfish coastwide optimum yield (OY) from 17 to 14 metric tons (mt) this year.

Regarding inseason adjustments, we urge the Council to consider the extremely negative social and economic impacts already occurring in the west coast fisheries because of efforts to reduce bycatch mortality for this species.

For example, on the northern California coast, from Point Arena to Fort Bragg and Shelter Cove, recreational rockfishing seasons have been reduced to a mere 90 days, even though the retention of yelloweye is prohibited in this fishery. Weather further reduces the actual fishing days by 50% on average.

It is strange that the NRDC is pursuing these single-species management measures through the courts at the same time they have been advocating "ecosystem management" that would presumably move beyond a dependence on MSY-OY management and fishery-dependent data.

We recognize the importance of research and experiments with innovative fishing gear to improve performance and reduce bycatch mortality. Therefore we urge the Council to continue to allocate some portion of the yelloweye OY to exempted fishing permits (EFPs) and scientific research or we will never get out of the "box" constraining our fisheries. If reductions are made in the EFP portion of the scorecard, we support consolidating these yelloweye allocations to those EFPs that show the most promise for creating new ways to fish without impacting yelloweye rockfish. In particular, the

Oregon Recreational Fishing Alliance EFP for targeting yellowtail rockfish has produced useful data, attracted state agency support and shows every indication of proving out a gear type to target underfished species while reducing yelloweye rockfish impacts to nearly zero mt.

California is in the process of permanently setting aside areas of the state's waters out to 3 miles to close it from all groundfish fisheries through its Marine Life Protection Act initiative. Up to 40% of the hard bottom rockfishing grounds have been closed to fishing from the Point Conception to Point Arena in state waters as of May 1<sup>st</sup>, 2010. The portion of the yelloweye biomass residing in these new closed areas needs to be estimated and credited to California's portion of the bycatch scorecard.

The Council further needs to assign the Scientific and Statistical Committee to estimate the amount of yelloweye habitat set aside through the trawl and non-trawl RCAs.

Recreational anglers in northern California have made tremendous efforts to reduce bycatch mortality for yelloweye by distributing hundreds of rockfish descenders that improve their survival rate, and a new CRFS form asks each angler if they used these devices. This should be factored in to the Council's decision.

Ultimately, the National Marine Fisheries Service, working with the Council, industry and affected communities, need to demonstrate to the Courts that the management of the Pacific coast groundfish fishery, even at a yelloweye rockfish OY of 17 mt, is rebuilding consistent with the Magnuson-Stevens Act. Immediate action needs to be taken to prevent the ongoing destruction of small coastal fishing communities that we are now undergoing. We are losing our infrastructure and there is great pressure on local businesses in our harbors to abandon fishing businesses altogether. Non-fishing businesses dependent on tourism will also suffer in small ports in the Pacific Northwest. We do not believe this is the best economic use of our nation's marine resources, which the Magnuson-Stevens Act also requires.

Sincerely,

A handwritten signature in black ink that reads "Jim Martin". The signature is written in a cursive, flowing style with a large initial "J" and "M".

Jim Martin  
West Coast Regional Director  
The Recreational Fishing Alliance

May 24, 2010

Chairman Dave Ortmann  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, Oregon 97220-1384

Dear Mr. Ortmann:

I am writing to express my concern about the new yelloweye management requirement to reduce 3mt of by-catch. While I understand the necessity of finding more yelloweye savings, I am concerned that the fixed-gear fleet at Port Orford can't sustain additional restrictions.

Would it be possible to find the required yelloweye by-catch savings by moving the other nearshore fishermen – the recreation fleet – in to 20 fathoms which is where the commercial fleet fishes in our region? The Council imposed the 20 fathom line on the commercial fleet to reduce yelloweye by-catch and by all accounts it's working. Extending the line to other users could be a good way to reduce additional by-catch.

Sincerely,

A handwritten signature in black ink, appearing to read "David P. McE", followed by a long horizontal line extending to the right.

----- Original Message -----

**Date:** Fri, 28 May 2010 12:15:34 -0700  
**From:** Deb Wilson <[wilsontoo@wildblue.net](mailto:wilsontoo@wildblue.net)>  
**To:** [pfmc.comments@noaa.gov](mailto:pfmc.comments@noaa.gov)

May 28 2010

Dear DR. Mc Issac,

I am a nearshore fisher, I also am co- owner of a seafood market operating in Gold Beach OR. There is a small economic base here and we are concerned that we will be impacted by the recent court ruling regarding yelloweye rock fish allowable harvest. Additional regulatory reduction of nearshore species presently harvested, to reduce minimally, yelloweye bi catch seems extreme. The nearshore fleet is the main source of fresh local seafood. It is a small boat fleet mostly under 30ft. Observations indicate it is a clean fishery and regulations restrict fishing in deeper water yelloweye habitat. Because of the necessity to handle every fish decompression and safe release are the norm. The local fleet is open to structuring non regulatory measures to aid in meeting court ordered reduction. Without some relief this will be one more blow to a healthy local economy, and two small Oregon towns that are barely getting by. Thank you for considering this impact of fishery management. John F. Wilson 34201 Cedar Valley RD. Gold Beach OR> 97444 [wilsontoo@wildblue.net](mailto:wilsontoo@wildblue.net)

Pacific fishery Management Council

Concerning the cut in the yellow eye rockfish bycatch quota.

As a nearshore rockfish fisherman in Oregon any more cuts to our fishery would deeply impact us, our market is dependent on consistent product throughout the year. Also our quota has been cut over the last several years that anymore cuts could be an end to our market and lively hood in Southern Oregon.

The impact on the yellow eye in this area is very low since the nearshore fleet has been fishing inside the twenty fathom line. The most impact is from the sport and charter fleet that targets on lingcod and can fish out to forty fathoms , a reduction in there bag limit from two to one on lingcod would take pressure off yellow eye bycatch more than cutting the nearshore rockfish fleet. We know how to vent rockfish and handle live fish since that is our market, so any fish that we release are vented properly.

All charter boat operators should be required to vent all bycatch.

Please take our economic dependents into consideration.

Thank You, Craig Will



Oregon Black /blue Rockfish with Nearshore Endorsement permit holder No. 59046

RECEIVED

JUN 01 2010

PFGC





## Port Orford Ocean Resource Team

P.O. Box 679  
351 6<sup>th</sup> Street  
Port Orford, OR 97465  
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[info@oceanresourceteam.org](mailto:info@oceanresourceteam.org)  
<http://oceanresourceteam.org>

June 2, 2010

Mr. Dave Ortmann  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, Oregon 97220-1384

Dear Mr. Ortmann:

Our fishing community participates in the Limited Entry non-directed blackcod fishery that is managed with a 2 month quota and trip limits. We have been asking Council and staff for the past three years to make changes to this fishery so the fleet can actually reach the full amount allocated by the end of the year. All other fisheries are modeled to reach the target but this has never happened with the DTL blackcod fishery. In 2009 we only harvested 57% of the fish.

We started 2010 with an increase to the fishery but realize now that the fishery has been tracking slow and the two month quota and trip limits need to be increased again to reach the allowed limit this year. **We ask that the Council increase the DTL blackcod fishery for Limited Entry Fixed-gear at the June meeting. We request that the increase to the fishery be published and implemented by July 1<sup>st</sup> so the benefit to the fleet will occur in a timely manner and we can catch the fish this year.** The slower NMFS is to publish and implement the change, the less chance we have of getting anywhere near the limit this year. This has been a failing situation for years and we are anxious to get it fixed.

A significant amount of the economic viability of this community is dependent on getting our blackcod – and on getting a management system that allows us to catch the TAC.

Sincerely,

A handwritten signature in dark ink that reads "Leesa Cobb". The script is cursive and fluid.

Leesa Cobb

## CONTINUATION OF REGULATORY DEEMING FOR FMP AMENDMENT 20 (TRAWL RATIONALIZATION) AND AMENDMENT 21 (INTERSECTOR ALLOCATION)

At its April 2010 meeting, the Pacific Fishery Management Council (Council) reviewed the initial allocation rule draft regulatory language covering both the initial allocation of harvest privileges needed for trawl rationalization (Amendment 20, Agenda Item B.6.a, Attachment 1) and the sector allocations of Amendment 21. At that time, the Council made several decisions regarding questions of clarification, interpretation, and refinement, and tasked the Council staff to continue to work with National Marine Fisheries Service staff to make the appropriate language adjustments and further refinements to the rule. The Council also authorized the Executive Director with reviewing all final language and deeming regulations as necessary or appropriate to implement its policy intent. It also appointed an Ad Hoc Regulatory Deeming Workgroup to review the remaining set of implementing regulations for trawl rationalization (collectively termed the components rule).

On May 7, 2010, the Council transmitted Amendments 20 and 21, together with the draft regulations, to NMFS. This action started a Magnuson-Stevens Act approval process which requires the Secretary of Commerce (Secretary) to make a final decision on the Council recommendations within 95 days of the transmission. The associated public comment period on Amendments 20 and 21 opened May 12 and will close on July 12. The proposed initial allocation rule is expected to publish at the end of May at which time a public comment period will open under the Administrative Procedures Act. A Secretarial decision on approval is expected on August 10 (see NMFS Rulemaking Schedule provided as Agenda Item B.6.b, Supplemental NMFS Report 1).

At this meeting, the Council is scheduled to determine whether the components rule implementing Amendment 20 is consistent with the Council action, and necessary or appropriate to implement the Council recommendation. Under the regulatory deeming process adopted by the Council in 2009 (Council Operating Procedure 1), the Executive Director is charged with deeming regulations, unless otherwise directed by the Council. However, because of the complexity of regulations on trawl rationalization, the specific agenda items have been scheduled for full Council review and regulatory deeming decision making. This agenda item was titled to cover both Amendments 20 and 21, on the off chance that the additional revisions made after the April Council meeting went beyond the refinements authorized by the Council and required redeeming of the initial allocation rule. The initial allocation rule did not contain refinements that warranted a second look by the Council, therefore, it is not expected that Amendment 21 issues will be addressed at this meeting.

The Regulatory Deeming Workgroup (Workgroup) met May 20-21 and reviewed the May 19, 2010 draft of the trawl rationalization components rule available at that time (Agenda Item B.6.a, Attachment 2). This draft was preliminary and the components rule was still expected to undergo substantial revision before it would be ready for deeming by the Council. The Workgroup developed an extensive list of comments and has provided a generalized summary of those comments in the report on its May meeting (Agenda Item B.6.b, Regulatory Deeming

Workgroup Report). The Workgroup is scheduled to meet again just prior to the June Council meeting (June 10 and 11). At that time it will review the version of the components rule NMFS is expected to provide for Council deeming (Agenda Item B.6.b, Supplemental NMFS Report 2). NMFS will also provide the Council with a report on interpretations and clarifications, as it did at the March and April Council meetings (Agenda Item B.6.b, Supplemental NMFS Report 3).

The Council is scheduled to take up a number of trawl rationalization follow-up issues this fall, including scoping for an amendment on Community Fishing Associations (CFAs) and the development of provisions for use of the quota set aside for the Adaptive Management Program. A letter on CFAs from Congresswoman Lois Capps is included in the briefing materials (Agenda Item B.6.b, Congressional Letter). This letter also discussed the need for a project to study the use of electronic monitoring to replace of observers on vessels using fixed gear within the scope of the trawl IFQ program. The schedule and elements of a trailing amendment will not be addressed under this agenda item but be taken up under Agenda Item G.4 on Future Council Meeting Agenda and Workload Planning.

### **Council Action:**

#### **1. Determine whether draft trawl rationalization components rule is consistent with final Council action on Amendment 20.**

#### **Reference Materials:**

1. Agenda Item B.6.a, Attachment 1: Proposed Groundfish Fishery Management Plan Amendment 20 (Trawl Rationalization).
2. Agenda Item B.6.a, Attachment 2: Draft Program Components Rule (5/19/2010).
3. Agenda Item B.6.b, Regulatory Deeming Workgroup Report.
4. Agenda Item B.6.b, Supplemental NMFS Report 1: NMFS Rulemaking Schedule.
5. Agenda Item B.6.b, Supplemental NMFS Report 2: Draft Program Components Rule (June 2010).
6. Agenda Item B.6.b, Supplemental NMFS Report 3: NMFS Interpretations and Request for Clarifications.
7. Agenda Item B.6.b, Congressional Letter.
8. Agenda Item B.6.c, Public Comment.

#### **Agenda Order:**

- a. Agenda Item Overview **Jim Seger**
- b. Reports and Comments of Advisory Bodies and Management Entities
- c. Public Comment
- d. **Council Action:** Consider Regulatory Deeming and Implementing Issues for the FMP Amendments (Continues on Wednesday and Thursday as necessary)

PFMC  
05/28/10

**PROPOSED  
GROUNDFISH FISHERY MANAGEMENT PLAN  
AMENDMENT 20  
(TRAWL RATIONALIZATION)**

**PREPARED BY  
THE PACIFIC FISHERY MANAGEMENT COUNCIL  
7700 NE AMBASSADOR PLACE, SUITE 101  
PORTLAND, OR 97220  
503-820-2280  
[WWW.PCOUNCIL.ORG](http://WWW.PCOUNCIL.ORG)**

**AND THE**

**NATIONAL MARINE FISHERIES SERVICE  
7600 SAND POINT WAY NE, BIN C15700  
SEATTLE, WA 98115-0070  
206-526-6150**

**APRIL 2010**

## Summary of Proposed Changes to the Content of the Groundfish FMP

As part of implementing the trawl rationalization program, the Groundfish FMP must be amended. This would be Amendment 20 to the FMP. Parts of Chapters 1, 6, and 11 of the FMP need to be modified. In addition, an appendix would be added to the FMP containing a detailed description of the IFQ and co-op programs. The specific changes to FMP text are shown in the next section and summarized below. **For alternatives considered and analysis, see the Amendment 20 draft and final environmental impact statements.**

A brief description of the amendment is added to Chapter 1, along with a reference to Appendix E to the FMP, containing a detailed description of trawl rationalization program provisions.

Chapter 6 in the FMP describes the range of management measures available to the Council, organized according to major categories. Section 6.9 of the chapter describes measures to control fishing capacity, including permits and licenses.

- Section 6.9.1 describes general provisions for permits. A section is added to cover the new requirement for processor permits for the mothership fishery.
- Section 6.9.3, “Individual Fishing Quota Programs” was incorporated into the FMP by Amendment 18 and authorizes an IFQ program. It has been rewritten to cover trawl rationalization in general (both IFQs and co-ops) and a separate subsection was created to preserve the language referencing IFQs as they would apply to other sectors.

Chapter 11 describes the license limitation program and the division that program created between the limited entry and open access segments.

- Section 11.2.1 identifies the Federal permit requirements and the regulations that apply when vessels with limited entry permits use open access gears. That language is modified to indicate that when a vessel with a trawl permit uses an exempted gear IFQ regulations apply, except with respect to those gears for which the IFQ program provides an exception (see Section A-1.1 of the IFQ program for the gear exceptions).
- Section 11.2.5 identifies the requirements for gear endorsements. Paragraph 6 of this section has been rewritten to clarify the ability of vessels with limited entry permits to use gears for which they do not hold an endorsement and to incorporate language that provides for gear switching.
- A new section was added “Section 11.2.6 Sector Endorsements.” The existing sections on fixed gear sablefish were moved from Section 11.4 to this section and sections were added on catcher processor (CP) endorsements, and Pacific whiting mothership catcher vessel (CV(MS)) endorsements.
- Section 11.2.7 addresses the size endorsement. It has been modified to indicate a trawl permit’s size endorsement will not be reduced if it is transferred to a smaller vessel.

- Section 11.2.11 covers the rules for combining permits. A new paragraph was added to address the treatment of the new endorsements CP and CV(MS) endorsements when permit combination occurs.
- Section 11.5 contained the language implementing Amendment 15. As indicated in the first paragraph of that section, these provisions 15 sunset with the creation of a trawl rationalization program for the Pacific whiting fishery. Therefore, this language has been removed.

## Changes to the Groundfish FMP Incorporated by Amendment 20

*Relevant FMP text is excerpted below. Insertions are marked by underline and deletions by strikeout. Double underline marks text stricken elsewhere and moved to a new location. Ellipses (...) indicate unchanged text omitted below.*

### 1.0 INTRODUCTION

...

Amendment 20 was approved in [2010] and establishes the groundfish trawl rationalization program. Under this program groundfish limited entry trawl vessels making shoreside deliveries are managed with individual fishing quotas. Motherships and associated catcher-vessels in the at-sea Pacific whiting sector are managed under a system of regulated cooperatives. Pacific whiting catcher processors fish within a voluntary cooperative; the amendment establishes provisions to strengthen this cooperative. As noted above, Amendment 20 supersedes provisions in Amendment 15; corresponding text was replaced.

### 1.2 How This Document is Organized

...

- Appendix E contains a detailed description of the trawl rationalization program (see Section 6.9.3.1).

*[N.B. Appendix D to the Trawl Rationalization EIS would become Appendix E to the Groundfish FMP.]*

...

## 6.0 MANAGEMENT MEASURES

...

### 6.9 Measures to Control Fishing Capacity, Including Permits and Licenses

...

#### 6.9.1 General Provisions for Permits

### **6.9.1.1 Commercial Fisheries Permits**

All U.S. commercial fishing vessels are required by state laws to be in possession of a current fishing or landing permit from the appropriate state agency in order to land groundfish in the Washington, Oregon, and California area. Federal limited entry permits authorize fishing within limits and restrictions specified for those permits. Vessels without such permits are also subject to the specified limits and restrictions for the open access fishery. ~~Federal permits also may be required for groundfish processors.~~ In the event that a Federal fishing or access permit is required, failure to obtain and possess such a Federal permit will be in violation of this FMP.

### **6.9.1.2 Recreational Fisheries Permits**

All U.S. recreational fishermen are required by state laws to obtain a recreational permit or license in order to fish for groundfish. In the event that a Federal license or permit is required, failure to obtain and possess such Federal permit will be in violation of this FMP.

### **6.9.1.3 Processor Permits**

Federal permits also may be required for groundfish processors. Under the trawl rationalization program (see Section 6.9.3) mothership processors in the Pacific whiting fishery must possess a mothership (MS) permit. Like groundfish limited entry permits (see Chapter 11) Pacific whiting mothership (MS) permits are transferrable once initially distributed to qualifying vessels at the beginning of the trawl rationalization program. To qualify for initial issuance of an MS permit at the beginning of the program, a processing vessel must have processed at least 1,000 mt of Pacific whiting in each of any two years from 1997 through 2003.

## **6.9.2 Sector Endorsements**

The Council may establish sector endorsements, such as with the limited entry fixed gear sablefish fishery (see Section 11.2.6). Sector endorsements would limit participation in a fishery for a particular species or species group to persons, vessels, or permits meeting Council-established qualifying criteria. Participants in a sector-endorsed fishery may be subject to sector total catch limit management. A sector endorsement, whether it is applied to vessels that already hold limited entry permits or to those in the open access or recreational fisheries, is a license limitation program.

## **6.9.3 *Fishery Rationalization*~~Individual Fishing Quota~~**

### **6.9.3.1 The Trawl Rationalization Programs**

The trawl rationalization program applies to vessels holding trawl-endorsed groundfish limited entry permits (and mothership processors registered to mothership permits). The program is intended to reduce fishery capacity, minimize bycatch, and meet other goals of the FMP. The program replaces most cumulative landing limits (in both whiting and nonwhiting shoreside limited entry trawl sectors) with individual fishing quotas. Under the Magnuson-Stevens Act, “an ‘individual fishing quota’ means a Federal permit under a limited access system to harvest a quantity of fish, expressed by a unit or units representing a percentage of the total allowable catch of a fishery that may be received or held for exclusive use by a person.” The Council may establish IFQ programs for any commercial fishery sector. ~~IFQ programs would be established for the purposes of reducing fishery capacity, minimizing bycatch, and to meet other goals of the FMP. Participants in an IFQ fishery may be subject to individual total catch limit management (Section 6.7.1).~~ The Pacific whiting mothership sector is managed through a system of cooperatives (co-ops) under which catcher vessels choosing to fish in a co-op would be

obligated to deliver their catch to an associated mothership processor. Each year motherships and catcher vessels must identify which co-op they plan to participate in. If they do not plan to join a co-op for that year they participate in a non-co-op fishery. The Pacific whiting catcher-processor sector operates as a single, voluntary co-op. If the voluntary catcher-processor co-op dissolves any allocation to the sector will be divided equally among the catcher-processor endorsed permits.

Appendix E describes the details of the trawl rationalization program that will be implemented in Federal regulations.

The trawl rationalization program described in Appendix E may be modified through regulatory amendments proposed by the Council per §303(c) of the MSA and reviewed by the Secretary per §304(b). Appendix E may be revised from time to time to reflect changes to the program, but such changes can be made without submitting such changes for review by the Secretary as described in §304(a) of the MSA. The Council will establish a process for considering recommended changes to the regulations.

### **6.9.3.2 Rationalization of Other Fishery Sectors**

IFQ programs could be established in other fishery sectors for the purposes of reducing fishery capacity, minimizing bycatch, and to meet other goals of the FMP. Participants in an IFQ fishery may be subject to individual total catch limit management (Section 6.7.1).

...

## **11.0 GROUND FISH LIMITED ENTRY**

### **11.1 Introduction**

...

### **11.2 Management, Allocation and General Rules on the Issuance and Use of Groundfish LE Permits, Gear Endorsements Size Endorsements, and Fixed Gear Sablefish Endorsements**

...

#### ***11.2.1 Federal LE Permits Required Only for Gears Fishing on the Limited Access Quota***

1. Federal groundfish LE permits will be required and issued only for those vessels catching Council-managed groundfish species<sup>1/</sup> with groundfish limited entry gears (trawl, longline or fishpot gear) under the limited access quota.<sup>2/</sup>
2. Vessels using exempted gears (all gears other than trawl, longline and fishpot) or using longline or fishpot gear<sup>3/</sup> without a permit endorsed for one of those gears may continue to catch

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<sup>1</sup> All references to "Council-managed groundfish" refer only to groundfish species specified in the Council groundfish FMP which are caught in the exclusive economic zone or adjacent state waters off Washington, Oregon and California.

<sup>2</sup> References to longline, pot and trawl gear are references to legal groundfish gears as defined by the groundfish FMP.

<sup>3</sup> Trawl gear may not be used without a permit because the open access fishery for limited entry gears is aimed at accommodating small producers and will likely be managed under restrictive trip limits. The fishing power of trawl gear would result in excessive discards under these trip limits. Additionally, while longline and fishpot vessels catching small quantities of groundfish will be prevented from qualifying by the structure of the minimum landing requirements (MLRs) (a day's landings must be greater than 500 pounds in order for the day to count toward meeting the MLR; Section 11.3.1.3),



groundfish under an open access system. However, catch by vessels with trawl-endorsed LE permits that use such gears may instead be managed with IFQs, as specified in the regulations for the IFQ program (see Appendix E). (Exempted, longline and fishpot gears used by vessels without endorsements for those gears are termed open access gears.)

#### *11.2.2 Allocations between the Limited and Open Access Fisheries and Management of the Open Access Fishery*

...

#### *11.2.3 Initial Issuance of LE Permits*

...

#### *11.2.4 Ownership Restriction and Changes in Ownership*

...

#### *11.2.5 Gear Endorsements*

...

*[N.B. In the following, double underline indicates insertions corresponding to the deleted text in paragraph 6.]*

6. ~~An LE permit will not allow the use of limited entry gears to catch any Council-managed groundfish unless a valid gear endorsement for the specific gear is affixed to the LE permit. Trawl gear and Council-managed groundfish may not be on board a vessel at the same time, nor may the gear be deployed, without an LE permit registered for the vessel and endorsed for trawl gear. If a vessel has longline or fishpot gear on board, an LE permit registered for the vessel and the permit is endorsed for the gear on board, regulations for the limited access fishery will apply.~~

---

Gear endorsements are required for LE-permitted vessels to use limited entry gear types (see Section 11.2.1, paragraph 1) to catch groundfish under the regulations governing the limited entry fishery.

- a. Longline and Fishpot Usage for Vessels with a Permit Endorsed for the Gear. If a vessel has longline or fishpot gear on board, and the vessel is registered to an LE permit that is endorsed for the longline or fishpot gear on board, regulations for the limited access fishery will apply to the vessel. If the vessel also has a trawl endorsement and has opted to participate for a period in the trawl rationalization program using the fixed gear (longline or fishpot) for which it holds an endorsement then the trawl rationalization portion of the limited entry fishery regulations will apply to the vessel for that period.
- b. Exception for Longline and Fishpot Gear Usage for Vessels With a Limited Entry Permit not Endorsed for the Gear Being Used:

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this structure will provide little barrier for most trawl vessels. Thus, there is no strong reason to provide the open access opportunity to compensate for the 500 pound per landing day threshold.

- i. As specified in Section 11.2.1, paragraph 2, Limited Entry vessels may use longline and pot gear without an endorsement, in which case the use of the gear is governed by the open access fishery regulations unless the vessel's limited entry permit is endorsed for trawl gear.
  - ii. As specified in Section 11.2.2, if a vessel registered to a LE permit is fishing with longline or fishpot gear, but without an endorsement for that gear, the catch still counts against the limited entry fishery allocation (See Section 11.2.2).
  - iii. As specified in the trawl rationalization program (Section 6.9.3.1 and Appendix E) vessels registered to a trawl-endorsed LE permit and using longline or fishpot gear without a limited entry endorsement for those gears must cover their landings with trawl IFQ and comply with the provisions of the trawl IFQ program. Open access sector regulations will not apply to vessels participating under the IFQ program.
- c. Trawl Gear Usage. Trawl gear and Council-managed groundfish may not be on board a vessel at the same time, nor may the gear be deployed, without an LE permit registered for the vessel and endorsed for trawl gear.

...

#### 11.2.6 Sector Endorsements

##### **11.2.6.1 Fixed Gear Sablefish Endorsements**

*[N.B. Section 11.4, with the same title, is incorporated into this section as a housekeeping measure.]*

1. The permit and gear endorsement requirements of the license limitation program limit the number of vessels which may participate in the groundfish fishery, however, there is still substantial opportunity for vessels to shift between segments of the groundfish fishery. One of the segments of the limited entry fishery subject to an increase in the number of vessels participating is the limited entry fixed gear sablefish fishery. To prevent the movement of vessels from non-sablefish segments of the limited entry fixed gear groundfish fishery to the sablefish segment of the fishery, a fixed gear sablefish endorsement for limited entry permits is required for longline and fishpot gear limited entry vessels to take sablefish against the fixed gear limited entry allocation and as part of the primary fishery, the major limited entry fixed gear sablefish harvest opportunities north of 36°N latitude. Such endorsements are not required to harvest under fixed gear limited entry daily-trip-limit or other regulations intended to allow low level or incidental harvest.
2. The fixed gear sablefish endorsement will be affixed to the permit.
3. The fixed gear sablefish endorsement will remain valid when the permit is transferred.
4. If permits are stacked such that a single permit has multiple sablefish endorsements, sablefish endorsements and associated cumulative limits may be transferred to other sablefish-endorsed permits so long as at least one sablefish endorsement and associated tier limit remains with the permit. Fixed gear sablefish endorsements may not be transferred from permits on which there is only one fixed gear sablefish endorsement.
5. Limitations which apply to the fixed gear sablefish endorsement and fishing thereunder shall not restrict the use of any trawl gear endorsement on the same LE permit, unless these restrictions are specific in their application to trawl gear.

6. Rules on the issuance of fixed gear sablefish endorsements and other characteristics of the endorsements are specified ~~in Section 11.4~~ below.

*[N.B. The following text is moved from Section 11.4, also entitled Fixed Gear Sablefish Endorsements]*

The fixed gear sablefish endorsement is intended for operations participating in the fixed gear sablefish fishery which were significantly active and dependent on the fishery prior to the end of the qualifying period specified in paragraph 3. The following paragraphs describe qualifying criteria that were used for initial issuance of the fixed gear sablefish endorsement.

1. A fixed gear sablefish endorsement will be affixed to any LE permit which meets the fixed gear sablefish endorsement qualifying criteria.
2. The catch history used to determine whether a permit meets the fixed gear sablefish endorsement qualifying criteria is the permit catch history. Permit catch history includes the catch history of the vessel(s) that initially qualified for the permit and the catch of any other vessels with which the permit rights were associated during the time the rights were associated with the vessel (if the current permit is the result of the combination of multiple permits, then for the combined permit to qualify for an endorsement, at least one of the permits which were combined must have sufficient sablefish history to qualify for an endorsement on its own; or the permit must qualify based on catch occurring after it has combined but within the qualifying period). Permit catch history also includes the catch of any interim permit held by the current owner of the permit during the pendency of an appeal on a permit denied under the groundfish limited entry program, but only if (1) the appeal on which the interim permit was based was lost and (2) the owner's current permit was used by the owner in the 1995 limited entry sablefish fishery.
3. The fixed gear sablefish endorsement qualifying criteria are at least 16,000 pounds round weight of sablefish caught with longline or fishpot gear in one year from 1984 to 1994
4. All catch must be non-Indian harvest from Council managed areas. Harvest taken in tribal set aside fisheries does not qualify.
5. The NMFS issuing authority will have broad authority to examine information other than codes on landing tickets in determining whether the qualifying criteria is or is not met.

#### **11.2.6.2 Pacific whiting Catcher-processor (CP) Endorsement**

The class of CP endorsed permits (CP permits) is limited by an endorsement placed on an LE permit. LE permits registered to qualified catcher-processor vessels are endorsed as CP permits. A qualified permit is one that harvested and processed in the catcher-processor sector of the Pacific whiting fishery at any time from 1997 through 2003. A vessel that is 75 feet or less LOA that harvests whiting and, in addition to heading and gutting, cuts the tail off and freezes the whiting, is not considered to be a catcher/processor nor is it considered to be processing fish. Such a vessel is considered a participant in the shorebased whiting sector, and is subject to regulations and allocations for that sector (50 CFR 660.373(a)(3). Therefore, such vessels do not require a CP endorsement.

### **11.2.6.3 Pacific whiting Catcher Vessel (CV(MS)) Endorsement**

Permits with a qualifying history are designated as CV(MS) permits through the addition of an endorsement to their LE groundfish permit. Only vessels registered to an LE permit with a CV(MS) endorsement may participate in the Pacific whiting mothership-processor fishery. A qualified permit is one that has a total of more than 500 mt of whiting deliveries to motherships from 1994 through 2003.

#### *11.2.7 Size Endorsement Will Specify the Vessel Length*

The LE base permit will be endorsed with the length overall (as defined for purposes of U.S. Coast Guard documentation) of the vessel for which the LE permit is initially issued. The length for which the LE permit is endorsed will be changed only when LE permits are combined, as per Section 11.2.11<sup>4</sup>, ~~or, in the case of LE permits endorsed for trawl gear, when the size of the vessel used with the permit is more than five feet less than the originally endorsed length. In the latter case, the LE permit will be reissued with a size endorsement for the length of the smaller vessel. Regulations may be promulgated to waive this downsizing requirement if the permit was transferred to a smaller vessel for the purposes of stacking (see Section 11.2.4, paragraph 3).~~ Vessels which do not have documents stating their length overall will have to be measured by a marine surveyor or the U.S. Coast Guard and certified for that length.<sup>5</sup>

If the Council establishes a permit stacking program, that program may or may not require that permits stacked on top of the base LE permit be endorsed with the length overall of the vessel holding the permits.

#### *11.2.8 An LE Permit and Necessary Gear Endorsements Will Be Held by the Owner of Record of the Vessel*

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#### *11.2.9 Transfer of an LE Permit to Different Owners or Vessels of the Same Owner*

...

#### *11.2.10 Loss of a Vessel*

....

#### *11.2.11 Combining LE Permits*

1. Two or more LE permits with “A” gear endorsements for the same type of limited entry gear (either trawl, longline or fishpot) may be combined (based on specific criteria) to “step-up” to a permit with a larger size endorsement. NMFS, with professional advice of marine architects and other qualified individuals, and after consultation with the Council and review board, will develop and implement a standardized measure of harvest capacity for the purpose of determining the appropriate endorsed length for LE permits created by combining two or more permits possessing smaller length endorsements. The capacity represented by the appropriate length

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<sup>4</sup> The FMP included an exception for when LE permits endorsed for trawl gear were transferred to a smaller vessel such that the LE permit will be reissued with a size endorsement for the length of the smaller vessel (from Amendment 6). This exception was removed by Amendment 20.

<sup>5</sup> While not an immediate cap on vessel capacity, the size endorsement places an upward limit on the amount by which the capacity used with an LE permit may increase.

endorsement for the combined permit should not exceed the sum of the capacities of the LE permits being combined.

2. LE permits may not be divided to “step-down” to more than one permit with smaller size endorsements.
3. Survival of Gear Endorsements. When LE permits are combined, “A” endorsements identical on both LE permits will remain valid. Provisional “A”, “B” and designated species “B” gear endorsements will generally become invalid because they are not separable from the vessel for which they are initially issued. (See table below for examples.) ~~Fixed gear sablefish endorsements will remain valid only if all the longline or fishpot permits being combined have fixed gear sablefish endorsements.~~

1st Permit Endorsement on 1st LE Permit	+	2nd Permit Endorsements on 2nd LE Permit	=	Combined Permit Endorsements on the Combined LE Permit
“A” - Trawl		“A” - Pot		None
“A” - Longline		“A” - Longline		“A” - Longline
“A” - Trawl		Provisional “A” - Trawl		None
“A” - Pot		“B” - Pot		None
“A” - Trawl		Designated Species “B” - Shortbelly - Trawl		None

4. Survival of Fixed Gear Sector Endorsements: Fixed gear sablefish endorsements will remain valid only if all the longline or fishpot permits being combined have fixed gear sablefish endorsements.
5. Survival of Trawl Sector Endorsements. When a CP-endorsed LE permit is combined with an LE trawl permit without a CP-endorsement a single CP-endorsed permit with a larger size endorsement will result. A CV(MS) endorsement on a permit being combined with a CP-endorsed permit will not be reissued on the resulting permit. If a CV(MS) endorsed permit is combined with a permit without a sector endorsement the CV(MS) endorsement is retained on the resulting permit. The resulting size endorsement will be determined based on the permit combination formula authorized in paragraph 1 above.

#### 11.2.12 Permit Renewal

#### 11.2.13 Owner-on-board Requirements

### 11.3 Multilevel Gear Endorsement System

#### ~~11.4 Fixed Gear Sablefish Endorsement~~

*[N.B. Text in this section moved to Section 11.2.6 as shown above.]*

#### ~~11.5 Limited Entry Program for the Pacific Coast Whiting Fishery~~

~~Until the implementation of a trawl IQ or cooperative management program in the Pacific whiting fishery, no vessel may participate in the shoreside, mothership, or catcher processor sector of the Pacific whiting fishery unless that vessel meets the following participation requirements for such vessel in such sector:~~

~~For catcher vessels participating in the shore-based sector, the participation requirements are that the vessel with a limited entry trawl endorsed permit using mid-water trawl gear made at least~~

~~one whiting delivery to a shoreside whiting processor in at least one primary whiting season for the shore based sector between January 1, 1994, and January 1, 2007.~~

~~For catcher vessels participating in the mothership sector, participation requirements are that the vessel made at least one delivery to a mothership whiting processor during the at sea processing season for the mothership sector between January 1, 1997, and January 1, 2007.~~

~~For catcher/processors vessels, participation requirements are having caught and processed whiting during the at sea processing season for the catcher/processor sector in any one qualifying year from January 1, 1997, through January 1, 2007.~~

~~For mothership vessels, participation requirements are having received at least one delivery of whiting during the at sea processing season for the mothership sector in any one qualifying year from January 1, 1997, through January 1, 2007.~~

~~A vessel may qualify for participation in each sector for which it meets the above standards.~~

~~Implementing regulations will specify the application procedures. NMFS will maintain a list of vessels or issue a certificate to vessels that qualify for participation in each sector.~~

[Added, Amendment 15]

#### **11.64 LE Permit Issuance Review Board**

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#### **11.75 Implementation, Application and Appeals Process**

...

#### **11.86 Council Review and Monitoring**

...

# **PACIFIC COAST GROUND FISH FISHERY MANAGEMENT PLAN**

**FOR THE CALIFORNIA, OREGON, AND  
WASHINGTON GROUND FISH FISHERY**

**(PROPOSED UNDER AMENDMENT 20)**

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Revised and printed on June 1, 2010

## E.1 Overview of Recommendations by Sector

The Pacific Fishery Management Council's (Council) sector specific recommendations for rationalizing the trawl fishery are provided here and will be finalized and forwarded to the National Marine Fisheries (NMFS) for approval later in 2009. The recommendations were adopted at the Council's November 2008 meeting. In general, the Council recommends the following:

### **Shoreside Trawl Sector** (nonwhiting groundfish species and whiting):

- Manage with individual fishing quotas (IFQs).
- Provide 90 percent of the initial allocation of nonwhiting IFQ to holders of vessel permits; and
- set aside 10 percent of the initial allocation for an adaptive management program that may benefit processors and communities, among others.
- Provide 80 percent of the initial allocation of whiting IFQ to holders of vessel permits; and
- provide 20 percent of the initial allocation of whiting to processors.

### **Mothership Trawl Sector** (whiting and groundfish bycatch species):

- Manage with a harvester co-op system and limited entry for mothership processors.
- Require that vessels declare preseason the mothership processor for which they will fish in a coming year.

### **Catcher Processor (CP) Sector** (whiting and groundfish bycatch species):

- Create a permit endorsement to prevent expansion of the number of participants.
- Allocate whiting and bycatch to the existing voluntary co-op.<sup>6</sup>

<sup>6</sup> When the Council took final action, NMFS indicated its preliminary intent to license the voluntary co-op. However, this was not part of the Council's final action.



Provide an IFQ program if the voluntary co-op fails (initially allocate IFQ equally among all permit holders).

The amount of allocation available for these sectors will be determined through the intersector allocation process. IFQ for the shoreside fishery may not be delivered to at-sea processors, nor may quota allocated to the mothership or catcher-processor sectors be delivered shoreside.

The following sections provide a general summary of the program for each sector, followed by a complete description that also identifies trailing actions the Council has been working on in 2009. These actions will be completed prior the time it submits the package to NMFS for approval.<sup>7</sup> *The trailing actions pertain to eligibility to own IFQ, accumulation limits, and adaptive management. Implementation is not expected earlier than 2011.*

## **E.2 Shoreside Trawl Sector: IFQ Program (Appendix A of the Environmental Impact Statement [EIS])**

This section details the IFQ program that the Council is recommending for the shoreside sector of the groundfish fishery. The first part of the section describes major components of the program. Table 1, which starts on page 6, presents complete details on elements of the recommended IFQ program.

### **E.2.1 Overview of the IFQ Program Elements**

Under this program, most status quo management tools would remain in place. The main exceptions are cumulative landing limits for nonwhiting groundfish species and a closure period to control whiting harvest at the start of the year.<sup>8</sup> Other measures, such as Rockfish Conservation Area (RCA) boundaries, may be adjusted as experience is gained with the IFQ program.

An IFQ will grant an entity the privilege to catch a specified portion of the trawl sector's allocation. Within the IFQ program, vessels will be allowed to use a variety of directed groundfish commercial gear (including nontrawl gear) to take the shoreside trawl sector allocation, which will thus allow for "gear switching." IFQs will be created for most species of groundfish under the Groundfish Fishery Management Plan (FMP) (although some will still be managed collectively at the stock complex level, e.g. remaining minor slope rockfish). Some groundfish species rarely caught by trawl gear and dogfish will be excluded from the IFQ program. To ensure that optimum yields (OY) for species not covered by IFQ are not exceeded, catch of those species will be monitored and deductions made from the OY in anticipation of the expected level of shoreside trawl sector catch. For trips targeted on whiting, IFQ will be required only for whiting and the main bycatch species.

Halibut individual bycatch quota (IBQ) will be required to cover the incidental catch<sup>9</sup> of Pacific halibut in the groundfish trawl shoreside fishery. Under an IBQ program, retention would not be allowed.

The following sections describe the major provisions of the IFQ program.

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<sup>7</sup> During its March and April 2009 meetings the Council also clarified a number of its recommendations. These clarifications are reflected in the version of the trawl rationalization recommendation provided here.

<sup>8</sup> This closure period is necessary because of Endangered Species Act concerns related to salmon.

<sup>9</sup> At its June meeting, the Council will consider a recommendation by the Groundfish Allocation Committee to interpret previous Council action under Amendment 21 as creating an IBQ program to cover incidental mortality rather than catch.

#### **E.2.1.1 Initial Allocation**

The program will initially allocate IFQ as quota share (QS) to fishery participants based mainly on their historic involvement in the fishery. Following the initial allocation, transfers (described below) will allow for others to also participate in the fishery as quota holders. The initial allocation can be viewed in two segments:

First, in developing its recommendation the Council considered the groups that should be included in the initial allocation, and the proportional split among the groups. The Council recommended that harvesters (those holding limited entry permits for trawl vessels) be given an initial allocation of 90 percent of the nonwhiting QS and 80 percent of the whiting QS. Ten percent of the QS for nonwhiting species would be made available for an adaptive management program and processors would receive 20 percent of the whiting QS.

Second, the Council considered specific allocation formulas that will determine the amount of QS each eligible entity will receive. These calculations are based primarily on the delivery history associated with a vessel permit or processing company over a set number of years. For the allocation to permits, the QS associated with the history of permits retired in the buyback program will be distributed equally among the remaining qualified permits (about 44 percent of the QS will be allocated in this fashion). A special calculation is provided for incidentally caught overfished species. For these species the allocation will be based on the QS recipient's need to cover incidental catch under current fishing practices (as measured by bycatch rates, individual permit logbooks for recent years, and the amount of target species QS that an entity receives). None of the QS for overfished species will be allocated equally among harvesters, with the exception of canary rockfish. A similar approach would be used for the allocation of halibut IBQ.

#### **E.2.1.2 Stock Management Units for IFQs**

QS will be issued for the species groups and areas for which there are OYs (management units). However, QS will not be required for some rarely-caught species. Catch of these species would be monitored to ensure they don't exceed any established allocations. There may be further area subdivisions for species for which there is an area specific precautionary harvest policy. There are also provisions that provide for both species group and area subdivision of QS after initial allocation.

#### **E.2.1.3 Annual Issuance, Holding Requirements and Transfer Rules**

In designing the management regime for the IFQ program, the Council is balancing the benefits of flexibility and individual accountability with program costs and the constraints of the very low allowable catch levels of overfished species. Prior to the start of each fishing year, NMFS will issue quota pounds (QP) to entities based on the amount of QS they hold and the shoreside trawl sector allocation. The QP would have to be transferred to a vessel account in order to be used. When a vessel goes fishing under the IFQ program, all catch must be recorded (including discards) and must be matched by an equal amount of QP from the vessel's QP account. If there is not enough QP to cover the catch from a trip, there is a 30-day grace period during which adequate QP must be transferred into the vessel's account. A vessel's fishing will be limited, and its permit cannot be sold, until the overage is covered. A carryover provision will allow for an overage in one year to be covered by up to 10 percent of the following year's QP; likewise, the provision also will allow QP that were not used in one year to be carried over into the following year, up to 10 percent.

Bycatch reduction and greater efficiency are expected to occur in the groundfish fishery under the IFQ program because of the transferability of QS and QP. Through the transfer of QS/QP (bought and sold or

“leased” through private contract), it is anticipated that those best able to avoid catching overfished species, and those who are most efficient, will increase the amount of QS/QP registered to them, while those who consistently have high bycatch rates or operate less efficiently might choose to sell their QS and leave the fishery. Generally, anyone eligible to own a U.S.-documented fishing vessel could also acquire QS and QP, and the QS and QP could be acquired in very small increments.<sup>10</sup> These provisions will allow for new entrants into the fishery; for example, a crew member could slowly purchase amounts of quota. They also allow for ownership of QS by entities that do not otherwise participate in the fishery. *In early 2009, during its trailing actions the Council considered but rejected substantially modifying provisions pertaining to who is eligible to own the QS.*

While transferability is an important component, in order to protect against unintended consequences some provisions limit transferability. For example, there will be accumulation limits on the amount of QS or QP that can be controlled by an entity, and accumulation limits on the amount of QP registered to a vessel. The intent of these limits is to prevent excessive control of quota by a participant. *The exact percentages which will be used in these limits will be determined through a trailing action.*

An adaptive management provision will allow the Council to use 10 percent of the trawl allocation to provide incentives, support, or other compensation to offset adverse impacts of the program. This program may benefit communities and processors, among others. *Details will be the subject of a trailing action.*

#### **E.2.1.4 Tracking and Monitoring**

A tracking and monitoring program is necessary to assure that all catch (including discards) is documented and matched against QP. At-sea observers would be required on all vessels and shoreside monitoring during all off-loading (100 percent coverage). Cameras may be used to augment the observers and assure compliance. Compared to status quo monitoring, this will be a significant increase for a large portion of the trawl fleet, particularly nonwhiting shoreside vessels. More accurate estimates of total mortality will benefit stock conservation goals. Discarding will be allowed, though all fish discarded will also have to be covered by QP. There would be 100 percent shoreside monitoring; and there may be limited landing hours to control costs. Additionally, a program for the mandatory submission of economic data is included to facilitate monitoring program performance.

#### **E.2.1.5 Costs and Fee Structure**

Program costs are of concern and ongoing Federal administrative costs are estimated in the EIS at \$2.4 to \$2.9 million per year for the entire trawl rationalization program, including the co-ops for the at-sea segment of the fishery (see Section 3). Program benefits are expected to significantly exceed costs. The costs listed here do not include initial implementation costs or the costs that industry will bear for observers. Fee structures will be proposed to recover program costs from industry, up to the limit of three percent of exvessel value.

#### **E.2.1.6 Program Monitoring, Review and Future Auction**

The Council will conduct a formal review of program performance no later than five years after implementation and every four years thereafter. The result of the evaluation could include dissolution of the program, revocation of all or part of quota shares, or other fundamental changes to the program. At the time of its first review, the Council will consider also the use of an auction or other nonhistory based method when distributing quota share that may become available after the initial allocation.

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<sup>10</sup> To be eligible to own QS the person need not actually own a U.S. documented fishing vessel.

### E.3 Detailed Specification of IFQ Program Elements and Options

Table 1 provides a complete description of the IFQ program.

**Table 1. Full description of the IFQ Program for shoreside trawl deliveries.**

	Element	SubElement	
<b>A. <u>Trawl Sector Management</u></b>			
A-1.1	Scope for IFQ Management, Including Gear Switching		<p>For trips delivered shoreside, QP will be required to cover catch of all groundfish (including all discards) by limited entry (LE) trawl vessels with certain gear and species exceptions.</p> <p>Gear Exception: Vessels with an LE trawl permit using the following gears would not be required to cover their groundfish catch with QP: exempted trawl, <sup>a</sup> gear types defined in the coastal pelagic species FMP, gear types defined in the highly migratory species FMP, salmon troll, crab pot, and LE fixed gear when the vessel also has a LE permit endorsed for fixed-gear (longline or fishpot) AND has declared that they are fishing in the LE fixed-gear fishery.</p> <p>Species Exception: The following would be an exception from the QP requirement longspine thornyheads south of 34°27' N latitude, minor nearshore rockfish (north and south), black rockfish (WOC), California scorpionfish, cabezon, kelp greenling, shortbelly rockfish, and the "Other Fish" category of groundfish.</p> <p><i>This definition of the scope allows an LE trawl vessel to switch between trawl and nontrawl groundfish gears, including fixed-gear, for the purpose of catching their QP ("gear switching"). It also allows a nontrawl vessel to acquire a trawl permit, and thereby use trawl QP to catch the LE trawl allocation using nontrawl gear.<sup>b</sup></i></p>

**Table 1. Full description of the IFQ program (continued).**

	Element	SubElement	
A-1.2	IFQ Management Units, Including Latitudinal Area Management		<p>QS will carry designations for the species/species group, area, and trawl sector to which it applies (see A-1.3 for the list of trawl sectors). The QP will have the same species/species group, area, and sector designations as the QS on the basis of which the QP was issued. QP will not be used in a trawl sector other than that for which it was issued,<sup>c</sup> and will not be used in a nontrawl sector (i.e. by vessels without trawl permits).<sup>d</sup> QP will not be used in a catch area or for a species/species group other than that for which it is designated.</p> <p>For those species within the scope of the program, the QS/QP species groupings and area subdivisions will be those for which OYs are specified in the acceptable biological catch (ABC)/OY table that is generated through the groundfish biennial specifications process and those for which there is an area-specific precautionary harvest policy<sup>e</sup> QS for remaining minor rockfish will be aggregated for the shelf and slope depth strata (nearshore are excluded from the scope, see Section A-1.1).</p> <p>Changing the management units. After initial QS allocation the Council may alter the management units by changing the management areas or subdividing species groups. Section A-2.1.6 provides methods for reallocating QS when such changes are made after initial implementation of the program.<sup>f</sup> <i>Hereafter, all references to species include species and species group, unless otherwise indicated.</i></p>
A-1.3	General Management and Trawl Sectors		<p>Unless otherwise specified, status quo regulations, other than trip limits <b>for species within the scope of the IFQ program</b>, will remain in place. If individual vessel overages (catch not covered by QP) make it necessary, area restrictions, season closures, or other measures will be used to prevent the trawl sector (in aggregate or the individual trawl sectors listed here) from going over allocations.<sup>g</sup> The IFQ fishery may also be restricted or closed as a result of overages in other sectors.</p> <p>There will be three trawl sectors: shoreside, mothership, and catcher-processors. However, as per Section A-1.1, IFQ will be required only for the shoreside trawl sector. The mothership and catcher-processor sectors will be managed using co-ops, as specified in the co-op section of the trawl rationalization program. If the industry organized voluntary co-op program for the catcher-processor sector collapses, IFQ will be required for the catcher-processor sector, as specified in the co-op program described for that sector.</p> <p><i>Allocation among trawl sectors has been determined in FMP Amendment 21. Those allocations not covered by Amendment 21 will be addressed in the biannual specifications process. Trawl vessels fishing IFQ with nontrawl gear will be required to comply with the RCA lines applicable for that gear. Such restrictions, as necessary, will be determined in a separate process.</i></p>
A-1.4	Management of NonWhiting Trips		<p>Nonwhiting trips are those with less than 50 percent whiting. No changes to management measures, other than those identified in Section A-1.3, have been identified at this time.</p>
A-1.5	Management of Whiting Trips <sup>h</sup>		<p>Whiting seasons will not be changed under the IFQ program, and so the current spring openings will be maintained to control impacts on ESA-listed salmon.<sup>i</sup> When the primary whiting season is closed for shoreside deliveries, cumulative whiting catch limits will apply and shoreside QP will be required to cover whiting incidental catch.</p>

**Table 1. Full description of the IFQ program (continued).**

	Element	SubElement	
A-1.6	Groundfish Permit Length Endorsements		Length endorsement restrictions on LE permits endorsed for groundfish gear will be retained; however, the provision that requires that the size endorsements on trawl permits transferred to smaller vessels be reduced to the size of that smaller vessel will be eliminated (i.e., length endorsements will not change when a trawl-endorsed permit is transferred to a smaller vessel).
<b>A-2. <u>IFQ System Details</u></b>			
A-2.1	<b>Initial Allocation and Direct Reallocation</b>		
A-2.1.1	Eligible Groups	a Groups and Initial Split of QS	<p><b>Eligible Groups</b> The initial allocation of QS will be made either only to permit owners and processors, as follows.</p> <p>Whiting QS: 80 percent to permits, 20 percent to processors and zero percent for adaptive management.  Nonwhiting QS: 90 percent to permits, zero percent to processors, and 10 percent for adaptive management.</p> <p><i>After initial allocation, trading will likely result in changes in the distribution of shares among permit owners and processors. Additionally, entities that are neither permit owners nor processors may acquire QS (see below: "IFQ/Permit Holding Requirements and IFQ Acquisition").</i></p>
		b Permits	Landing history will accrue to the permit under which the landing was made. The owner of a groundfish LE permit at the time of initial allocation will receive the QS issued based on the permit. (Also, see Section A-2.1.4 on permit combinations and other exceptional situations.)
		c Processors and Processing Definition	A special definition of "processor" and "processing" will be used for initial QS allocation. A main intent of the definition is to specify that only the first processor of the fish be credited for the history of that delivery when the initial allocation formula is applied (see footnote for definition). <sup>j</sup>
		d Attributing and Accruing Processing History	<p>For an allocation for <b>shoreside processors (applies only to whiting)</b>:  attribute history to the receiver reported on the landing receipt (i.e. the entity responsible for filling out the state fishticket), except history may be reassigned to an entity not on the landings receipt, if parties agree or through an agency appeals process. <i>The intent of this option is to provide an opportunity for catch history to be assigned to the entity that actually processed the fish.</i></p> <p>For shoreside processors, allocations go to the processing business and successor-in-interest will be recognized. NMFS will develop criteria for use in determining the successor in interest with respect to the entities listed on the landings receipts or otherwise eligible for an initial QS allocation based on being the first processor of the fish.<sup>k</sup></p>
A-2.1.2	Recent Participation	a Permits (including CP permits)	Recent participation is not required in order for a permit to qualify for an initial allocation of QS.
		b Processors (motherships)	Not applicable because a co-op program was provided for this sector rather than IFQs. <i>(This header is being left in the document so that paragraph numbering will correspond to numbering in the analysis.)</i>

**Table 1. Full description of the IFQ program (continued).**

	Element	SubElement	
		c Processors (shoreside)	Recent participation is required to qualify for an initial allocation of whiting QS: 1 mt or more of deliveries from whiting trips in each of any two years from 1998-2004.
A-2.1.3	Allocation Formula	a Permits with catcher vessel history	<p>QS will be issued for all fish management units within the scope of the program (see Section A-1.2) based on equal division and permit history, as follows:<sup>l</sup></p> <p><b>Equal Division:</b> There will be an equal division of the buy-back permits' pool of QS among all qualifying permits (<i>except the incidentally caught overfished species other than canary</i>). Qualifying permits include all catcher vessel permits, including those that have been used only in the mothership sector. (The QS pool associated with the buyback permits will be the buyback permit history as a percent of the total fleet history for the allocation period. The calculation will be based on total absolute pounds with no other adjustments and no dropped years.)</p> <p><b>Permit History:</b> The remaining QS (<i>the QS left after setting aside amounts for equal allocation</i>) will be allocated based on each permit's history (see following formulas).</p> <p><b>For the portion of the allocation based on each permit's history.</b></p> <p>For <b>nonwhiting</b> trips, permit history used for QS allocation will be calculated:</p> <p><b>For nonoverfished species:</b> using an allocation period of 1994-2003. Within that period use relative history and drop the three worst years.<sup>m</sup></p> <p><b>For overfished species taken incidentally:</b><sup>n</sup> using target species QS as a proxy based on the following approach: Apply fleet average bycatch rates to each permit's depth and latitude distributions and target species QS allocations. Fleet average bycatch rates for latitudinal areas<sup>o</sup> divided shoreward and seaward of the RCA will be developed from West Coast Observer Program data for 2003-06. For the purposes of the allocation, a permit's QS for each target species will be distributed shoreward and seaward of the RCA and latitudinally based on the permit's logbook information for 2003-06. If a permit does not have any logbooks for 2003-06, fleetwide averages will be used.<sup>p</sup></p> <p>For <b>whiting</b> trips, permit history used for QS allocation will be calculated as follows:</p> <p><b>For whiting,</b> use an allocation period of 1994-2003. Within that period, use relative history and drop the two worst years.<sup>q</sup></p> <p><b>For bycatch species</b> (if IFQ is used for bycatch species): use the whiting history as a proxy (i.e., allocation will be pro rata based on the whiting allocation).</p> <p><b>Area Assignments:</b> Landings history will be assigned to catch areas based on port of landing.<sup>r</sup></p> <p><b>Relative history (percent).</b> For each sector, the permit history for each year is measured as a percent of the sector's total for the year.</p> <p><b>Initial allocations will be constrained by accumulation limits.</b> See Section A-2.2.3.e for a discussion of the limits and divestiture requirements.</p>

**Table 1. Full description of the IFQ program (continued).**

	Element	SubElement	
		b Permits with catcher-processor history	Not applicable because a co-op program was provided for this sector rather than IFQs. <i>(This header is being left in the document so that paragraph numbering will correspond to numbering in the analysis).</i>
		c Processors (motherships)	Not applicable because a co-op program was provided for this sector rather than IFQs <i>(This header is being left in the document so that paragraph numbering will correspond to numbering in the analysis).</i>
		d Processors (shoreside)	For whiting: <ul style="list-style-type: none"> <li>Allocate whiting QS based on the entity's history for the allocation period of 1998 <sup>s</sup>-2004 (drop two worst years) and use relative history.</li> </ul> <b>Initial allocations will be constrained by accumulation limits.</b> See Section A-2.2.3.e for a discussion of the limits and divestiture requirements.
A-2.1.4	History for Combined Permits and Other Exceptional Situations		Permit history for combined permits will include the history for all the permits that have been combined. For history occurring when two or more trawl permits were stacked, split the history evenly between the stacked permits. History for illegal landings will not count toward an allocation of QS. Landings made under nonwhiting Experimental Fishing Permits (EFPs) that are in excess of the cumulative limits in place for the nonEFP fishery will not count toward an allocation of QS. Compensation fish will not count toward an allocation of QS.
A-2.1.5	Initial Issuance Appeals		There will be no Council appeals process on the initial issuance of IFQ. NMFS will develop a proposal for an internal appeals process and bring it to the Council for consideration. Any revisions to an entity's fishtickets must be approved by the state in order to be accepted. Any proposed revisions to fishtickets should undergo review by state enforcement personnel prior to finalization of the revisions.



**Table 1. Full description of the IFQ program (continued).**

	Element	SubElement	
A-2.1.6	Direct Reallocation and Future Allocations After Initial Issuance		<p><b>Reallocation With Change in Overfished Status:</b> When an overfished species is rebuilt or a species becomes overfished there may be a change in the QS allocation within a sector (allocation between sectors is addressed in the intersector allocation process). When a stock becomes rebuilt, the reallocation will be to facilitate the re-establishment of historic target fishing opportunities. When a stock becomes overfished, QS may be reallocated to maintain target fisheries to the degree possible. That change may be based on a person's holding of QS for target species associated with the rebuilt species or other approaches deemed appropriate by the Council.</p> <p><b>Reallocation With Changes in Area Management</b> (Changes in management lines are expected to be rare; however, when they occur the following provides for the reallocation of QS in a manner that will give individual QS holders with the same amounts of total QP before and after the line changes.)</p> <p><b>Area Subdivision:</b> If at any time after the initial allocation an IFQ management unit is geographically subdivided, those holding QS for the unit being subdivided will receive an amount of QS for each newly created area that is equivalent to the amount they held for the area before it was subdivided.</p> <p><b>Area Recombination:</b> When two areas are combined, the QS held by individuals in each area will be adjusted proportionally such that (1) the total QS for the area sums to 100 percent, and (2) a person holding QS in the newly created area will receive the same amount of total QP as they would if the areas had not been combined.</p> <p><b>Area Line Movement:</b> When a management boundary line is moved, the QS held by individuals in each area will be adjusted proportionally such that they each maintain their same share of the trawl allocation on a coastwide basis (a fishing area may expand or decrease, but the individual's QP for both areas combined wouldn't change because of the change in areas). In order to achieve this end, the holders of QS in the area being reduced will receive QS for the area being expanded, such that the total QP they would be issued will not be reduced as a result of the area reduction.<sup>1</sup> Those holding QS in the area being expanded will have their QS reduced such that the total QP they receive in the year of the line movement will not increase as a result of the expansion (nor will it be reduced).</p> <p><b>Reallocation With Subdivision of a Species Group:</b> If at any time after the initial allocation an IFQ management unit for a species group is subdivided, those holding QS for the unit being subdivided will receive an amount of QS for each newly created IFQ management units that is equivalent to the amount they held for the species group before it was subdivided. For example, if a person holds one percent of a species group before the subdivision, that person will hold one percent of the QS for each of the groups resulting from the subdivision.</p> <p><b>Future Allocation of Groundfish Outside the Scope of the IFQ Program:</b> For the "Other Fish," category of groundfish, if at some time in the future the Council adds it to the IFQ system, the initial allocation would be determined using the same history criteria as was used for other IFQ species (i.e. 1994-2003 history), unless otherwise specified by a future Council action.</p>

**Table 1. Full description of the IFQ program (continued).**

	Element	SubElement	
A-2.2	<b>Permit/IFQ Holding Requirements and Acquisition (after initial allocation)</b>		
A-2.2.1	Permit/IFQ Holding Requirement		<ol style="list-style-type: none"> <li>1. Only vessels with LE trawl permits are allowed to fish in the trawl IFQ fishery.</li> <li>2. For a vessel to use QP, the QP must be in the vessel's QP account.</li> <li>3. All catch a vessel takes on a trip must be covered with QP within 30 days of the time that data or documentation from the trip shows there is an overage unless the overage is within the limits of the carryover provision (Section A-2.2.2.b), in which case the vessel has 30 days or a reasonable time (to be determined) after the QP for the following year are issued, whichever is greater.<sup>u</sup></li> <li>4. For any vessel with an overage (catch not covered by QP), fishing that is within the scope of the IFQ program (Section A-1.1) will be prohibited until the overage is covered, regardless of the amount of the overage. Vessels which have not adequately covered their overage within the time limits specified in paragraph 3, must still cover the overage before resuming fishing, using QP from the following year(s), if necessary. If a vessel covers its overage, but coverage occurs outside the specified time limit (paragraph 3), the vessel may still be cited for a program violation.</li> <li>5. For vessels with an overage, the LE permit may not be sold or transferred until the deficit is cleared.</li> </ol>
A-2.2.2	IFQ Annual Issuance	a Annual Quota Pound Issuance	<p>QP will be issued annually to QS holders based on the amount of QS held.<sup>v</sup></p> <p><i>As specified above, QS holders will have to transfer their QP to a vessel account in order for those QP to be used.</i></p>

**Table 1. Full description of the IFQ program (continued).**

	Element	SubElement	
		b Carryover (Surplus or Deficit)	<p>To the extent allowed by the conservation requirements of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), a carryover allowance will allow surplus QP in a vessel's QP account to be carried over from one year to the next or allow a deficit in a vessel's QP account for one year to be carried over and covered with QP from a subsequent year. Surplus QP may not be carried over for more than one year.</p> <p>A vessel with a QP <b>surplus</b> at the end of the current year will be able to use that QP in the immediately following year, up to the limit of the carryover allowance (see below). However, if there is a decline in the OY, the amount of QP carried over as a surplus will be reduced in proportion to the reduction in the OY.</p> <p>A vessel with a QP <b>deficit</b> in the current year will be able to cover that deficit with QP from the following year without incurring a violation if</p> <ul style="list-style-type: none"> <li>(1) the amount of QP it needs from the following year is within the carryover allowance (see below), and</li> <li>(2) the QP are acquired within the time limits specified in A-2.2.1.<sup>w</sup></li> </ul> <p><b>Carryover Allowance:</b> Limit of up to 10 percent carryover for each species. This applies to both nonoverfished species and overfished species. The percentage is calculated based on the total pounds (used and unused) in a vessel's QP account for the current year. The percentage used for the carryover provision may be changed during the biennial specifications process.</p>
		c QS Use-or-Lose Provisions (Deleted)	<i>This section has been deleted but the numbering is being maintained as a placeholder so as not to change section numbering and corresponding references in the analysis.<sup>x</sup></i>
		d Entry Level Opportunities	Under the MSA, the Council is required to consider entry level fishermen, small vessel owners, and crew members, and in particular the possible allocation of a portion of the annual harvest to individuals falling in those categories. No special provisions have been identified for analysis. New entry is addressed indirectly by allowing crew, captains and others to acquire QS in small increments.
A-2.2.3	IFQ Transfer Rules	a Eligible to Own or Hold	No person can acquire quota shares or quota pounds other than 1) a United States citizen, 2) a permanent resident alien, or 3) a corporation, partnership, or other entity established under the laws of the United States or any State, that is eligible to own and control a U.S. fishing vessel with a fishery endorsement pursuant to 46 USC 12113 (general fishery endorsement requirements and 75 percent citizenship requirement for entities). However, there is an exception for any entity that owns a mothership that participated in the west coast groundfish fishery during the allocation period and is eligible to own or control that U.S. fishing vessel with a fishery endorsement pursuant to sections 203(g) and 213(g) of the AFA.

**Table 1. Full description of the IFQ program (continued).**

	Element	SubElement	
		b Transfers and Leasing	<p>QS/QP will be transferable and transfers must be registered with NMFS. NMFS will not differentiate between a transfer for a lease and a permanent transfer.<sup>y</sup></p> <p>Each year, all QP must be transferred to a vessel account. A penalty for not meeting this transfer requirement has not been recommended; however, this requirement is intended to encourage its availability for use by the fleet.</p> <p>QP can only be transferred into vessel accounts. Once in a vessel account QP can be transferred from one vessel account to another.</p>
		c Temporary Transfer Prohibition	<p>NMFS may establish temporary prohibitions on the transfer of QS, as necessary to facilitate program administration.</p> <p>QS will not be transferred in the first two years of the program (QP will be transferable).</p>
		d Divisibility	<p>QS will be highly divisible and the QP will be transferred in whole pound units (i.e. fractions of a pound may not be transferred).</p>

**Table 1. Full description of the IFQ program (continued).**

	Element	SubElement	
		e Accumulation Limits (Vessel and Control)	<p>Limits<sup>z</sup> may vary by species/species group, areas, and sector. The values for the limits are provided in Table 2. The vessel unused QP limits may be revisited in the first biennial specifications process after implementation of the program.</p> <p><b>Vessel Use Limit (Vessel Limit):</b> A limit on the total QP that may be registered for a single vessel during the year. This element will mean that a vessel could not have more used and unused quota pounds registered for the vessel than a predetermined percentage of the QP pool.</p> <p><b>Vessel Unused QP Limit:</b> A limit on the amount of unused QP that may be registered to the vessel at any time. This limit applies only for overfished species and Pacific halibut.</p> <p><b>QS Control Limit:</b> A person, individually or collectively, may not control QS in excess of the specified limit (because there is no the grandfather clause). QS controlled by a person shall include those registered to that person, plus those controlled by other entities in which the person has a direct or indirect ownership interest, as well as shares that the person controls through other means.<sup>aa</sup> The calculation of QS controlled by a person will follow the “individual and collective” rule.</p> <p>Individual and Collective Rule: The QS that counts toward a person's accumulation limit will include 1) the QS or QP owned by them, and 2) a portion of the QS owned by any entity in which that person has an interest. The person's share of interest in that entity will determine the portion of that entity's QS that counts toward the person's limit.<sup>bb</sup></p> <p><b>Grandfather Clause and Divestiture:</b> There will not be a grandfather clause for the QS control limits, however, an adjustment period is provided through the following divestiture rules. QS will be issued for amounts in excess of aggregate and species control limits only for holders of permits transferred by November 8, 2008, if such transfers have been registered with NMFS by November 30, 2008. The holder of any permit transferred after that time will be eligible to receive an initial allocation for that permit of only those QS that are within the aggregate and individual species control limits. Anyone who qualifies for an initial allocation of QS in excess of the control limits will be allowed to receive that allocation but required to divest themselves of that excess QS sometime during years three and four of the IFQ program (the two years after the QS transfer moratorium specified in Section A-2.2.3.c). Holders of QS in excess of the limits may receive and use the QP associated with that excess, up to the time their divestiture is completed. However, QP for year five of the program will not be issued for QS held in excess of the limits. At the end of year four, any QS still held in excess of the species or aggregate limits in place at the time of the initial QS allocation will be revoked and redistributed to the remainder of the QS holders in proportion to their QS holdings. No compensation will be due for any revoked shares. Divestiture transfers will be allowed in accordance with the provisions established here and the transfer rules and processes implemented by NMFS. Permit transfers will not be limited or required by the divestiture provision.</p> <p><b>Calculation of Aggregate Nonwhiting QS Holdings:</b> To determining how much aggregate nonwhiting QS an entity holds, an entity's QS for each species will be converted to pounds. This conversion will always be conducted using the trawl allocations applied to the 2010 OYs, until such time as the Council recommends otherwise. Specifically, each entity's QS for each species will be multiplied by the shoreside trawl allocation for that species. The entity's pounds for all nonwhiting species will then be summed and divided by the shoreside trawl allocation of all nonwhiting species to get the entity's share of the aggregate nonwhiting trawl quota.</p> <p><i>Note: QS that is not allocated because of the accumulation limits and absence of the grandfather clause will be distributed to other eligible recipients in a manner that maintains the distribution among groups specified in A-2.1.1 and based on the allocation formulas specified in A-2.1.3.</i></p>

**Table 1. Full description of the IFQ program (continued).**

	Element	SubElement	
A-2.3	<b>Program Administration</b>		
A-2.3.1	Tracking, Monitoring and Enforcement		<p>It is the Council intent to provide NMFS flexibility sufficient to design and implement a tracking and monitoring program that will achieve the goals and objectives of the trawl rationalization program.</p> <p style="text-align: center;"><b>Discarding by Shoreside Sector</b></p> <p>Nonwhiting – Discarding of IFQ species allowed, discarding of IBQ species required, discarding of nongroundfish species allowed.</p> <p>Whiting  Maximized retention vessels:  Discarding of fish covered by IFQ or IBQ, and nongroundfish species prohibited.  Vessels sorting at-sea:  Same as for nonwhiting.</p> <p style="text-align: center;"><b>At-Sea Catch Monitoring for Shoreside Sector</b></p> <p>Nonwhiting – The sorting of catch, the weighing and discarding of any IBQ and IFQ species, and the retention of IFQ species must be monitored by the observer.</p> <p>Whiting  For maximized retention vessels: video monitoring as proposed under Amendment 10.  Observers would be required in addition to or as a replacement for video monitoring.  For vessels that sort at-sea: The sorting, weighing and discarding of any IFQ or IBQ species must be monitored by an observer with supplemental video monitoring.</p> <p style="text-align: center;"><b>Shoreside Landings Monitoring</b></p> <p>The sorting, weighing and reporting of any IFQ species must be monitored by a shoreside landings monitor (IBQ will have been discarded at sea).</p> <p>(Description continued on next page.)</p>

**Table 1. Full description of the IFQ program (continued).**

	Element	SubElement	
			<p>(...continued from previous page)</p> <p><b>Catch Tracking Mechanisms for Shoreside Sector</b></p> <p><b>Electronic vessel logbook report</b> VMS-based electronic logbook required to be transmitted from vessel. At-sea entry by vessel personnel required including catch weight by species and if retained or discarded.</p> <p><b>Vessel landing declaration report</b> Mandatory declaration reports.</p> <p><b>Electronic ITQ landing report</b> Mandatory reports completed by processors and similar to electronic fishticket report.</p> <p><b>Processor production report</b> Mandatory reports (possible inclusion of proprietary data included to be recommended as option is fleshed out).</p> <p><b>Cost Control Mechanisms for Shoreside Sector</b></p> <p><b>Shoreside landing hour restrictions</b> Landing hours may be restricted.</p> <p><b>Shoreside site Licenses</b> Mandatory license for shoreside deliveries. License can be issued to any site that meets the monitoring requirements.</p> <p><b>Vessel Certification</b> Mandatory certification. Certificate can be issued to any vessel that meets the monitoring requirements.</p> <p><b>Program Performance Measures for Shoreside Sector</b> Integrate into the tracking and monitoring program the collection of data on cost, earnings and profitability; economic efficiency and stability; capacity measures; net benefits to society; distribution of net benefits; product quality; functioning of quota market; incentives to reduce bycatch; market power; spillover effects into other fisheries; contribution to regional economies (income and employment); distributional effects/community impacts; employment in seafood catching and processing; safety; bycatch and discards; administrative, enforcement, and management costs. (See A-2.3.2)</p>
A-2.3.2	Socio-Economic Data Collection		The data collection program will be expanded and submission of economic data by harvesters and processors will be mandatory. Random and targeted audits may be used to validate mandatory data submissions. See footnote for a full description <sup>cc</sup> Information on QS transaction prices, will be included in a central QS ownership registry. <i>NOTE: Data collection started before the first year of implementation would be beneficial, in order to have a baseline for comparison.</i>
A-2.3.3	Program Costs	a Cost Recovery	Fees up to three percent of exvessel value, consistent with 303A(e) of the MSA may be assessed. Cost recovery shall be for costs of management, data collection, analysis, and enforcement activities.
		b Fee Structure	To be determined. The TIQC recommended a fee structure that reflects usage. A fee structure that allows for equitable sharing of observer costs for smaller vessels may be developed.

**Table 1. Full description of the IFQ program (continued).**

	Element	SubElement	
A-2.3.4	Program Duration and Modification		<p>The Council shall begin a review of the IFQ program no later than 5 years after implementation of the program. The review will evaluate the progress the IFQ program has made in achieving the goal and objectives of Amendment 20. The result of this evaluation could include dissolution of the program, revocation of all or part of quota shares, or other fundamental changes to the program. Holders of quota shares should remain cognizant of this fact when making decisions regarding their quota shares, including buying selling, and leasing of these shares.</p> <p>The Council shall consider the use of an auction or other nonhistory based methods when distributing quota share that may become available after initial allocation. This may include quota created when a stock transitions from overfished to nonoverfished status, quota not used by the adaptive management program, quota forfeited to “use it or lose it” provisions, and any quota that becomes available as a result of the initial or subsequent reviews of the program.</p> <p>The specific form of the auction or other method of distribution shall be designed to achieve the goals of Amendment 20, specifically including minimizing the adverse effects from an IFQ program on fishing communities to the extent practical.</p> <p>After the initial review, there will be a review process every four years. A community advisory committee will take part in the review of IFQ program performance.</p>



**Table 1. Full description of the IFQ program (continued).**

	Element	SubElement
A-3	<b><u>Adaptive Management (also see Section A-9)</u></b>	<p>Ten percent of the nonwhiting QS will be reserved to facilitate adaptive management in the shoreside nonwhiting sector. Therefore, each year 10 percent of the shoreside trawl sector nonwhiting quota pounds will be available for use in adaptive management (adaptive management QP). The set aside will be used to address the following objectives.</p> <ul style="list-style-type: none"> <li>○ Community stability</li> <li>○ Processor stability</li> <li>○ Conservation</li> <li>○ Unintended/Unforeseen consequences of IFQ management.</li> <li>○ Facilitating new entrants.</li> </ul> <p><b>Years One and Two.</b> During the first two years in which the IFQ program is in place, the method to be used in distributing QP in years three through five will be determined, including.</p> <ul style="list-style-type: none"> <li>○ The decision making and organization structure to be used in distributing the QP set aside<sup>dd</sup></li> <li>○ The formula for determining community and processor eligibility, as well as methods for allocation, consistent with additional goals.</li> <li>○ The division of QP among the states.</li> <li>○ Whether to allow the multi-year commitment of QP to a particular project.</li> </ul> <p><b>Years Three through Five.</b> QP will be distributed through the organizational structure, decision process, formulas and criteria developed in years one and two and implemented through subsequent Council recommendation and NMFS rule making processes. Consideration will be given to the multiyear commitment of QP to particular projects (three year commitments).</p> <p><b>Review and Duration.</b> The set aside of QP for the identified objectives will be reviewed as part of the year five comprehensive review and a range of sunset dates will be considered, including 10, 15, 20 year and no sunset date options.</p>
A-4	<b><u>Pacific Halibut IBQ—nonretention</u></b>	<p>IBQ for Pacific halibut bycatch in the trawl fishery will be established. The IBQ will be required to cover legal and sublegal sized Pacific halibut bycatch mortality in the area north of 40°10' N latitude. It is the intent of the Council that halibut IBQ mortality be estimated on an individual vessel basis. Such IBQ will be issued on the basis of a bycatch rate applied to the target species QS an entity receives in a manner similar to that described in Section A-2.1.3.a, for overfished species caught incidentally. Area-specific bycatch rates may be used for allocation but halibut IBQ will not be geographically subdivided.</p>

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**Table 2.** Control and vessel limit options: Council preferred alternative.

<b>Species Category</b>	<b>Vessel Limit (Applies to all QP in a Vessel Account, Used and Unused)</b>	<b>Vessel Unused QP Limit</b>	<b>QS Control Lim</b>
Nonwhiting Groundfish Species	3.2%		2.7%
Lingcod - coastwide	3.8%		2.5%
Pacific Cod	20.0%		12.0%
Pacific whiting (shoreside)	15.0%		10.0%
Pacific whiting (mothership)	30.0%		20.0%
Sablefish			
N. of 36° (Monterey north)	4.5%		3.0%
S. of 36° (Conception area)	15.0%		10.0%
PACIFIC OCEAN PERCH	6.0%	4.0%	4.0%
WIDOW ROCKFISH *	8.5%	5.1%	5.1%
CANARY ROCKFISH	10.0%	4.4%	4.4%
Chilipepper Rockfish	15.0%		10.0%
BOCACCIO	15.4%	13.2%	13.2%
Splitnose Rockfish	15.0%		10.0%
Yellowtail Rockfish	7.5%		5.0%
Shortspine Thornyhead			
N. of 34°27'	9.0%		6.0%
S. of 34°27'	9.0%		6.0%
Longspine Thornyhead			
N. of 34°27'	9.0%		6.0%
COWCOD	17.7%	17.7%	17.7%
DARKBLOTCHED	6.8%	4.5%	4.5%
YELLOWEYE	11.4%	5.7%	5.7%
Minor Rockfish North			
Shelf Species	7.5%		5.0%
Slope Species	7.5%		5.0%
Minor Rockfish South			
Shelf Species	13.5%		9.0%
Slope Species	9.0%		6.0%
Dover sole	3.9%		2.6%
English Sole	7.5%		5.0%
Petrale Sole	4.5%		3.0%
Arrowtooth Flounder	20.0%		10.0%
Starry Flounder	20.0%		10.0%
Other Flatfish	15.0%		10.0%
Other Fish	7.5%		5.0%
Pacific Halibut	14.4%	5.4%	5.4%

\* If widow rockfish is rebuilt before initial allocation of QS, the vessel limit will be set at limit will be 1.5 times the control limit.

#### **E.4 Whiting At-sea Trawl Sector: Cooperative Program (Appendix B of the EIS)**

The at-sea whiting sector co-op program is described generally below. Table 3 provides an outline of the sections of the program. A full description of the co-op programs follows Table 3, beginning with a section on management of the whiting fishery and followed by sections on the mothership and catcher-processor sectors of the whiting fishery (the “at-sea” sectors).

The Council considered but did not adopt a co-op program for the shoreside whiting fishery. Instead, the shoreside whiting sector was merged with the nonwhiting sector, both to be managed with IFQs. However, section place holders for the shoreside whiting co-op program are maintained in this document to maintain a numbering system that will correspond to the numbering of the alternatives and sections of the analysis as they are laid out in the EIS.

#### **E.5 Overview of Co-op Program Elements**

##### ***E.5.1 At-sea Whiting Sector Management under Co-ops***

While co-ops will be used to control the harvest within the at-sea whiting sectors, a number of management measures will still be required to control competition between the whiting sectors. This section covers those measures along with other measures which will apply to all sectors managed under co-ops, such as observer requirements and mandatory submission of economic data. The description of the co-op management program for each at-sea whiting sector starts in Section E.5.2.

The existing allocation of whiting between the shoreside, mothership, and catcher-processor (CP) sectors will not change under the rationalization program (42, 24, and 34 percent, respectively).

Provisions also address bycatch in the at-sea whiting fishery (particularly that of certain overfished species). The Council is recommending incidental groundfish species caps for each of the whiting sectors, for the co-op and nonco-op fisheries within the mothership sector, and for the co-ops within the mothership sector. Within sectors, bycatch allocations would be pro rata, based on the amount of whiting allocated to that sector.

Area closures may be used to control the pace of the fishery. For the mothership sector, the fishery will be divided into a co-op fishery and a nonco-op fishery (for those who do not desire to take part in a co-op). Participants in the nonco-op fishery will not have a claim to a particular amount of the fish allocated to that fishery; therefore the vessels will likely race to harvest the available allocation.

NMFS will close the whiting fishery, a particular sector, the co-op or nonco-op fishery within a sector, or individual co-ops, as appropriate, when it is projected that a whiting catch or bycatch limit will be reached. With respect to co-ops, inseason monitoring and closure will be needed only at the highest level of aggregation of the co-ops. For example, if individual co-ops join together to form an inter-co-op that covers the entirety of one of the whiting sectors, then NMFS will track and close at the sector level. Nevertheless, vessel level monitoring will still be required to ensure that catch is accurately recorded.

Given the high level of monitoring already in place in the whiting fishery, only moderate changes in monitoring are needed to implement this program for the at-sea whiting fishery. For the at-sea

segment of the fishery, 100 percent coverage aboard mothership and catcher processors will continue. A program for the mandatory submission of economic data is also included, to facilitate monitoring program performance.

### ***E.5.2 Co-ops for Catcher Vessels Delivering to Motherships***

Under this program, those who hold whiting-endorsed permits for catcher vessels in the mothership sector will choose each year whether to be part of a co-op or to register to fish in the nonco-op portion of the fishery. The holders of catcher vessel permits with mothership whiting endorsements will form the co-ops. Based on its catch history, each permit that qualifies for a mothership whiting endorsement will be capped at a portion of the history (endorsement share) of the mothership sector allocation of whiting and bycatch species. Each year, NMFS will distribute a catch allocation to each catcher vessel co-op based on the sum of the endorsement shares for the permits registered to that co-op. NMFS will also distribute a catch allocation each year to the nonco-op portion of the fishery, based on the collective endorsement shares of the permits opting to participate in the nonco-op fishery.

The co-op organization will coordinate harvest by its members. Although co-op agreements will include a mandatory clause that the catch allocation made to a member must equal the amount that the member brings into the co-op, co-op members may transfer catch allocations among themselves. Similarly, if multiple co-ops join together in an inter-co-op, one co-op will be allowed to transfer catch allocation to another co-op within that inter-co-op. NMFS will not necessarily need to track transfers among co-op members or within an inter-co-op.

The class of motherships will be closed by creating a LE permit for mothership vessels. There will be restrictions limiting a vessels ability to both catch and operate as a mothership in the whiting fishery in the same year. This will limit the ability of processing vessels to move between the catcher processor and mothership sectors.

Prior to the start of each season, each catcher vessel permit desiring to participate in the co-op fishery will obligate itself to deliver its catch to a particular mothership. The obligation to a particular co-op or mothership will not carry-over from one year to the next, it may be changed at the catcher vessel permit owners discretion based on its preseason declaration. While catch may be transferred among participants in a co-op or inter-co-op, such transfers would not change the mothership to which the catch is obligated, unless a mutual agreement is reached.

As in the IFQ program, accumulation limits will be imposed to prevent excessive concentration of catch allocations. They will cap the proportion of whiting that an individual or entity can process, cap the proportion of whiting an individual or entity could accumulate via ownership of catcher vessel permit(s), and cap the amount that can be landed by any one catcher vessel.

### ***E.5.3 Co-ops for Catcher-Processors***

Under the catcher-processor (CP) co-op program, as under status quo, a voluntary CP co-op may continue to be formed by CP permit holders. This system will continue as long the existing co-op system continues to operate successfully or until the FMP is otherwise amended. If the voluntary co-op system fails, it will be replaced with an IFQ system. Currently the co-op operates under a private contract that includes division of the harvest among participants according to an agreed schedule. In the event the co-op system fails, IFQ will be allocated equally to each CP permit (equally divided among all CP endorsed permits).

Under the catcher-processor (CP) co-op program, the main Council recommendations are the creation of a CP endorsement to close the CP fishery to new entrants and the assignment of an allocation to the voluntary CP co-op. The endorsement will be granted to LE permits registered to CP vessels if the vessels meet specified qualification criteria. Only vessels with a CP LE permit will be allowed to harvest fish from the CP sector's allocation. LE permits with CP endorsements will continue to be transferable. NMFS will not establish an allocation of catch or catch history among CP permits unless the co-op fails. NMFS will specify in regulation the assignment of the CP sector allocation to the CP sector co-op. If necessary, a closure will be used to keep the CP sector from exceeding its allocation of whiting and bycatch species.

## E.6 Detailed Specification of Co-op Program Elements

**Table 3 Overview of the co-op program.**

<b>B.1</b>	<b><i>Whiting Sector Management Under Co-ops</i></b>
B-1.1	Whiting Management
B-1.2	Annual Whiting Rollovers
B-1.3	Bycatch Species Management
B-1.4	At-sea Observers/Monitoring
B-1.5	Mandatory Data Collection
B-1.6	Adaptive Management—Not included in recommendation. <i>(This section header is being maintained as a place holder so that numbering will correspond to that of the alternatives and analysis in the EIS).</i>
B-1.7	Length Endorsement
<b>B-2</b>	<b><i>Whiting Mothership Sector Co-op Program</i></b>
B-2.1	Participation in the Mothership Sector
B-2.2	Permits/Endorsement Qualification and Characteristics
B-2.3	Co-op Formation and Operation Rules
B-2.4	Obligations to Processors
B-2.5	NMFS Role
<b>B-3</b>	<b><i>Whiting Shoreside Sector Co-op Program</i></b>
	Not included in recommendation. <i>(This section header is being maintained as a place holder).</i>
<b>B-4</b>	<b><i>Catcher-Processors Co-op Program</i></b>
B-4.1	Participation in the Catcher-Processor Sector and Endorsement Qualification
B-4.2	Co-op Formation and Operation Rules
B-4.3	NMFS Role

## **B-1 Whiting Sector Management Under Co-ops**

### **B-1.1 Whiting Management**

Under the co-op program, catcher vessel permits for the mothership sector will be endorsed for deliveries to motherships and amounts of history assigned to each catcher vessel permit based on past harvest in the fishery. Catcher-processor permits will be endorsed for participation in the catcher-processor sector.

The whiting catch history calculation for each mothership-endorsed catcher vessel permit [CV(MS)] will be assigned to a pool for the co-op in which the permit will participate or a pool for the mothership nonco-op fishery. NMFS will make an allocation assignment to the catcher-processor sector co-op based on the allocation to the CP sector. Co-ops are responsible for monitoring and enforcing the catch limits of co-op members.

NMFS will monitor the catch in the mothership nonco-op fishery, the mothership co-op fishery, the CP fishery, and the overall whiting catch of all at-sea sectors. NMFS will close each segment of the fishery based on projected attainment of whiting catch. Additionally, all at-sea sectors will be subject to closure based on attainment of the overall trawl whiting allocation.

### **B-1.2 Annual Whiting Rollovers**

There will not be a rollover of unused whiting from one sector to another.

### **B-1.3 Bycatch Species Management**

For the foreseeable future, the whiting fishery will be managed under bycatch limits (hard caps) for widow, canary, darkblotched rockfish, and Pacific Ocean perch. The catch of all groundfish will be accounted for and tracked against the OY.

The ESA-listed salmon bycatch management measures—that is, the 11,000 Chinook threshold, 0.05 rate threshold, and triggered 100 fathom closure—will also continue to be in place.

The goal of bycatch management is to control the rate and amounts of rockfish and salmon bycatch to ensure each sector is provided an opportunity to harvest its whiting allocation.

There will be a set aside of Pacific halibut for the at-sea whiting fishery, as specified in the intersector allocation process (Amendment 21).

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**B-1.3.1 Bycatch Allocation Subdivision**

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Subdivide bycatch species managed with hard caps (widow, canary, darkblotched rockfish, and Pacific Ocean perch ) among each of the whiting sectors; within the sectors subdivide between the co-op fishery and nonco-op fishery (subdivision for the nonco-op fishery does not apply to the catcher-processor co-op program); and subdivide among co-ops.

Only those species with hard caps will be subdivided for bycatch management and bycatch will be allocated to each permit and co-op pro rata in proportion to its whiting allocation. The mothership sector's bycatch allocation will be divided between its co-op and nonco-op fishery, based on the allocations made to the permits participating in each portion of the fishery.

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**B-1.3.2 Bycatch Management**

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All sectors and co-ops will close based on projected attainment of the at-sea whiting fishery bycatch cap for any one species. The mothership co-op fishery, nonco-op fishery, and catcher-processor fishery will each be closed based on projected attainment of their individual allocation. Additionally, each co-op will cease fishing when its bycatch allocation is reached.

The Council may also use area closures (seasonal or year-round) to manage overfished stocks in the co-op and nonco-op fisheries. The area closures may be the same or different for different species. Area closures may be year-round, seasonal, or triggered automatically by the attainment of certain levels of catch.

Unused bycatch may be rolled over from one sector to another if the sector's full allocation of whiting has been harvested or participants in the sector do not intend to harvest the remaining sector allocation.

<b>B-1.4 At-sea Observers/ Monitoring</b>
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**At-sea Whiting Fishery:** 100 percent observer coverage aboard mothership and catcher-processors will continue. Observers would be required in addition to or as a replacement for video monitoring.<sup>11</sup>

For some coverage, cameras may be used in place of observers (feasibility to be determined). It is the Council intent to provide NMFS flexibility sufficient to design and implementation a tracking and monitoring program that will achieve the goals and objectives of the trawl rationalization program.

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<sup>11</sup> February 2010: The second sentence of this paragraph was adopted as part of the Council's November 2008 motion but it was located under the section on the IFQ program rather than the section on the mothership co-op program.



### **B-1.5 Mandatory Data Collection**

The following are the central elements of the data collection program that will be implemented as part of the co-op program.

- Mandatory submission of economic data for LE trawl industry (harvesters and processors).
- Voluntary submission of economic data for other sectors of the fishing industry.
- Include transaction value information in a centralized registry of ownership.
- Formal monitoring of government costs.

**Mandatory Provisions.** The Council and NMFS shall have the authority to implement a data collection program for cost, revenue, ownership, and employment data, compliance with which will be mandatory for members of the west coast groundfish industry harvesting or processing fish under the Council's authority. Data collected under this authority will be treated as confidential in accordance with Section 402 of the MSA.

A mandatory data collection program shall be developed and implemented as part of the groundfish trawl rationalization program and continued through the life of the program. Cost, revenue, ownership, employment and other information will be collected on a periodic basis (based on scientific requirements) to provide the information necessary to study the impacts of the program, including achievement of goals and objectives associated with the rationalization program. These data may also be used to analyze the economic and social impacts of future FMP amendments on industry, regions, and localities. The program will include targeted and random audits as necessary to verify and validate data submissions. *Data collected under this authority will be treated as confidential in accordance with Section 402 of the MSA.* Additional funding (as compared to status quo) will be needed to support the collection of these data. The data collected would include data needed to meet MSA requirements (including antitrust).

The development of the program shall include a comprehensive discussion of the enforcement of such a program, including discussion of the type of enforcement actions that will be taken if inaccuracies are found in mandatory data submissions. The intent of this action will be to ensure that accurate data are collected without being overly burdensome to industry in the event of unintended errors. Annual reports will be provided to the Council.

**Voluntary Provisions:** A voluntary data collection program will be used to collect information needed to assess spillover impacts on nontrawl fisheries.

**Central Registry:** Information on transaction prices will be included in a central registry of whiting endorsed permit and mothership permit owners. Such information will also be included for sales and lessees.

**Government Costs:** Data will be collected and maintained on the monitoring, administration, and enforcement costs related to governance of the rationalization program.

#### **B-1.6 Adaptive Management**

There will not be an adaptive management set aside for the at-sea whiting fisheries. *(This section is being maintained as a place holder so that numbering will correspond to that in the alternatives and analysis of the EIS.)*

#### **B-1.7 Length Endorsement**

Length endorsement restrictions on LE permits endorsed for groundfish gear will be retained, however, the provision that requires that the size endorsements on trawl permits transferred to smaller vessels be reduced to the size of that smaller vessel will be eliminated (i.e. length endorsements will not change when a trawl endorsed permit is transferred to a smaller vessel).

## **B-2 Whiting Mothership Sector Co-Op Program**

**Overview.** Qualified permits will be endorsed for mothership (MS) co-op participation. Each year the holders of those permits will choose whether their vessels will fish in the co-op fishery, in which individual co-ops will direct harvest, or fish in a nonco-op fishery that will be managed by NMFS as an Olympic style fishery. The co-op will be obligated to deliver its fish to specific mothership processors based on the obligations of each permit in the co-op determined based on preseason declarations. LE permits will be issued for motherships and required for a mothership to receive whiting from catcher vessels.

### **B-2.1 Participation in the Mothership Sector**

#### **a. Catcher Vessels**

Vessels with CV(MS)-endorsed permits may participate in either the co-op or nonco-op portion of the mothership fishery. They will choose annually which fishery they will participate in for the coming year. Additionally, any groundfish LE trawl permitted vessels may participate in the co-op portion of the fishery if they join a co-op (as described in Section B-2.3.3).<sup>12</sup> No other catcher vessels may participate in the mothership fishery.

A vessel may not engage in the processing of whiting during any year in which a catcher vessel (mothership) (CV[MS]) endorsed permit is registered for use with the vessel.

#### **b. Processors**

Only motherships with a mothership LE permit may receive deliveries from catcher vessels participating in the co-op or nonco-op portions of the mothership sector whiting fishery. (Note: motherships may acquire such permits by transfer; see Section B-2.2.2.)

#### **c. Vessels Excluded<sup>13</sup>**

Motherships also operating as a catcher-processor may not operate as a mothership: during a year in which it also participates as a catcher-processor.

<sup>12</sup> When such permits participate in a co-op the co-op will not be allocated any additional fish based on participation by such a vessel.

<sup>13</sup> A vessel that has been under foreign registry after the date of the AFA and that has participated in fisheries in the territorial waters or exclusive economic zones of other countries will not be eligible to participate as a mothership in the mothership sector of the Pacific whiting fishery, as per the AFA's modification of Section 12102(c)(6) of the USC. Section 12102(c)(6) of the USC has since been renumbered.

## **B-2.2 Permits/Endorsement Qualification and Characteristics**

### **B-2.2.1 Catcher Vessel Mothership (CV[MS] Whiting Endorsement)**

#### **a. Endorsement Qualification and History Assignment**

Permits with a qualifying history will be designated as CV(MS) permits through the addition of an endorsement to their LE groundfish permit. At the time of endorsement qualification, each permit will also be assigned a catch history that will determine the share of the mothership whiting allocation associated with that permit.

**Qualifying for a CV(MS) Whiting Endorsement.** A LE permit will qualify for a CV(MS) whiting endorsement if it has a total of more than 500 mt of whiting deliveries to motherships from 1994 through 2003.

**Catch History Assignment (Identification of Endorsement Related Catch History).** The initial catch history calculation for CV(MS) whiting endorsements will be based on whiting history of the permit for 1994 through 2003, dropping two<sup>14</sup> years. A permit's history for each year will be measured as a share of the fleet history for that year (i.e. "relative pounds" will be used). This catch history will be used by NMFS to assign both whiting and bycatch species allocations to the co-ops and nonco-op fishery pools, as per section B.1.3.2.

For the purpose of the endorsement and initial calculation, catch history associated with the permit includes that of permits that were combined to generate the current permit.

#### **b. Whiting Permit and Endorsement Transferability and Endorsement Severability**

The CV(MS) whiting endorsement (together with the associated catch history) *may not be* severed from the groundfish LE trawl permit. Catch history associated with the whiting endorsement may not be subdivided. CV(MS) permits may be transferred two times during the fishing year, provided that the second transfer is back to the original catcher vessel (i.e. only one transfer per year to a different catcher vessel).

#### **c. Accumulation Limit**

**CV(MS) Permit Ownership:** No individual or entity may own CV(MS) permits for which the allocation total is greater than 20 percent.

**Catcher Vessel Usage Limit:** No vessel may catch more than 30 percent of the mothership sector's whiting allocation.

<sup>14</sup> February 2010: The word "worst" was removed in line with the Council's April 2009 action specifying that the permit owner would be allowed to select the years dropped from the calculation.

#### d. Combination

**CV(MS) Permit Combination to Achieve a Larger Size Endorsement.** When a CV(MS)-endorsed permit is combined with another permit (including unendorsed permits), the resulting permit will be CV(MS) endorsed.<sup>15</sup>

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### **B-2.2.2      *Mothership Processor Permit***

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#### a. Qualifying Entities

The owners of qualifying motherships will be issued MS permits. In the case of bareboat charters, the charterer of the bareboat will be issued the permit.

#### b. Qualification Requirements

A qualifying mothership is one which processed at least 1,000 mt of whiting in each of any two years from 1997 through 2003.

#### c. Transferability

1. MS permits will be transferable
2. MS permits may be transferred to a vessel of any size (there will be no size endorsements associated with the permit). MS permits **may not** be transferred to a vessel engaged in the *harvest* of whiting in the year of the transfer.
3. Limit on the Frequency of Transfers: MS permits may be transferred two times during the fishing year provided that the second transfer is back to the original mothership (i.e. only one transfer per year to a different mothership).

#### d. Usage Limit

No individual or entity owning a MS permit(s) may process more than 45 percent of the total MS sector whiting allocation.

<b>B-2.3 Co-op Formation and Operation Rules.</b>
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### **B-2.3.1      *Who and Number of Co-ops***

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Co-ops are not required but may be voluntarily formed among CV(MS) permit owners. The number of co-ops will be indirectly limited by the limit on the minimum number of vessels able to form a co-op (see Section 2.3.3-b).

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<sup>15</sup> Specifically, a CV(MS)-endorsed permit that is combined with a LE trawl permit that is not CV(MS) endorsed or one that is CV(Shoreside) [CV(SS)] endorsed will be reissued with the CV(MS) endorsement. If the other permit is CV(SS) endorsed, the CV(SS) endorsement will also be maintained on the resulting permit. However, CV(MS) and CV(SS) catch histories will be maintained separately on the resulting permit and be specific to participation in the sectors for which the catch histories were originally determined. If a CV(MS) permit is combined with a CP permit, the CV(MS) endorsement and history will not be reissued on the combined permit. The size endorsement resulting from permit combinations will be determined based on the existing permit combination formula.

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**B-2.3.2      When**


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Each year at a date certain prior to the start of the fishery, MS and CV(MS) permit holders planning to participate in the mothership sector must register with NMFS. At that time CV(MS) permit holders must identify which co-op they will participate in or if they plan to participate in the nonco-op fishery.

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**B-2.3.3      Co-op Agreement Standards**


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**a. Submissions to NMFS and the Council**

**Co-op permit and agreement.** Federal co-op permits will be issued for co-op agreements approved by NMFS. Signed copies of the cooperative contracts must be filed with the Council and NMFS and available for public review before the co-op is authorized to engage in fishing activities.<sup>16</sup> Any material changes or amendments to the contract must be filed annually with the Council and NMFS by a date certain.

**Letter to Department of Justice.** Co-ops must also file with the Council and NMFS a copy of a letter from the co-op requesting a business review letter on the fishery cooperative from the Department of Justice and any response to such request.

**b. Number of Participants in Each Co-op (Including Inter-co-ops)**

CV permits may join together in separate harvester co-ops. A minimum of 20 percent of the CV(MS) permit holders are required to form a co-op.<sup>17</sup> Co-ops may form co-ops with other co-ops. Within one of the whiting sectors, these co-ops may be formed to manage directed catch and/or bycatch. Whiting and bycatch allocations may be transferred among co-ops through inter-co-op agreements.

**c. Catch History Distributions Among Permits**

Co-op agreements must stipulate that catch allocations to members of the co-op be based on their catch history calculation by NMFS used for distribution to the co-op.

**d. Participation by NonCV (MS) Endorsed Permits**

Through temporary arrangements a co-op allocation may be harvested by any catcher vessel holding a valid LE trawl permit which has joined the co-op (including one that does not have a CV(MS) endorsement).<sup>18</sup>

**e. Other Required Co-op Agreement Provisions**


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<sup>16</sup> During council discussion this was flagged by NOAA GC as a potential legal problem.

<sup>17</sup> The minimum threshold number of participants required to form a co-op balances the potential advantages for multiple co-ops while limiting implementation and management costs and administrative requirements for managing this sector.

<sup>18</sup> As a member of the co-op, such a vessel would be subject to Section B-2.4 and the indicated processor obligations.

The Council's intent is to have mothership sector participants work with NMFS to develop and describe a process and co-op agreement requirements to include in implementing regulations for this action.

A co-op agreement must include:

1. A list of all vessels, and which must match the amount distributed to individual permit holders by NMFS.
2. Signature of all permit holders participating in the co-op.
3. A plan to adequately monitor catch and bycatch.
4. Adequate enforcement and penalty provisions to ensure that catch and bycatch overages do not occur.
5. Measures designed to reduce bycatch of overfished species.
6. An obligation to manage inseason transfers of catch history.
7. A requirement that agreement by at least a majority of the members is required to dissolve a co-op (**During council discussion this was flagged by NOAA GC as a potential legal problem**).
8. An obligation to produce an annual report to the Council and NMFS by a date certain documenting the co-op's catch and bycatch data and inseason transfers (the report is to be available for review by the public).
9. Identification of a co-op manager who will:
  - a. serve as the contact person with NMFS, the Council and other co-ops,
  - b. be responsible for the annual distribution of catch and bycatch,
  - c. oversee transfers,
  - d. prepare annual reports, and
  - e. be authorized to receive or respond to any legal process against the co-op.
10. Provisions that prohibit co-op membership by permit holders that have incurred legal sanctions that prevent them from fishing groundfish in the Council region.
11. A provision that requires new owners to comply with membership restrictions in the co-op agreements.

**f. Additional Provisions for Inter-co-op Agreements**

1. In the case of two or more cooperatives entering into an inter-cooperative agreement, the inter-co-op agreement must incorporate and honor the provisions of the individual co-op agreements unless all such agreements (or modifications thereof) are resubmitted for approval.
2. The requirements of Sections 2.3.3.a-2.3.3.e apply to the inter-co-op agreement, except that for the purpose of Section 2.3.3.e., subparagraph 7, the members of the interco-ops are the co-ops and not the participants in each co-op.

**B-2.3.4 Annual Allocation Transferability**

- a. The annual allocations received by a co-op based on catch history of the whiting endorsements held by its members may be transferred among co-op members and from one co-op to another so long as obligations to processors are met (as per Section B-2.4). Additionally, in order to transfer annual allocation from one co-op to another there must be a NMFS approved inter-co-op agreement.
- b. Allocations may not be transferred from the mothership sector to another sector.

## **B-2.4 Obligations to Processors (Processor Ties)**

Each year, a permit will obligate to a processor all of its catch for a coming year.

### **B-2.4.1 Formation and Modification of Processor Tie Obligations**

There will not be processor tie that carries from one year to the next. CV(MS) permits will be obligated to a single MS permit for an entire year but may change to a different MS permit through a preseason declaration of intent.

Between September 1 and December 31 of the year prior to implementation and every year thereafter, each CV(MS) permit is required to contact NMFS and indicate whether CV(MS) permit will be participating in the co-op or nonco-op fishery in the following year. If participating in the co-op fishery, then CV(MS) permit must also provide the name of the MS permit that CV(MS) permit will be linked to in the following year (i.e., annual catcher vessel, mothership linkage that may be changed each year without requirement to go into the "nonco-op" fishery). Once established, the catcher vessel, mothership linkage shall remain in place until changed by CV(MS) permit. By September 1 of the year prior to implementation and every year thereafter, if CV permit would be participating in the co-op fishery in the following year, then CV permit must notify the MS permit that the CV permit QP will be linked to in the following year.<sup>19</sup>

**Mothership Permit Transfer.** If a mothership transfers its MS permit to a different mothership or different owner, the CV(MS) permit obligation for that year remains in place and transfers with the MS permit to the replacement mothership unless the obligation is changed by mutual agreement. The obligation does not extend beyond the fishing year.

### **B-2.4.2 Flexibility in Meeting Obligations to Processors**

#### **a. Temporary Transfer of the Annual Allocation Within the Co-op or from One Co-op to Another**

When CV(MS) permit owners transfer co-op allocations from one co-op member to another within the co-op or from one co-op to another within an inter-co-op such allocations must be delivered to the mothership to which the allocation is obligated through the preseason declaration, unless released by mutual agreement.

#### **b. Mutual Agreement Exception**

By mutual agreement of the CV(MS) permit owner and mothership to which the permit is obligated, a permit may deliver to a licensed mothership other than that to which it is obligated.

### **B-2.4.3 Mothership Processor Withdrawal**

If a mothership withdraws subsequent to quota assignment, then the CV(MS) permit that it is obligated to it is free to participate in the co-op or nonco-op fishery. The MS permit shall notify

<sup>19</sup> February 2010: The last sentence of this paragraph was part of the November 2008 Council motion and was inadvertently omitted from previous drafts of the Council's final preferred alternative.



NMFS and linked CV(MS) permits of its withdrawal, and CV(MS) permits shall notify NMFS of their intent to participate in the co-op or nonco-op fishery thereafter. If continuing in co-op fishery, then CV(MS) permit shall provide NMFS with the name of the new MS permit to which it will be obligated for that season.

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**B-2.5 NMFS Role**

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**B-2.5.1 Permit and Endorsement Issuance**

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NMFS will issue all necessary permits and endorsements under the rules specified under this program. Appeals processes will be provided as appropriate and necessary.

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**B-2.5.2 Fishery Registration and Co-op Approval**

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NMFS will announce a deadline before which all co-op agreements must be received for the coming year. NMFS will review and approve or reject co-op agreements based on standards provided here and other standards that it deems necessary to achieve the policy intent of the Council's actions.

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**B-2.5.3 Annual Allocation to Co-ops and the Nonco-op Fishery**

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**a. Co-op Allocation**

Each year NMFS will determine the percent of the mothership sector's harvest allocation to be given to each co-op based on the catch history calculation of CV(MS) permits registered to participate in the co-op that year. NMFS does not allocate to the individual permit holder; rather, NMFS allocates an aggregate amount of harvest tonnage annually to the co-op based on the catch histories associated with the members of the co-ops.

**b. Nonco-op Allocation**

Each year NMFS will determine the distribution to be given to the nonco-op fishery based on the catch history calculation of permit holders registered to participate in that fishery.

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**B-2.5.4 Fishery Management and Co-op Monitoring**

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1. NMFS will track all permit transfers and the invocation of mutual agreement exceptions. Permit transfers will not be valid until registered and acknowledged by NMFS.
2. NMFS will monitor catch and close segments of the fishery as necessary to ensure catch limits are not exceeded for:
  - a. the whiting mothership co-op fishery
  - b. the whiting mothership nonco-op fishery
  - c. the mothership whiting sector as a whole
3. NMFS will not necessarily monitor, but will investigate and enforce as it deems necessary, the permit and co-op obligations to motherships.

4. NMFS will not necessarily monitor or enforce (except as it deems necessary):
  - a. an individual permit's progress towards its catch allocations (permit level catch control will be at the co-op level and enforced through execution of the private contract)
  - b. a co-op's progress toward its catch allocation<sup>20</sup>
  - c. actual performance of the co-op agreement (the parties to the contract will resolve through private contract and remedies any deviation from provisions such as that requiring that a vessel have the opportunity to harvest the catch allocated to the co-op based on that vessel's permit, Section B-2.3.3.c)
5. NMFS will monitor other program provisions as needed. In some situations, there may need to be a declaration procedure to determine where a permit is delivering its obligated catch, for example, if a mothership withdraws without transferring its permit or reaching a mutual agreement for the transfer of obligated deliveries to a different mothership.

<b>B-3      Whiting Shoreside Sector Co-Op Program (placeholder, not recommended)</b>
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**The shoreside whiting sector will be managed with an IFQ program. This section header is being maintained so that section numbering here will correspond to section numbering in the alternatives and analysis in the EIS.**

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<sup>20</sup> This assumes that there is an inter-co-op agreement in place that covers the entire co-op fishery. If such an agreement is not in place covering both catch and bycatch, NMFS may need to monitor catch by each individual co-op (but not by the individual vessels in the co-op).

## **B-4 Catcher-Processors Co-op Program**

Catch by the catcher-processor sector will be controlled primarily by closing the fishery when a constraining allocation is reached.<sup>21</sup> As under status quo, vessels may form co-ops to achieve benefits that result from a slower-paced, more controlled harvest. The main recommendations are the creation of a limited number of catcher-processor endorsements, the requirement that a catcher-processor co-op qualify for a Federal co-op permit, and the specification in regulation of the amounts that will be available for harvest by the voluntary co-op. A new entrant will have to acquire a permit with a catcher-processor endorsement in order to enter the fishery. If the co-op system fails it will be replaced by an IFQ program and the initial issuance of IFQ will be allocated equally among the permits (equally divided among all CP endorsed permits).

### **B-4.1 Participation in the Catcher-Processor Sector , Endorsement Qualification and Permit Transferability.**

**Catcher-processor (CP) Endorsement.** The class of CP endorsed permits (CP permits) will be limited by an endorsement placed on a LE permit. LE permits registered to qualified catcher-processor vessels will be endorsed as CP permits. A qualified permit is one that harvested and processed in the catcher-processor sector of the Pacific whiting fishery at any time from 1997 through 2003. Only vessels catcher-processor vessels with a CP endorsed LE permit will be allowed to process whiting at-sea as part of the CP sector. LE permits with CP endorsements will continue to be transferable.

**Participation as Mothership.** A catcher-processor cannot operate as a mothership during the same year it participates in the CP fishery.

**CP Permit Combination to Achieve a Larger Size Endorsement.** A CP permit that is combined with a LE trawl permit that is not CP endorsed will result in a single CP permit with a larger size endorsement. (A CV(MS) endorsement on one of the permits being combined will not be reissued on the resulting permit.) The resulting size endorsement will be determined based on the existing permit combination formula.

**CP Permit Transfers to Smaller Vessels.** Length endorsement restrictions on LE permits endorsed for groundfish gear will be retained, however, the provision that requires that the size endorsements on trawl permits transferred to smaller vessels be reduced to the size of that smaller vessel will be eliminated (i.e. length endorsements will not change when a trawl endorsed permit is transferred to a smaller vessel).

**Number of Transfers Per Year.** CP permits may be transferred two times during the fishing year, provided that the second transfer was back to the original CP (I.e., only one transfer per year to a different CP).

<sup>21</sup> All references to catcher-processors in this section references to vessels operating in the catcher-processor sector. Vessels under 75' which catch and process at-sea as part of the shoreside sector are not covered here.

## **B-4.2 Co-op Formation and Operation Rules**

**Annual registration.** As under status quo, co-op(s) will be formed among holders of permits for catcher-processors. Participation in the co-op will be at the discretion of those permit holders. If eligible participants choose to form a co-op, the catcher-processor sector will be managed as a private voluntary cooperative and governed by a private contract that specifies, among other things, allocation of whiting among CP permits, catch/bycatch management, and enforcement and compliance provisions. The co-op will submit an application to NMFS for a Federal co-op permit. NMFS will not establish an allocation of catch or catch history among permits unless the sector fails to organize itself under a single co-op agreement that qualifies for a Federal co-op permit. . If the co-op system fails it will be replaced by an IFQ program and the initial issuance of IFQ will be divided equally among all CP endorsed permits.

**Annual Reporting Requirements.** The CP cooperative will submit an annual report to the Council at their November meeting. The report will contain information about the current year's CP fishery, including the CP sector's annual allocation of Pacific whiting; the CP cooperative's actual retained and discarded catch of Pacific whiting, salmon, rockfish, groundfish, and other species on a vessel-by-vessel basis; a description of the method used by the CP cooperative to monitor performance of cooperative vessels that participated in the CP sector of the fishery; and a description of any actions taken by the CP cooperative in response to any vessels that exceed their allowed catch and bycatch. The report will also identify plans for the next year's CP fishery, including the companies participating in the cooperative, the harvest agreement, and catch monitoring and reporting requirements.

## **B-4.3 NMFS Role**

### ***B-4.3.1 Permit and Endorsement Issuance***

NMFS will issue all necessary permits and endorsements under the rules specified under this program. Appeals processes will be provided as appropriate and necessary.

### ***B-4.3.2 Annual Allocation***

Harvest amounts for the co-op will be specified in regulation. If the co-op breaks up, IFQ will issue and divided equally among the 10 permits.

The catcher-processor sector allocation may be divided among eligible catcher-processor vessels (i.e., those catcher-processor vessels for which a CP permit is held) according to an agreed catcher-processor cooperative harvest schedule as specified by private contract.

### ***B-4.3.3 Fishery and Co-op Monitoring***

1. NMFS will track all permit transfers. Permit transfers will not be valid until registered and acknowledged by NMFS.
2. NMFS will monitor catch and close the catcher-processor sector fishery as necessary to ensure catch limits are not exceeded.

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- <sup>a</sup> California halibut gear of 7.5” or greater used in state waters would be exempted.
- <sup>b</sup> Mandatory gear conversion (the permanent switching from trawl to some other gear) was considered but not included at this time.
- <sup>c</sup> Since the shoreside trawl sector covers all shoreside deliveries, this implies that IFQ issued for the shoreside trawl sector may not be used for at-sea deliveries (i.e. may not be used to cover deliveries made to motherships or catch by catcher-processors).
- <sup>d</sup> Notwithstanding this provision, a vessel with a LE trawl permit may catch the trawl QP with a nontrawl gear, as per Section A-1.1.
- <sup>e</sup> At present there are no groundfish species for which the harvest in the trawl fishery is managed differently by geographic area. An example of an area specific precautionary policy from outside trawl fishery management is the geographic differential recommended by the Scientific and Statistical Committee for lingcod. Lingcod is monitored and managed differently in different geographic areas though there is a single coastwide ABC and OY for lingcod. Since there are no geographic subdivisions in the trawl management measures for lingcod, it is assumed that lingcod trawl IFQ will not be geographically subdivided.
- <sup>f</sup> Such changes in latitudinal area management may occur as a result of changes in the management areas for species/species complexes in the ABC/OY table or as a result of separate Council action to change the trawl QS by area. In either case, specific Council action will be required to change the management areas and such action will be accompanied by appropriate supporting analysis and public comment opportunity.
- <sup>g</sup> The Council authority to establish or modify RCAs will not be changed by this program.
- <sup>h</sup> A whiting QP rollover provision was considered but rejected from further analysis. This provision would have allowed unused QP to be reclassified so that they could be used in any whiting sector.
- <sup>i</sup> The current process for changing the whiting fishery opening dates involves a regulatory amendment developed under the FMP through a framework process. Implementation of an IFQ program should not change this process.
- <sup>j</sup> “**Processors**” are defined as follows:  
**An at-sea processor** is a vessel that operates as a mothership in the at-sea whiting fishery or a permitted vessel operating as a catcher-processor in the at-sea whiting fishery.  
**A shoreside processor** is an operation, working on US soil, that takes delivery of trawl-caught groundfish that has not been “processed at-sea” and that has not been “processed shoreside”; and that thereafter engages that particular fish in “shoreside processing.” Entities that received fish that have not undergone “at-sea processing” or “shoreside processing” (as defined in this paragraph) and sell that fish directly to consumers shall not be considered a “processor” for purposes of QS allocations.  
**“Shoreside Processing”** is defined as either of the following:
1. Any activity that takes place shoreside; and that involves: cutting groundfish into smaller portions; OR freezing, cooking, smoking, drying groundfish; OR packaging that groundfish for resale into 100 pound units or smaller for sale or distribution into a wholesale or retail market.
  - OR
  2. The purchase and redistribution into a wholesale or retail market of live groundfish from a harvesting vessel.
- <sup>k</sup> Transfer of physical assets alone should not be considered a basis for successor in interest. Business relationships such as transfer of the company name and customer base might be reasonable evidence of successor in interest.

<sup>l</sup> Due to the divestiture provision of Section A-2.3.2.e, it is relatively unlikely that accumulation limits will constrain the amount of QS an entity receives in the initial allocation. However, if an entity qualifies for QS in excess of accumulation limits and is does not qualify to receive that QS under the divestiture provision, the initial allocation will be constrained by first applying the aggregate limits and then, if necessary, the individual species limits. In using this approach, the entity's QS allocation should not be scaled back more than necessary to stay within limits and any QS not allocated will be reallocated to other QS recipients.

<sup>m</sup> State landings receipts (fishtickets) will be used to assess landings history for shoreside deliveries. In some cases, fishticket records do not identify species to the same level of detail used for the IFQ management units (e.g. reports "unspecified rockfish"). Under such circumstances standard species composition routines usually used at the port level have been applied to vessel level data to estimate the species composition of such landings. In some instances, even after applying species composition information there may be some fishticket records with a species groundfish categorization that does not match with one of the IFQ management units. Under such circumstances, when the initial allocations are made, other information on the landings records and in logbooks might be used to assign the landing to its most probable species category.

<sup>n</sup> The intent is to provide an allocation method for QS for overfished species which addresses the vessel's need to have the QS to cover incidental catch in fisheries that target healthy stocks. The method would attempt to allocate the species to those who will be receiving QS for related target species. By allocating overfished species QS to those most in need of it, such an allocation would be expected to reduce transition costs. Currently, the list of overfished species that fall into this category is as follows: canary rockfish, darkblotched rockfish, Pacific Ocean perch, widow rockfish, and yelloweye rockfish. This list may change by the time the program is ready to be implemented. If a major target species became overfished, it would not be intended that such a species would be allocated via an alternative method (for example species such as Dover sole, sablefish, or Pacific whiting).

<sup>o</sup> The four areas are as follows: (1) north of 47°40 N latitude; (2) between 47°40 N latitude and 43°55 N latitude; (3) between 43°55 N latitude and 40°10 N latitude; and (4) south of 40°10 N latitude.

<sup>p</sup> In order to determine an amount of aggregate target species to which bycatch rates will be applied, each vessel's QS will be multiplied by the trawl allocation at the time of implementation.

<sup>q</sup> State landings receipts (fishtickets) will be used to assess landings history for shoreside deliveries.

<sup>r</sup> Catch area data on fishtickets are not considered appropriate for this purpose. The catch area field is often filled out by fish receivers that do not know the area in which the vessel fished. Additionally catch area is often left unspecified. Therefore, it will be assumed that all catch comes from ocean areas near the port of landing.

<sup>s</sup> March 2010. Changed from 1994-2004 to 1998-2003 to reflect Council action of November 2008.

<sup>t</sup> Unless there is a change in the total OY or other factors affecting trawl allocation for the areas involved, in which case their change in QP would be proportional to the change in the trawl allocation.

<sup>u</sup> QP from a subsequent year may not be accessed until such QP have been issued by NMFS.

<sup>v</sup> Including QS that an entity received in excess of accumulation limits in place at the time of initial allocation (see Section A-2.2.3.e).

<sup>w</sup> Carryover of deficits provides some flexibility to use pounds from a year to cover a deficit from a previous year. Without a carryover provision, a vessel would still need to use pounds in a subsequent year to cover an overage but would incur a violation.

<sup>x</sup> The following is the text deleted from this section: "No QS use-or-lose provision has been specified.. The need for this provision will be evaluated as part of program review process, and the provision could be added later, if necessary. *Section A-2.2.3.b contains a provision mandating the transfer of QP to vessels each year. This is intended to encourage QP use.*"

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<sup>y</sup> QS may be transferred on a temporary basis through private contract (leased) but NMFS will not track lease transfers differently than any other transfer.

<sup>z</sup> The “vessel” accumulation limit was originally termed a “permit” limit. The term “permit” was changed to “vessel” to be consistent with Section A-2.1.3, which indicates that QP go into vessel accounts, not permit accounts. The term “own or control” was shortened to “control” for simplicity. “Control” includes ownership and therefore is inclusive of “ownership.”

<sup>aa</sup> It is the Council intent that control limits should not constrain the formation of risk pools to help the fishermen deal with overfished species constraints, so long as the pools do not undermine the effectiveness of the accumulation limits. A risk pool is one in which two or more people enter into an agreement whereby if one person does not have the QP the others would agree to provide the QP, if they have them. Whether these kinds of agreements are informal or formal, as other considerations and conditions are added to the agreements they may begin to constitute control. It is the Council intent to allow for these pooling agreements, so long as they do not become control.

<sup>bb</sup> For example, if a person has a 50 percent ownership interest in that entity, then 50 percent of the QS owned by that entity will count against the individual's accumulation limit unless it is otherwise determined that have effective control of a greater or lesser amount.

<sup>cc</sup> **Expanded data collection** would include:

mandatory submission of economic data for LE trawl industry  
(harvesters and processors),

voluntary submission of economic data for other sectors of the  
fishing industry,

transaction value information in a centralized registry of  
ownership, and

formal monitoring of government costs.

**Mandatory Provisions:** The Pacific Fishery Management Council and NMFS shall have the authority to implement a data collection program for cost, revenue, ownership, and employment data, compliance with which will be mandatory for members of the west coast groundfish industry harvesting or processing fish under the Council's authority. Data collected under this authority will be treated as confidential in accordance with Section 402 of the MSA.

A mandatory data collection program shall be developed and implemented as part of the groundfish trawl rationalization program and continued through the life of the program. Cost, revenue, ownership, employment and other information will be collected on a periodic basis (based on scientific requirements) to provide the information necessary to study the impacts of the program, including achievement of goals and objectives associated with the rationalization program. These data may also be used to analyze the economic and social impacts of future FMP amendments on industry, regions, and localities. The program will include targeted and random audits as necessary to verify and validate data submissions. Additional funding (as compared to status quo) will be needed to support the collection of these data. The data collected would include data needed to meet MSA requirements (including antitrust).

The development of the program shall include: a comprehensive discussion of the enforcement of such a program, including discussion of the type of enforcement actions that will be taken if inaccuracies are found in mandatory data submissions. The intent of this action will be to ensure that accurate data are collected without being overly burdensome on industry in the event of unintended errors.

**Voluntary Provisions:** A voluntary data collection program will be used to collect information needed to assess spillover impacts on nontrawl fisheries.

**Central Registry:** Information on transaction prices will be included in a central registry of QS owners. Such information will also be included for LE permit owners/lessees.

**Government Costs:** Data will be collected and maintained on the monitoring, administration, and enforcement costs related to governance of the trawl rationalization program.

<sup>dd</sup> The following are three options for the sequences of agency involvement in decision making for the distribution of adaptive management QP after year 2..

1. NMFS
2. State → Council → NMFS
3. Council → NMFS



\* \* \* \* = some language is skipped, look at instructions for the section for more details.

5/19/2010

Draft Program Components Rule 1

660.20.....	-0355
660.213.....	-0271
660.219.....	-0355
660.25.....	-0203
660.313.....	-0271
660.319.....	-0355
660.353.....	-0271
660.55.....	-0352
660.55.....	-0243

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50 CFR Chapter VI  
PART 660--FISHERIES OFF WEST COAST STATES

3. The authority citation for part 660 continues to read as follows:

Authority: 16 U.S.C. 1801 et seq. and 16 U.S.C. 773 et seq.

4. INSTRUCTION – In section 660.12, paragraph (f) is renumbered paragraph (g), and a new paragraph (f) is added to read as follows:

§ 660.12 General groundfish prohibitions. \* \* \*

\* \* \* \* \*

- (a) General. \* \* \*
- (b) Reporting and recordkeeping. \* \* \*
- (c) Limited entry fisheries. \* \* \*
- (d) Limited entry permits. \* \* \*
- (e) Groundfish observer program. \* \* \*
- (f) Groundfish catch monitor program.

(1) Forcibly assault, resist, oppose, impede, intimidate, harass, sexually harass, bribe, or interfere with a catch monitor.

(2) Interfere with or bias the sampling procedure employed by a catch monitor, including either mechanically or manually sorting or discarding catch before sampling.

(3) Tamper with, destroy, or discard a catch monitor's collected samples, equipment, records, photographic film, papers, or personal effects without the express consent of the catch monitor.

(4) Harass a catch monitor by conduct that:

(i) Has sexual connotations,

(ii) Has the purpose or effect of interfering with the catch monitor's work performance, and/or

(iii) Otherwise creates an intimidating, hostile, or offensive environment. In determining whether conduct constitutes harassment, the totality of the circumstances, including the nature of the conduct and the context in which it occurred, will be considered. The determination of the legality of a particular action will be made from the facts on a case-by-case basis.

(5) Receive, purchase, or take custody, control, or possession of a delivery without catch monitor coverage when such coverage is required under § 660.140, subpart D.

(6) Fail to allow the catch monitor unobstructed access to catch sorting, processing, catch counting, catch weighing, or electronic or paper fish tickets.

(7) Fail to provide reasonable assistance to the catch monitor.

(8) Fail to provided notification of a delivery in person, by personal communications radio, or by telephone of planned facility operations, including the receipt of fish, at least 30 minutes and not more than 2 hours prior to the start of the planned operation, unless the catch monitor specifically requests other arrangements.

(9) Require, pressure, coerce, or threaten a catch monitor to perform duties normally performed by employees of the first receiver, including, but not limited to duties associated with the receiving of landing, processing of fish, sorting of catch, or the storage of the finished product.

(g) Vessel monitoring systems. \* \* \*

3. INSTRUCTION- In section 660.13, paragraphs (d)(5)(iv)(A)(1) through (4), (7), and (8) are revised to read as follows:

§ 660.13 Recordkeeping and reporting.

\* \* \* \* \*

(d) Declaration reporting requirements. \* \* \*

(5) Declaration reports.

(iv) \* \* \*

(A) One of the following gear types must be declared:

(1) Limited entry fixed gear, not including shorebased IFQ fishery

(2) Limited entry fixed gear, shorebased IFQ

(3) Limited entry midwater trawl, non-whiting shorebased IFQ,

(4) Limited entry midwater trawl, Pacific whiting shorebased IFQ,

\* \* \*

(5) Limited entry midwater trawl, Pacific whiting catcher/processor sector,

(6) Limited entry midwater trawl, Pacific whiting mothership sector,

(7) Limited entry bottom trawl, shorebased IFQ, not including demersal trawl,

(8) Limited entry demersal trawl, shorebased IFQ,

\* \* \*

(B) [Reserved]

§660.14 Vessel Monitoring System (VMS) requirements. \* \* \*

5. INSTRUCTION – In section 660.15, paragraphs (a) through (d) are revised to read as follows:

§ 660.15 Equipment requirements.

(a) Applicability. This section contains the equipment and operational requirements for scales used to weigh catch at sea, scales used to weigh catch at IFQ first receivers, computer hardware for electronic fish ticket software and computer hardware for electronic logbook software. All records described in this section must be retained as specified at § 660.113, subpart D, and made available upon request of NMFS staff or NMFS authorized personnel.

(b) Performance and technical requirements for scales used to weight catch at sea.

(1) Scales approved by NMFS for MS and C/P coop programs. A scale used to weigh catch in the MS and C/P coop programs must meet the type evaluation and initial inspection requirements set forth in § 679.28(b)(1) and (2).

(2) Annual inspection. Once a scale is installed on a vessel and approved by NMFS for use, it must be inspected annually as described in § 679.28(b).

(3) Daily testing. Each scale must be tested daily and meet the maximum permissible error (MPE) requirements described at § 660.150 in MP catch weighing section 660.160 CP catch weighing sections, subpart D.

Comment [jg1]: Does this work for gear switching?

(4) At-sea scale tests. To verify that the scale meets the maximum permissible errors (MPEs) specified in this paragraph, the vessel operator must ensure that vessel crew test each scale used to weigh catch at least one time during each 24-hour period when use of the scale is required. The vessel owner must ensure that these tests are performed in an accurate and timely manner.

(i) Belt scales. The MPE for the daily at-sea scale test is plus or minus 3 percent of the known weight of the test material. The scale must be tested by weighing at least 400 kg (882 lb) of fish or an alternative material supplied by the scale manufacturer on the scale under test. The known weight of the fish or test material must be determined by weighing it on a platform scale approved for use under § 679.28 (b)(7).

(ii) Platform scales used for observer sampling on MSs, MS/CVs, and C/Ps. A platform scale used for observer sampling must be tested at 10, 25, and 50 kg (or 20, 50, and 100 lb if the scale is denominated in pounds) using approved test weights. The MPE for the daily at-sea scale test is plus or minus 0.5 percent.

(iii) Approved test weights. Each test weight must have its weight stamped on or otherwise permanently affixed to it. The weight of each test weight must be annually certified by a National Institute of Standards and Technology approved metrology laboratory or approved for continued use by the NMFS authorized inspector at the time of the annual scale inspection.

(c) Performance and technical requirements for scales used to weigh catch at IFQ first receivers. Scale requirements in this paragraph are in addition to those requirements set forth by the State in which the scale is located, and nothing in this paragraph may be construed to reduce or supersede the authority of the State to regulate, test, or approve scales within the State. Scales used to weigh catch that are also required to be approved by the State must meet the following requirements:

(1) Verification of approval. The scale must display a valid State sticker indicating that the scale is currently approved in accordance with the laws of the state where the scale is located.

(2) Visibility. A first receiver must ensure that the scale and scale display are visible simultaneously.

(3) Printed scale weights. All scales must produce a printed record for each delivery, or portion of a delivery, weighed on that scale. During the catch monitoring plan approval process NMFS may determine that a scale not designed for automatic bulk weighing) be exempted from part or all of the printed record requirements. The printed record must include:

(i) The first receiver's name;

(ii) The weight of each load in the weighing cycle;

(iii) The total weight of fish in each landing, or portion of the landing that was weighed on that scale;

(iv) The date and time the information is printed; and

(v) The name and registration or documentation number of the vessel making the landing. The scale operator may write this information on the scale printout in ink at the time of printing.

(4) Inseason scale testing. Scales used to weigh Shorebased IFQ Program catch must meet inseason testing criteria specified at 660.140(k).

(5) Inseason testing criteria. To pass an inseason test, a catch monitor, NMFS staff or a NMFS-authorized agent must be able to verify the following:

(i) the scale display and printed information are clear and easily read under all conditions of normal operation;

(ii) the weight values are visible on the display until the value is printed; and

(iii) the scale does not exceed the maximum permissible errors specified in the following table:

Test Load in Scale Divisions	Maximum Error in Scale Divisions
(A) 0-500	1
(B) 501-2,000	2
(C) 2,001-4,000	3
(D) >4,000	4

(6) Automatic weighing systems. The automatic weighing system must prevent catch from passing over the scale or entering any weighing hopper unless the following criteria are met:

(i) No catch may enter a weighing hopper until the weighing cycle is complete and no catch can leave the hopper;

(ii) No catch may be cycled and weighed until if the weight recording element is operational;

(iii) No catch may enter a weighing hopper until the prior weighing cycle has been completed and the scale indicator has returned to a zero.

(d) Electronic fish tickets. IFQ first receivers using the electronic fish ticket software provided by Pacific States Marine Fish Commission are required to meet the hardware and software requirements below. Those IFQ first receivers who have NMFS-approved software compatible with the standards specified by Pacific States Marine Fish Commission for electronic fish tickets are not subject to any specific hardware or software requirements.

(1) Hardware and software requirements. (i) A personal computer with Pentium 75-MHz or higher. Random Access Memory (RAM) must have sufficient megabyte (MB) space to run the operating system, plus an additional 8 MB for the software application and available hard disk space of 217 MB or greater. A CD-ROM drive with a Video Graphics Adapter (VGA) or higher resolution monitor (super VGA is recommended).

(ii) Microsoft Windows 2000 (64 MB or greater RAM required), Windows XP (128 MB or greater RAM required) or later operating system.

(iii) Microsoft Access 2003 or newer.

(2) NMFS approved software standards and internet access. The IFQ first receiver is responsible for obtaining, installing, and updating electronic fish tickets software either provided by Pacific States Marine Fish Commission, or compatible with the data export specifications specified by Pacific States Marine Fish Commission and for maintaining internet access sufficient to transmit data files via email. Requests for data export specifications can be submitted to: Attn: Electronic Fish Ticket Monitoring, National Marine Fisheries Service, Northwest Region Sustainable Fisheries Division, 7600 Sand Point Way NE, Seattle, WA 98115.

(3) Maintenance. The IFQ first receiver is responsible for ensuring that all hardware and software required under this subsection are fully operational and functional whenever they receive, purchase, or take custody, control, or possession of an IFQ landing.

(4) Improving data quality. Vessel owners and operators, IFQ first receivers, or shoreside processor owners, or managers may contact NMFS in writing to request assistance in improving data quality and resolving issues. Requests may be submitted to: Attn: Electronic Fish Ticket

Monitoring, National Marine Fisheries Service, Northwest Region Sustainable Fisheries Division, 7600 Sand Point Way NE, Seattle, WA 98115.

6. INSTRUCTION – In section 660.16, paragraphs (d) and (e) are removed and paragraph (c) is revised to read as follows:

§ 660.16 Groundfish observer program.

\* \* \* \* \*

(a) General. \* \* \*

(b) Purpose. The purpose of the Groundfish Observer Program is to collect fisheries data ~~deemed by the Northwest Regional Administrator, NMFS, to be necessary and appropriate for,~~ among other relevant purposes, management, compliance monitoring, and research in the groundfish fisheries and for the conservation of living marine resources ~~and their habitat.~~

(c) Observer coverage requirements. The following table provides references to the paragraphs in the Pacific coast groundfish subparts that contain fishery specific requirements. Observer coverage required for the Shorebased IFQ Program, MS Coop Program, or C/P Coop Program shall not be used to comply with observer coverage requirements for any other Pacific coast groundfish fishery in which that vessel may also participate.

<u>West Coast Groundfish Fishery</u>	<u>Regulation section</u>
(1) Shorebased IFQ Program- Trawl Fishery	§ 660.140, subpart D
(2) MS Coop Program- Whiting At-sea Trawl Fishery	§ 660.150, subpart D
(3) C/P Coop Program- Whiting At-sea Trawl Fishery	§ 660.160, subpart D
(4) Fixed Gear Fisheries	§ 660.216, subpart E
(5) Open Access Fisheries	§ 660.316, subpart F

7. INSTRUCTION – Section 660.17 is revised to read as follows:

§ 660.17 Catch monitors and catch monitor providers.

(a) Catch monitor certification. Catch monitor certification authorizes an individual to fulfill duties as specified by NMFS while under the employ of a certified catch monitor provider.

(b) Certification requirements. NMFS may certify individuals who:

(1) are employed by a certified catch monitor provider at the time of the issuance of the certification and qualified, as described at § 660.315 (e)(1)(i) through (viii) and have provided proof of qualifications to NMFS, through the certified catch monitor provider.

(2) have successfully completed NMFS-approved training.

(i) Successful completion of training by an applicant consists of meeting all attendance and conduct standards issued in writing at the start of training; meeting all performance standards issued in writing at the start of training for assignments, tests, and other evaluation tools; and completing all other training requirements established by NMFS.

(ii) If a candidate fails training, he or she will be notified in writing on or before the last day of training. The notification will indicate: the reasons the candidate failed the training; whether the candidate can retake the training, and under what conditions. If a determination is made that the candidate may not pursue further training, notification will be in the form of an IAD denying certification, as specified under §XXXX of this section.

(3) Have not been decertified as an observer or catch monitor under provisions in § 660.XXX.

(c) Catch monitor standards of behavior.

(1) Catch monitors must avoid any behavior that could adversely affect the confidence of the public in the integrity of the catch monitor program or of the government.

(2) Catch monitors must do the following:

(i) perform their assigned duties as described in manuals or other written instructions provided by NMFS.

(ii) accurately record the required data, write complete reports, and report accurately any observations of suspected violations of regulations.

(iii) must not disclose data and observations collected at the processing facility to any person except, NMFS OLE, or authorized officers or others as specifically authorized by NMFS.

(d) Catch monitor provider certification. Persons seeking to provide catch monitor services under this section must obtain a catch monitor provider certification from NMFS.

(1) Applications. Persons seeking to provide catch monitor services must submit a completed application by mail to the NMFS Northwest Region, Permits Office, 7600 Sand Point Way NE, Seattle, WA 98115. An application for a catch monitor provider permit shall consist of a narrative that contains the following:

(i) Identification of the management, organizational structure, and ownership structure of the applicant's business, including identification by name and general function of all controlling management interests in the company, including but not limited to owners, board members, officers, authorized agents, and staff. If the applicant is a corporation, the articles of incorporation must be provided. If the applicant is a partnership, the partnership agreement must be provided.

(ii) Contact information.

(A) The owner's permanent mailing address, telephone, and fax numbers.

(B) The business mailing address, including the physical location, email address, telephone and fax numbers.

(C) Any authorized agent's mailing address, physical location, email address, telephone and fax numbers. An authorized agent means a person appointed and maintained within the United States who is authorized to receive and respond to any legal process issued in the United States to an owner or employee of a catch monitor provider.

(iii) Prior experience. A statement identifying prior relevant experience in recruiting, hiring, deploying, and providing support for individuals in marine work environments in the groundfish fishery or other fisheries of similar scale.

(iv) Ability to perform or carry out responsibilities of a catch monitor provider. A description of the applicant's ability to carry out the responsibilities of a catch monitor provider is set out under **paragraph § XXXX**

(v) A statement signed under penalty of perjury describing any criminal convictions of each owner and board member, officer, authorized agent, and staff; a list of Federal contracts held and related performance ratings; and, a description of any previous decertification actions that may have been taken while working as an observer or observer provider.

(vi) A statement signed under penalty of perjury describing each owner and board member, officer, authorized agent, and staff indicating that they are free from conflict of interest as described under **§ 660.316 (c)**

(2) Application review.

(i) The certification official, described in **§ 660.XXX**, may issue catch monitor provider certifications upon determination that the application submitted by the candidate meets all requirements specified in **§ 660.XXX**.

**Comment [t2]:** Add language to Grandfather in EFP providers for first year. Others will be certified for 2012. Fall back on N Pacific providers, too (for observers that could serve as CM).

Borrow from one for observer providers.

(ii) Issuance of the certification will, at a minimum, be based on the completeness of the application, as well as the following criteria:

- (A) The applicant's ability to carry out the responsibilities and relevant experience;
- (B) Satisfactory performance ratings on any Federal contracts held by the applicant.
- (C) Absence of a conflict of interest.
- (D) Absence of relevant criminal convictions.

(3) Agency determination. The certification official will make a determination to approve or deny the application and notify the applicant by letter via certified return receipt mail, within 60 days of receipt of the application. Certification and decertification procedures that apply to catch monitor providers are specified in § 660.016.

(e) Catch monitor provider responsibilities.

(1) Provide qualified candidates to serve as catch monitors. To be qualified a candidate must:

- (i) Be a U.S. citizen or have authorization to work in the United States;
- (ii) Be at least 18 years of age;
- (iii) Have a high school diploma and;

(A) At least two years of study from an accredited college with a major study in natural resource management, natural sciences, earth sciences, natural resource anthropology, law enforcement/police science, criminal justice, public administration, behavioral sciences, environmental sociology, or other closely related subjects pertinent to the management and protection of natural resources, or;

(B) One year of specialized experience performing duties which involved communicating effectively and obtaining cooperation, identifying and reporting problems or apparent violations of regulations concerning the use of protected or public land areas, and carrying out policies and procedures within a recreational area or natural resource site.

(iv) Have a current and valid driver's license.

(v) Have had a background investigation and been found to have had no criminal or civil convictions that would affect their performance or credibility as a catch monitor.

(vi) Have had health and physical fitness exams and been found to be fit for the job duties and work conditions;

(A) Physical fitness exams shall be conducted by a medical doctor who has been provided with a description of the job duties and work conditions and who provides a written conclusion regarding the candidate's fitness relative to the required duties and work conditions;

(B) Physical exams may include testing for illegal drugs;

(C) Candidates must have a minimum visual acuity of 20/100 corrected to 20/20 in at least one eye.

(vii) Have signed a statement under penalty of perjury indicating that they are free from conflict of interest as described under §660.316 (c)

(viii) Priority shall be given to qualified candidates who have and show proof of their knowledge of West Coast marine fish species, ability to effectively communicate in writing and orally, and have technical expertise in weights and measures.

(2) Standards. Provide to the candidate a copy of the standards of conduct, responsibilities, conflict of interest standards and drug and alcohol policy.

(3) Contract. Provide to the candidate a copy of a written contract signed by the catch monitor and catch monitor provider that shows among other factors the following provisions for employment:



- (i) Compliance with the standards of conduct, responsibilities, conflict of interest standards and drug and alcohol policy;
- (ii) Willingness to complete all responsibilities of current deployment prior to performing jobs or duties which are not part of the catch monitor responsibilities.
- (iii) Commitment to return all sampling or safety equipment issued for the deployment.

8. INSTRUCTION – Section 660.18 is revised to read as follows:

§ 660.18 Certification and decertification procedures for catch monitors and catch monitor providers.

(a) Certification official. The Regional Administrator (or a designee) will designate a NMFS catch monitor certification official who will make decisions on whether to issue or deny catch monitor certification pursuant to the regulations at § 660.17, subpart C.

(b) Agency determinations on certifications.

(1) Issuance of certifications. Certification may be issued upon determination by the certification official that the candidate has successfully met all requirements for certification as specified in:

- (A) § 660.17 (X) for catch monitors; and
- (B) § 660.17 (X) for catch monitor providers

(2) Denial of a certification. The NMFS certification official will issue a written IAD identifying the reasons certification was denied and what requirements were deficient when the certification official determines that a candidate has irresolvable deficiencies in meeting the requirements for certification as specified in:

- (A) § 660.17 (X) for catch monitors; and
- (B) § 660.17 (X) for catch monitor providers

(3) Appeals. A candidate or applicant who receives an IAD that denies his or her certification may appeal pursuant to § 660.XXX. A candidate or applicant who appeals the IAD will not be issued an interim certification, and will not receive a certification unless the final resolution of that appeal is in the candidate's favor.

(c) Limitations on conflict of interest for catch monitors.

(1) Catch monitors must not have a direct financial interest, other than the provision of observer or catch monitor services, in a North Pacific fishery managed pursuant to an FMP for the waters off the coast of Alaska, Alaska state waters, or in a Pacific Coast fishery managed by either the state or Federal governments in waters off Washington, Oregon, or California, including but not limited to:

- (i) Any ownership, mortgage holder, or other secured interest in a vessel, shore-based or floating stationary processor facility involved in the catching, taking, harvesting or processing of fish,
- (ii) Any business involved with selling supplies or services to any vessel, shore-based or floating stationary processing facility; or
- (iii) Any business involved with purchasing raw or processed products from any vessel, shore-based or floating stationary processing facilities.

(2) Must not solicit or accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from anyone who either conducts activities that are regulated by NMFS or has interests that may be substantially affected by the performance or nonperformance of the catch monitor' official duties.

**Comment [jg3]:** Add language to grandfather existing CM providers (from EFP) for first year of program. (see 660.17)

(3) May not serve as a catch monitors on any vessel or at any shoreside or floating stationary processing facility owned or operated where a person was previously employed.

(4) May not solicit or accept employment as a crew member or an employee of a vessel, or shoreside processor while employed by a catch monitor provider.

(5) Provisions for remuneration of catch monitors under this section do not constitute a conflict of interest.

(d) Limitations on conflict of interest for catch monitor providers. Catch monitor providers must not have a direct financial interest, other than the provision of observer or catch monitor services, in a North Pacific fishery managed pursuant to an FMP for the waters off the coast of Alaska, or in a Pacific Coast fishery managed by either the state or Federal governments in waters off Washington, Oregon, or California, including but not limited to:

(1) Any ownership, mortgage holder, or other secured interest in a vessel, shore-based or floating stationary processor facility involved in the catching, taking, harvesting or processing of fish,

(2) Any business involved with selling supplies or services to any vessel, shore-based or floating stationary processing facility; or

(3) Any business involved with purchasing raw or processed products from any vessel, shore-based or floating stationary processing facilities.

(e) Decertification.

(1) Decertification review official. The Regional Administrator (or a designee) will designate a decertification review official(s), who will have the authority to review certifications and issue IADs of decertification.

(2) Causes for decertification. The decertification official may initiate decertification proceedings when it is alleged that any of the following acts or omissions have been committed:

(i) Failed to satisfactorily perform the specifies duties and responsibilities;

(ii) Failed to abide by the specified standards of conduct;

(iii) Upon conviction of a crime or upon entry of a civil judgment for:

(A) Commission of fraud or other violation in connection with obtaining or attempting to obtain certification, or in performing the duties and responsibilities specified in this section;

(B) Commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(C) Commission of any other offense indicating a lack of integrity or honesty that seriously and directly affects the fitness of catch monitors.

(3) Issuance of IAD. Upon determination that decertification is warranted under § 660.316(c) or (d), the decertification official will issue a written IAD. The IAD will identify the specific reasons for the action taken. Decertification is effective 30 days after the date of issuance, unless there is an appeal.

(4) Appeals. A catch monitor or catch monitor provider who receives an IAD that revokes certification may appeal. The appeal must be in writing, and must allege facts or circumstances to show why the certification should be granted, or revoked, under the criteria in this section. An appeal must be filed with the Regional Administrator within 30 days of the IAD denying, or revoking the certification.

(i) Decisions on appeals of an IAD denying certification or decertifying will be made by the Regional Administrator (or designated official).

(ii) Absent good cause for further delay, the Regional Administrator (or designated official) will issue a written decision on the appeal within 45 days of receipt of the appeal and

shall state the reasons for the decision. The Regional Administrator's decision is the final administrative decision of the Department of Commerce as of the date of the decision.

§ 660.20 Vessel and gear identification. \* \* \*

§ 660.24 Limited entry and open access fisheries. \* \* \*

9. INSTRUCTION – In section 660.25, paragraphs (b)(1)(i)(A) and (B) are removed and paragraph (e) is revised to read as follows:

§ 660.25 Permits.

(a) General. \* \* \*

(b) Limited entry permit. \* \* \*

(c) Quota share (QS) permit. \* \* \*

(d) First receiver site license. \* \* \*

\* \* \* \* \*

(e) Coop permit.

(1) MS coop permit. A MS coop permit conveys a conditional privilege to a person to harvest a coop's allocation of designated species and species groups. A MS coop permit is not a limited entry permit. The provisions for the MS coop permit, including eligibility, renewal, change of permit ownership, fees, and appeals are described in the MS Coop Program at § 660.150, subpart D.

(2) C/P coop permit. A C/P coop permit conveys a conditional privilege to a person to harvest a coop's allocation of designated species and species groups. A C/P coop permit is not a limited entry permit. The provisions for the C/P coop permit, including eligibility, renewal, change of permit ownership, fees, and appeals are described in the C/P Coop Program at § 660.160, subpart D.

\* \* \* \* \*

(f) Permit fees. \* \* \*

(g) Permit appeals process. \* \* \*

(h) Permit sanctions. \* \* \*

10. INSTRUCTION – Section 660.26 is removed.

§ 660.30 Compensation with fish for collecting resource information – EFPs. \* \* \*

§ 660.40 Overfished species rebuilding plans. \* \* \*

§ 660.50 Pacific coast treaty Indian fisheries. \* \* \*

9. INSTRUCTION – In section 660.55, paragraphs (i)(2) is revised to read as follows:

§ 660.55 Allocations. \* \* \*

(a) General. \* \* \*

(b) Fishery harvest guidelines and reductions made prior to fishery allocations. \* \* \*

(c) Trawl/Nontrawl allocations. \* \* \*

(d) Commercial harvest guidelines for remaining groundfish species. \* \* \*

(e) Limited Entry(LE)/Open Access (OA) allocations. \* \* \*

(f) Catch accounting. \* \* \*

(g) Recreational fisheries. \* \* \*

(h) Sablefish allocations (north of 36° N. lat.). \* \* \*

\* \* \* \* \*

Comment [jg4]: Needs further revisions?

(i) Pacific whiting allocation. \* \* \*

(1) \* \* \*

(2) The commercial harvest guideline for Pacific whiting is allocated among three sectors, as follows: 34 percent for the C/P Coop Program; 24 percent for the MS Coop Program; and 42 percent for the Shorebased IFQ Program. No more than 5 percent of the Shorebased IFQ Program allocation may be taken and retained south of 42° N. lat. before the start of the primary Pacific whiting season north of 42° N. lat. Specific sector allocations for a given calendar year are found in Tables 1a and 2a of this subpart. Set asides for other species for the at-sea whiting fishery for a given calendar year are found in Tables 1d and 2d of this subpart.

\* \* \* \* \*

(j) Fishery set-asides. \* \* \*

(k) Exempted fishing permit set-asides. \* \* \*

(l) Black rockfish harvest guideline. \* \* \*

(m) Pacific halibut bycatch allocation. \* \* \*

11. INSTRUCTION – In section 660.60, paragraph (d)(1), paragraph (h)(2), and paragraph (h)(5)(ii) are revised; and paragraphs (h)(5)(v) and (vi) are added to read as follows:  
§ 660.60 Specifications and management measures.

(a) General. \* \* \*

(b) Biennial actions. \* \* \*

(c) Routine management measures. \* \* \*

\* \* \* \* \*

(d) Automatic actions. \* \* \*

(1) Automatic actions are used in MS Coop Program and C/P Coop Program to:

(i) Close at-sea sectors of the fishery when a sector's Pacific whiting or non-whiting species with allocations are reached, or are projected to be reached;

(ii) Close all at-sea sectors or a single sector of the fishery when a bycatch limit is reached or projected to be reached;

(iii) Reapportion unused allocations of non-whiting groundfish species to other at-sea sectors of the Pacific whiting fishery.

(iv) Implement the Ocean Salmon Conservation Zone, described at § 660.131(c)(3), subpart D, when NMFS projects the Pacific whiting fishery may take in excess of 11,000 Chinook within a calendar year.

(v) Implement Pacific Whiting Bycatch Reduction Areas, described at § 660.131(c)(4) Subpart D, when NMFS projects a sector-specific bycatch limit will be reached before the sector's whiting allocation.

\* \* \* \* \*

(e) Prohibited species. \* \* \*

(f) Exempted Fishing Permits (EFP). \* \* \*

(g) Applicability. \* \* \*

(h) Fishery restrictions. \* \* \*

(2) Landing. As stated at § 660.11, subpart C (in the definition of “Landing”), once the offloading of any species begins, all fish aboard the vessel are counted as part of the landing and must be reported as such. Transfer of fish at sea is prohibited under § 660.12, subpart C, unless a vessel is participating in the primary whiting fishery as part of the mothership or catcher/processor sectors, as described at § 660.131(a), subpart D. Catcher vessels in the

**Comment [jg5]:** How do we need to revise this to implement for the IFQ fishery. Make it a per vessel limit using the vessel accounts?

**Comment [jg6]:** Do we need to designate anything else as a “routine management measure”?

**Comment [jg7]:** Do we need to add further crossover provisions for gear switching? Crossover provisions at paragraph (h)(7).

mothership sector must transfer all catch from a haul to the same vessel registered to a MS permit prior to the gear being set for a subsequent haul. Catch may not be transferred to a tender vessel.

\* \* \* \* \*

(5) Size limits, length measurement, and weight limits.

(ii) Weight limits and conversions. For species other than Pacific whiting and rockfish, the weight limit conversion factor established by the state where the fish is or will be landed will be used to convert the processed weight to round weight for purposes of applying the trip limit, QP, or other allocation. Weight conversions provided herein are those conversions currently in use by the States of Washington, Oregon, and California and may be subject to change by those states. Fishery participants should contact fishery enforcement officials in the state where the fish will be landed to determine that state's official conversion factor. To determine the round weight, multiply the processed weight times the conversion factor.

\* \* \* \* \*

(v) Pacific whiting. The following conversion applies to vessels landing sorted catch in the Shorebased IFQ Program: for headed and gutted Pacific whiting (head removed just in front of the collar bone and viscera removed,) the conversion factor is 1.67; for headed and gutted Pacific whiting with the tail removed the conversion factor is 2.0.

(vi) Rockfish. The following conversion applies to vessels landing sorted catch in the Shorebased IFQ Program: for headed and gutted, western cut (head removed just in front of the collar bone and viscera removed,) the conversion factor is 1.66; for headed and gutted, eastern cut (head removed just in behind the collar bone and viscera removed,) the conversion factor is 2.0.

\* \* \* \* \*

§ 660.65 Groundfish harvest specifications. \* \* \*

§ 660.70-99 Closed area - GCA's and EFH. \* \* \*

Subpart D – West Coast Groundfish – Trawl Fisheries

§ 660.100 Purpose and Scope. \* \* \*

12. INSTRUCTION – In section 660.111, the following definitions are removed: “Pacific whiting shoreside or shore-based fishery”, “Pacific whiting shoreside first receivers”, and “Pacific whiting shoreside vessel”. New definitions are added in alphabetical order for: “IFQ trip”, “Pacific whiting IFQ fishery”, “Pacific whiting IFQ trip”.

§ 660.111 Trawl fishery - definitions.

\* \* \* \* \*

Accumulation limits refers to permits or QS and means XXXXXX

\* \* \* \* \*

IFQ trip means a trip in which the vessel has a valid fishing declaration for any of the following: Limited entry midwater trawl, non-whiting shorebased IFQ; Limited entry midwater trawl, Pacific whiting shorebased IFQ; Limited entry bottom trawl, shorebased IFQ, not including demersal trawl; Limited entry demersal trawl, shorebased IFQ; or Limited entry fixed gear, shorebased IFQ.

\* \* \* \* \*

Comment [blr8]: Need?

Pacific whiting IFQ fishery means the Shorebased IFQ Program fishery composed of vessels making Pacific whiting IFQ trips pursuant to the requirements at § 660.131 during the primary season fishery dates for the Shorebased IFQ Program.

Pacific whiting IFQ trip means a trip in which a vessel registered to a limited entry permit uses legal midwater groundfish trawl gear with a valid declaration for limited entry midwater trawl, Pacific whiting shorebased IFQ, as specified at § 660.13(d)(5) during the dates that the Pacific whiting IFQ fishery primary season.

\* \* \* \* \*

Usage limit refers to vessel QP or processed catch and means

Comment [blr9]: Need??

\* \* \* \* \*

13. INSTRUCTION – In section 660.112, paragraph (f) is removed; paragraph (a)(2) is revised; paragraph (a)(4) is renumbered as (a)(5), and a new (a)(4) is added; paragraphs (b) through (e) are revised to read as follows:

§ 660.112 Trawl fishery - prohibitions. \* \* \*

(a) General. \* \* \*

(2) Sorting. It is unlawful for any person to fail to sort catch consistent with the requirements specified at § 660.130(d).

\* \* \* \* \*

(4) Observers.

(i) Fish (including processing, as defined at § 600.10) in the Shorebased IFQ Program, the MS Coop Program, or the C/P Coop Program if NMFS determines the vessel is unsafe for an observer.

(ii) Fish in the Shorebased IFQ Program, the MS Coop Program, or the C/P Coop Program without observer coverage.

(5) Fishing in conservation areas with trawl gear. \* \* \*

\* \* \* \* \*

(b) Shorebased IFQ program.

(1) General.

(i) Own or control by any means whatsoever an amount of QS that exceeds the Shorebased IFQ Program accumulation limits.

(ii) Fish in the Shorebased IFQ Program with a vessel that does not have a valid vessel account and has no deficits (negative balance) for any species/species group.

(iii) Have any IFQ species/species group catch (landings and discards) from an IFQ trip not covered by QP for greater than 30 days from the date of landing for that trip unless the overage is within the limits of the carryover provision specified at § 660.140, subpart D, in which case the vessel has 30 days after the QP for the following year are issued, whichever is greater.

(iv) Participate in fishing that is within the scope of the Shorebased IFQ Program from any vessel with an overage (catch not covered by QP) until the overage is covered, regardless of the amount of the overage.

(v) Use QP by vessels not registered to a limited entry trawl permit with a valid vessel account.

(vi) Use QP in an area or for species/species groups other than that for which it is designated.

(vii) Fish on a Pacific whiting IFQ trip with a gear other than legal midwater groundfish trawl gear.

(viii) Fish on a Pacific whiting IFQ trip without a valid declaration for limited entry midwater trawl, Pacific whiting shorebased IFQ, as specified at § 660.13(d)(5), subpart C.

(ix) Use midwater trawl gear to fish for Pacific whiting within an RCA outside the Pacific whiting IFQ fishery primary season as specified at § 660.XXX.

(xi) Dumping catch from a new haul until all catch from the previous haul is removed from the deck or stored in a location isolated from the new haul's catch.

(2) IFQ first receivers.

(i) Accept an IFQ landing without a valid first receiver site license.

(ii) Fail to sort fish received from a IFQ landing prior to first weighing after offloading as specified at § 660.XXX for the Shorebased IFQ Program.

(iii) Process, sell, or discard any groundfish received from an IFQ landing that has not been weighed on a scale that is in compliance with requirements at § 660.15, subpart C.

(iv) Transport catch away from the point of landing before that catch has been sorted and weighed by federal groundfish species or species group, and recorded for submission on an electronic fish ticket. (If fish will be trucked to a different location for processing, all sorting and weighing to federal groundfish species groups must occur before transporting the catch away from the point of landing).

(v) Receive for transport or processing an IFQ landing without first obtaining verification from vessel personnel that the vessel had an observer on the vessel as required by Federal regulation.

(vi) Process an IFQ landing without coverage by a catch monitor when one is required by regulations, unless NMFS has granted a written waiver specifically exempting the IFQ first receiver from the catch monitor coverage requirements.

(vii) Process catch without a NMFS accepted catch monitoring plan.

(viii) Mix catch from more than one IFQ landing prior to the catch being sorted and weighed.

(ix) Fail to comply with the IFQ first receiver responsibilities specified at § 660.140.

(x) Process, sell, or discard any groundfish received from an IFQ landing that has not been accounted for on an electronic fish ticket with the identification number for the vessel that delivered the fish.

(xi) Fail to submit, or submit incomplete or inaccurate information on any report, application, or statement required under this part.

(c) MS and C/P coop programs.

(1) Process Pacific whiting in the fishery management area during times or in areas where at-sea processing is prohibited for the sector in which the vessel fishes, unless:

(i) The fish are received from a member of a Pacific Coast treaty Indian tribe fishing under § 660.50, subpart C;

(ii) The fish are processed by a waste-processing vessel according to § 660.131(j), subpart D; or

(iii) The vessel is completing processing of Pacific whiting taken on board during that vessel's primary season.

(2) During times or in areas where at-sea processing is prohibited, take and retain or receive Pacific whiting, except as cargo or fish waste, on a vessel in the fishery management area that already has processed Pacific whiting on board. An exception to this prohibition is provided if the fish are received within the tribal U&A from a member of a Pacific Coast treaty Indian tribe fishing under § 660.50, subpart C.



(3) Operate as a waste-processing vessel within 48 hours of a primary season for Pacific whiting in which that vessel operates as a catcher/processor or mothership, according to § 660.131(j), subpart D.

(4) On a vessel used to fish for Pacific whiting, fail to keep the trawl doors on board the vessel, when taking and retention is prohibited under § 660.131(f), subpart D.

(5) Sort or discard any portion of the catch taken by a catcher vessel in the mothership sector before the catcher vessel observer completes sampling of the catch, with the exception of minor amounts of catch that are lost when the codend is separated from the net and prepared for transfer.

(d) MS coop program (coop and non-coop fisheries).

(1) Fish with a vessel in the mothership non-coop fishery that is not registered to a current MS/CV-endorsed limited entry trawl permit.

(2) Receive catch, process catch, or otherwise fish as a mothership vessel if that is not registered to a current MS permit.

(3) Fish with a vessel in the mothership sector, if that vessel was used to fish in the C/P fishery in the same calendar year.

(4) Fish in the MS Coop Program with a vessel that does not have has a valid VMS declaration for limited entry midwater trawl, Pacific whiting mothership sector, as specified at § 660.13(d)(5), subpart C.

(5) Transfer catch to a vessel that is not registered to a MS permit. (i.e. a tender vessel).

(6) Use a vessel registered to a limited entry permit with a trawl endorsement (with or without a MS/CV endorsement) to catch more than 30 percent of the Pacific whiting allocation for the mothership sector.

(7) Fish before all catch from a haul has been transferred to a single vessel registered to a MS permit.

(8) Transfer catch from a single haul to more than one permitted MS vessel.

(9) Fish for a MS coop with a vessel that is not identified on the MS coop permit or with a vessel that does not have permission from the coop to fish for that coop.

(10) Take deliveries without a valid scale inspection report signed by an authorized scale inspector on board the vessel.

(11) Sort, process, or discard catch before the catch is weighed on a scale that meets the requirements of § 679.15(b), including the daily test requirements.

(12) Discard any catch from the codend or net (i.e. bleeding) before the observer has completed their data collection.

(13) Mix catch from more than a one haul before the observer completes their collection of catch for sampling.

(e) C/P coop program.

(1) Fish with a vessel in the catcher/processor sector that is not registered to a current C/P-endorsed limited entry trawl permit.

(2) Fish as a catcher/processor vessel in the same year that the vessel fishes as a catcher vessel in the mothership fishery.

(3) Fish in the C/P Coop Program with a vessel that does not have has a valid VMS declaration for limited entry midwater trawl, Pacific whiting catcher/processor sector, as specified at § 660.13(d)(5).

(4) Fish in the C/P Coop Program with a vessel that is not identified on the C/P coop permit.

Comment [jg10]: Or should this be in the coop agreement? Coop permit application?

Comment [jg11]: Coop agreement? Coop permit application?



(5) Fish in the C/P Coop Program without a valid scale inspection report signed by an authorized scale inspector on board the vessel.

(6) Sort, process, or discard catch before the catch is weighed on a scale that meets the requirements of § 679.15(b), including the daily test requirements.

(7) Discard any catch from the codend or net (i.e. bleeding) before the observer has completed their data collection.

(8) Mix catch from more than one haul before the observer completes their collection of catch for sampling.

14. INSTRUCTION – In section 660.113, paragraph (d) is removed; paragraphs (a) through (c) are renumbered as (b) through (d); and a new paragraph (a) is added to read as follows:

§ 660.113 Trawl fishery - recordkeeping and reporting. \* \* \*

Comment [jg12]: This section needs work!

(a) General requirements.

(i) All records or reports required by this paragraph must: be maintained in English, be accurate, be legible, be based on local time, and be submitted in a timely manner as required in paragraph (e)(1)(iv) of this section.

(ii) Retention of Records. All records used in the preparation of records or reports specified in this section or corrections to these reports must be maintained for a period of not less than three years after the date of landing and must be immediately available upon request for inspection by NMFS or authorized officers or others as specifically authorized by NMFS. Records used in the preparation of required reports specified in this section or corrections to these reports that are required to be kept include, but are not limited to, any written, recorded, graphic, electronic, or digital materials as well as other information stored in or accessible through a computer or other information retrieval system; worksheets; weight slips; preliminary, interim, and final tally sheets; receipts; checks; ledgers; notebooks; diaries; spreadsheets; diagrams; graphs; charts; tapes; disks; or computer printouts. All relevant records used in the preparation of electronic fish ticket reports or corrections to these reports must be maintained for a period of not less than three years after the date and must be immediately available upon request for inspection by NMFS or authorized officers or others as specifically authorized by NMFS.

(b) Shorebased IFQ program.

(1) General.

(i) Any person with a limited entry groundfish permit or IFQ first receiver site license participating in the Shorebased IFQ Program must complete the mandatory economic data collection form.

(ii) Any person taking, retaining, and landing groundfish in the Shorebased IFQ Program must report their landings and discards through the electronic “?????” fish ticket report.

Comment [jg13]: This should be for vessels, first receivers are below in e-fish tix section

(2) Electronic vessel logbook. [Reserved]

(3) Gear switching declaration. [Reserved]

(4) Electronic fish ticket. The IFQ first receiver is responsible for compliance with all reporting requirements described in this paragraph.

Comment [jg14]: First receiver?

(i) Required information. All IFQ first receivers must provide the following types of information: date of landing, vessel that made the delivery, gear type used, first receiver, round weights of species landed listed by species or species group including species with no value, number of salmon by species, number of Pacific halibut, and any other information deemed

necessary by the Regional Administrator as specified on the appropriate electronic fish ticket form.

(ii) Submissions. The IFQ first receiver must:

(A) Sort all fish, prior to first weighing, by species or species groups as specified at § 660.370 (h)(6)(iii).

(B) Include as part of each electronic fish ticket submission, the actual scale weight for each groundfish species as specified by requirements at §660.XXX and the vessel identification number.

(C) Use for the purpose of submitting electronic fish tickets, and maintain in good working order, computer equipment as specified at §660.XXX;

(D) Install, use, and update as necessary, any NMFS-approved software described at §660.XXX;

(E) Submit a completed electronic fish ticket for every IFQ landing no later than 24 hours after the date the fish are received, unless a waiver of this requirement has been granted under provisions specified at paragraph (e)(1)(vii) of this section.

(iii) Revising a submission. In the event that a data error is found, electronic fish ticket submissions may be revised by resubmitting the revised form. Electronic fish tickets are to be used for the submission of final data. Preliminary data, including estimates of fish weights or species composition, shall not be submitted on electronic fish tickets.

(iv) Retention of records. All records used in the preparation of electronic fish tickets or corrections to these reports must be maintained in the first receiver's office for a period of not less than three years after the date of landing and must be immediately available upon request for inspection by NMFS or authorized officers or others as specifically authorized by NMFS. Records used in the preparation of electronic fish tickets or corrections to these reports that are required to be kept include, but are not limited to, any written, recorded, graphic, electronic, or digital materials as well as other information stored in or accessible through a computer or other information retrieval system; worksheets; weight slips; preliminary, interim, and final tally sheets; receipts; checks; ledgers; notebooks; diaries; spreadsheets; diagrams; graphs; charts; tapes; disks; or computer printouts. All relevant records used in the preparation of electronic fish ticket reports or corrections to these reports must be maintained in the first receiver's office for a period of not less than three years after the date and must be immediately available upon request for inspection by NMFS or authorized officers or others as specifically authorized by NMFS.

(v) Waivers for submission. On a case-by-case basis, a temporary written waiver of the requirement to submit electronic fish tickets may be granted by the Assistant Regional Administrator or designee if he/she determines that circumstances beyond the control of a first receiver would result in inadequate data submissions using the electronic fish ticket system. The duration of the waiver will be determined on a case-by-case basis.

(vi) Reporting requirements when a temporary waiver has been granted. IFQ First receivers that have been granted a temporary waiver from the requirement to submit electronic fish tickets must submit on paper the same data as is required on electronic fish tickets within 24 hours of the date received during the period that the waiver is in effect. Paper fish tickets must be sent by facsimile to NMFS, Northwest Region, Sustainable Fisheries Division, 206-526- 6736 or by delivering it in person to 7600 Sand Point Way NE, Seattle, WA 98115. The requirements for submissions of paper tickets in this paragraph are separate from, and in addition to existing state requirements for landing receipts or fish receiving tickets.

(c) MS coop program (coop and non-coop fisheries).

(1) Economic data collection.

(i) For the coop fishery, the designated coop manager listed in the coop agreement for the MS coop permit must complete the mandatory economic data collection form.

(ii) For the non-coop fishery, any person with a limited entry groundfish permit (MS/CV or mothership permit), must complete the mandatory economic data collection form provided by NMFS.

(2) NMFS-approved scales.

(i) Scale test report form. Mothership vessel operators are responsible for conducting scale tests and for recording the scale test information on the at-sea scale test report form as specified at § 660.150(X) for mothership vessels.

(ii) Printed scale reports. Specific requirements pertaining to printed scale reports and scale weight print outs are specified at § 660.150(X) for mothership vessels.

(iii) Retention of scale records and reports. The vessel must maintain the test report form on board until the end of the fishing year during which the tests were conducted, and make the report forms available to observers, NMFS staff, or NMFS authorized personnel. In addition, the vessel owner must retain the scale test report forms for 3 years after the end of the fishing year during which the tests were performed. All scale test report forms must be signed by the vessel operator.

(3) Annual coop report.

(i) The designated coop manager for the mothership coop must submit an annual report. The complete annual coop report will contain information about the current year's fishery, including:

(A) the mothership sector's annual allocation of Pacific whiting and the permitted mothership coop allocation;

(B) the mothership coop's actual retained and discarded catch of Pacific whiting, salmon, Pacific halibut, rockfish, groundfish, and other species on a vessel-by-vessel basis;

(C) a description of the method used by the mothership coop to monitor performance of coop vessels that participated in the fishery;

(D) a description of any actions taken by the mothership coop in response to any vessels that exceed their allowed catch and bycatch; and

(E) plans for the next year's mothership coop fishery, including the companies participating in the cooperative, the harvest agreement, and catch monitoring and reporting requirements.

(ii) The annual coop report must be submitted to the Pacific Fishery Management Council for their November meeting each year. A final report must be submitted to NMFS with by March 31 of the following year and before a coop permit is issued for the following year.

(4) Cease fishing report.

(5) Mandatory logbook. XXproduction report, transfer logXX

(d) C/P coop program.

(1) Economic data collection. The designated coop manager listed in the coop agreement for the C/P coop permit must complete the mandatory economic data collection form by NMFS.

(2) NMFS-approved scales.

(i) Scale test report form. Catcher/processor vessel operators are responsible for conducting scale tests and for recording the scale test information on the at-sea scale test report form as specified at § 660.160(X) for C/P vessels.

Comment [blr15]: Is some type of mandatory reporting required or do we put voluntary reporting in reg. (PRA)

(ii) Printed scale reports. Specific requirements pertaining to printed scale reports and scale weight print outs are specified at § 660.160(X) for C/P vessels.

(iii) Retention of scale records and reports. The vessel must maintain the test report form on board until the end of the fishing year during which the tests were conducted, and make the report forms available to observers, NMFS staff, or NMFS authorized personnel. In addition, the vessel owner must retain the scale test report forms for 3 years after the end of the fishing year during which the tests were performed. All scale test report forms must be signed by the vessel operator.

(3) Annual coop report.

(i) The designated coop manager for the C/P coop must submit an annual report. The complete annual coop report will contain information about the current year's fishery, including:

(A) the C/P sector's annual allocation of Pacific whiting;

(B) the C/P coop's actual retained and discarded catch of Pacific whiting, salmon, Pacific halibut, rockfish, groundfish, and other species on a vessel-by-vessel basis;

(C) a description of the method used by the C/P coop to monitor performance of cooperative vessels that participated in the fishery;

(D) a description of any actions taken by the C/P coop in response to any vessels that exceed their allowed catch and bycatch; and

(E) plans for the next year's C/P coop fishery, including the companies participating in the cooperative, the harvest agreement, and catch monitoring and reporting requirements.

(ii) The annual coop report must be submitted to the Pacific Fishery Management Council for their November meeting each year. A final report must be submitted to NMFS with by March 31 of the following year and before a coop permit is issued for the following year.

(4) Cease fishing report.

(5) Mandatory logbook. XXproduction report, transfer logXX

**Comment [blr16]:** Same as with MP -- Is some type of mandatory reporting required or do we put voluntary reporting in reg. (PRA)

15. INSTRUCTION –Section 660.116 is removed.

§ 660.116 Trawl fishery - observer requirements.

§ 660.120 Trawl fishery - crossover provisions. \* \* \*

16. INSTRUCTION - In section 660.130, paragraph (a) and paragraph (d) are revised to read as follows:

§ 660.130 Trawl fishery - management measures.

**Comment [blr17]:** Need to figure out what portions of existing management measures stay and how to revise.

(a) General. Limited entry trawl vessels include those vessels registered to a limited entry permit with a trawl endorsement, and to vessels registered to a MS permit. Most species taken in limited entry trawl fisheries will be managed with quotas (see § 660.140), allocations or set-asides (see § 660.150 or § 660.160), or cumulative trip limits (see trip limits in Tables 1 (North) and 1 (South) of this subpart), size limits (see § 660.60 (h)(5), subpart C), seasons (see Pacific whiting at § 660.131(b), subpart D), gear restrictions (see paragraph (b) of this section) and closed areas (see paragraph (e) of this section and §§ 660.70 through 660.79, subpart C). The trawl fishery has gear requirements and harvest limits that differ by the type of trawl gear on board and the area fished. Cowcod retention is prohibited in all fisheries and groundfish vessels operating south of Point Conception must adhere to CCA restrictions (see paragraph (e)(1) of this section and § 660.70, subpart C). The trip limits in Tables 1 (North) and 1 (South) of this subpart apply to vessels participating in the limited entry groundfish trawl fishery and may not

be exceeded. Federal commercial groundfish regulations are not intended to supersede any more restrictive state commercial groundfish regulations relating to federally-managed groundfish.

\* \* \* \* \*

(b) Trawl gear requirements and restrictions. \* \* \*

(c) Cumulative trip limits and prohibitions by limited entry trawl gear type. \* \* \*

(d) Sorting. Under § 660.12 (a)(8), subpart C, it is unlawful for any person to “fail to sort, prior to the first weighing after offloading, those groundfish species or species groups for which there is a trip limit, size limit, scientific sorting designation, quota, harvest guideline, or OY, if the vessel fished or landed in an area during a time when such trip limit, size limit, scientific sorting designation, quota, harvest guideline, or OY applied.” The states of Washington, Oregon, and California may also require that vessels record their landings as sorted on their state landing receipt.

(1) Species and areas.

(i) Coastwide. Widow rockfish, canary rockfish, darkblotched rockfish, yelloweye rockfish, shortbelly rockfish, black rockfish, blue rockfish, minor nearshore rockfish, minor shelf rockfish, minor slope rockfish, shortspine and longspine thornyhead, Dover sole, arrowtooth flounder, petrale sole, starry flounder, English sole, other flatfish, lingcod, sablefish, Pacific cod, spiny dogfish, other fish, longnose skate, and Pacific whiting;

(ii) North of 40°10' N. lat. POP, yellowtail rockfish;

(iii) South of 40°10' N. lat. Minor shallow nearshore rockfish, minor deeper nearshore rockfish, California scorpionfish, chilipepper rockfish, bocaccio rockfish, splitnose rockfish, Pacific sanddabs, cowcod, bronzespotted rockfish and cabezon.

(2) Sorting requirements for the shorebased IFQ program.

(i) Fish landed at IFQ first receivers (including shoreside processing facilities and buying stations that intend to transport catch for processing elsewhere) must be sorted, prior to first weighing after offloading from the vessel and prior to transport away from the point of landing, except as allowed in § 660.140(k) for the midwater Pacific whiting fishery.

(ii) All catch must be sorted to the species groups specified in paragraph (h)(6)(i)(A) of this section for vessels with limited entry permits. Prohibited species must be sorted according to the following species groups: Dungeness crab, Pacific halibut, Chinook salmon, other salmon. Non-groundfish species must be sorted as required by the state of landing.

(3) Sorting requirements for the at-sea sectors of the Pacific whiting fishery.

(i) Pacific whiting at-sea processing vessels may use an accurate in-line conveyor or hopper type scale to derive an accurate total catch weight prior to sorting. Immediately following weighing of the total catch, the catch must be sorted to the species groups specified in paragraph (h)(6)(i)(A) and all incidental catch (groundfish and non-groundfish species) must be accurately weighed and the weight of incidental catch deducted from the total catch weight to derive the weight of target species.

(ii) Catcher vessels in the MS sector. If sorting occurs on the catcher vessel, the catch must not be discarded from the vessel and the vessel must not resume fishing until the catcher vessel observer has obtained an accurate weight by species for the sorted catch.

\* \* \* \* \*

(e) Groundfish conservation areas (GCAs) applicable to trawl vessels. \* \* \*

16. INSTRUCTION - In section 660.131, paragraphs (a) through (c) and paragraphs (e) and (f) are revised; paragraphs (g), (h), and (k) are removed; paragraphs (i) and (j) are renumbered as paragraphs (g) and (h); and the new paragraph (g) is revised to read as follows:  
§ 660.131 Pacific whiting fishery management measures.

(a) Sectors.

(1) The catcher/processor sector, or C/P Coop Program, is composed of catcher/processors which are vessels registered to a limited entry permit with a C/P endorsement.

(2) The mothership sector, or MS Coop Program, is composed of motherships and catcher vessels that harvest Pacific whiting for delivery to motherships. Motherships are vessels registered to a MS permit, and catcher vessels are vessels registered to a limited entry permit with a MS/CV endorsement or vessels registered to a limited entry permit without a MS/CV endorsement if the vessel is identified as a member vessel of a permitted MS coop.

(3) The Pacific whiting IFQ fishery is composed of vessels that harvest Pacific whiting for delivery shoreside to IFQ first receivers during the primary season. Notwithstanding the other provisions of 50 CFR part 660, subpart C or D, a vessel that is 75 feet or less LOA that harvests Pacific whiting and, in addition to heading and gutting, cuts the tail off and freezes the Pacific whiting, is not considered to be processing fish. Such a vessel is subject to regulations and allocations for the Shoreside IFQ Program.

(b) Pacific whiting seasons.

(1) Primary seasons. The primary seasons for the Pacific whiting fishery are:

(i) For the Shorebased IFQ Program, Pacific whiting IFQ fishery, the period(s) of the large-scale target fishery is conducted after the season start date and ends when an vessel has no more whiting QP in their vessel account;

(ii) For catcher/processors, the period(s) when at-sea processing is allowed and the fishery is open for the catcher/processor sector; and

(iii) For vessels delivering to motherships, the period(s) when at-sea processing is allowed and the fishery is open for the mothership sector.

~~(2) Before and after the primary seasons. Before and after the primary seasons, trip landing or frequency limits may be imposed under § 660.60(c). The sectors are defined at §660.60(a).~~

**Comment [b18]:** What goes here? May only fish for groundfish on IFQ trips ?

(3) Different primary season start dates. North of 40°30' N. lat., different starting dates may be established for the catcher/processor sector, the mothership sector, and in the Pacific whiting IFQ fishery for vessels delivering to IFQ first receivers north of 42° N. lat. and vessels delivering to IFQ first receivers between 42° through 40°30' N. lat.

(i) Procedures. The primary seasons for the whiting fishery north of 40°30' N. lat. generally will be established according to the procedures of the PCGFMP for developing and implementing harvest specifications and apportionments. The season opening dates remain in effect unless changed, generally with the harvest specifications and management measures.

(ii) Criteria. The start of a primary season may be changed based on a recommendation from the Council and consideration of the following factors, if applicable: Size of the harvest guidelines for whiting and bycatch species; age/size structure of the whiting population; expected harvest of bycatch and prohibited species; availability and stock status of prohibited species; expected participation by catchers and processors; environmental conditions; timing of alternate or competing fisheries; industry agreement; fishing or processing rates; and other relevant information.

(iii) Primary whiting season start dates and duration. After the start of a primary season for a sector of the whiting fishery, the season remains open for that sector until the quota is taken or a bycatch limit is reached and the fishery season for that sector is closed by NMFS. The starting dates for the primary seasons for the whiting fishery are as follows:

- (A) Catcher/processor sector—May 15.
- (B) Mothership sector—May 15.
- (C) Shorebased IFQ program, Pacific whiting IFQ fishery.
- (1) North of 42° N. lat.— June 15;
- (2) Between 42°–40°30' N. lat.— April 1; and
- (3) South of 40°30' N. lat.— April 15.

(4) Trip limits in the whiting fishery. The “per trip” limit for whiting before and after the regular (primary) season for the shore-based sector is announced in Table 1 of this subpart, and is a routine management measure under § 660.60(c). This trip limit includes any whiting caught shoreward of 100–fm (183–m) in the Eureka, CA area. The “per trip” limit for other groundfish species before, during, and after the regular (primary) season are announced in Table 1 (North) and Table 1 (South) of this subpart and apply as follows:

(i) During the groundfish cumulative limit periods both before and after the primary whiting season, vessels may use either small and/or large footrope gear, but are subject to the more restrictive trip limits for those entire cumulative periods.

(ii) If, during a primary whiting season, a whiting vessel harvests a groundfish species other than whiting for which there is a midwater trip limit, then that vessel may also harvest up to another footrope-specific limit for that species during any cumulative limit period that overlaps the start or end of the primary whiting season.

(c) Closed areas. Vessels fishing in the Pacific whiting primary seasons for the Shorebased IFQ Program, MS Coop Program, or C/P Coop Program shall not target Pacific whiting with midwater trawl gear in the following portions of the fishery management area: \* \* \*

(d) Eureka Area Trip Limits. \* \* \*

(e) At-sea processing. Whiting may not be processed at sea south of 42°00' N. lat. (Oregon-California border), unless by a waste-processing vessel as authorized under paragraph (g) of this section.

(f) Time of day. Vessels fishing in the Pacific whiting primary seasons for the Shorebased IFQ Program, MS Coop Program or C/P Coop Program shall not target Pacific whiting with midwater trawl gear in the fishery management area south of 42°00' N. lat. between 0001 hours to one-half hour after official sunrise (local time). During this time south of 42°00' N. lat., trawl doors must be on board any vessel used to fish for whiting and the trawl must be attached to the trawl doors. Official sunrise is determined, to the nearest 5° lat., in The Nautical Almanac issued annually by the Nautical Almanac Office, U.S. Naval Observatory, and available from the U.S. Government Printing Office.

(g) Bycatch reduction and full utilization program for at-sea processors (optional). If a catcher/processor or mothership in the whiting fishery carries more than one NMFS-approved observer for at least 90 percent of the fishing days during a cumulative trip limit period, then groundfish trip limits may be exceeded without penalty for that cumulative trip limit period, if the conditions in paragraph (g)(1) of this section are met. For purposes of this program, “fishing day” means a 24-hour period, from 0001 hours through 2400 hours, local time, in which fishing gear is retrieved or catch is received by the vessel, and will be determined from the vessel's

**Comment [b19]:** Can paragraph (4) be deleted? I assume that nothing needs to be said beyond what is stated in each fishery's allocation sections. Is that correct?

**Comment [b20]:** GC - Much of this is not longer applicable since trip limits no longer exist and all CPs and MSs will be required to carry 2 obs. Do we just leave for now or update in some way?

DEEMING- Flag to industry as a deeming question



observer data, if available. Changes to the number of observers required for a vessel to fish under in the bycatch reduction program will be announced prior to the start of the fishery, generally concurrent with the harvest specifications and management measures. Groundfish consumed on board the vessel must be within any applicable trip limit and recorded as retained catch in any applicable logbook or report. [Note: For a mothership, non-whiting groundfish landings are limited by the cumulative landings limits of the catcher vessels delivering to that mothership.]

(1) Conditions. Conditions for participating in the voluntary full utilization program are as follows:

(i) All catch must be made available to the observers for sampling before it is sorted by the crew.

(ii) Any retained catch in excess of cumulative trip limits must either be: Converted to meal, mince, or oil products, which may then be sold; or donated to a bona fide tax-exempt hunger relief organization (including food banks, food bank networks or food bank distributors), and the vessel operator must be able to provide a receipt for the donation of groundfish landed under this program from a tax-exempt hunger relief organization immediately upon the request of an authorized officer.

(iii) No processor or catcher vessel may receive compensation or otherwise benefit from any amount in excess of a cumulative trip limit unless the overage is converted to meal, mince, or oil products. Amounts of fish in excess of cumulative trip limits may only be sold as meal, mince, or oil products.

(iv) The vessel operator must contact the NMFS enforcement office nearest to the place of landing at least 24 hours before landing groundfish in excess of cumulative trip limits for distribution to a hunger relief agency. Cumulative trip limits and a list of NMFS enforcement offices are found on the NMFS, Northwest Region homepage at [www.nwr.noaa.gov](http://www.nwr.noaa.gov).

(v) If the meal plant on board the whiting processing vessel breaks down, then no further overages may be retained for the rest of the cumulative trip limit period unless the overage is donated to a hunger relief organization.

(vi) Prohibited species may not be retained.

(vii) Donation of fish to a hunger relief organization must be noted in the transfer log (Product Transfer/Offloading Log (PTOL)), in the column for total value, by entering a value of “0” or “donation,” followed by the name of the hunger relief organization receiving the fish. Any fish or fish product that is retained in excess of trip limits under this rule, whether donated to a hunger relief organization or converted to meal, must be entered separately on the PTOL so that it is distinguishable from fish or fish products that are retained under trip limits. The information on the Mate's Receipt for any fish or fish product in excess of trip limits must be consistent with the information on the PTOL. The Mate's Receipt is an official document that states who takes possession of offloaded fish, and may be a Bill of Lading, Warehouse Receipt, or other official document that tracks the transfer of offloaded fish or fish product. The Mate's Receipt and PTOL must be made available for inspection upon request of an authorized officer throughout the cumulative limit period during which such landings occurred and for 15 days thereafter.

(h) Processing fish waste at sea. A vessel that processes only fish waste (a “waste-processing vessel”) is not considered a whiting processor and therefore is not subject to the allocations, seasons, or restrictions for catcher/processors or motherships while it operates as a waste-processing vessel. However, no vessel may operate as a waste-processing vessel 48 hours immediately before and after a primary season for whiting in which the vessel operates as a



catcher/processor or mothership. A vessel must meet the following conditions to qualify as a waste-processing vessel:

(1) The vessel makes meal (ground dried fish), oil, or minced (ground flesh) product, but does not make, and does not have on board, surimi (fish paste with additives), fillets (meat from the side of the fish, behind the head and in front of the tail), or headed and gutted fish (head and viscera removed).

(2) The amount of whole whiting on board does not exceed the trip limit (if any) allowed under § 660.60(c), subpart C, or Tables 1 (North) or 1 (South) in subpart D.

(3) Any trawl net and doors on board are stowed in a secured and covered manner, and detached from all towing lines, so as to be rendered unusable for fishing.

(4) The vessel does not receive codends containing fish.

(5) The vessel's operations are consistent with applicable state and Federal law, including those governing disposal of fish waste at sea.

16. INSTRUCTION - In section 660.140, paragraphs (a), (b), (d)(2), (d)(3), (d)(5), (d)(7), and paragraphs (e) through (m) are revised to read as follows:

§ 660.140 Shorebased IFQ Program.

(a) General. The Shorebased IFQ Program requirements in § 660.140 will be effective beginning January 1, 2011, except for paragraphs (d)(4), (d)(6), and (d)(8) of this section, which are effective immediately. The IFQ Program applies to qualified participants in the Pacific Coast Groundfish fishery and includes a system of transferable QS for most groundfish species or species groups and trip limits or set-asides for the remaining groundfish species or species groups. In addition to the requirements of this section, the shorebased IFQ program is subject to the following groundfish regulations of subparts C and D:

(1) Regulations set out in the following sections of subpart C: § 660.11 Definitions, § 660.12 Prohibitions, § 660.13 Recordkeeping and reporting, § 660.14 VMS requirements, § 660.15 Equipment requirements, § 660.16 Groundfish observer program, § 660.20 Vessel and gear identification, § 660.25 Permits, § 660.55 Allocations, § 660.60 Specifications and management measures, § 660.65 Groundfish harvest specifications, and §§ 660.70 through 660.79 Closed areas.

(2) Regulations set out in the following sections of subpart D: § 660.111 Trawl fishery definitions, § 660.112 Trawl fishery prohibitions, § 660.113 Trawl fishery recordkeeping and reporting, § 660.120 Trawl fishery crossover provisions, § 660.130 Trawl fishery management measures, and § 660.131 Pacific whiting fishery management measures.

(3) The shorebased IFQ fishery may be restricted or closed as a result of projected overages within the Shorebased IFQ Program, the MS Coop Program, or the C/P Coop Program. As determined necessary by the Regional Administrator, area restrictions, season closures, or other measures will be used to prevent the trawl sector in aggregate or the individual trawl sectors (Shorebased IFQ, MS Coop, or C/P Coop) from exceeding an OY, or formal allocation specified in the PCGFMP or regulation at § 660.55, subpart C, or §§ 660.140, 660.150, or 660.160, subpart D.

(b) Participation requirements and responsibilities.

(1) QS permit owners.

(2) IFQ vessels.

(i) Vessels must be registered to a groundfish limited entry permit, endorsed for trawl gear.

Comment [jg21]: Needs developed

(ii) Vessels must be registered to a vessel account.

(iii) To fish in the Shorebased IFQ Program, any vessel must have a valid vessel account. A valid vessel account is an account established for the vessel for a specific calendar year with at least one pound of QS for any species and has no deficits (negative balance) for any species/species group.

(iv) All IFQ species/species group catch (landings and discards) must be covered by QP within 30 days of the date of landing for that IFQ trip unless the overage (catch not covered by QP) is within the limits of the carryover provision at XXX.XXX, in which case the vessel may declare out of the IFQ fishery for the year in which the overage occurred and has 30 days after the QP for the following year are issued.

(v) Any vessel with an overage (catch not covered by QP) is prohibited from fishing that is within the scope of the Shorebased IFQ Program until the overage is covered, regardless of the amount of the overage.

(vi) Vessels are subject to limits on the amount of QP that may be registered to a single vessel during the year (QP Vessel Limit) and, for some species, on the amount of unused QP registered to a vessel account at any one time (Unused QP Vessel Limit). These amounts are specified at 660.XXX.

(vii) Vessel must use one of the groundfish gears listed at XXgear switching sectionXXX.

(viii) Vessels that are registered to MS/CV endorsed permits may be used to fish in the Shorebased IFQ program if the vessel has a valid vessel account.

(ix) In the same calendar year, a vessel registered to a trawl endorsed limited entry permit with no MS/CV or C/P endorsements may be used to fish in the shorebased IFQ program if the vessel has a valid vessel account, and to fish in the mothership sector for a permitted MS coop as agreed upon with the MS coop.

(3) IFQ first receivers.

(c) IFQ species and allocations. \* \* \*

(1) IFQ species. \* \* \*

(2) IFQ program allocations. \* \* \*

\* \* \* \* \*

(d) QS permits and QS accounts.

(1) General. \* \* \*

(2) Eligibility and registration.

(i) Eligibility. Only the following persons are eligible to own QS permits:

(A) a United States citizen, that is eligible to own and control a U.S. fishing vessel with a fishery endorsement pursuant to 46 USC 12113 (general fishery endorsement requirements and 75 percent citizenship requirement for entities);

(B) a permanent resident alien, that is eligible to own and control a U.S. fishing vessel with a fishery endorsement pursuant to 46 USC 12113 (general fishery endorsement requirements and 75 percent citizenship requirement for entities); or

(C) a corporation, partnership, or other entity established under the laws of the United States or any State, that is eligible to own and control a U.S. fishing vessel with a fishery endorsement pursuant to 46 USC 12113 (general fishery endorsement requirements and 75 percent citizenship requirement for entities). However, there is an exception for any entity that owns a mothership that participated in the west coast groundfish fishery during the allocation

Comment [jg22]: Needs developed

Comment [jg23]: Need to add IFQ management areas. See March 2010, E.6.b, NMFS Report 1, #16.

period and is eligible to own or control that U.S. fishing vessel with a fishery endorsement pursuant to sections 203(g) and 213(g) of the AFA.

(ii) Registration. A QS account must be registered with the NMFS SFD Permits Office. A QS account will be established with the issuance of a QS permit. The QS permit owner may designate other persons that can access the QS account by submitting a request in writing to NMFS.

(3) Renewal, change of permit ownership, and transfer.

(i) Renewal. The holder of a QS permit must renew the QS permit by December 31 of each year. Failure to renew a QS Permit will result in the suspension of the associated QS account until such time that the permit is renewed. A completed ownership interest form is required as part of renewal of a QS permit.

(ii) Change of permit ownership and transfer.

(A) Restriction on the transfer of ownership for QS permits. A QS permit cannot be transferred to another individual or entity. The QS permit owner cannot change or add additional individuals or entities as owners of the permit. Any change to the owner of the QS permit requires the new owner to apply for a QS permit.

(B) Restriction on the transfer of QS between QS permits/QS accounts. After the second year of the trawl rationalization program, QS permit owners may transfer QS to another QS permit owner. For the purposes of transfer, QS is transferred as a percent and is highly divisible. During the first 2 years after implementation of the program, QS cannot be transferred to another QS Permit owner. However, NMFS will allow for the transfer of QS during the first two years on a limited basis and only when the action is directed by a U.S. court that directs the reassignment of QS as part of a legal proceeding.

(C) Restriction on the transfer of QP from a QS account to a vessel account.

(iii) Effective Date.

(A) A QS permit is effective on the date approved by NMFS and remains in effective until the end of the calendar year, unless XXXX.

(B) Transfer of QS between QS permits/QS accounts is effective on the date approved by NMFS.

(C) Transfer of QP from a QS account to a vessel account is effective on the date approved by NMFS.

(4) Accumulation limits.-- (i) QS and IBO control limits. \* \* \*

(ii) Ownership - individual and collective rule. \* \* \*

(iii) Control. \* \* \*

(iv) Trawl identification of ownership interest form. \* \* \*

(v) Divestiture. \* \* \*

\* \* \* \* \*

(5) Appeals. An appeal to a QS permit or QS account action follows the same process as the general permit appeals process is defined at § 660.25(g), subpart C.

(6) Fees. \* \* \*

\* \* \* \* \*

(7) Cost recovery. A QS permit owner will not be responsible to pay cost recovery fees. Vessel account owners will be required to pay all cost recovery fees based on the annual usage of QPs as specified at paragraph (e)(7) of this section.

(8) Application requirements and initial issuance for QS permit and QS. \* \* \*

\* \* \* \* \*

**Comment [jg24]:** This revision based on April 2010 Council motion.

But only applies to QS and MS permit?

All other LE permits (except MS permit) have different eligibility requirements at 660.25(b).

**Comment [jg25]:** Finish

**Comment [jg26]:** or should this be the next calendar year? QP wouldn't be issued on the transfer until the next calendar year.

(e) Vessel accounts.

(1) General. QP will have the same species/species groups and area designations as the QS from which it was issued. Annually, QS (expressed as a percent) are converted to QP (expressed as a weight). QPs are required to cover catch of all groundfish (landings and discards) by limited entry trawl vessels, except for:

(i) Gear exception. Vessels with a limited entry trawl permit using the following gears would not be required to cover groundfish catch with QP: open access exempted trawl, gear types defined in the coastal pelagic species PCGFMP, gear types defined in the highly migratory species PCGFMP, salmon troll, crab pot, and limited entry fixed gear when the vessel also has a limited entry permit endorsed for fixed gear and has declared that they are fishing in the limited entry fixed gear fishery.

(ii) Species exception. QP are not required for the following species, longspine thornyheads south of 34°27 N. lat., minor nearshore rockfish (north and south), black rockfish (coastwide), California scorpionfish, cabezon, kelp greenling, shortbelly rockfish, and “other fish” (as defined at § 660.11, subpart C, under the definition of “groundfish”). For these species, trip limits remain in place as specified in the trip limit tables at **Table 1 (North) and Table 1 (South) of this subpart.**

(2) Eligibility and registration.

(i) Eligibility. To be registered a vessel account, a person must own a vessel and that vessel must be registered to a groundfish limited entry permit endorsed for trawl gear.

(ii) Registration. A vessel account must be registered with the NMFS SFD Permits Office. A vessel account may be established at any time during the year. An eligible vessel owner must request in writing that NMFS establish a vessel account. The request must include the vessel name; USCG vessel registration number (as given on USCG Form 1270); the vessel owner name; if the vessel owner is a business entity, then include the name of the authorized representative that may act on behalf of the entity; business address, phone number, fax number, and email. Any change in the legal name of the vessel owner will require the new owner to register with NMFS for a vessel account. In addition, the vessel owner may designate other persons that can access the vessel account by submitting a request in writing to NMFS.

(3) Renewal, change of account ownership, and transfer of QP. [Reserved]

Comment [jg27]: Needs developed

(4) Accumulation limits. Vessels are subject to limits on the amount of QP that may be registered to a single vessel during the year (QP Vessel Limit) and, for some species, on the amount of unused QP registered to a vessel account at any one time (Unused QP Vessel Limit). These amounts are as follows:

Species Category	QP Vessel Limit (Annual Limit)	Unused QP Vessel Limit (Daily Limit)
Nonwhiting Groundfish Species	3.2%	
Lingcod - coastwide	3.8%	
Pacific Cod	20.0%	
Pacific whiting (shoreside)	15.0%	
Sablefish		
N. of 36° (Monterey north)	4.5%	
S. of 36° (Conception area)	15.0%	
PACIFIC OCEAN PERCH	6.0%	4.0%
WIDOW ROCKFISH *	8.5%	5.1%
CANARY ROCKFISH	10.0%	4.4%
Chilipepper Rockfish	15.0%	
BOCACCIO	15.4%	13.2%
Splitnose Rockfish	15.0%	
Yellowtail Rockfish	7.5%	
Shortspine Thornyhead		
N. of 34°27'	9.0%	
S. of 34°27'	9.0%	
Longspine Thornyhead		
N. of 34°27'	9.0%	
COWCOD	17.7%	17.7%
DARKBLOTCHED	6.8%	4.5%
YELLOWEYE	11.4%	5.7%
Minor Rockfish North		
Shelf Species	7.5%	
Slope Species	7.5%	
Minor Rockfish South		
Shelf Species	13.5%	
Slope Species	9.0%	
Dover sole	3.9%	
English Sole	7.5%	
Petrale Sole	4.5%	
Arrowtooth Flounder	20.0%	
Starry Flounder	20.0%	
Other Flatfish	15.0%	
Other Fish	7.5%	
Pacific Halibut	14.4%	5.4%

\* If widow rockfish is rebuilt before initial allocation of QS, the vessel limit will be set at limit will be 1.5 times the control limit.

(5) Carryover. [Reserved]

(6) Appeals. An appeal to a vessel account action follows the same process as the general permit appeals process defined at § 660.25(g), subpart C.

Comment [jg28]: Needs developed

(7) Fees. The Regional Administrator is authorized to charge fees for administrative costs associated with the vessel accounts consistent with the provisions given at § 660.25(f), subpart C.

(8) Cost recovery. Vessel account owners will be required to pay all cost recovery fees based on the annual usage of QPs. Cost recovery fees will not be collected until further cost recovery regulations are implemented by NMFS.

(f) First receiver site license.

(1) General. Any IFQ first receiver that receives IFQ landings must have been issued a valid first receiver site license. The first receiver site license authorizes the holder to receive purchase, or takes custody, control, or possession of an IFQ landing at a specific physical site onshore directly from a vessel.

(2) Issuance.

(i) First receiver site licenses will only be issued to a person registered to a valid fish buyer's license issued by the state of Washington, Oregon, or California.

(ii) A first receiver may apply for a first receiver site license at any time during the calendar year.

(iii) A first receiver site license is valid until the end of the calendar year. IFQ first receivers must reapply for a first receiver site license each year and whenever a change in the ownership occurs.

(3) Application process. Persons interested in being licensed as an IFQ first receiver must submit a complete application for a first receiver site license. NMFS will only consider complete applications for approval. A complete application includes:

(i) State fish buyer's license. A copy of the valid fish buyer's license issued by the state in which they operate.

(ii) Contact information.

(A) The name of the first receiver,

(B) The physical location of the first receiver, including the street address where the IFQ landings will be received and/or processed.

(C) The name and phone number of the plant manager and any other authorized representative who will serve as a point of contact with NMFS.

(iii) A NMFS –accepted catch monitoring plan. All first receivers must prepare and operate under a NMFS-accepted catch monitoring plan. NMFS will not issue a site license to a processor that does not have a current, NMFS accepted catch monitoring plan.

(A) Catch monitoring plan approval process. NMFS will accept a catch monitoring plan if it meets all the requirements specified in **paragraph (C) of this section**. The site must be inspected by NMFS staff or a NMFS authorized representative prior to acceptance to ensure that the processor conforms to the elements addressed in the catch monitoring plan. NMFS will complete its review of the catch monitoring plan within 14 working days of receiving a complete catch monitoring plan and conducting a **catch monitoring plan inspection**. If NMFS does not accept a catch monitoring plan for any reason, a new or revised catch monitoring plan may be submitted.

Comment [jg30]: Is this supposed to be plant inspection?

(B) Arranging an inspection. The time and place of a catch monitoring plan inspection must be arranged by submitting a written request for an inspection to NMFS, Northwest Region at NMFS, Northwest Region, Permits Office, Bldg. 1, 7600 Sand Point Way NE, Seattle, WA 98115. NMFS will schedule an inspection within ten working days after receiving a complete application for an inspection. The inspection request must include:

(1) Name and signature of the person submitting the application and the date of the application;

(2) Address, telephone number, fax number, and email address (if available) of the person submitting the application;

(3) A proposed catch monitoring plan detailing how the processor will meet each of the performance standards in paragraph (d)(3) of this section.

(C) Contents of a catch monitoring plan.

(1) Catch sorting. Describe the amount and location of all space used for sorting catch, the number of staff assigned to catch sorting and the maximum rate that catch will flow through the sorting area.

(2) Monitoring for complete sorting. Detail how processor staff will ensure that sorting is complete and what steps will be taken to prevent unsorted catch from entering the factory or other areas beyond the location where catch sorting and weighing can be monitored from the observation area.

(3) Scales used for weighing IFQ landings. Identify each scale that will be used to weigh IFQ landings by serial number and describe where it is located and what it will be used.

(4) Scale testing procedures. For each scale identified in the catch monitoring plan, describe the procedures the plant will use to test the scale; list the test weights and equipment required to test the scale; list where the test weights and equipment will be stored; and list the plant personnel responsible for conducting the scale testing.

(5) Printed record. Identify all scales that will be used to weigh IFQ landings that cannot produce a complete printed record as specified at § 660.140 (X)(X). State how the scale will be used, and how the plant intends to produce a complete record of the total weight of each delivery.

(6) Weight monitoring. The catch monitoring plan must detail how it will ensure that all catch is weighed and the process will meet the catch weighing requirements specified at § 660.140(X). If a catch monitoring plan proposes the use of totes in which IFQ species will be weighed, or a deduction for the weight of ice, the catch monitoring plan must detail how the process will be accurately accounted for the weight of ice and/or totes.

(7) Delivery point. Each catch monitoring plan must identify a specific delivery points where catch is removed from an IFQ vessel. If the catch is pumped from the hold of a catcher vessel or a codend, the delivery point will be the location where the pump first discharges the catch. If catch is removed from a vessel by brailing, the delivery point normally will be the bin or belt where the brailer discharges the catch.

(8) Observation area. A description of the observation area, where a catch monitor may monitor the flow of fish during a delivery, including: access to the observation area, the flow of fish, and lighting used during periods of limited visibility.

(9) Lockable cabinet. The location of a secure, dry, and lockable cabinet or locker for the exclusive use of the catch monitor, NMFS staff or NMFS authorized personnel.

(10) Plant liaison. The catch monitoring plan must identify the designate a plant liaison.

(11) First receiver diagram. The catch monitoring plan must be accompanied by a scale drawing of the plant showing:



- (i) The delivery point;
- (ii) The observation area;
- (iii) The lockable cabinet;
- (iv) The location of each scale used to weigh catch; and
- (v) Each location where catch is sorted.

(D) Catch monitoring plan changes. NMFS will accept a catch monitoring plan if it meets the performance standards specified in paragraph (C) of this section. For the site license to remain in effect through the calendar year, an owner or manager must notify NMFS in writing of any and all changes made in IFQ first receiver operations or layout that do not conform to the catch monitoring plan.

(E) Changing an accepted catch monitoring plan. An owner and manager may change an approved catch monitoring plan by submitting a plan addendum to NMFS. NMFS will accept the modified catch monitoring plan if it continues to meet the specified in requirements of paragraph (X) of this section. Depending on the nature and magnitude of the change requested, NMFS may require an additional catch monitoring plan inspections. A catch monitoring plan addendum must contain:

- (1) Name and signature of the person submitting the addendum;
- (2) Address, telephone number, fax number and email address (if available) of the person submitting the addendum;
- (3) A complete description of the proposed catch monitoring plan change.

(4) Initial administrative determination. For all complete applications, NMFS will issue an IAD that either approves or disapproves the application. If approved, the IAD will include a first receiver site license. If disapproved, the IAD will provide the reasons for this determination.

(5) Effective date. The first receiver site license is effective upon approval by NMFS and will be effective until December 31 of the same year.

(6) Reissuance in subsequent years. Existing license holders must reapply by December 31. If the existing license holder fails to reapply by December 31, the first receiver's site license will expire and they will not be authorized to receive or process groundfish IFQ species. Any applications received after November 30 may not be approved for a first receiver site license by January 1 of the following year. If a first receiver applies for and is issued a first receiver site license after September 1 in a given year, NMFS will send an application form for the subsequent year when issuing the site license for the current year.

(7) Change in ownership of an IFQ first receiver. If there are any changes to the owner of a first receiver registered to a first receiver site license during a calendar year, the first receiver site license is void. The new owner of the first receiver must apply to NMFS for a first receiver site license. A first receiver site license is not transferrable by the license holder to any other person.

(8) Fees. The Regional Administrator is authorized to charge fees for administrative costs associated with processing the application consistent with the provisions given at § 660.25(f), subpart C.

(9) Appeals. If NMFS does not accept the first receiver site license application through an IAD, the applicant may appeal the IAD consistent with the general permit appeals process is defined at § 660.25(g), subpart C.



(g) Retention requirements (whiting and non-whiting vessels).

(1) IFQ species. [Reserved]

Comment [jg31]: Needs developed

(2) Pacific halibut IBQ. [Reserved]

Comment [jg32]: Needs developed

(3) Pacific whiting IFQ fishery. [Reserved]

Comment [jg33]: Needs developed

(h) Observer Requirements.

(1) General.

(2) Coverage requirements.

(i) Any vessel fishing in the Shorebased IFQ Program is required to carry a NMFS-certified observer including any trip.

(ii) The observer deployment limitations and workload. The time required for the observer to complete sampling duties aboard a vessel must not exceed 16 consecutive hours in each 24-hour period. An observer must not be deployed for more than 22 calendar days in a calendar month and given the time necessary to enter data as per observer program protocol.

(iii) Any boarding refusal on the part of the observer or vessel is reported to the observer program and NMFS OLE observer compliance coordinator by the observer provider and observer. Observer must be available for an interview with the observer program or OLE if necessary.

(3) Vessel responsibilities.

(i) Accommodations and food.

(A) Accommodations and food for trips less than 24 hours must be equivalent to those provided for the crew.

(B) Accommodations and food for trips of 24 hours or more must be equivalent to those provided for the crew and must include berthing space, a space that is intended to be used for sleeping and is provided with installed bunks and mattresses. A mattress or futon on the floor or a cot is not acceptable if a regular bunk is provided to any crew member, unless other arrangements are approved in advance by the Regional Administrator of designate.

(ii) Safe conditions.

(A) Maintain safe conditions on the vessel for the protection of observers including adherence to all U.S. Coast Guard and other applicable rules, regulations, statutes, and guidelines pertaining to safe operation of the vessel, including, but not limited to rules of the road, vessel stability, emergency drills, emergency equipment, vessel maintenance, vessel general condition and port bar crossings. An observer may refuse boarding or reboarding a vessel and may request a vessel to return to port if operated in an unsafe manner or if unsafe conditions are identified.

(B) Have on board: a valid Commercial Fishing Vessel Safety Decal issued within the past 2 years or at a time interval consistent with current USCG regulations or policy that certifies compliance with regulations found in 33 CFR Chapter I and 46 CFR Chapter I, a certificate of compliance issued pursuant to 46 CFR 28.710 or a valid certificate of inspection pursuant to 46 U.S.C. 3311.

(3) Computer hardware and software. [Reserved]

Comment [jg34]: Needs developed

(iv) Vessel position. Allow observer(s) access to, and the use of, the vessel's navigation equipment and personnel, on request, to determine the vessel's position.

(v) Access. Allow observer(s) free and unobstructed access to the vessel's bridge, trawl or working deck, holding bins, sorting areas, cargo hold, and any other space that may be used to hold, process, weigh, or store fish at any time.

(vi) Prior notification. Notify observer(s) at least 15 minutes before fish are brought on board to allow sampling the catch.

(vii) Records. Allow observer(s) to inspect and copy any state or Federal logbook maintained voluntarily or as required by regulation.

(viii) Assistance. Provide all other reasonable assistance to enable observer(s) to carry out their duties, including, but not limited to:

(A) Measuring decks, codends, and holding bins.

(B) Providing a designated working area on deck for the observer(s) to collect, sort and store catch samples. As much as possible, the area should be free and clear of hazards including, but not limited to moving fishing gear, stored fishing gear, inclement weather conditions, and open hatches.

(C) Collecting samples of catch.

(D) Collecting and carrying baskets of fish.

(E) Allowing the observer(s) to collect biological data and samples.

(F) Providing adequate space for storage of biological samples.

(G) Providing time between hauls to sample and record all catch.

(H) Sorting retained and discarded catch into quota pound groupings.

(I) Stowing all catch from a haul before the next haul is brought aboard.

(3) Procurement of observer services.

(i) Owners of vessels required to carry observers under paragraph (a)(1) of this section must arrange for observer services from an Observer provider permitted by the North Pacific Groundfish Observer Program under 50 CFR 679.50 i, except that:

(A) Vessels are required to procure observer services directly from NMFS when NMFS has determined and given notification that the vessel must carry NMFS staff or an individual authorized by NMFS in lieu of an observer provided by a permitted observer provider.

(B) Vessels are required to procure observer services directly from NMFS and a permitted observer provider when NMFS has determined and given notification that the vessel must carry NMFS staff and/or individuals authorized by NMFS, in addition to an observer provided by a permitted observer provider.

(4) Observer provider responsibilities. Observer providers must:

(i) Provide qualified candidates to serve as observers.

(A) To be qualified, a candidate must have:

(1) A Bachelor's degree or higher from an accredited college or university with a major in one of the natural sciences;

(2) Successfully completed a minimum of 30 semester hours or equivalent in applicable biological sciences with extensive use of dichotomous keys in at least one course;

(3) Successfully completed at least one undergraduate course each in math and statistics with a minimum of 5 semester hours total for both; and

(4) Computer skills that enable the candidate to work competently with standard database software and computer hardware.

(ii) Prior to hiring an observer candidate, the observer provider must:

(A) Provide the candidate a copy of NMFS-provided pamphlets, information and other literature describing observer duties, for example, the West Coast Groundfish Observer Program's sampling manual. Observer job information is available from the Observer Program Office's web site at <http://www.nwfsc.noaa.gov/research/divisions/fram/observer/index.cfm>

(B) For each observer employed by an observer provider, either a written contract or a written contract addendum must exist that is signed by the observer and observer provider prior

to the observer's deployment and that contains the following provisions for continued employment:

- (1) That all the observer's in-season catch messages between the observer and NMFS are delivered to the Observer Program Office as specified by the Observer Program instructions;
- (2) The observer inform the observer provider prior to the time of embarkation if he or she is experiencing any new mental illness or physical ailments or injury since submission of the physician's statement as required as a qualified observer candidate that would prevent him or her from performing their assigned duties;
- (3) Ensure that every observer completes a basic cardiopulmonary resuscitation/first aid course prior to the end of the NMFS West Coast Groundfish Observer Training class.
- (4) NMFS may reject a candidate for training if the candidate does not meet the minimum qualification requirements as outlined by NMFS Minimum Eligibility Standards for observers listed above in **paragraph XX**.
- (iii) Ensure that observers complete duties in a timely manner. An observer provider must ensure that observers employed by that observer provider do the following in a complete and timely manner:
  - (A) Submit to NMFS all data, logbooks and reports and biological samples as required under the observer program policy deadlines.
  - (B) Report for his or her scheduled debriefing and complete all debriefing responsibilities; and
  - (C) Return all sampling and safety gear to the Observer Program Office at the termination of their contract.
- (iv) Provide vessels only observers:
  - (A) With a valid West Coast Groundfish observer certification;
  - (B) Who have not informed the provider prior to the time of embarkation that he or she is experiencing a mental illness or a physical ailment or injury developed since submission of the physician's statement, as required in **paragraph XX** of this section that would prevent him or her from performing his or her assigned duties; and
  - (C) Who have successfully completed all NMFS required training and briefing before deployment.
- (v) Respond to industry requests for observers. An observer provider must provide an observer for deployment as requested by vessels to fulfill vessel requirements for observer coverage under **sections XX of this section**. An alternate observer must be supplied in each case where injury or illness prevents the observer from performing his or her duties or where the observer resigns prior to completion of his or her duties. If the observer provider is unable to respond to an industry request for observer coverage due to the lack of available observers by the estimated embarking time of the vessel, the provider must report it to NMFS, at minimum, 4 hours prior to the vessel's estimated embarking time.
- (vi) Provide observer salaries and benefits. An observer provider must provide to its observer employees salaries and any other benefits and personnel services in accordance with the terms of each observer's contract. The provider must also confirm that its observers are compensated with salaries that meet or exceed the U.S. Department of Labor guidelines for marine fishery observers. Observers shall be compensated as Fair Labor Standards Act non-exempt employees. Observer providers shall provide any other benefits and personnel services in accordance with the terms of each observer's contract or employment status.
- (vii) Provide observer deployment logistics.

(A) An observer provider must ensure each of its observers under contract:

(1) Has an individually assigned mobile or cell phones, in working order, for all necessary communication. An observer provider may alternatively compensate observers for the use of the observer's personal cell phone or pager for communications made in support of, or necessary for, the observer's duties.

(2) Calls into the NMFS deployment hotline upon departing and arriving into port for each trip to leave the following information: observer name, phone number, vessel departing on, expected trip end date and time.

(3) Remains available to NMFS Office for Law Enforcement and NMFS Observer Program until the conclusion of debriefing.

(4) Receive all necessary transportation, including arrangements and logistics, of observers to the initial location of deployment, to all subsequent vessel assignments during that deployment, and to the debriefing location when a deployment ends for any reason; and

(5) Receive lodging, per diem, and any other services necessary to observers assigned to fishing vessels.

(B) An observer under contract may be housed on a vessel to which he or she is assigned:

(1) Prior to their vessel's initial departure from port;

(2) For a period not to exceed twenty-four hours following the completion of an offload when the observer has duties and is scheduled to disembark; or

(3) For a period not to exceed twenty-four hours following the vessel's arrival in port when the observer is scheduled to disembark.

(C) During all periods an observer is housed on a vessel, the observer provider must ensure that the vessel operator or at least one crew member is aboard.

(D) Otherwise, each observer between vessels, while still under contract with a permitted observer provider, shall be provided with accommodations at a licensed hotel, motel, bed and breakfast, or other shoreside accommodations for the duration of each period between vessel or shoreside assignments. Such accommodations must include an assigned bed for each observer and no other person may be assigned that bed for the duration of that observer's stay. Additionally, no more than four beds may be in any room housing observers at accommodations meeting the requirements of this section.

(viii) Observer deployment limitations and workload. Not deploy an observer on the same vessel more than 45 calendar days in a 12-month period. Not exceed observer deployment limitations and workload as outlined in paragraph (h)(ii) above.

(ix) Verify vessel's safety decal. An observer provider must verify that a vessel has a valid USCG safety decal as required under paragraph XX of this section before an observer may get underway aboard the vessel. One of the following acceptable means of verification must be used to verify the decal validity:

(A) An employee of the observer provider, including the observer, visually inspects the decal aboard the vessel and confirms that the decal is valid according to the decal date of issuance; or

(B) The observer provider receives a hard copy of the USCG documentation of the decal issuance from the vessel owner or operator.

(x) Maintain communications with observers. An observer provider must have an employee responsible for observer activities on call 24 hours a day to handle emergencies involving observers or problems concerning observer logistics, whenever observers are at sea, in transit, or in port awaiting vessel reassignment.

(xi) Maintain communications with the observer program office. An observer provider must provide all of the following information by electronic transmission (e-mail), fax, or other method specified by NMFS.

(A) Observer training and briefing registration materials. This information must be submitted to the Observer Program Office at least 7 business days prior to the beginning of a scheduled West Coast groundfish observer certification training or briefing session.

(1) Training registration materials consist of the following:

(i) Date of requested training;

(ii) A list of observer candidates. The list must include each candidate's full name (i.e., first, middle and last names), date of birth, and sex;

(iii) A copy of each candidate's academic transcripts and resume; and

(iv) A statement signed by the candidate under penalty of perjury which discloses the candidate's criminal convictions.

(2) Briefing registration materials consist of the following:

(i) Date and type of requested briefing session and briefing location; and

(ii) List of observers to attend the briefing session. Each observer's full name (first, middle, and last names) must be included.

(iii) Projected observer assignments. Prior to the observer's completion of the training or briefing session, the observer provider must submit to the Observer Program Office a statement of projected observer assignments that includes each observer's name, current mailing address, e-mail address, phone numbers and port of embarkation ("home port").

(B) Physical examination. A signed and dated statement from a licensed physician that he or she has physically examined an observer or observer candidate. The statement must confirm that, based on that physical examination, the observer or observer candidate does not have any health problems or conditions that would jeopardize that individual's safety or the safety of others while deployed, or prevent the observer or observer candidate from performing his or her duties satisfactorily. The statement must declare that, prior to the examination, the physician was made aware of the duties of the observer and the dangerous, remote, and rigorous nature of the work by reading the NMFS-prepared information. The physician's statement must be submitted to the Observer Program Office prior to certification of an observer. The physical exam must have occurred during the 12 months prior to the observer's or observer candidate's deployment. The physician's statement will expire 12 months after the physical exam occurred. A new physical exam must be performed, and accompanying statement submitted, prior to any deployment occurring after the expiration of the statement.

(C) Certificates of insurance. Copies of "certificates of insurance", that names the NMFS Observer Program leader as the "certificate holder", shall be submitted to the Observer Program Office by February 1 of each year. The certificates of insurance shall verify the following coverage provisions and state that the insurance company will notify the certificate holder if insurance coverage is changed or canceled.

(1) Maritime Liability to cover "seamen's" claims under the Merchant Marine Act (Jones Act) and General Maritime Law (\$1 million minimum).

(2) Coverage under the U.S. Longshore and Harbor Workers' Compensation Act (\$1 million minimum).

(3) States Worker's Compensation as required.

(4) Commercial General Liability.

(D) Observer provider contracts. If requested, observer providers must submit to the Observer Program Office a completed and unaltered copy of each type of signed and valid contract (including all attachments, appendices, addendums, and exhibits incorporated into the contract) between the observer provider and those entities requiring observer services under paragraph XX of this section. Observer providers must also submit to the Observer Program Office upon request, a completed and unaltered copy of the current or most recent signed and valid contract (including all attachments, appendices, addendums, and exhibits incorporated into the contract and any agreements or policies with regard to observer compensation or salary levels) between the observer provider and the particular entity identified by the Observer Program or with specific observers. Said copies must be submitted to the Observer Program Office via fax or mail within 5 business days of the request for the contract at the address or fax number listed in paragraph (e)(3) of this section. Signed and valid contracts include the contracts an observer provider has with:

(1) Vessels required to have observer coverage as specified at paragraph XX of this section; and

(2) Observers.

(E) Change in observer provider management and contact information. Except for changes in ownership addressed under paragraph XX of this section, an observer provider must submit notification of any other change to the information submitted on the provider's permit application under paragraphs XX of this section. Within 30 days of the effective date of such change, this information must be submitted by fax or mail to the Observer Program Office at the address listed in paragraph XX of this section.

(F) Boarding refusals. The observer service provider must report to NMFS any trip that has been refused by an observer within 24 hours of the refusal.

(G) Biological samples. The observer service provider must ensure that biological samples are stored/handled properly prior to delivery/transport to NMFS.

(H) Observer status report. Each week, observer providers must provide NMFS with an updated list of contact information for all observers that includes the observer's name, mailing address, e-mail address, phone numbers, port of embarkation ("home port"), fishery deployed the previous week and whether or not the observer is "in service", indicating when the observer has requested leave and/or is not currently working for the provider.

(I) Providers must submit to NMFS, if requested, copies of any information developed and used by the observer providers distributed to vessels, such as informational pamphlets, payment notification, description of observer duties, etc.

(J) Other reports. Reports of the following must be submitted in writing to the West Coast Groundfish Observer Program Office by the observer provider via fax or email address designated by the Observer Program Office within 24 hours after the observer provider becomes aware of the information:

(1) Any information regarding possible observer harassment;

(2) Any information regarding any action prohibited under XX or §600.725(o), (t) and (u);

(3) Any concerns about vessel safety or marine casualty under 46 CFR 4.05–1 (a)(1) through (7);,

(4) Any observer illness or injury that prevents the observer from completing any of his or her duties described in the observer manual; and

(5) Any information, allegations or reports regarding observer conflict of interest or breach of the standards of behavior described in observer provider policy.

(xii) Replace lost or damaged gear. An observer provider must replace all lost or damaged gear and equipment issued by NMFS to an observer under contract to that provider. All replacements must be in accordance with requirements and procedures identified in writing by the Observer Program Office.

(xiii) Maintain confidentiality of information. An observer provider must ensure that all records on individual observer performance received from NMFS under the routine use provision of the Privacy Act remain confidential and are not further released to anyone outside the employ of the observer provider company to whom the observer was contracted except with written permission of the observer.

(ivx) Must meet limitations on conflict of interest. Observer providers:

(A) Must not have a direct financial interest, other than the provision of observer services, in the West Coast Groundfish fishery managed under an FMP for the waters off the coasts of Washington, Oregon, and California, including, but not limited to,

(1) Any ownership, mortgage holder, or other secured interest in a vessel, or shoreside processors facility involved in the catching, taking, harvesting or processing of fish,

(2) Any business involved with selling supplies or services to any vessel or shoreside processors participating in a fishery managed pursuant to an FMP in the waters off the coasts of California, Oregon, and Washington, or

(3) Any business involved with purchasing raw or processed products from any vessel or shoreside processor participating in a fishery managed pursuant to an FMP in the waters off the coasts of California, Oregon, and Washington.

(B) Must assign observers without regard to any preference by representatives of vessels other than when an observer will be deployed.

(C) Must not solicit or accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from anyone who conducts fishing or fish processing activities that are regulated by NMFS, or who has interests that may be substantially affected by the performance or nonperformance of the official duties of observer providers.

(vx) Must develop and maintain a policy addressing observer conduct and behavior for their employees that serve as observers.

(A) The policy shall address the following behavior and conduct regarding:

(1) Observer use of alcohol;

(2) Observer use, possession, or distribution of illegal drugs and;

(3) Sexual contact with personnel of the vessel or processing facility to which the observer is assigned, or with any vessel or processing plant personnel who may be substantially affected by the performance or non-performance of the observer's official duties.

(B) An observer provider shall provide a copy of its conduct and behavior policy to each observer candidate and to the Observer Program by February 1 of each year, ~~to observers, observer candidates and the Observer Program Office.~~

(vix) Refuse to deploy an observer on a requesting vessel if the observer service provider has determined that the requesting vessel is inadequate or unsafe pursuant to those described at §600.746 or U.S. Coast Guard and other applicable rules, regulations, statutes, or guidelines pertaining to safe operation of the vessel.

(5) Observer certification and responsibilities.

(i) Applicability. Observer certification authorizes an individual to fulfill duties as specified in writing by the NMFS Observer Program Office while under the employ of a NMFS-permitted observer provider and according to certification requirements as designated under **paragraph XX of this section**.

(ii) Observer certification official. The Regional Administrator will designate a NMFS observer certification official who will make decisions for the Observer Program Office on whether to issue or deny observer certification.

(iii) Certification requirements.

(A) Initial certification. NMFS will certify individuals who, in addition to any other relevant considerations:

(1) Are employed by an observer provider company permitted pursuant to 50 CFR 660.120 at the time of the issuance of the certification;

(2) Have provided, through their observer provider:

(i) Information identified by NMFS at **50 CFR 660.120** regarding an observer candidate's health and physical fitness for the job;

(ii) Meet all observer candidate education and health standards as specified in **50 CFR 660.120 and**

(iii) Have successfully completed NMFS-approved training as prescribed by the West Coast Groundfish Observer Program.

(B) Successful completion of training by an observer applicant consists of meeting all attendance and conduct standards issued in writing at the start of training; meeting all performance standards issued in writing at the start of training for assignments, tests, and other evaluation tools; and completing all other training requirements established by the Observer Program.

(C) Have not been decertified under **paragraph XX of this section**, or pursuant to **50 CFR 660.120**.

(iv) Denial of an initial observer certification. The NMFS observer certification official will issue a written determination denying observer certification if the candidate fails to successfully complete training, or does not meet the qualifications for certification for any other relevant reason.

(v) Issuance of an initial observer certification. An observer certification may be issued upon determination by the observer certification official that the candidate has successfully met all requirements for certification.

(vi) Maintaining the validity of an observer certification. After initial issuance, an observer must keep their certification valid by meeting all of the following requirements specified below:

(A) Successfully perform their assigned duties as described in the Observer Manual or other written instructions from the Observer Program Office including calling into the NMFS deployment hotline upon departing and arriving into port each trip to leave the following information: observer name, phone number, vessel name departing on, date and time of departure and date and time of expected return.

(B) Accurately record their sampling data, write complete reports, and report accurately any observations of suspected violations of regulations relevant to conservation of marine resources or their environment.



(C) Not disclose collected data and observations made on board the vessel or in the processing facility to any person except the owner or operator of the observed vessel or an authorized officer or NMFS.

(D) Successfully complete NMFS-approved annual briefings as prescribed by the West Coast Groundfish Observer Program.

(E) Successful completion of briefing by an observer applicant consists of meeting all attendance and conduct standards issued in writing at the start of training; meeting all performance standards issued in writing at the start of training for assignments, tests, and other evaluation tools; and completing all other briefing requirements established by the Observer Program.

(F) Hold current basic cardiopulmonary resuscitation/first aid certification as per American Red Cross Standards.

(G) Successfully meet all expectations in all debriefings including reporting for assigned debriefings.

(H) Submit all data and information required by the observer program within the program's stated guidelines.

(I) Meet the minimum annual deployment period of 3 months at least once every 12 months.

(J) Limitations on conflict of interest. Observers:

(1) Must not have a direct financial interest, other than the provision of observer services, in a North Pacific fishery managed pursuant to an FMP for the waters off the coast of Alaska, or in a Pacific Coast fishery managed by either the state or Federal governments in waters off Washington, Oregon, or California, including but not limited to:

(i) Any ownership, mortgage holder, or other secured interest in a vessel, shore-based or floating stationary processor facility involved in the catching, taking, harvesting or processing of fish,

(ii) Any business involved with selling supplies or services to any vessel, shore-based or floating stationary processing facility; or

(iii) Any business involved with purchasing raw or processed products from any vessel, shore-based or floating stationary processing facilities.

(2) Must not solicit or accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from anyone who either conducts activities that are regulated by NMFS or has interests that may be substantially affected by the performance or nonperformance of the observers' official duties.

(3) May not serve as observers on any vessel or at any shore-based or floating stationary processing facility owned or operated by a person who previously employed the observers.

(4) May not solicit or accept employment as a crew member or an employee of a vessel or shore-based processor while employed by an observer provider.

(5) Provisions for remuneration of observers under this section do not constitute a conflict of interest.

(vii) Probation and decertification. ~~NMFS has the authority to review observer certifications and issue observer certification probation and/or decertification as described in NMFS policy found on the NMFS website specified in paragraph XX of this section.~~

(viii) Issuance of decertification. Upon determination that decertification is warranted under **paragraph XX of this section**, NMFS shall issue a written decision to decertify the observer to the observer and approved observer providers, ~~via certified mail at the observer's~~

~~most current address provided to NMFS~~. The decision shall identify whether a certification is revoked and shall identify the specific reasons for the action taken. Decertification is effective immediately as of the date of issuance, unless the decertification official notes a compelling reason for maintaining certification for a specified period and under specified conditions. Decertification is the final decision of NMFS and the Department of Commerce and may not be appealed.

(i) [Reserved]

(j) Catch monitor requirements for IFQ first receivers.

(1) Catch monitor coverage requirements. A catch monitor is required be present at each IFQ first receiver whenever an IFQ landing is received, unless the first receiver has been granted a written waiver from the catch monitor requirements by NMFS.

(2) Procurement of catch monitor services. Owners or managers of each IFQ first receiver must arrange for catch monitor services from a certified catch monitor provider prior to accepting IFQ landings. IFQ first receivers are responsible for all associated costs including training time, debriefing time, and lodging while deployed.

(3) Catch monitor safety.

(i) Each IFQ first receiver must adhere to all applicable rules, regulations, or statutes pertaining to safe operation and maintenance of a processing and/or receiving facility.

(ii) The working hours of each individual catch monitor will be limited as follows:

(A) An individual catch monitor shall not be required or permitted to work more than 16 hours per calendar day, with maximum of 14 hours being work other than the summary and submission of catch monitor data.

(B) Following monitoring shift of more than 10 hours, each catch monitor must be provided with a minimum 6 hours break before they may resume monitoring.

(4) IFQ landing notification requirements. Each IFQ first receiver must provide the catch monitor notification in person, by personal communications radio, or by telephone of the offloading schedule for each IFQ landing at least 30 minutes prior to, but not more than two hours before, offloading begins.

(5) Catch monitor access.

(i) Each IFQ first receiver must allow catch monitors free and unobstructed access to the catch throughout the sorting process and the weighing process.

(ii) The IFQ first receiver must ensure that there is an observation area available to the catch monitor that meets the following standards:

(A) Accessible to catch monitors, NMFS staff or NMFS-authorized agents at any time.

(B) The catch monitor must have an unobstructed view or otherwise be able to monitor the entire flow of fish between the delivery point and a location where all sorting has takes place and each species has been weighed. Adequate lighting must be provided during periods of limited visibility.

(iii) Each IFQ first receiver must allow catch monitors free and unobstructed access to any documentation required by regulation including fish tickets, scale printouts and scale test results.

(iv) Each IFQ first receiver must provide the catch monitors free and unobstructed access to a telephone line during the hours that Pacific whiting is being processed at the facility and 30 minutes after the processing of the last delivery each day.

Comment [jg35]: What's supposed to go here?

(6) Lockable cabinet. Each IFQ first receiver must provide a secure, dry, and lockable cabinet or locker with the minimum dimensions of two feet wide by two feet tall by two feet deep for the exclusive use of the catch monitor and NMFS staff or NMFS-authorized agents.

(7) Catch monitor liaison. Each IFQ first receiver must designate a plant liaison. The catch monitor liaison is responsible for:

- (A) Orienting new catch monitors to the facility;
- (B) Assisting in the resolution of catch monitoring concerns; and
- (C) Informing NMFS if changes must be made to the catch monitoring plan.

(8) Reasonable assistance. Each IFQ first receiver must provide reasonable assistance to the catch monitors to enable each catch monitor to carry out his or her duties. Reasonable assistance includes, but is not limited to: informing the monitor when bycatch species will be weighed, and providing a secure place to store equipment and gear.

(k) Catch weighing requirements.

(1) Catch monitoring plan. All first receivers must operate under a NMFS-accepted catch monitoring plan.

(2) Sorting and weighing IFQ landings.

(i) Approved scales. The owner of an IFQ first receiver must ensure that all IFQ species received from a vessel making an IFQ landing are weighed on a scale(s) that meets the requirements specified at § 660.15(c).

(ii) Printed record. All scales identified in the catch monitoring plan approved by NMFS during the first receiver site license application process, must produce a printed record for each delivery, or portion of a delivery, weighed on that scale, with the following exception: If approved by NMFS as part of the catch monitoring plan, scales not designed for automatic bulk weighing may be exempted from part or all of the printed record requirements. The printed record must include:

- (A) The first receiver's name;
- (B) The weight of each load in the weighing cycle;
- (C) The total weight of fish in each landing, or portion of the landing that was weighed on that scale;
- (D) The date the information is printed; and
- (E) The name and vessel registration or documentation number of the vessel making the delivery. The scale operator may write this information on the scale printout in ink at the time of printing.

(iii) Scales that may be exempt from printed report. A First Receiver that received no more than 200,000 pounds of groundfish in any calendar month during the prior calendar year will be exempted from the requirement to produce a printed record provided that:

- (A) The first receiver has not previously operated under a catch monitoring plan where a printed record was required; and
- (B) The first receiver is able to ensure that all catch is weighed and that it is possible for a catch monitor, NMFS staff or NMFS-authorized agent to ensure that all catch is weighed.

(iv) Retention of printed records. A first receiver must maintain printouts on site until the end of the fishing year during which the printouts were made and make them available upon request by NMFS staff or NMFS authorized personnel for 3 years after the end of the fishing year during which the printout was made.

(v) Weight monitoring. A First Receiver must ensure that it is possible for the catch monitor, NMFS staff or NMFS-authorized agents to verify the weighing of all catch.

(vi) Catch sorting. All fish delivered to the plant must be sorted and weighed by species as specified at § 660.130 (X).

(vii) Complete sorting. Sorting and weighing must be completed prior to catch leaving the area that can be monitored from the catch monitor's observation area.

(viii) Pacific whiting. For Pacific Whiting taken with midwater trawl gear, IFQ first receivers may use a in-line conveyor or hopper type scale to derive an accurate total catch weight prior to sorting. Immediately following weighing of the total catch and prior to processing or transport away from the point of landing, the catch must be sorted to the species groups specified in paragraph (h)(6)(i)(A) and all incidental catch (groundfish and non groundfish species) must be accurately weighed and the weight of incidental catch deducted from the total catch weight to derive the weight of target species.

(ix) For all other IFQ landings the following weighing standards apply:

(A) An in-line conveyor or automatic hopper scale may be used to weigh the predominant species after catch has been sorted. Other species must be weighed in a manner that facilitates tracking of the weights of those species.

(B) IFQ species or species group may be weighed in totes on a platform scale capable of printing a label or tag and recording the label or tag information to memory for printing a report as specified XXXXXX. The label or tag must remain affixed to the tote until the tote is emptied. The label or tag must show the following information:

(1) The species or species group;

(2) The weight of the fish in the tote;

(3) The date the label or tag was printed.

(C) Totes and ice. No deduction may be made for the perceived weight of water or slime. This standard may be met by:

(1) Taring the empty or pre iced tote on the scale prior to filling with fish;

(2) Labeling each tote with an individual tare weight. This weight must be accurate within 500 grams (1 pound if scale is denominated in pounds) for any given tote and the average error for all totes may not exceed 200 grams (8 ounces for scales denominated in pounds);

(3) An alternate approach approved by NMFS. NMFS will only approve approaches that do not involve the estimation of the weight of ice or the weight of totes and allow NMFS staff or NMFS authorized personnel to verify that the deduction or tare weight is accurate.

(2) IFQ first receiver responsibilities relative to catch weighing and monitoring of catch weighing. The owner of an IFQ first receiver must:

(i) General.

(A) Ensure that all IFQ landings are sorted, and weighed as specified at § 660.XXX and in accordance with an approved catch monitoring plan.

(ii) Catch monitors, NMFS staff, and NMFS-authorized agents.

(A) Have a Catch Monitor on site the entire time an IFQ landing is being offloaded, sorted, or weighed.

(B) Notify the catch monitor of the offloading schedule as specified at § 660.140(j)(4).

(C) Provide catch monitors, NMFS staff, or a NMFS-authorized agent with unobstructed access to any areas where IFQ species are or may be sorted or weighed at any time IFQ species are being landed or processed.

(D) Allow catch monitors, NMFS personnel or a NMFS-authorized agent to observe the weighing of catch on the scale and to read the scale display at any time.

(E) Ensure that printouts of the scale weight of each delivery or offload are made available to catch monitors, NMFS staff or to NMFS-authorized agent at the time printouts are generated.

(3) Scale tests.

(i) All testing must meet the scale test standards specified at § 660.15(c).

(ii) Inseason scale testing. First receivers must allow, and provide reasonable assistance to a catch monitor, NMFS personnel or a NMFS-authorized agent to test scales used to weigh IFQ catch. A scale that does not pass an inseason test may not be used to weigh IFQ catch until the scale passes an inseason test or is approved for continued use by the weights and measures authorities of the state in which the scale is located.

(iv) Equipment failure. [Reserved]

Comment [jg36]: Needs developed

(i) Any vessel registered to a trawl endorsed limited entry permit fishing for shorebased IFQ Program QP is exempt from the gear endorsement restrictions specified at 660.334 (b) if the following gears are used to harvest QP provided all fishing is conducted pursuant to the management measures specified of the gear:

(A) Limited entry longline gear, consistent with the provisions in Subpart E.

(B) Limited entry pot or trap gear, consistent with the provisions in Subpart E.

(ii) Any vessel registered to a trawl endorsed limited entry permit that fishes in the Shorebased IFQ Program would not be required to cover their groundfish catch with QP if the groundfish are caught with non-groundfish trawl gear; legal gear defined for the harvest of species managed under the coastal pelagic species FMP; legal gear defined for the harvest of species managed under the highly migratory species FMP; salmon troll; crab pot; or and LE fixed gear if the vessel also has a LE permit endorsed for fixed-gear (longline or fish pot) AND has a valid declaration as specified at 660.XXXX for the Limited Entry fixed-gear fishery.

(iii) The following species would be accepted from the QP requirement:

(A) longspine thornyheads south of 34°27' N latitude,

(B) minor nearshore rockfish (north and south),

(C) black rockfish (WOC),

(D) California scorpionfish,

(E) cabezon, kelp greenling,

(F) shortbelly rockfish, and

(G) spiny dogfish.

Comment [jg37]: This section is out of place

(l) Gear switching. [Reserved]

Comment [jg38]: Needs developed

(m) Adaptive management program. [Reserved]

Comment [jg39]: Needs a sentence explaining AMP generally and stating that further regulations will be developed to implement the program.

16. INSTRUCTION - In section 660.150, paragraphs (a)(3), (a)(4), (b) through (e), (f)(2) through (f)(4), (g)(2) through (g)(4), (h) through (k) are revised; and paragraph (l) is removed to read as follows:

§ 660.150 Mothership (MS) coop program.

\* \* \* \* \*

(a) General. \* \* \*

(3) Regulations set out in the following sections of subpart C: § 660.11 Definitions, § 660.12 Prohibitions, § 660.13 Recordkeeping and reporting, § 660.14 VMS requirements, § 660.15 Equipment requirements, § 660.16 Groundfish Observer Program, § 660.20 Vessel and

gear identification, § 660.25 Permits, § 660.55 Allocations, § 660.60 Specifications and management measures, § 660.65 Groundfish harvest specifications, and §§ 660.70 through 660.79 Closed areas.

(4) Regulations set out in the following sections of subpart D: § 660.111 Trawl fishery definitions, § 660.112 Trawl fishery prohibitions, § 660.113 Trawl fishery recordkeeping and reporting, § 660.120 Trawl fishery crossover provisions, § 660.130 Trawl fishery management measures, and § 660.131 Pacific whiting fishery management measures.

\* \* \* \* \*

(b) Participation requirements and responsibilities.

(1) Mothership vessels.

(i) Mothership vessel participation requirements. A vessel is eligible to receive and process catch as a mothership in the MS coop program if:

(A) The vessel is registered to a MS permit.

(B) The vessel is not used to fish as a catcher vessel in the mothership sector of the Pacific whiting fishery in the same calendar year.

(C) The vessel is not used to fish as a C/P in the Pacific whiting fishery in the same calendar year.

(D) If the vessel is a bareboat charter XXXXXX

(E) ~~The vessel has not been under foreign registry and fished in the territorial waters or exclusive economic zones of other countries, as per Section 12102(e)(6) of the AFA.~~

(ii) Mothership vessel responsibilities. The owner and operator of a mothership vessel must:

(A) Recordkeeping and reporting. Maintain a valid declaration as specified at § 660.13(d), subpart C; and, maintain and submit all records and reports specified at § 660.113(c) including, economic data, scale tests records, and cease fishing declarations.

(B) Observers. Procure observer services as specified at § 660.XXX, maintain the appropriate level of coverage as specified at § 660.XXX, and meet the vessel responsibilities specified at § 660.XXX.

(C) Catch weighing requirements.

(1) Ensure that all catch is weighed in its round form on a NMFS-approved scale that meets the requirements described in section § 660.15 (b), is tested as is required at § 660.XXX, and is operated as required at § 660.XXX;

(2) Provide a NMFS-approved platform scale and test weights that meet the requirements of described in section § 660.15 (b) and that is tested as is required at § 660.XXX.

(B) Centralized registry of ownership. [Reserved]

(2) Mothership catcher vessels.

(i) Mothership catcher vessel participation requirements.

(A) A vessel is eligible to harvest in the MS coop program if the following conditions are met:

(1) If the vessel is used to fish as a mothership catcher vessel for a permitted MS coop, the vessel is registered to a limited entry permit with a trawl endorsement and is listed on the MS coop permit.

(2) If the vessel is used to harvest fish in the non-coop fishery, the vessel is registered to a MS/CV endorsed limited entry permit.

(3) The vessel is not used to harvest fish or process as a mothership or catcher/processor vessel in the same calendar year.

Comment [jg40]: Needs developed

(4) The vessel does not catch more than 30 percent of the Pacific whiting allocation for the mothership sector.

(ii) Mothership catcher vessel responsibilities.

(A) Observers. Procure observer services as specified at § 660.XXX, maintain the appropriate level of coverage as specified at § 660.XXX, and meet the vessel responsibilities specified at § 660.XXX.

(B) Recordkeeping and reporting. Provide a valid declarations for the XXXfisheryXXX as specified at § 660.XX; maintain all required logbooks as specified at XXXXXX; Economic Data; Centralized registry of ownership.

Comment [jg41]: Needs further developed

(3) MS coops.

(i) MS coop participation requirements. For a MS coop to participate in the Pacific whiting mothership sector fishery it must:

(A) be issued a MS coop permit;

(B) be owned and operated by MS/CV endorsed limited entry permit owners;

(C) be formed voluntarily;

(D) be a legally recognized entity that represents its members and employs a designated coop manager;

(E) have at least 20 percent of all MS/CV permits as members. The coop membership percentage will be interpreted by rounding to the nearest whole permit (i.e. 0.1 through 0.4 rounds down and 0.5 through 0.9 rounds up).

(ii) MS coop responsibilities. A MS coop is responsible for:

(A) Applying for and receive a MS Coop Permit;

(B) Organizing and coordinating harvest activities of vessels registered to member permits;

(C) Reassigning catch history assignments for use by coop members;

(D) Organizing and coordinating the transfer and leasing of catch allocations with other permitted coops through inter-coop agreements;

(E) Monitoring harvest activities and enforcing the catch limits of coop members;

(F) Submitting an annual report.

(G) Having a designated coop manager. The designated coop manager must:

(1) Serve as the contact person between NMFS, the Council and other coops;

(2) Organize the annual distribution of catch and bycatch between coop members;

(3) Oversee reassignment of catch within the coop;

(4) Oversee inter-coop catch reassignments;

(5) Prepare and submit an annual reports on behalf of the coop; and,

(6) Be authorized to receive or respond to any legal process in which the coop is involved.

(iii) Liability for violations. A MS coop must comply with the provisions of this section. The permit owners, and vessels owners and operators registered to the member permits, including vessels under contract, are responsible for the fishery cooperative comply with the provisions of this section.

(iv) MS coop failure.

(A) A permitted MS coop is considered to have failed if:

(1) the coop members voluntarily dissolve the coop, or

(2) the coop membership falls below 20 percent of the MS/CV endorsed limited entry permits, or



(3) the coop agreement is no longer valid, or

(4) the coop fails to meet the MS coop responsibilities specified at § 660.XXX.

(B) If a permitted MS coop dissolves, the designated coop manager must notify NMFS SFD in writing of the dissolution of the coop.

(C) The Regional Administrator may make an independent determination of a permitted coop failure based on factual information collected by or provided to NMFS.

(D) In the event of a NMFS determined coop failure, or reported failure, the designated coop manager will be notified in writing about NMFS' determination. Upon notification of a coop failure, the MS coop permit will no longer be in effect. Should a coop failure determination be made during the Pacific whiting primary season for the mothership sector, unused allocation associated with the catch history will not be available for harvest by the coop that failed or any other MS coop.

(c) Inter-coop agreements.

(1) Permitted MS coops may voluntarily enter into inter-coop agreements for the purpose of sharing permitted MS coop allocations of Pacific whiting and allocated non-whiting groundfish.

(2) If two or more permitted MS coops enter into an inter-coop agreement, the inter-coop agreement must incorporate and honor the provisions of each permitted MS coop. Changes or modifications to the existing permitted MS coop agreements must be submitted to NMFS and accepted by NMFS prior to the permitted MS coop entering in to an inter-coop agreement.

(d) MS coop program species and allocations--(1) MS coop program species. MS Coop Program Species are as follows:

(i) Species with formal allocations to the MS Program are Pacific whiting, canary rockfish, darkblotched rockfish, Pacific Ocean perch, and widow rockfish;

(ii) Species with set-asides for the MS and C/P Programs combined, as described in Tables 1d and 2d, subpart C.

(2) Annual mothership sector sub-allocations. Annual allocation amount(s) will be determined using the following procedure:

(i) MS/CV catch history assignments. Catch history assignments will be based on catch history using the following methodology:

(A) Pacific whiting catch history assignment. For each MS/CV endorsed limited entry permit, the entire catch history assignment of Pacific whiting will be annually allocated to a single permitted MS coop or to the non-coop fishery. A MS/CV permit owner cannot divide the catch history assignment to more than one MS coop or to the non-coop fishery for that year. Once assigned to a permitted MS coop or the non-coop fishery, it remains with that permitted MS coop or non-coop fishery for that calendar year. When the mothership sector allocation is established through the final Pacific whiting specifications, the information for the conversion of catch history assignment to pounds will be made available to the public through a Federal Register announcement and/or public notice and/or the NMFS website. The amount of whiting from the catch history assignment will be issued to the nearest whole pound using standard rounding rules (i.e. 0.1 through 0.4 rounds down and 0.5 through 0.9 rounds up).

(B) Non-whiting groundfish species catch.

(1) Groundfish species with a mothership sector allocation established in regulation at § 660.55(X), including overfished species, will be divided annually between the permitted coops and the non-coop fisheries. The pounds associated with each permitted MS coop will be provided when the coop permit is issued.



(2) Groundfish species with at-sea sector set-asides, will be managed on an annual basis unless there is a risk of a harvest specification being exceeded, unforeseen impact on another fisheries, or conservation concerns in which case inseason action may be taken. Set asides may be adjusted through the biennial specifications and management measures process as necessary.

(3) Groundfish species not addressed in paragraph (1) or (4) above, will be managed on an annual basis unless there is a risk of a harvest specification being exceeded, unforeseen impact on another fisheries, or conservation concerns in which case inseason action may be taken.

(4) Halibut set-asides. Annually a specified amount of the Pacific halibut will be held in reserve as a set-aside for the Pacific whiting mothership sector.

(ii) Annual coop allocations.

(A) Pacific whiting. Each permitted MS coop is authorized to harvest a quantity of Pacific whiting that is based on the sum of the catch history assignments for each MS/CV endorsed permit identified in the accepted coop agreement for a given calendar year. Eligible vessels registered to limited entry permits without a MS/CV endorsement do not bring catch allocation to a permitted MS coop.

(B) Non-whiting groundfish with allocations. Sub-allocations of non-whiting groundfish species with allocations to permitted MS coops will be in proportion to the Pacific whiting catch history assignments assigned to each permitted MS coop.

(iii) Annual non-coop allocation.

(A) Pacific whiting. The non-coop whiting fishery is authorized to harvest a quantity of Pacific whiting that is remaining in the mothership sector annual allocation after the deduction of all coop allocations.

(B) Non-whiting groundfish with allocations. The sub-allocation to the non-coop fishery will be in proportion to the mothership catcher vessel Pacific whiting catch history assignments for the non-coop fishery.

(C) Announcement of the non-coop fishery allocations. Information on the amount of Pacific whiting and non-whiting groundfish with allocations that will be made available to the non-coop fishery when the final Pacific whiting specifications for the mothership sector is established and will be announced to the public through a Federal Register announcement and/or public notice and/or the NMFS website.

(3) Reaching an allocation or sub-allocation. When the mothership sector Pacific whiting allocation, Pacific whiting sub-allocation, or non-whiting groundfish catch allocation is reached or is projected to be reached, the following action may be taken:

(i) Further harvesting, receiving or at-sea processing of by a mothership or catcher vessel in the mothership sector is prohibited when the mothership sector Pacific whiting allocation is projected to be reached. No additional unprocessed groundfish may be brought on board after at-sea processing is prohibited, but a mothership may continue to process catch that was on board before at-sea processing was prohibited. Pacific whiting may not be taken and retained, possessed, or landed by a catcher vessel participating in the mothership sector.

(ii) When a permitted MS coop sub-allocation of Pacific whiting or non-whiting groundfish species is projected to be reached, further harvesting or receiving of groundfish by vessels fishing in the permitted MS coop must cease, unless the permitted MS coop is operating under an accepted inter-coop agreement. No additional unprocessed groundfish may be brought on board a mothership, but a mothership may continue to process catch that was on board before at-sea processing was prohibited.

(iii) When the non-coop fishery sub-allocation of Pacific whiting or non-whiting groundfish species is projected to be reached, further harvesting or receiving of groundfish by vessels fishing in under the non-coop fishery must cease. No additional unprocessed groundfish may be brought on board a mothership, but a mothership may continue to process catch that was on board before at-sea processing was prohibited.

(4) Non-whiting groundfish species reapportionment. This paragraph describes the process for reapportioning non-whiting groundfish species with allocations between permitted MS coops and the catcher/processor sector. Reapportionment of mothership sector allocations to the catcher/processor will not occur until all permitted MS coops and the non-coop fishery have been closed by NMFS or have informed NMFS that they have ceased operations for the remainder of the calendar year.

(i) Within the mothership sector. The Regional Administrator may make available for harvest to permitted coops and the non-coop fishery that have not notified NMFS that they have ceased fishing for the year, the amounts of a permitted MS coop's non-whiting catch allocation remaining when a coop reaches its Pacific whiting allocation or when the designated coop manager notifies NMFS that a permitted coop has ceased fishing for the year. The reapportioned allocations will be in proportion to their original allocations.

(ii) Between the mothership and catcher/processor sectors. The Regional Administrator may make available for harvest to the catcher/processor sector of the Pacific whiting fishery identified in § 660.373, the amounts of the mothership sector's non-whiting catch allocation remaining when the Pacific whiting allocation is reached or participants in the sector do not intend to harvest the remaining allocation. The designated coop manager, or in the case of an inter-coop, all of the designated coop managers must submit a cease fishing report to NMFS indicating that harvesting has concluded for the year. At any time after greater than 80 percent of the Mothership sector Pacific whiting allocation has been harvested, the Regional Administrator may contact designated coop managers to determine whether they intend to continue fishing. When considering redistribution of non-whiting catch allocation, the Regional Administrator will take in to consideration the best available data on total projected fishing impacts. Reapportionment between permitted MS coops and the non-coop fishery within the mothership sector will be in proportion to their original coop allocations for the calendar year.

(iii) Set-aside species. No inseason management actions are associated with set asides

(5) Announcements. The Regional Administrator will announce in the Federal Register when the mothership sector or the allocation of Pacific whiting or non-whiting groundfish with an allocation is reached, or is projected to be reached, and specify the appropriate action. In order to prevent exceeding an allocation and to avoid underutilizing the resource, prohibitions against further taking and retaining, receiving, or at-sea processing of Pacific whiting, or reapportionment of non-whiting groundfish with allocations may be made effective immediately by actual notice to fishers and processors, by e-mail, internet ( [www.nwr.noaa.gov/Groundfish-Halibut/Groundfish-Fishery-Management/Whiting-Management/index.cfm](http://www.nwr.noaa.gov/Groundfish-Halibut/Groundfish-Fishery-Management/Whiting-Management/index.cfm) ), phone, fax, letter, press release, and/or USCG Notice to Mariners (monitor channel 16 VHF), followed by publication in the Federal Register, in which instance public comment will be sought for a reasonable period of time thereafter.

(6) Redistribution of annual allocation.

(i) Between members of a permitted MS coop. The owners of MS/CV endorsed limited entry permits may lease or otherwise redistribute Pacific whiting catch shares between catcher vessels identified on the same MS coop permit through a private agreement, providing the

processor obligation (§ 660.150(d)(7)) has been met or a mutual agreement exception (§ 660.150(d)(7)(i)) has been submitted to NMFS.

(ii) Between permitted MS coops (inter-coop). Through an inter-coop agreement, the designated coop managers of permitted MS coops may distribute Pacific whiting and non-whiting groundfish allocations among one or more permitted MS coops, providing the processor obligations (§ 660.150(d)(7)) have been met or a mutual agreement exception (§ 660.150(d)(7)(i)) has been submitted to NMFS.

(iii) Between Pacific whiting sectors. Pacific whiting may not be redistributed between the mothership sector and catcher/processor sector. Whiting may not be redistributed to the Shorebased IFQ Program.

(7) Processor obligation and mutual agreement exceptions.

(i) Processor obligation. Through the annual MS Coop permit application process, the MS/CV endorsed permit owner must identify to NMFS to which MS permit the MS/CV permit owner intends to have the vessel registered to the MS/CV endorsed permit deliver its catch.

(ii) Expiration of a processor obligation. Processor obligations expire at the end of each calendar year when the MS Coop Permit expires. A processor obligation from the prior year may be changed for the following the calendar year through a new application for a MS Coop Permit.

(iii) Processor obligation when MS coop allocation is redistributed. When a permitted MS coop redistributes Pacific whiting allocation within the permitted MS coop or from one permitted MS coop to another permitted MS coop through an inter-coop agreement, such allocations must be delivered to the mothership registered to the MS permit to which the allocation was obligated to through the processor obligation submitted to NMFS, unless a mutual agreement exception has been submitted to NMFS.

(iv) Mutual agreement exception. A catcher vessel can be released from a processor obligation through a mutual agreement exception. The MS/CV endorsed permit owner must submit a copy to NMFS of the written agreement that includes the initial MS permit owner's acknowledgment of the termination of the MS/CV endorsed permit owner's processor obligation and the MS/CV endorsed permit owner must identify a processor obligation for a new MS permit.

(v) MS permit withdrawal. If a MS Permit withdraws from the mothership fishery XXX before the resulting amounts of catch history assignment have been announced by NMFSXXX the MS/CV endorsed permit that is obligated to the MS permit is free to participate in the coop or non-coop fishery. In such an event, the MS/CV endorsed permit owner must provide to NMFS a written notification of the withdrawal of the MS permit that includes the initial MS permit owner's acknowledgment of the withdrawal along with a request to revise the processor obligation for a new MS permit or the non-coop fishery.

(vi) Submission of a mutual agreement exception or MS permit withdrawal. Written notification of a mutual exception agreement or MS permit withdrawal must be submitted to NMFS, Northwest Region, Permits Office, Bldg. 1, 7600 Sand Point Way NE, Seattle, WA 98115.

(e) MS coop permit and agreement.

(1) Eligibility and application requirements to register for a MS coop permit.

(i) Eligibility. To be an eligible coop entity a group of MS/CV endorsed permit owners (coop members) must be a recognized entity under the laws of the United States or the laws of a State and that represents all of the coop members .

(ii) Annual registration and deadline. A coop entity intending to participate as a coop under the MS Coop Program must submit an application for a MS coop permit by March 31 of the year in which they intend to participate. NMFS will not consider any applications received after **XXDATEXX**. A MS coop permit expires on December 31 of the year in which it was issued.

(iii) Application for a MS coop permit. The coop entity must submit a complete application form and each of the items listed in paragraphs **(e)(2)(iii)(A) through (B)**. Only complete applications will be considered for issuance of a MS coop permit. NMFS may request additional supplemental documentation as necessary to make a determination of whether to approve or disapprove the application. Application forms and instruction are available on the NMFS NWR website ([www.nwr.noaa.gov](http://www.nwr.noaa.gov)) or by request from NMFS.

(A) Coop agreement. A coop agreement must include all of the information listed in this **paragraph** to be considered a complete coop agreement. NMFS will only review complete coop agreements. Coop agreements will not be accepted when the agreement unless it includes all of the required information; the descriptive items listed in this paragraph appear to meet the stated purpose; and information is submitted is correct and accurate.

(1) Coop agreement contents. Each coop agreement must be signed by all of the coop members (MS/CV endorsed permit owners) and include the following information:

(i) A listing of all vessels, including those registered to a MS/CV endorsed limited entry permit or a trawl-endorsed limited entry permit without a MS/CV endorsement that the member permit owners intend to use for fishing under the requested coop permit.

(ii) All MS/CV endorsed limited entry member permits identified by permit number.

(iii) The mothership sector catch history assignment associated with each member MS/CV endorsed limited entry permit.

(iv) All MS permits obligated to coop member permits by MS permit number and vessel registered to each MS permit.

(v) A processor obligation clause indicating that each MS/CV permit was obligated to a specific MS permit by July 1 of the previous year.

(vi) A clause indicting that each member MS/CV endorsed permit's catch history assignment is based on the catch history assignment that the member permit brings to the coop.

(vii) A description of the coop's plan to adequately monitor and account for the catch of Pacific whiting and non-whiting groundfish allocations, and to monitor and account for the catch of prohibited species.

(viii) A new member permit owner clause that requires new owners of member permit's to comply with membership restrictions in the coop agreements.

(ix) A description of the coop's enforcement and penalty provisions adequate to maintain catch of Pacific whiting and non-whiting groundfish within the allocations.

(x) A description of measures to reduce catch of overfished species.

(xi) A description of how the responsibility to manage inter-coop reassignment of catch history assignments will be met, should any occur.

(xii) A description of how the responsibility to produce an annual report documenting the coop's catch, bycatch data, inseason catch history reassignments and any other significant activities undertaken by the coop during the year will be met by **XXdue dateXX**.

(xiii) Identification of the designated coop manager.

(xiv) A signed clause by the designated coop manager acknowledging the responsibilities of a designated coop manager defined in **§660.XXX**.

(xv) A description for how the coop will be dissolved.

(xvi) ~~Provisions that prohibit members permit owners that have incurred legal sanctions from fishing in the coop.~~

(2) Department of Justice correspondence. Each coop must submit a letter to the Department of Justice requesting a business review letter on the fishery coop. Copies of the letter and any correspondence with the Department of Justice regarding the request must be included in the application to NMFS for a MS Coop Permit.

(3) Inter-coop agreement. The coop entity must provide, at the time of annual application, copies of any inter-coop agreement(s) into which the coop has entered. Such agreements must incorporate and honor the provisions of the individual coop agreements for each coop that is a party to the inter-coop agreement.

(B) Acceptance of a coop agreement.

(1) If NMFS does not accept the coop agreement, the coop permit application will be returned to the applicant with a letter stating the reasons the coop agreement was not accepted by NMFS.

(2) Coop agreements that are not accepted may be resubmitted for review by sufficiently addressing the deficiencies identified in the letter of rejection and resubmitting the entire coop permit application by the date specified in the letter of rejection.

(3) An approved coop agreement that was submitted with the MS coop permit application and for which a MS permit was issued will remain in place through the end of the calendar year. The designated coop manager must resubmit a complete coop agreement to NMFS consistent with the coop agreement contents described in **this paragraph** if there is a material change to the coop agreement.

(4) Within 3 days following a material change, a revised coop agreement must be submitted to NMFS with a letter that describes such changes. NMFS will review the material changes and provide a letter to the coop manager that either accepts the changes as given or does not accept the revised coop agreement with a letter stating the reasons that it was not accepted by NMFS. The coop may resubmit the coop agreement with further revisions to the material changes responding to NMFS concerns.

(iv) Effective date of MS coop permit. A MS coop permit will be effective upon the date approved by NMFS and remain in effect until the end of the calendar year or until one or more of the following events occur, whichever comes first:

(A) NMFS closes the fishing season for the mothership sector or a specific MS coop or the designated coop manager notifies NMFS that the coop has completed fishing for the calendar year,

(B) the coop has reached its Pacific whiting allocation,

(C) a material change to the coop agreement has occurred and the designated coop manager failed to provide a revised coop agreement to NMFS within three calendar days of the material change, or

(D) NMFS has determined that a coop failure occurred.

(2) Initial administrative determination. For all complete applications, NMFS will issue an Initial Administrative Determination (IAD) that either approves or disapproves the application. If approved, the IAD will include a MS coop permit. If disapproved, the IAD will provide the reasons for this determination. An application will be disapproved if any required fees and annual reports have not been received by NMFS.

(2) Submission of inter-coop agreements. Inter-coop agreements must be submitted to NMFS for acceptance.

(3) Inter-coop agreement review process. Each designated coop manager must submit a copy of the inter-coop agreement signed by both designated coop managers for review. Complete coop agreements containing all items listed under paragraph (C) below will be reviewed by NMFS.

(4) Appeals. An appeal to a MS coop permit action follows the same process as the general permit appeals process defined at § 660.25(g), subpart C.

(5) Fees. The Regional Administrator is authorized to charge fees for administrative costs associated with the issuance of a MS coop permit consistent with the provisions given at § 660.25(f), subpart C.

(6) Cost recovery. The owner of a MS coop permit (coop entity) will be required to pay all cost recovery fees based on the harvest of Pacific whiting by the coop members in a given year. Cost recovery fees will not be collected until further cost recovery regulations are implemented by NMFS.

Comment [jg42]: And bycatch species?

\* \* \* \* \*

(f) Mothership (MS) permit.

(1) General. \* \* \*

(2) Renewal, change of permit ownership, or vessel registration. [Reserved]

Comment [jg43]: Needs developed

(3) Accumulation limits. \* \* \*

(4) Appeals. An appeal to a MS permit action follows the same process as the general permit appeals process defined at § 660.25(g), subpart C.

(5) Fees. \* \* \*

(6) Application requirements and initial issuance for MS permit. \* \* \*

\* \* \* \* \*

(g) Mothership catcher vessel (MS/CV) endorsed permit.

(1) General. \* \* \*

(2) Change of permit owner, vessel registration, vessel owner, or combination.

Comment [jg44]: Needs revised

(i) During the annual limited entry permit renewal processes all MS/CV limited entry permit owners must make a preliminary declaration regarding their intent to participate in the coop or non-coop portion of the MS coop program. MS/CV permits non-obligated to a permitted MS coop by XX the annual deadline date to register as a MS coopXX, will be assigned to the non-coop fishery.

(ii) Combination. An action by NMFS to combine two or more permits results on one permit with an increased size endorsement. If a MS/CV endorsed permit is combined with another limited entry permit, the resulting permit will be MS/CV endorsed. If a MS/CV endorsed permit is combined with a C/P endorsed permit, the resulting permit will be a C/P endorsed permit. If a MS/CV endorsed permit is combined with another MS/CV endorsed permit, the combined catch history assignment of the permit(s) will be added to the active permit (the permit remaining after combination) and the other permit will be retired. NMFS will not approve a permit combination if it results in a person exceeding the accumulation limits specified at 660.XXX. Any request to combine permits is subject to the provision provided at §§ 660.335(b) and 660.334(C)(2)(iii).

(3) Accumulation Limits. \* \* \*

(4) Appeals. An appeal to a MS/CV endorsed permit action follows the same process as the general permit appeals process defined at § 660.25(g), subpart C.

(5) Fees. \* \* \*

(6) Application requirements and initial issuance for MS/CV endorsement. \* \* \*

\* \* \* \* \*

(h) Non-coop fishery.

(A) Catch history assignments. The owner of MS vessel must submit in writing to NMFS a letter indicating if it will participate in the non-coop fishery and which vessels are obligated to it.

(B) Access to non-coop fishery allocation. All vessels registered to the MS/CV permits assigned to the non-coop fishery will have access to harvest and deliver the aggregate catch history assignment of all MS/CV permits assigned to the non coop fishery.

(C) Non-coop fishery processor obligation. Permits opting to participate in a non-coop are tied to the mothership until the end of the calendar year. Permits opting to participate in a non-coop are tied to the mothership until the end of the calendar year.

(D) Non-coop fishery closure. The non-coop fishery will be closed by automatic action as specified at § 660.XXX when the Pacific whiting or non-whiting allocations to the non-coop fishery have been reached or are projected to be reached.

(i) Retention requirements. [Reserved]

(j) Observer requirements.

(l) Observer coverage requirements.

(i) Coverage. Any vessel registered to a MS permit 125 ft (38.1 m) LOA or longer must carry two NMFS-certified observers, and any vessel registered to a MS permit mothership shorter than 125 ft (38.1 m) LOA must carry one NMFS-certified observer, each day that the vessel is used to take, retain, receive, land, process, or transport groundfish.

(ii) Any vessel delivering catch to any mothership must carry one NMFS-certified observer each day that the vessel is used to take groundfish.

(iii) Refusal to Board. Any boarding refusal on the part of the observer or vessel is reported to the observer program and NMFS OLE observer compliance coordinator by the observer provider and observer. Observer must be available for an interview with the observer program or OLE if necessary.

(iv) Observer Workload. For observers deployed on mothership vessels, the time required for the observer to complete sampling duties must not exceed 12 consecutive hours in each 24-hour period. For observers deployed aboard mothership catcher vessels, not exceed observer deployment limitations and workload as outlined in § 660.140 (h)(ii).

(2) Vessel Responsibilities. An operator and/or crew of a vessel required to carry an observer must provide:

(i) Accommodations and food.

(A) Motherships. Provide accommodations and food that are equivalent to those provided for officers, engineers, foremen, deck-bosses or other management level personnel of the vessel.

(B) Catcher vessels. Provide accommodations and food that are equivalent to those provided to the crew.

(ii) Safe Conditions.

(1) Maintain safe conditions on the vessel for the protection of observers including adherence to all U.S. Coast Guard and other applicable rules, regulations, or statutes pertaining to safe operation of the vessel.

(C) Have on board: a valid Commercial Fishing Vessel Safety Decal issued at a time interval consistent with current USCG regulations or policy that certifies compliance with

Comment [jg45]: Is this already addressed earlier in section?

Comment [jg46]: Needs developed  
If removed, change instructions



regulations found in 33 CFR Chapter I and 46 CFR Chapter I, a certificate of compliance issued pursuant to 46 CFR 28.710 or a valid certificate of inspection pursuant to 46 U.S.C. 3311.

(D) Computer hardware and software. Motherships vessels must:

(1) provide hardware and software pursuant to regulations at 50 CFR 679.50(g)(1)(iii)(B)(1) through 50 CFR 679.50(g)(1)(iii)(B)(3), as follows:

(2) provide the observer(s) access to a computer required under paragraph XXX of this section, and that is connected to a communication device that provides a point-to-point connection to the NMFS host computer.

(3) Ensure that the mothership has installed the most recent release of NMFS data entry software provided by the Regional Administrator, or other approved software prior to the vessel receiving, catching or processing IFQ species.

(iii) Ensure that the communication equipment required in this paragraph (g)(1)(iii)(B) of this section and that is used by observers to enter and transmit data, is fully functional and operational. "Functional" means that all the tasks and components of the NMFS supplied, or other approved, software described at paragraph (g)(1)(iii)(B)(2) of this section and the data transmissions to NMFS can be executed effectively aboard the vessel by the communications equipment.

(2) Catcher vessels. [Reserved]

(E) Vessel position. Allow observer(s) access to, and the use of, the vessel's navigation equipment and personnel, on request, to determine the vessel's position.

(F) Access. Allow observer(s) free and unobstructed access to the vessel's bridge, trawl or working decks, holding bins, processing areas, freezer spaces, weight scales, cargo holds, and any other space that may be used to hold, process, weigh, or store fish or fish products at any time.

(G) Prior notification. Notify observer(s) at least 15 minutes before fish are brought on board, or fish and fish products are transferred from the vessel, to allow sampling the catch or observing the transfer, unless the observer specifically requests not to be notified.

(H) Records. Allow observer(s) to inspect and copy any state or Federal logbook maintained voluntarily or as required by regulation.

(I) Assistance. Provide all other reasonable assistance to enable observer(s) to carry out their duties, including, but not limited to:

(1) Measuring decks, codends, and holding bins.

(2) Providing the observer(s) with a safe work area.

(3) Collecting samples of catch.

(4) Collecting and carrying baskets of fish.

(5) Allowing the observer(s) to collect biological data and samples.

(6) Providing adequate space for storage of biological samples.

(J) Sample Station and Operational Requirements For Mothership and Mothership Catcher Vessels.

(1) Observer sampling station on Motherships. This paragraph contains the requirements for observer sampling stations on mothership vessels. To allow the observer to carry out required duties, the vessel owner must provide an observer sampling station that meets the requirements of paragraph (X)(X) (i) through (viii) of this section.

(i) Accessibility. The observer sampling station must be available to the observer at all times.



(ii) Location. The observer sampling station must be located within 4 m of the location from which the observer samples unsorted catch.

(iii) Access. Unobstructed passage must be provided between the observer sampling station and the location where the observer collects sample catch.

(iv) Minimum work space. The observer must have a working area of at least 4.5 square meters, including the observer's sampling table, for sampling and storage of fish to be sampled. The observer must be able to stand upright and have a work area at least 0.9 m deep in the area in front of the table and scale.

(v) Table. The observer sampling station must include a table at least 0.6 m deep, 1.2 m wide and 0.9 m high and no more than 1.1 m high. The entire surface area of the table must be available for use by the observer. Any area for the observer sampling scale is in addition to the minimum space requirements for the table. The observer's sampling table must be secured to the floor or wall.

(vi) Diverter Board. The conveyor belt conveying unsorted catch must have a removable board ("diverter board") to allow all fish to be diverted from the belt directly into the observer's sampling baskets. The diverter board must be located downstream of the scale used to weigh total catch. At least 1 m of accessible belt space, located downstream of the scale used to weigh total catch, must be available for the observer's use when sampling.

(vii) Other Requirements. The sampling station must be in a well-drained area that includes floor grating (or other material that prevents slipping), lighting adequate for day or night sampling, and a hose that supplies fresh or sea water to the observer.

(viii) Observer Sampling Scale. The observer sample station must include a NMFS-approved platform scale (pursuant to requirements at § 679.28(j)(2)) with a capacity of at least 50 kg located within 1 m of the observer's sampling table. The scale must be mounted so that the weighing surface is no more than 0.7 m above the floor.

(2) Sampling Stations on Catcher Vessels Delivering To Motherships. This paragraph contains the requirements for observer sampling stations on mothership catcher vessels. To allow the observer to carry out the required duties, the vessel owner must provide an observer sampling station that meets the requirements of paragraphs (i) through (XX) of this section.

(i) Accessibility. The observer sampling station must be available to the observer at all times.

(ii) Hazards. As much as possible, the area should be free and clear of hazards including, but not limited to: moving fishing gear, stored fishing gear, inclement weather conditions, and open hatches.

(v) Transfer at-sea: Motherships must:

(A) Ensure that transfers of observers at sea via small boat under its own power are carried out during daylight hours, under safe conditions, and with the agreement of observers involved.

(B) Notify observers at least 3 hours before observers are transferred, such that the observers can finish any sampling work, collect personal belongings, equipment, and scientific samples.

(C) Provide a safe pilot ladder and conduct the transfer to ensure the safety of observers during transfers.

(D) Provide an experienced crew member to assist observers in the small boat in which any transfer is made.

(3) Procurement of observer services.

(i) Owners of vessels required to carry observers under **paragraph XXXXX of this section** must arrange for observer services from an observer provider permitted by the North Pacific Groundfish Observer Program under **50 CFR 679.50(i)**, except that:

(A) Vessels are required to procure observer services directly from NMFS when NMFS has determined and given notification that the vessel must carry NMFS staff or an individual authorized by NMFS in lieu of an observer provided by a permitted observer provider.

(B) Vessels are required to procure observer services directly from NMFS and a permitted observer provider when NMFS has determined and given notification that the vessel must carry NMFS staff and/or individuals authorized by NMFS, in addition to an observer provided by a permitted observer provider.

(4) Observer provider responsibilities.

(i) Qualifies Candidates. Observer providers must provide qualified candidates to serve as observers. To be qualified, a candidate must have:

(A) A Bachelor's degree or higher from an accredited college or university with a major in one of the natural sciences;

(B) Successfully completed a minimum of 30 semester hours or equivalent in applicable biological sciences with extensive use of dichotomous keys in at least one course;

(C) Successfully completed at least one undergraduate course each in math and statistics with a minimum of 5 semester hours total for both; and

(D) Computer skills that enable the candidate to work competently with standard database software and computer hardware.

(ii) Description of Observer Duties. The observer provider must provide the candidate a copy of NMFS-provided pamphlets, information and other literature describing observer duties (i.e. The At-Sea Hake Observer Program's Observer Manual) prior to hiring the candidate. Observer job information is available from the Observer Program Office's web site at [www.nwfsc.noaa.gov/research/divisions/fram/observer/atseahake.cfm](http://www.nwfsc.noaa.gov/research/divisions/fram/observer/atseahake.cfm)

(iii) Observer Contracts. The observer provider must provide for each observer, either a written contract or a written contract addendum that is signed by the observer and observer provider prior to the observer's deployment and that contains the following provisions for continued employment:

(A) That all the observer's catch reports required to be sent during the season are delivered to the Observer Program Office as specified by written Observer Program instructions;

(B) Prior to the time of embarkation, disclosure of any mental illness or physical ailments or injury that would prevent the candidate from performing their assigned duties of an observer and which were not documented in the physician's statement submitted by the candidate as required in **paragraph XX** of this section;

(C) Requirement that ensures the observers complete duties in a timely manner. An observer provider must ensure that observers employed by that observer provider do the following in a complete and timely manner:

(1) Once an observer is scheduled for a final deployment debriefing under **paragraph XX of this section**, submit to NMFS all data, reports required by the Observer Manual, and biological samples from the observer's deployment by the completion of the electronic vessel and/or processor survey(s);

(2) Report for the scheduled debriefing and complete all debriefing responsibilities;

(3) Report to the observer program office and the NMFS OLE observer compliance coordinator any refusal to board an assigned vessel.

(4) Return all sampling and safety gear to the Observer Program Office.

(iv) Providing NMFS-certified Observers to Motherships. The observer provider must only provide observers to mothership vessels that have:

(A) a valid North Pacific groundfish observer certification endorsements and an At-Sea Hake Observer Program certification to provide observer services;

(B) not informed the provider prior to the time of embarkation that he or she is experiencing a mental illness or a physical ailment or injury developed since submission of the physician's statement, as required in paragraph XX of this section that would prevent him or her from performing his or her assigned duties; and

(C) successfully completed all NMFS required training and briefing before deployment.

(v) Providing NMFS-certified Observers to Motherships. Observer providers must only provide observers to mothership catcher vessels that meet the certification and training requirements specified at 660.140 (h) for vessels in the shorebased IFQ Program.

(vi) Respond to industry requests for observers. An observer provider must provide an observer for deployment as requested by vessels to fulfill vessel requirements for observer coverage specified at sections XX. An alternate observer must be supplied in each case where injury or illness prevents the observer from performing his or her duties or where the observer resigns prior to completion of his or her duties.

(vii) Provide Observer Salaries and Benefits. An observer provider must provide to its observer employees salaries and any other benefits and personnel services in accordance with the terms of each observer's contract.

(viii) Provide Observer Deployment Logistics. An observer provider must provide to each of its observers under contract:

(A) All necessary transportation, including arrangements and logistics, of observers to the initial location of deployment, to all subsequent vessel assignments during that deployment, and to the debriefing location when a deployment ends for any reason; and

(B) Lodging, per diem, and any other services necessary to observers assigned to fishing vessels.

(C) An observer under contract may be housed on a vessel to which he or she is assigned:

(1) Prior to their vessel's initial departure from port;

(2) For a period not to exceed twenty-four hours following the completion of an offload when the observer has duties and is scheduled to disembark; or

(3) For a period not to exceed twenty-four hours following the vessel's arrival in port when the observer is scheduled to disembark.

(4) During all periods an observer is housed on a vessel, the observer provider must ensure that the vessel operator or at least one crew member is aboard.

(5) An observer under contract who is between vessel assignments must be provided with shoreside accommodations at a licensed hotel, motel, bed and breakfast, or other shoreside accommodations for the duration of each period between vessel or shoreside assignments. Such accommodations must include an assigned bed for each observer and no other person may be assigned that bed for the duration of that observer's stay. Additionally, no more than four beds may be in any room housing observers at accommodations meeting the requirements of this section.

(ix) Not Exceed Observer Deployment Limitations. Unless alternative arrangements are approved by the Observer Program Office, an observer provider must not:

(A) Deploy an observer on the same vessel more than 90 days in a 12-month period;

(B) Deploy an observer for more than 90 days in a single deployment;  
(C) Include more than four vessels assignments in a single deployment, or  
(D) Disembark an observer from a vessel before that observer has completed his or her sampling or data transmission duties.

(x) Verify vessel's safety decal. An observer provider must verify that a vessel has a valid USCG safety decal as required under paragraph XX of this section before an observer may get underway aboard the vessel. One of the following acceptable means of verification must be used to verify the decal validity:

(A) The observer provider or employee of the observer provider, including the observer, visually inspects the decal aboard the vessel and confirms that the decal is valid according to the decal date of issuance; or

(B) The observer provider receives a hard copy of the USCG documentation of the decal issuance from the vessel owner or operator.

(xi) Maintain communications with observers. An observer provider must have an employee responsible for observer activities on call 24 hours a day to handle emergencies involving observers or problems concerning observer logistics, whenever observers are at sea, in transit, or in port awaiting vessel reassignment.

(xii) Maintain Communications With The Observer Program Office. An observer provider must provide all of the following information by electronic transmission (e-mail), fax, or other method specified by NMFS.

(A) Training and Briefing Registration Materials. The observer provider must submit training and briefing registration materials to the Observer Program Office at least 5 business days prior to the beginning of a scheduled observer at-sea hake training or briefing session. Registration materials consist of the date of requested training or briefing with a list of observers. Each observer's full name (i.e., first, middle and last names).

(B) Projected Observer Assignments. Prior to the observer's completion of the training or briefing session, the observer provider must submit to the Observer Program Office a statement of projected observer assignments that include the observer's name; vessel, gear type, and vessel/processor code; port of embarkation; and area of fishing.

(C) Observer Debriefing Registration. The observer provider must contact the At-Sea Hake Observer Program within 5 business days after the completion of an observer's deployment to schedule a date, time and location for debriefing. Observer debriefing registration information must be provided at the time of debriefing scheduling and must include the observer's name, cruise number, vessel name(s) and code(s), and requested debriefing date.

(D) Other Reports. Reports of the following must be submitted in writing to the At-Sea Hake Observer Program Office by the observer provider via fax or email address designated by the Observer Program Office within 24 hours after the observer provider becomes aware of the information:

(1) Any information regarding possible observer harassment;

(i) Any information regarding any action prohibited under section XX (660.12 Prohibitions section) or § 600.725(o), (t) and (u);

(ii) Any concerns about vessel safety or marine casualty under 46 CFR 4.05–1 (X)(X) through (X);

(iii) Any observer illness or injury that prevents the observer from completing any of his or her duties described in the observer manual; and

(iv) Any information, allegations or reports regarding observer conflict of interest or breach of the standards of behavior described at paragraph XX of this section.

(vx) Replace lost or damaged gear. An observer provider must replace all lost or damaged gear and equipment issued by NMFS to an observer under contract to that provider. All replacements must be in accordance with requirements and procedures identified in writing by the Observer Program Office.

(vix) Maintain Confidentiality of Information. An observer provider must ensure that all records on individual observer performance received from NMFS under the routine use provision of the Privacy Act remain confidential and are not further released to anyone outside the employ of the observer provider company to whom the observer was contracted except with written permission of the observer.

(viix) Limitations on Conflict of Interest. Observer providers must meet limitations on conflict of interest. Observer providers:

(A) Must not have a direct financial interest, other than the provision of observer services, in the West Coast Groundfish fishery managed under an FMP for the waters off the coasts of Washington, Oregon, and California, including, but not limited to,

(1) Any ownership, mortgage holder, or other secured interest in a vessel, or shoreside processor facility involved in the catching, taking, harvesting or processing of fish,

(2) Any business involved with selling supplies or services to any vessel or shoreside processors participating in a fishery managed pursuant to an FMP in the waters off the coasts of California, Oregon, and Washington, or

(3) Any business involved with purchasing raw or processed products from any vessel or shoreside processor participating in a fishery managed pursuant to an FMP in the waters off the coasts of California, Oregon, and Washington.

(B) Must assign observers without regard to any preference by representatives of vessels other than when an observer will be deployed.

(C) Must not solicit or accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from anyone who conducts fishing or fish processing activities that are regulated by NMFS, or who has interests that may be substantially affected by the performance or nonperformance of the official duties of observer providers.

(viii) Observer Conduct and Behavior. Observer providers must develop and maintain a policy addressing observer conduct and behavior for their employees that serve as observers. The policy shall address the following behavior and conduct regarding:

(A) Observer use of alcohol;

(B) Observer use, possession, or distribution of illegal drugs and;

(C) Sexual contact with personnel of the vessel or processing facility to which the observer is assigned, or with any vessel or processing plant personnel who may be substantially affected by the performance or non-performance of the observer's official duties.

(D) An observer provider shall provide a copy of its conduct and behavior policy by February 1 of each year, to: Observers, observer candidates and; the Observer Program Office.

(5) Observer certification and responsibilities.

(i) Observer Certification for Observers deployed on motherships:

(A) Applicability. Observer certification authorizes an individual to fulfill duties as specified in writing by the NMFS Observer Program Office while under the employ of a NMFS-permitted observer provider and according to certification endorsements as designated under paragraph XX of this section.

(B) Observer certification official. The Regional Administrator will designate a NMFS observer certification official who will make decisions for the Observer Program Office on whether to issue or deny observer certification.

(C) Certification requirements. NMFS will certify individuals who, in addition to any other relevant considerations:

(1) Are employed by an observer provider company permitted pursuant to 50 CFR 679.50 at the time of the issuance of the certification;

(2) Have provided, through their observer provider:

(i) Information identified by NMFS at 50 CFR 679.50 regarding an observer candidate's health and physical fitness for the job;

(ii) Meet all observer education and health standards as specified in 50 CFR 679.50 and

(iii) Have successfully completed NMFS-approved training as prescribed by the At-Sea Hake Observer Program.

(A) Successful completion of training by an observer applicant consists of meeting all attendance and conduct standards issued in writing at the start of training;

(B) meeting all performance standards issued in writing at the start of training for assignments, tests, and other evaluation tools; and completing all other training requirements established by the Observer Program.

(D) Have not been decertified under paragraph (X)(X) of this section, or pursuant to 50 CFR 679.50.

(E) Agency determinations on observer certification

(1) Denial of a certification. The NMFS observer certification official will issue a written determination denying observer certification if the candidate fails to successfully complete training, or does not meet the qualifications for certification for any other relevant reason.

(2) Issuance of an observer certification. An observer certification will be issued upon determination by the observer certification official that the candidate has successfully met all requirements for certification as specified XXXXX.

(i) Endorsements. The following endorsements must be obtained, in addition to observer certification, in order for an observer to deploy.

(A) North Pacific Groundfish Observer Program certification training endorsement. A certification training endorsement signifies the successful completion of the training course required to obtain observer certification. This endorsement expires when the observer has not been deployed and performed sampling duties as required by the Observer Program Office for a period of time, specified by the Observer Program, after his or her most recent debriefing. The observer can renew the endorsement by successfully completing certification training once more.

(B) North Pacific Groundfish Observer Program annual general endorsements. Each observer must obtain an annual general endorsement to their certification prior to his or her first deployment within any calendar year subsequent to a year in which a certification training endorsement is obtained. To obtain an annual general endorsement, an observer must successfully complete the annual briefing, as specified by the Observer Program. All briefing attendance, performance, and conduct standards required by the Observer Program must be met.

(C) North Pacific Groundfish Observer Program deployment endorsements. Each observer who has completed an initial deployment after certification or annual briefing must receive a deployment endorsement to their certification prior to any subsequent deployments for the remainder of that year. An observer may obtain a deployment endorsement by successfully completing all pre-cruise briefing requirements. The type of briefing the observer must attend

and successfully complete will be specified in writing by the Observer Program during the observer's most recent debriefing.

(D) At-Sea Hake Observer Program endorsements. A Pacific hake fishery endorsement is required for purposes of performing observer duties aboard vessels that process groundfish at sea in the Pacific whiting fishery. A Pacific whiting fishery endorsement to an observer's certification may be obtained by meeting the following requirements:

(2) Be a prior NMFS-certified observer in the groundfish fisheries off Alaska or the Pacific Coast;

(3) Receive an evaluation by NMFS for his or her most recent deployment (if any) that indicated that the observer's performance met Observer Program expectations for that deployment;

(a) Successfully complete a NMFS-approved observer training and/or Pacific whiting briefing as prescribed by the Observer Program; and

(b) Comply with all of the other requirements of this section.

(F) Limitations on conflict of interest.

(1) Observers: Must not have a direct financial interest, other than the provision of observer services, in a North Pacific fishery managed pursuant to an FMP for the waters off the coast of Alaska, or in a Pacific Coast fishery managed by either the state or Federal governments in waters off Washington, Oregon, or California, including but not limited to:

(i) Any ownership, mortgage holder, or other secured interest in a vessel, shore-based or floating stationary processor facility involved in the catching, taking, harvesting or processing of fish,

(ii) Any business involved with selling supplies or services to any vessel, shore-based or floating stationary processing facility; or

(iii) Any business involved with purchasing raw or processed products from any vessel, shore-based or floating stationary processing facilities.

(2) Must not solicit or accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from anyone who either conducts activities that are regulated by NMFS or has interests that may be substantially affected by the performance or nonperformance of the observers' official duties.

(3) May not serve as observers on any vessel or at any shore-based or floating stationary processing facility owned or operated by a person who previously employed the observers.

(4) May not solicit or accept employment as a crew member or an employee of a vessel or shoreside processor while employed by an observer provider.

(5) Provisions for remuneration of observers under this section do not constitute a conflict of interest.

(G) Standards of behavior.

(1) Observers must avoid any behavior that could adversely affect the confidence of the public in the integrity of the Observer Program or of the government, including but not limited to the following:

(i) Observers must:

(A) perform their assigned duties as described in the Observer Manual or other written instructions from the Observer Program Office.

(B) report to the observer program office and the NMFS OLE any time they refuse to board.



(C) accurately record their sampling data, write complete reports, and report accurately any observations of suspected violations of regulations relevant to conservation of marine resources or their environment.

(D) not disclose collected data and observations made on board the vessel or in the processing facility to any person except the owner or operator of the observed vessel or processing facility, an authorized officer, or NMFS.

(H) Suspension and decertification—

(1) Suspension and decertification review official. The Regional Administrator (or a designee) will designate an observer suspension and decertification review official(s), who will have the authority to review observer certifications and issue initial administrative determinations of observer certification suspension and/or decertification.

(2) Causes for suspension or decertification. The suspension/decertification official may initiate suspension or decertification proceedings against an observer:

(i) When it is alleged that the observer has committed any acts or omissions of any of the following:

(A) Failed to satisfactorily perform the duties of observers as specified in writing by the NMFS Observer Program; or

(B) Failed to abide by the standards of conduct for observers as prescribed under paragraph XX of this section;

(ii) Upon conviction of a crime or upon entry of a civil judgment for:

(A) Commission of fraud or other violation in connection with obtaining or attempting to obtain certification, or in performing the duties as specified in writing by the NMFS Observer Program;

(B) Commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(C) Commission of any other offense indicating a lack of integrity or honesty that seriously and directly affects the fitness of observers.

(3) Issuance of initial administrative determination. Upon determination that suspension or decertification is warranted under paragraph XX of this section, the suspension/decertification official will issue a written IAD to the observer via certified mail at the observer's most current address provided to NMFS. The IAD will identify whether a certification is suspended or revoked and will identify the specific reasons for the action taken. If the IAD issues a suspension for an observer certification, the terms of the suspension will be specified. Suspension or decertification is effective immediately as of the date of issuance, unless the suspension/decertification official notes a compelling reason for maintaining certification for a specified period and under specified conditions.

(4) Appeals. A certified observer who receives an IAD that suspends or revokes his or her observer certification may appeal pursuant to paragraph XX of this section.

(i) Decisions on appeals of initial administrative decisions denying certification to, or suspending, or decertifying, an observer, will be made by the Regional Administrator (or designated official).

(ii) Appeals decisions shall be in writing and shall state the reasons therefore.

(iii) An appeal must be filed with the Regional Administrator within 30 days of the initial administrative decision denying, suspending, or revoking the observer's certification.



(iv) The appeal must be in writing, and must allege facts or circumstances to show why the certification should be granted, or should not be suspended or revoked, under the criteria in this section.

(v) Absent good cause for further delay, the Regional Administrator (or designated official) will issue a written decision on the appeal within 45 days of receipt of the appeal. The Regional Administrator's decision is the final administrative decision of the Department as of the date of the decision.

(B) Observers deployed on mothership catcher vessels. Certifications and responsibilities for observers deployed aboard mothership catcher vessels are found in 660.140 XXX.

(k) Catch weighing requirements.

(1) Approved scales. The owner and operator of a mothership vessel must:

(i) Ensure that all catch is weighed in its round form on a NMFS-approved scale that meets the requirements specified at § 660.15(b);

(ii) Provide a NMFS-approved platform scale and test weights that meet the requirements specified at § 660.15(b) and § 660.150 (j)(2)(J).

(2) At-sea scale tests. To verify that the scale meets the maximum permissible error (MPE) requirements specified at § 660.15(b), subpart C, the vessel operator must ensure that vessel crew test each scale used to weigh IFQ catch at least one time during each 24-hour period when use of the scale is required. The vessel owner must ensure that these tests are performed in an accurate and timely manner.

(i) Belt scales. The MPE for the daily at-sea scale test is plus or minus 3 percent of the known weight of the test material. The scale must be tested by weighing at least 400 kg (882 lb) of fish or an alternative material supplied by the scale manufacturer on the scale under test. The known weight of the fish or test material must be determined by weighing it on a platform scale approved for use under § 679.28 (b)(7).

(ii) Platform scales used for observer sampling. A platform scale used for observer sampling must be tested at 10, 25, and 50 kg (or 20, 50, and 100 lb if the scale is denominated in pounds) using approved test weights. The MPE for the daily at-sea scale test is plus or minus 0.5 percent.

(iii) Approved test weights. Each test weight must have its weight stamped on or otherwise permanently affixed to it. The weight of each test weight must be annually certified by a National Institute of Standards and Technology approved metrology laboratory or approved for continued use by the NMFS authorized inspector at the time of the annual scale inspection.

(iv) Requirements for all scale tests.

(A) Notify the observer at least 15 minutes before the time that the test will be conducted, and conduct the test while the observer is present.

(B) Conduct the scale test and record the following information on the at-sea scale test report form:

(1) Vessel name;

(2) Month, day, and year of test;

(3) Time test started to the nearest minute;

(4) Known weight of test weights;

(5) Weight of test weights recorded by scale;

(6) Percent error as determined by subtracting the known weight of the test weights from the weight recorded on the scale, dividing that amount by the known weight of the test weights, and multiplying by 100; and

(Z) Sea conditions at the time of the scale test.

(C) Maintain the test report form on board the vessel until the end of the fishing year during which the tests were conducted, and make the report forms available to observers, NMFS staff, or NMFS authorized personnel. In addition, the vessel owner must retain the scale test report forms for 3 years after the end of the crab fishing year during which the tests were performed. All scale test report forms must be signed by the vessel operator.

(3) Scale maintenance. The vessel owner must ensure that the vessel operator maintains the scale in proper operating condition throughout its use, that adjustments made to the scale are made so as to bring the performance errors as close as practicable to a zero value, and that no adjustment is made that will cause the scale to weigh inaccurately.

(4) Printed reports from the scale. The vessel owner must ensure that the printed reports are provided as required by this paragraph. Printed reports from the scale must be maintained on board the vessel until the end of the year during which the reports were made, and be made available to NMFS staff or NMFS authorized personnel. In addition, the vessel owner must retain printed reports for 3 years after the end of the year during which the printouts were made.

(i) Reports of catch weight and cumulative weight. Reports must be printed at least once every 24 hours **prior to submitting a landing report as described in § XXXX**. Reports must also be printed before any information stored in the scale computer memory is replaced. Scale weights must not be adjusted by the scale operator to account for the perceived weight of water, mud, debris, or other materials. Scale printouts must show:

(A) The vessel name and **Federal vessel permit number**;

(B) The date and time the information was printed;

(C) The haul number as recorded in the processors DCPL

(D) The Total weight of the haul; and

(E) The total cumulative weight of all fish and other material weighed on the scale since the last annual inspection

(ii) Printed report from the audit trail. The printed report must include the information specified in sections 2.3.1.8, 3.3.1.7, and 4.3.1.8 of **appendix A to 50 CFR part 679**. The printed report must be provided to the authorized scale inspector at each scale inspection and must also be printed at any time upon request of NMFS staff or other NMFS-authorized personnel.

(iii) Platform scales used for observer sampling. A platform scale used for observer sampling is not required to produce a printed record.

(5) Equipment failure. [Reserved]

16. INSTRUCTION - In section 660.160, paragraphs (a)(3) and (a)(4) are revised; paragraphs (b) through (h) are renumbered as paragraphs (c) through (i); a new paragraph (b) is added; the new paragraph (c)(2) is revised; the new paragraphs (c)(3) through (c)(7) are added; the new paragraphs (d), (e)(2) through (4), (f) through (i) are revised to read as follows:

§ 660.160 Catcher/processor (C/P) coop program

\* \* \* \* \*

(a) General. \* \* \*

(3) Regulations set out in the following sections of subpart C: § 660.11 Definitions, § 660.12 Prohibitions, § 660.13 Recordkeeping and reporting, § 660.14 VMS requirements, § 660.15 Equipment requirements, § 660.16 Groundfish Observer Program, § 660.20 Vessel and gear identification, § 660.25 Permits, § 660.55 Allocations, § 660.60 Specifications and

management measures, § 660.65 Groundfish harvest specifications, and §§ 660.70 through 660.79 Closed areas.

(4) Regulations set out in the following sections of subpart D: § 660.111 Trawl fishery definitions, § 660.112 Trawl fishery prohibitions, § 660.113 Trawl fishery recordkeeping and reporting, § 660.120 Trawl fishery crossover provisions, § 660.130 Trawl fishery management measures, and § 660.131 Pacific whiting fishery management measures.

\* \* \* \* \*

(b) Participation requirements and responsibilities.

(1) C/P vessel participation requirements. A vessel is eligible to fish as a catcher/processor in the C/P coop program if:

(i) The vessel is registered to a C/P permit.

(ii) The vessel is not used to harvest fish as a catcher vessel in the mothership coop program in the same calendar year.

(iii) The vessel is not used to fish as a mothership in the MS coop program in the same calendar year.

(iv) ~~The vessel has not been under foreign registry and fished in the territorial waters or exclusive economic zones of other countries, as per Section 12102(e)(6) of the AFA.~~

(2) C/P responsibilities. The owner and operator of a catcher/processor vessel must:

(i) Recordkeeping and reporting. Maintain a valid declaration as specified at § 660.13(d); and maintain and submit all records and reports specified at § 660.113(d) including, economic data, scale tests records, and cease fishing declarations.

(ii) Observers. Procure observer services as specified at § 660.XXX, maintain the appropriate level of coverage as specified at § 660.XXX, and meet the vessel responsibilities specified at § 660.XXX.

(iii) Catch weighing requirements.

(A) Ensure that all catch is weighed in its round form on a NMFS-approved scale that meets the requirements described in section § 660.15 (b), is tested as is required at § 660.XXX, and is operated as required at § 660.XXX;

(B) Provide a NMFS-approved platform scale and test weights that meet the requirements of described in section § 660.15 (b) and that is tested as is required at § 660.XXX.

(C) Centralized registry of ownership. [Reserved]

(3) C/P coops.

(i) C/P coop participation requirements. For a C/P coop to participate in the catcher/processor sector of the Pacific whiting fishery, the C/P coop must:

(A) be issued a MS coop permit;

(B) be owned and operated by C/P endorsed limited entry permit owners;

(C) be formed voluntarily;

(D) be a legally recognized entity that represents its members and employs a designated coop manager; and

(E) have all C/P permit owners as coop members.

(ii) C/P coop responsibilities. A C/PS coop is responsible for:

(A) applying for and being registered to a C/P Coop Permit;

(B) organizing and coordinating harvest activities of vessels registered to member permits;

(C) allocating catch for use by specific coop members;

(D) monitoring harvest activities and enforcing the catch limits of coop members;

Comment [jg47]: Needs developed

- (E) submitting an annual report.
- (F) having a designated coop manager. The designated coop manager must:
  - (1) serve as the contact person with NMFS and the Council;
  - (2) **organize the annual distribution of catch and bycatch between coop members;**
  - (3) prepare and submit an annual reports on behalf of the coop; and,
  - (4) be authorized to receive or respond to any legal process in which the coop is involved.
- (iii) Liability for violations. A C/P coop must comply with the provisions of this section.

The permit owners, and vessels owners and operators of vessels registered to the member permits, including vessels under contract, are responsible for the fishery cooperative complying with the provisions of this section.

(iv) C/P coop failure.

(A) A coop failure results when:

(1) any vessel registered to a current C/P endorsed permit fishes without being identified in the C/P coop agreement submitted to NMFS during the coop permit application process;

Comment [A48]: Correct?

(2) any vessel registered to a current C/P endorsed permit withdraws from the C/P coop agreement;

(3) the coop members voluntarily dissolve the coop;

(4) the coop agreement is no longer valid; or

(5) the coop fails to meet the C/P coop responsibilities specified at § 660.XXX.

(B) If the C/P coop dissolves, the designated coop manager must notify NMFS SFD in writing of the dissolution of the coop.

(C) The Regional Administrator may make an independent determination of a coop failure based on factual information collected by or provided to NMFS.

(D) In the event of a NMFS determined coop failure:

(1) The catcher/processor sector will convert to an IFQ-based fishery beginning the following calendar year after a coop failure, or as soon as practicable thereafter. NMFS will develop additional regulations, as necessary to implement an IFQ fishery for the C/P sector.

(2) each C/P endorsed permit would receive an equal percent (10 percent) of IFQ QS.

\* \* \* \* \*

(c) C/P Coop program species and allocations--\* \* \*

(2) C/P coop program annual allocations. The C/P Coop Program allocation is equal to the catcher/processor sector allocation. Only a single coop, comprised of all C/P endorsed permits, may be formed in the catcher/processor sector with the one permitted coop receiving the catcher/processor sector allocation.

(3) Non-whiting groundfish species.

(i) Non-whiting groundfish species with a catcher/processor sector allocation are established in accordance with regulation at § 660.55(X). The pounds associated with each species will be allocated to the coop permit.

(ii) Groundfish species with at-sea sector set-asides, will be managed on an annual basis unless there is a risk of a harvest specification being exceeded, unforeseen impact on another fisheries, or conservation concerns in which case inseason action may be taken. Set asides may be adjusted through the biennial specifications and management measures process as necessary.

(iii) Groundfish species not covered under paragraph (i) or (ii) above, will be managed on an annual basis unless there is a risk of a harvest specification being exceeded, unforeseen impact on another fisheries, or conservation concerns in which case inseason action may be taken.

(4) Halibut set-asides. Annually a specified amount of the Pacific halibut will be held in reserve as a set-aside for the Pacific whiting C/P sector.

(5) Non-whiting groundfish species reapportionment. The Regional Administrator may make available for harvest to the mothership sector of the Pacific whiting fishery as identified in § 660.131(a), the amounts of a sector's non-whiting catch allocation remaining when a sector reaches its Pacific whiting allocation or participants in the sector do not intend to harvest the remaining sector allocation. The designated coop managers must notify NMFS in writing when harvesting has concluded for the year. At any time after greater than 80 percent of the catcher/processor sector Pacific whiting allocation has been harvested, the Regional Administrator may contact designated coop managers to determine whether they intend to continue fishing. When considering redistribution of non-whiting catch allocation, the Regional Administrator will take into consideration the best available data on total projected fishing impacts.

(6) Reaching the C/P allocation. When the catcher/processor sector allocation of Pacific whiting is reached or is projected to be reached, the following action may be taken:

(i) Pacific whiting. Further taking and retaining, receiving, or at-sea processing of Pacific whiting by a catcher/processor is prohibited when the catcher/processor sector Pacific whiting allocation is reached or projected to be reached. No additional unprocessed Pacific whiting may be brought on board after at-sea processing is prohibited, but a catcher/processor may continue to process Pacific whiting that was on board before at-sea processing was prohibited.

(ii) Non-whiting groundfish with allocations. The Catcher/processor sector will close when the allocation of any one species is reached or projected to be reached.

(7) Announcements. The Regional Administrator will announce in the Federal Register when the catcher/processor sector or the allocation of non-whiting groundfish with an allocation is reached, or is projected to be reached, and specify the appropriate action. In order to prevent exceeding an allocation and to avoid underutilizing the resource, prohibitions against further taking and retaining, receiving, or at-sea processing of Pacific whiting, or reapportionment of non-whiting groundfish with allocations may be made effective immediately by actual notice to fishers and processors, by e-mail, internet ( [www.nwr.noaa.gov/Groundfish-Halibut/Groundfish-Fishery-Management/Whiting-Management/index.cfm](http://www.nwr.noaa.gov/Groundfish-Halibut/Groundfish-Fishery-Management/Whiting-Management/index.cfm) ), phone, fax, letter, press release, and/or USCG Notice to Mariners (monitor channel 16 VHF), followed by publication in the Federal Register, in which instance public comment will be sought for a reasonable period of time thereafter.

(d) C/P coop permit and agreement.

(1) Eligibility and application requirements to register for a C/P coop permit.

(i) Eligibility. Only an entity that is a recognized entity under the laws of the United States or the laws of a State and that represents all of the coop members can apply for and obtain a C/P coop permit. ~~The only person that can hold a permit must be: 1) a United States citizen; or 2) a permanent resident alien; or 3) a corporation, partnership or other entity established under the laws of the United States or any State.~~

(ii) Annual registration and deadline. Each year, the coop entity must submit a complete application to NMFS for a C/P coop permit. The application must be submitted to NMFS by **XXFebruary IXX** of the year in which they intend to participate. NMFS will not consider any applications received after **XXDATEXX**. A C/P coop permit expires on December 31 of the year in which it was issued.

(iii) Application for a C/P coop permit. The coop entity must submit a complete application form and include each of the items listed in paragraphs (e)(2)(iii)(A) through (B). Only complete applications will be considered for issuance of a C/P coop permit. NMFS may request additional supplemental documentation as necessary to make a determination of whether to approve or disapprove the application. Application forms and instruction are available on the NMFS NWR website ([www.nwr.noaa.gov](http://www.nwr.noaa.gov)) or by request from NMFS.

(A) Coop agreement. A coop agreement must include all of the information listed in this paragraph to be considered a complete coop agreement. NMFS will only review complete coop agreements. Coop agreements will not be accepted when the agreement unless it includes all of the required information; the descriptive items listed in this paragraph appear to meet the stated purpose; and information is submitted is correct and accurate.

(1) Coop agreements contents. Each agreement must be signed by the coop members and include the following information:

(i) A listing of all vessels registered to C/P endorsed permits that the member permit owners intend to use for fishing under the C/P coop permit.

(ii) A listing of all C/P endorsed limited entry member permits identified by permit number.

(iii) A description of the coop's plan to adequately monitor and account for the catch of Pacific whiting and non-whiting groundfish allocations, and to monitor and account for the catch of prohibited species.

(iv) A new member permit owner clause that requires new owners of member permit's to comply with membership restrictions in the coop agreements.

(v) A description of the coop's plan for enforcement and penalty provisions adequate to maintain catch of Pacific whiting and non-whiting groundfish within the allocations and that Pacific halibut set-aside overages do not occur.

(vi) A description of measures to reduce catch of overfished species.

(vii) A description of how the coop's responsibility to produce an annual report documenting the coop's catch, bycatch data, and any other significant activities undertaken by the coop during the year will be met by XXdue dateXX.

(viii) Identification of the designated coop manager.

(ivx) A signed clause by the designated coop manager acknowledging the responsibilities of a designated coop manager defined in 660.XXXX.

(vx) A description for how the coop will be dissolved.

(viX) ~~Provisions that prohibit member permit owners that have incurred legal sanctions from fishing groundfish in the Council region~~

(2) Department of Justice correspondence. Each coop must submit a letter to the Department of Justice requesting a business review letter on the fishery coop. Copies of the letter and any correspondence with the Department of Justice regarding the request must be included in the application to NMFS for a MS Coop Permit.

(B) Acceptance of a coop agreement.

(1) If NMFS does not accept the coop agreement, the coop permit application will be returned to the applicant with a letter stating the reasons the coop agreement was not accepted by NMFS.

(2) Coop agreements that are not accepted may be resubmitted for review by sufficiently addressing the deficiencies identified in the letter of rejection and resubmitting the entire coop permit application by the date specified in the letter of rejection.

(3) An approved coop agreement that was submitted with the C/P coop permit application and for which a C/P permit was issued will remain in place through the end of the calendar year. The designated coop manager must resubmit a complete coop agreement to NMFS consistent with the coop agreement contents described in this paragraph if there is a material change to the coop agreement.

(4) Within 3 days following a material change, a revised coop agreement must be submitted to NMFS. NMFS will review the material changes and provide a letter to the coop manager that either accepts the changes as given or does not accept the revised coop agreement with a letter stating the reasons that it was not accepted by NMFS. The coop may resubmit the coop agreement with further revisions to the material changes responding to NMFS concerns.

(iv) Effective date of C/P coop permit. A C/P coop permit will be effective on the date approved by NMFS and remain in effect until the end of the calendar year or until one or more of the following events occur, whichever comes first:

(A) NMFS closes the fishing season for the catcher/processor sector or the designated coop manager notifies NMFS that the coop has completed fishing for the calendar year,

(B) the C/P coop has reached the catcher/processor sector Pacific whiting allocation,

(C) a material change to the coop agreement has occurred and the designated coop manager failed to provide a revised coop agreement to NMFS within three calendar days of the material change.

(D) NMFS has determined that a coop failure occurred.

(2) Initial administrative determination. For all complete applications, NMFS will issue an IAD that either approves or disapproves the application. If approved, the IAD will include a C/P coop permit. If disapproved, the IAD will provide the reasons for this determination. An application will be disapproved if any required fees and annual reports have not been received by NMFS.

(3) Appeals. An appeal to a C/P coop permit action follows the same process as the general permit appeals process defined at § 660.25(g), subpart C.

(4) Fees. The Regional Administrator is authorized to charge fees for administrative costs associated with the issuance of a C/P coop permit consistent with the provisions given at § 660.25(f), subpart C.

(5) Cost recovery. The owner of a C/P coop permit (coop entity) will be required to pay all cost recovery fees based on the harvest of Pacific whiting by the coop members in a given year. Cost recovery fees will not be collected until further cost recovery regulations are implemented by NMFS.

\* \* \* \* \*

(e) C/P endorsed permit.

(1) General. \* \* \*

(2) Eligibility and renewal for C/P endorsed permit.

(i) Eligibility. An owner of C/P endorsed limited entry permit must be eligible to own a U.S. documented vessel as given at § 660.333(b).

(ii) Renewal of C/P endorsed limited entry permit. A C/P endorsed permit must be renewed consistent with the regulations given at § 660.335(a). If a vessel registered to the C/P endorsed permit will operate as a mothership in the year for which the permit is renewed, the permit owner must make a declaration as part of the C/P endorsed permit renewal consistent with the regulations at § 660.373(h)(3).

(iii) Effective date of the C/P endorsed permit. XXX

Comment [jg49]: And bycatch species?

Comment [jg50]: Add text



(3) Change in permit ownership, vessel registration, vessel owner, transfer or combination.

(i) Changes in permit or vessel owner of C/P endorsed permit. The requirements for making a change in the permit owner or vessel owner found at § 660.335(d) remain in effect with for the exception listed in paragraph (ii).

(ii) Frequency of changes in vessel registration to a C/P endorsed permit. A limited entry permit with a catcher/processor endorsement may be registered to another vessel only once during a fishing season, except that it may be registered to another vessel two times during the fishing season as long as the second transfer is back to the original vessel. NMFS deems the original vessel to mean either the vessel registered to the permit as of January 1 or if no vessel is registered to the permit as of January 1, the original vessel is considered the first registration of a vessel after January 1. The frequency of transfer provisions at § 660.20(b)(3)(x) does not apply to C/P endorsed permit.

(iii) Effective date of transfer of a C/P endorsed permit. A change in vessel registration to a C/P endorsed permit will be effective upon NMFS approval and not subject to provisions at § 660.20(b)(3)(x).

(iv) Combination. A C/P endorsed permit that is combined with other trawl endorsed limited entry permits that do not have a C/P endorsement will result in a single trawl limited entry permit with a C/P endorsement with a larger size endorsement. The resulting size endorsement from a combination involving a C/P endorsed limited entry permit will be determined based on the existing combination formula given at § 660.20(b)(2)(iii).

(4) Appeals. An appeal to a C/P endorsed permit action follows the same process as the general permit appeals process defined at § 660.25(g), subpart C.

(5) Fees. \* \* \*

\* \* \* \* \*

(6) Cost recovery. A C/P endorsed permit owner will not be responsible to pay cost recovery fees. The C/P coop permit owner owners will be required to pay all cost recovery fees based as specified at paragraph (e)(7) of this section. If the C/P coop fails, the owner of C/P endorsed permit or the owner of a vessel registered to C/P endorsed permit in a given year may be required to pay cost recovery fees. Cost recovery fees will not be collected until further cost recovery regulations are implemented by NMFS.

(7) Application requirements and initial issuance for C/P endorsement. \* \* \*

\* \* \* \* \*

(f) Retention requirements. [Reserved]

(g) Observer requirements.

(1) Observer coverage requirements.

(2) Coverage. Any vessel registered to a C/P permit that is 125 ft (38.1 m) LOA or longer must carry two NMFS-certified observers, and any vessel registered to a C/P permit that is shorter than 125 ft (38.1 m) LOA must carry one NMFS-certified observer, each day that the vessel is used to take, retain, receive, land, process, or transport groundfish.

(3) Refusal to board. Any boarding refusal on the part of the observer or vessel is reported to the observer program and NMFS OLE observer compliance coordinator by the observer provider and observer. Observer must be available for an interview with the observer program or OLE if necessary.

(4) Observer Workload. The time required for the observer to complete sampling duties must not exceed 12 consecutive hours in each 24-hour period.

Comment [jg51]: Needs developed  
If not, revise instructions



(5) Vessel Responsibilities. An operator and/or crew of a vessel required to carry an observer must provide:

(i) Accommodations and Food. Provide accommodations and food that are equivalent to those provided for officers, engineers, foremen, deck-bosses or other management level personnel of the vessel.

(ii) Safe Conditions.

(A) Maintain safe conditions on the vessel for the protection of observers including adherence to all U.S. Coast Guard and other applicable rules, regulations, or statutes pertaining to safe operation of the vessel.

(B) Have On Board: a valid Commercial Fishing Vessel Safety Decal issued within the past or at a time interval consistent with current USCG regulations or policy that certifies compliance with regulations found in 33 CFR Chapter I and 46 CFR Chapter I, a certificate of compliance issued pursuant to 46 CFR 28.710 or a valid certificate of inspection pursuant to 46 U.S.C. 3311.

(iii) Computer Hardware and Software. Catcher/processors vessels must:

(A) provide hardware and software pursuant to regulations at **50 CFR 679.50(g)(1)(iii)(B)(1) through 50 CFR 679.50(g)(1)(iii)(B)(3)**.

(B) provide the observer(s) access to a computer required under paragraph (b)(3)(i) of this section that is connected to a communication device that provides a point-to-point connection to the NMFS host computer.

(C) ensure that the catcher/processor has installed the most recent release of NMFS data entry software provided by the Regional Administrator, or other approved software prior to the vessel receiving, catching or processing IFQ species.

(D). Ensure that the communication equipment required in **paragraph (g)(1)(iii)(B)** of this section and used by observers to enter and transmit data, is fully functional and operational. "Functional" means that all the tasks and components of the NMFS supplied, or other approved, software described at **paragraph (g)(1)(iii)(B)(2)** of this section and the data transmissions to NMFS can be executed effectively aboard the vessel by the communications equipment.

(iv) Vessel Position. Allow observer(s) access to, and the use of, the vessel's navigation equipment and personnel, on request, to determine the vessel's position.

(v) Access. Allow observer(s) free and unobstructed access to the vessel's bridge, trawl or working decks, holding bins, processing areas, freezer spaces, weight scales, cargo holds, and any other space that may be used to hold, process, weigh, or store fish or fish products at any time.

(vi) Prior Notification. Notify observer(s) at least 15 minutes before fish are brought on board, or fish and fish products are transferred from the vessel, to allow sampling the catch or observing the transfer, unless the observer specifically requests not to be notified.

(vii) Records. Allow observer(s) to inspect and copy any state or Federal logbook maintained voluntarily or as required by regulation.

(viii) Assistance. Provide all other reasonable assistance to enable observer(s) to carry out their duties, including, but not limited to:

(A) Measuring decks, codends, and holding bins.

(B) Providing the observer(s) with a safe work area.

(C) Collecting samples of catch when requested by the observer(s).

(D) Collecting and carrying baskets of fish when requested by the observer(s).

(E) Allowing the observer(s) to collect biological data and samples.

(F) Providing adequate space for storage of biological samples.

(ix) Sample Station and Operational Requirements for catcher/processor vessels.

This paragraph contains the requirements for observer sampling stations. To allow the observer to carry out the required duties, the vessel owner must provide an observer sampling station that meets the requirements of paragraph (b)(9) (i) through (viii) of this section.

(A) Accessibility. The observer sampling station must be available to the observer at all times.

(B) Location. The observer sampling station must be located within 4 m of the location from which the observer samples unsorted catch.

(C) Access. Unobstructed passage must be provided between the observer sampling station and the location where the observer collects sample catch.

(D) Minimum Work Space. The observer must have a working area of at least 4.5 square meters, including the observer's sampling table, for sampling and storage of fish to be sampled. The observer must be able to stand upright and have a work area at least 0.9 m deep in the area in front of the table and scale.

(E) Table. The observer sampling station must include a table at least 0.6 m deep, 1.2 m wide and 0.9 m high and no more than 1.1 m high. The entire surface area of the table must be available for use by the observer. Any area for the observer sampling scale is in addition to the minimum space requirements for the table. The observer's sampling table must be secured to the floor or wall.

(F) Diverter board. The conveyor belt conveying unsorted catch must have a removable board ("diverter board") to allow all fish to be diverted from the belt directly into the observer's sampling baskets. The diverter board must be located downstream of the scale used to weigh total catch. At least 1 m of accessible belt space, located downstream of the scale used to weight total catch, must be available for the observer's use when sampling.

(G) Other Requirements. The sampling station must be in a well-drained area that includes floor grating (or other material that prevents slipping), lighting adequate for day or night sampling, and a hose that supplies fresh or sea water to the observer.

(H) Observer Sampling Scale. The observer sample station must include a NMFS-approved platform scale (pursuant to requirements at [50 CFR 679.28\(d\)\(5\)](#)) with a capacity of at least 50 kg located within 1 m of the observer's sampling table. The scale must be mounted so that the weighing surface is no more than 0.7 m above the floor.

(I) Transfer At-sea. To ensure observer safety during at-sea transfers, vessels must:

(1) Ensure that transfers of observers at sea via small boat under its own power are carried out during daylight hours, under safe conditions, and with the agreement of observers involved.

(2) Notify observers at least 3 hours before observers are transferred, such that the observers can finish any sampling work, collect personal belongings, equipment, and scientific samples.

(3) Provide a safe pilot ladder and conduct the transfer to ensure the safety of observers during transfers.

(4) Provide an experienced crew member to assist observers in the small boat in which any transfer is made.

(3) Procurement of Observer Services.

(i) Owners of vessels required to carry observers under **paragraph (a)(1)** of this section must arrange for observer services from an observer provider permitted by the North Pacific Groundfish Observer Program under **50 CFR 679.50(i)**, except that:

(A) Vessels are required to procure observer services directly from NMFS when NMFS has determined and given notification that the vessel must carry NMFS staff or an individual authorized by NMFS in lieu of an observer provided by a permitted observer provider.

(B) Vessels are required to procure observer services directly from NMFS and a permitted observer provider when NMFS has determined and given notification that the vessel must carry NMFS staff and/or individuals authorized by NMFS, in addition to an observer provided by a permitted observer provider.

(4) Observer provider responsibilities.

(i) Qualified Candidates. Observer providers must provide qualified candidates to serve as observers.

(A) To be qualified, a candidate must have:

(1) A Bachelor's degree or higher from an accredited college or university with a major in one of the natural sciences;

(2) Successfully completed a minimum of 30 semester hours or equivalent in applicable biological sciences with extensive use of dichotomous keys in at least one course;

(3) Successfully completed at least one undergraduate course each in math and statistics with a minimum of 5 semester hours total for both; and

(4) Computer skills that enable the candidate to work competently with standard database software and computer hardware.

(ii) Description of Observer Duties. The observer provider must provide the candidate a copy of NMFS-provided pamphlets, information and other literature describing observer duties (i.e. The At-Sea Hake Observer Program's Observer Manual) prior to hiring an observer candidate. Observer job information is available from the Observer Program Office's web site at [www.nwfsc.noaa.gov/research/divisions/fram/observer/atseahake.cfm](http://www.nwfsc.noaa.gov/research/divisions/fram/observer/atseahake.cfm)

(iii) Observer Contracts. The observer provider must provide for each observer either a written contract or a written contract addendum that is signed by the observer and observer provider prior to the observer's deployment and that contains the following provisions for continued employment:

(A) That all the observer's catch reports required to be sent during the season are delivered to the Observer Program Office as specified by written Observer Program instructions;

(B) Prior to the time of embarkation, disclosure of any mental illness or physical ailment or injury that would prevent the candidate from performing the assigned duties of an observer and which were not documented in the physician's statement submitted by the candidate as required in **paragraph XX** of this section;

(C) Requirement that ensures the observers complete duties in a timely manner. An observer provider must ensure that observers employed by that observer provider do the following in a complete and timely manner:

(1) Once an observer is scheduled for a final deployment debriefing under **paragraph XX** of this section, submit to NMFS all data, reports required by the Observer Manual, and biological samples from the observer's deployment by the completion of the electronic vessel and/or processor survey(s);

(2) Report for the scheduled debriefing and complete all debriefing responsibilities;

(3) Report to the observer program office and the NMFS OLE observer compliance coordinator any refusal to board an assigned vessel, and

(4) Return all sampling and safety gear to the Observer Program Office.

(iv) Providing NMFS-Certified Observers. The observer provider must only provide observers to vessels that have:

(A) a valid North Pacific groundfish observer certification endorsements and an At-Sea Hake Observer Program certification to provide observer services;

(B) not informed the provider prior to the time of embarkation that he or she is experiencing a mental illness or a physical ailment or injury developed since submission of the physician's statement, as required in paragraph XX of this section that would prevent him or her from performing his or her assigned duties; and

(C) successfully completed all NMFS required training and briefing before deployment.

(v) Respond to Industry Requests for Observers. An observer provider must provide an observer for deployment as requested by vessels to fulfill vessel requirements for observer coverage specified under sections XX of this section. An alternate observer must be supplied in each case where injury or illness prevents the observer from performing his or her duties or where the observer resigns prior to completion of his or her duties.

(vi) Provide Observer Salaries And Benefits. An observer provider must provide to its observer employees salaries and any other benefits and personnel services in accordance with the terms of each observer's contract.

(vii) Provide Observer Deployment Logistics. An observer provider must provide to each of its observers under contract:

(A) All necessary transportation, including arrangements and logistics, of observers to the initial location of deployment, to all subsequent vessel assignments during that deployment, and to the debriefing location when a deployment ends for any reason; and

(B) Lodging, per diem, and any other services necessary to observers assigned to fishing vessels.

(1) An observer under contract may be housed on a vessel to which he or she is assigned:

(i) Prior to their vessel's initial departure from port;

(ii) For a period not to exceed twenty-four hours following the completion of an offload when the observer has duties and is scheduled to disembark; or

(iii) For a period not to exceed twenty-four hours following the vessel's arrival in port when the observer is scheduled to disembark.

(C) During all periods an observer is housed on a vessel, the observer provider must ensure that the vessel operator or at least one crew member is aboard.

(D) An observer under contract who is between vessel assignments, must be provided with shoreside accommodations including a licensed hotel, motel, bed and breakfast, or other shoreside accommodations for the duration of each period between vessel or shoreside assignments. Such accommodations must include an assigned bed for each observer and no other person may be assigned that bed for the duration of that observer's stay. Additionally, no more than four beds may be in any room housing observers at accommodations meeting the requirements of this section.

(viii) Deployment Limitations. An observer provider must not exceed observer deployment limitations specified in this paragraph unless alternative arrangements are approved by the Observer Program Office. An observer provider must not:

(A) Deploy an observer on the same vessel for more than 90 days in a 12-month period;

(B) Deploy an observer for more than 90 days in a single deployment;  
(C) Include more than four vessel assignments in a single deployment, or  
(D) Disembark an observer from a vessel before that observer has completed his or her sampling or data transmission duties.

(ix) Verify Vessel's Safety Decal. An observer provider must verify that a vessel has a valid USCG safety decal as required under paragraph XX of this section before an observer may get underway aboard the vessel. One of the following acceptable means of verification must be used to verify the decal validity:

(A) The observer provider or employee of the observer provider, including the observer, visually inspects the decal aboard the vessel and confirms that the decal is valid according to the decal date of issuance; or

(B) The observer provider receives a hard copy of the USCG documentation of the decal issuance from the vessel owner or operator.

(x) Maintain Communications With Observers. An observer provider must have an employee responsible for observer activities on call 24 hours a day to handle emergencies involving observers or problems concerning observer logistics, whenever observers are at sea, in transit, or in port awaiting vessel reassignment.

(xi) Maintain Communications With the Observer Program. An observer provider must provide all of the following information by electronic transmission (e-mail), fax, or other method specified by NMFS.

(A) Observer Training and Briefing. Observer training and briefing registration materials must be submitted to the Observer Program Office at least 5 business days prior to the beginning of a scheduled observer at-sea hake training or briefing session. Registration materials consist of the following: the date of requested training or briefing with a list of observers. Each observer's full name (i.e., first, middle and last names) must be included.

(B) Projected Observer Assignments. Prior to the observer's completion of the training or briefing session, the observer provider must submit to the Observer Program Office a statement of projected observer assignments that include the observer's name; vessel, gear type, and vessel/processor code; port of embarkation; and area of fishing.

(C) Observer Debriefing Registration. The observer provider must contact the At-Sea Hake Observer Program within 5 business days after the completion of an observer's deployment to schedule a date, time and location for debriefing. Observer debriefing registration information must be provided at the time of debriefing scheduling and must include the observer's name, cruise number, vessel name(s) and code(s), and requested debriefing date.

(D) Other Reports. Reports of the following must be submitted in writing to the At-Sea Hake Observer Program Office by the observer provider via fax or email address designated by the Observer Program Office within 24 hours after the observer provider becomes aware of the information:

(1) Any information regarding possible observer harassment;

(2) Any information regarding any action prohibited under section XX (660.12 Prohibitions section) or §600.725(o), (t) and (u);

(3) Any concerns about vessel safety or marine casualty under 46 CFR 4.05-1 (a)(1) through (7);

(4) Any observer illness or injury that prevents the observer from completing any of his or her duties described in the observer manual; and

(5) Any information, allegations or reports regarding observer conflict of interest or breach of the standards of behavior described at paragraph XX of this section.

(xii) Replace Lost or Damaged Gear. An observer provider must replace all lost or damaged gear and equipment issued by NMFS to an observer under contract to that provider. All replacements must be in accordance with requirements and procedures identified in writing by the Observer Program Office.

(xiii) Maintain Confidentiality of Information. An observer provider must ensure that all records on individual observer performance received from NMFS under the routine use provision of the Privacy Act remain confidential and are not further released to anyone outside the employ of the observer provider company to whom the observer was contracted except with written permission of the observer.

(xiv) Conflict of Interest. An observer provider must meet limitations on conflict of interest. Observer providers:

(A) Must not have a direct financial interest, other than the provision of observer services, in the West Coast Groundfish fishery managed under an FMP for the waters off the coasts of Washington, Oregon, and California, including, but not limited to,

(1) Any ownership, mortgage holder, or other secured interest in a vessel or shoreside processor facility involved in the catching, taking, harvesting or processing of fish,

(2) Any business involved with selling supplies or services to any vessel or shoreside processors participating in a fishery managed pursuant to an FMP in the waters off the coasts of California, Oregon, and Washington, or

(3) Any business involved with purchasing raw or processed products from any vessel or shoreside processor participating in a fishery managed pursuant to an FMP in the waters off the coasts of California, Oregon, and Washington.

(B) Must assign observers without regard to any preference by representatives of vessels other than when an observer will be deployed.

(C) Must not solicit or accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from anyone who conducts fishing or fish processing activities that are regulated by NMFS, or who has interests that may be substantially affected by the performance or nonperformance of the official duties of observer providers.

(xv) Observer Conduct and Behavior. An observer provider must develop and maintain a policy addressing observer conduct and behavior for their employees that serve as observers. The policy shall address the following behavior and conduct regarding:

(A) Observer use of alcohol;

(B) Observer use, possession, or distribution of illegal drugs and;

(C) Sexual contact with personnel of the vessel or processing facility to which the observer is assigned, or with any vessel or processing plant personnel who may be substantially affected by the performance or non-performance of the observer's official duties.

(D) An observer provider shall provide a copy of its conduct and behavior policy by February 1 of each year, to:

Observers, observer candidates and;  
the Observer Program Office.

(5) Observer Certification and Responsibilities.

(i) Observer Certification.

(A) Applicability. Observer certification authorizes an individual to fulfill duties as specified in writing by the NMFS Observer Program Office while under the employ of a NMFS-

permitted observer provider and according to certification endorsements as designated under paragraph XX of this section.

(B) Observer Certification Official. The Regional Administrator will designate a NMFS observer certification official who will make decisions for the Observer Program Office on whether to issue or deny observer certification.

(C) Certification Requirements. NMFS will certify individuals who, in addition to any other relevant considerations:

(1) Are employed by an observer provider company permitted pursuant to 50 CFR 679.50 at the time of the issuance of the certification;

(2) Have provided, through their observer provider:

(i) Information identified by NMFS at 50 CFR 679.50 regarding an observer candidate's health and physical fitness for the job;

(ii) Meet all observer education and health standards as specified in 50 CFR 679.50 and

(iii) Have successfully completed NMFS-approved training as prescribed by the At-Sea Hake Observer Program. Successful completion of training by an observer applicant consists of meeting all attendance and conduct standards issued in writing at the start of training; meeting all performance standards issued in writing at the start of training for assignments, tests, and other evaluation tools; and completing all other training requirements established by the Observer Program.

(3) Have not been decertified under paragraph (f)(3) of this section, or pursuant to 50 CFR 679.50.

(D) Agency Determinations on Observer Certification.

(1) Denial of a Certification. The NMFS observer certification official will issue a written determination denying observer certification if the candidate fails to successfully complete training, or does not meet the qualifications for certification for any other relevant reason.

(2) Issuance of an Observer Certification. An observer certification will be issued upon determination by the observer certification official that the candidate has successfully met all requirements for certification as specified in paragraph XX of this section. The following endorsements must be obtained, in addition to observer certification, in order for an observer to deploy.

(i) North Pacific Groundfish Observer Program certification training endorsement. A certification training endorsement signifies the successful completion of the training course required to obtain observer certification. This endorsement expires when the observer has not been deployed and performed sampling duties as required by the Observer Program Office for a period of time, specified by the Observer Program, after his or her most recent debriefing. The observer can renew the endorsement by successfully completing certification training once more.

(ii) North Pacific Groundfish Observer Program annual general endorsements. Each observer must obtain an annual general endorsement to their certification prior to his or her first deployment within any calendar year subsequent to a year in which a certification training endorsement is obtained. To obtain an annual general endorsement, an observer must successfully complete the annual briefing, as specified by the Observer Program. All briefing attendance, performance, and conduct standards required by the Observer Program must be met.

(iii) North Pacific Groundfish Observer Program deployment endorsements. Each observer who has completed an initial deployment after certification or annual briefing must receive a deployment endorsement to their certification prior to any subsequent deployments for the remainder of that year. An observer may obtain a deployment endorsement by successfully

completing all pre-cruise briefing requirements. The type of briefing the observer must attend and successfully complete will be specified in writing by the Observer Program during the observer's most recent debriefing.

(iv) At-Sea Hake Observer Program endorsements. A Pacific hake fishery endorsement is required for purposes of performing observer duties aboard vessels that process groundfish at sea in the Pacific whiting fishery. A Pacific whiting fishery endorsement to an observer's certification may be obtained by meeting the following requirements: Be a prior NMFS-certified observer in the groundfish fisheries off Alaska or the Pacific Coast, unless an individual with this qualification is not available; Receive an evaluation by NMFS for his or her most recent deployment (if any) that indicated that the observer's performance met Observer Program expectations for that deployment; Successfully complete a NMFS-approved observer training and/or Pacific whiting briefing as prescribed by the Observer Program; and Comply with all of the other requirements of this section.

(E) Limitations on Conflict of Interest. Observers:

(1) Must not have a direct financial interest, other than the provision of observer services, in a North Pacific fishery managed pursuant to an FMP for the waters off the coast of Alaska, or in a Pacific Coast fishery managed by either the state or Federal governments in waters off Washington, Oregon, or California, including but not limited to:

(i) Any ownership, mortgage holder, or other secured interest in a vessel, shore-based or floating stationary processor facility involved in the catching, taking, harvesting or processing of fish,

(ii) Any business involved with selling supplies or services to any vessel, shore-based or floating stationary processing facility; or

(iii) Any business involved with purchasing raw or processed products from any vessel, shore-based or floating stationary processing facilities.

(2) Must not solicit or accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from anyone who either conducts activities that are regulated by NMFS or has interests that may be substantially affected by the performance or nonperformance of the observers' official duties.

(3) May not serve as observers on any vessel or at any shore-based or floating stationary processing facility owned or operated by a person who previously employed the observers.

(4) May not solicit or accept employment as a crew member or an employee of a vessel or shore-based processor while employed by an observer provider.

(5) Provisions for remuneration of observers under this section do not constitute a conflict of interest.

(F) Standards of Behavior.

(1) Observers must avoid any behavior that could adversely affect the confidence of the public in the integrity of the Observer Program or of the government, including but not limited to the following:

Observers must:

(i) perform their assigned duties as described in the Observer Manual or other written instructions from the Observer Program Office.

(ii) report to the observer program office and the NMFS Office of Law Enforcement any time they refuse to board a vessel.



(iii) accurately record their sampling data, write complete reports, and report accurately any observations of suspected violations of regulations relevant to conservation of marine resources or their environment.

(iv) not disclose collected data and observations made on board the vessel or in the processing facility to any person except the owner or operator of the observed vessel or processing facility, an authorized officer, or NMFS.

(G) Suspension and Decertification.

(1) Suspension and decertification review official. The Regional Administrator (or a designee) will designate an observer suspension and decertification review official(s), who will have the authority to review observer certifications and issue initial administrative determinations of observer certification suspension and/or decertification.

(2) Causes for suspension or decertification. The suspension/decertification official may initiate suspension or decertification proceedings against an observer:

(i) When it is alleged that the observer has committed any acts or omissions of any of the following: Failed to satisfactorily perform the duties of observers as specified in writing by the NMFS Observer Program; or Failed to abide by the standards of conduct for observers as prescribed under paragraph XX of this section;

(ii) Upon conviction of a crime or upon entry of a civil judgment for: commission of fraud or other violation in connection with obtaining or attempting to obtain certification, or in performing the duties as specified in writing by the NMFS Observer Program; commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property; commission of any other offense indicating a lack of integrity or honesty that seriously and directly affects the fitness of observers.

(3) Issuance of Initial Administrative Determination. Upon determination that suspension or decertification is warranted under paragraph XX of this section, the suspension/decertification official will issue a written Initial Agency Determination (IAD) to the observer via certified mail at the observer's most current address provided to NMFS. The IAD will identify whether a certification is suspended or revoked and will identify the specific reasons for the action taken. If the IAD issues a suspension for an observer certification, the terms of the suspension will be specified. Suspension or decertification is effective immediately as of the date of issuance, unless the suspension/decertification official notes a compelling reason for maintaining certification for a specified period and under specified conditions.

(4) Appeals. A certified observer who receives an IAD that suspends or revokes his or her observer certification may appeal pursuant to paragraph XX of this section.

(i) Decisions on appeals of initial administrative decisions denying certification to, or suspending, or decertifying, an observer, will be made by the Regional Administrator (or designated official).

(ii) Appeals decisions shall be in writing and shall state the reasons therefore.

(iii) An appeal must be filed with the Regional Administrator within 30 days of the initial administrative decision denying, suspending, or revoking the observer's certification.

(iv) The appeal must be in writing, and must allege facts or circumstances to show why the certification should be granted, or should not be suspended or revoked, under the criteria in this section.

(v) Absent good cause for further delay, the Regional Administrator (or designated official) will issue a written decision on the appeal within 45 days of receipt of the appeal. The

Regional Administrator's decision is the final administrative decision of the Department as of the date of the decision.

(h) [Reserved]

(i) Catch weighing requirements.

(1) Approved scales. The owner and operator of a catcher/processor vessel must:

(i) Ensure that all catch is weighed in its round form on a NMFS-approved scale that meets the requirements specified at § 660.15(b);

(ii) Provide a NMFS-approved platform scale and test weights to the observer that meet the requirements specified at § 660.15(b) and § 660.160 (f)(2)(ix).

(2) At-sea scale tests. To verify that the scale meets the maximum permissible errors (MPEs) specified in this paragraph, the vessel operator must ensure that vessel crew test each scale used to weigh catch at least one time during each 24-hour period when use of the scale is required. The vessel owner must ensure that these tests are performed in an accurate and timely manner.

(i) Belt scales. The MPE for the daily at-sea scale test is plus or minus 3 percent of the known weight of the test material. The scale must be tested by weighing at least 400 kg (882 lb) of fish or an alternative material supplied by the scale manufacturer on the scale under test. The known weight of the fish or test material must be determined by weighing it on a platform scale approved for use under § 679.28 (b)(7).

(ii) Platform scales used for observer sampling. A platform scale used for observer sampling must be tested at 10, 25, and 50 kg (or 20, 50, and 100 lb if the scale is denominated in pounds) using approved test weights. The MPE for the daily at-sea scale test is plus or minus 0.5 percent.

(iii) Approved test weights. Each test weight must have its weight stamped on or otherwise permanently affixed to it. The weight of each test weight must be annually certified by a National Institute of Standards and Technology approved metrology laboratory or approved for continued use by the NMFS authorized inspector at the time of the annual scale inspection.

(iv) Requirements for all scale tests.

(A) Notify the observer at least 15 minutes before the time that the test will be conducted, and conduct the test while the observer is present.

(B) Conduct the scale test and record the following information on the at-sea scale test report form:

(1) Vessel name;

(2) Month, day, and year of test;

(3) Time test started to the nearest minute;

(4) Known weight of test weights;

(5) Weight of test weights recorded by scale;

(6) Percent error as determined by subtracting the known weight of the test weights from the weight recorded on the scale, dividing that amount by the known weight of the test weights, and multiplying by 100; and

(7) Sea conditions at the time of the scale test.

(C) Maintain the test report form on board the vessel until the end of the fishing year during which the tests were conducted, and make the report forms available to observers, NMFS staff, or NMFS authorized personnel. In addition, the vessel owner must retain the scale test report forms for 3 years after the end of the crab fishing year during which the tests were performed. All scale test report forms must be signed by the vessel operator.

(3) Scale maintenance. The vessel owner must ensure that the vessel operator maintains the scale in proper operating condition throughout its use, that adjustments made to the scale are made so as to bring the performance errors as close as practicable to a zero value, and that no adjustment is made that will cause the scale to weigh inaccurately.

(4) Printed reports from the scale. The vessel owner must ensure that the printed reports are provided as required by this paragraph. Printed reports from the scale must be maintained on board the vessel until the end of the year during which the reports were made, and be made available to NMFS staff or NMFS authorized personnel. In addition, the vessel owner must retain printed reports for 3 years after the end of the year during which the printouts were made.

(i) Reports of catch weight and cumulative weight. Reports must be printed at least once every 24 hours prior to submitting a landing report as described in § XXXX. Reports must also be printed before any information stored in the scale computer memory is replaced. Scale weights must not be adjusted by the scale operator to account for the perceived weight of water, mud, debris, or other materials. Scale printouts must show:

- (A) The vessel name and Federal vessel permit number;
- (B) The date and time the information was printed;
- (C) The haul number as recorded in the processors DCPL
- (D) The Total weight of the haul; and

(E) The total cumulative weight of all fish and other material weighed on the scale since the last annual inspection

(ii) Printed report from the audit trail. The printed report must include the information specified in sections 2.3.1.8, 3.3.1.7, and 4.3.1.8 of appendix A to 50 CFR part 679. The printed report must be provided to the authorized scale inspector at each scale inspection and must also be printed at any time upon request of NMFS staff or other NMFS-authorized personnel.

(iii) Platform scales used for observer sampling. A platform scale used for observer sampling is not required to produce a printed record.

\* \* \* \* \*



Trawl Rationalization

# *Regulatory Deeming*

June 2010

**NOAA  
FISHERIES  
SERVICE**



## TRat progress

### NEPA Documents:

Both Am 20 & 21 FEISs should publish in late June

### 3 or more rulemakings-

1. Data Collection Rule (final rule published 1/29)
  - *Potential participants in TRat program should complete an ownership interest form .*
  - *Potential participants should check their data.*
  - ***Deadline extended: late May 2010 → July 1, 2010***



## TRat progress

### 3 or more rulemakings-

#### 1. Data Collection Rule

#### 2. Initial Issuance Rule & FMP Review

- *Will announce NMFS approval or disapproval of FMP AM 20 & 21 and EIS review*
- *If approved, will announce draft regulations for the following:*
  - *Allocations (from Am 21)*
  - *Initial issuance and appeals (IFQ, MS, C/P)*
  - *Reorganized groundfish program regulations (includes existing observer program regulations)*
- *Schedule*
  - ***Open for public comment through July 12, 2010***
  - *August – final rule publishes*
  - *Sep-Dec – initial issuance & appeals*
  - *1/1/2011 – TRat program implemented*

#### 3. Program Components Rule



## TRat progress

1. Data Collection Rule
2. Initial Issuance Rule & FMP Review
3. Program Components Rule

- *Will announce draft regulations for the following:*
  - *Program components*  
*(IFQ gear switching, new observer program requirements, equipment requirements, catch monitors, catch weighing requirements, coop permits/agreements, first receiver site licenses, vessel accounts, etc.)*
  - *Further tracking and monitoring components*
  - *Mandatory economic data collection*
- *Schedule*
  - *April & June – PFMC meetings – regulatory deeming*
  - *Aug – proposed rule publishes*
  - *Nov – final rule publishes*
  - *1/1/2011 – TRat program implemented*

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# NMFS Clarifications Requested of Council

**NOAA  
FISHERIES  
SERVICE**





## NMFS clarifications

### Issue 1: QS permit renewal.

#### What happens if a QS permit is not renewed on time?

- **A:** *Not renewed between 9/15-11/30, have until 9/1 of the following year to renew and get QP or IBQ pounds. They would not be redistributed.*
- **B:** *Not renewed between 9/15-11/30, QP or IBQ pounds get redistributed to all other QS permit owners that renewed on time.*
  - **Sub-B:** *Same as B except that if not renewed between 6/15-8/31, hardship provision in cases of illness, injury, or death would extend deadline to September 30.*



## NMFS clarifications

### Issue 2:

How many decimal places should transfers of QS be divisible to?

- *A (NMFS-preferred): to 0.001%*
- *B: to the smallest percent any person is issued for any species during the initial issuance process.*
- *C: based on a minimum of 1 pound.*

### Issue 3:

Is IBQ transferable in the first 2 years?

- *A (NMFS-preferred): IBQ not transferable, but IBQ pounds are*
- *B: IBQ and IBQ pound are transferable*



## NMFS clarifications

### Issue 4:

What are the ownership rules applicable to MS/CV endorsed permits and MS permits?

- A: *not subject to individual and collective rule*
- B: *subject to individual and collective rule*

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# NMFS Interpretations of Council Intent

**NOAA  
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## NMFS interpretations

### State employees as CM

- 4) *NMFS is continuing to explore this.*

### QS and IBQ transfer deadline

- 9) *No transfers between 12/1-31.*

### Changes in vessel registration

- 11) *Effective date for change in MS/CV endorsed permit is the start of the next cumulative limit period.*



## NMFS interpretations

### Coop report deadline March 31

- 13) Preliminary report would be to Council in November.  
Final report to NMFS by March 31 (aligns with coop  
permit renewal process 2/1-3/31).*

### Coop failure & coop agreement

- 15) & 16) Language changes noted*

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# Draft Program Components Rule

**NOAA  
FISHERIES  
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## program components rule

### Note corrections:

- *P. 46 – delete “other fish” from vessel limit table*
- *P. 69 - gear switching*

### Items that need drafted:

- *Interim first receiver site license & CM providers*
- *Reallocation language from App.D (A-2.1.6)*





## gear switching concerns

### Seaward non-trawl RCA

Based on the spex decision for overfished species, the non-trawl RCA will likely be specified at 100 for most of the coast and 125 fm in one or more areas (N. Pt Chehalis, Cascade Head to 43)

- In the north, fixed gear YE rates are highest between 100 and 125 fm

### Shoreward non-trawl RCA

Based on the spex decision for overfished species, the non-trawl RCA will likely be:

- Closed to shore in WA
- 20 fm for OR and N CA
- 60 fm S of 34-27
- No nearshore allocations were made to the trawl fleet
- High YE bycatch rates in this area, could exceed the trawl allocation



Questions?

# Economic Data Collection (EDC) for Monitoring the Effects of Trawl Rationalization

Todd Lee, Ph.D.  
NOAA Fisheries  
Northwest Fisheries Science Center  
Seattle, WA  
[todd.lee@noaa.gov](mailto:todd.lee@noaa.gov)

June 2010



# Objectives

- Follow guidance in Council's economic data collection provision
  - Study impacts of program
  - Determine whether goals and objectives are achieved
  - Data may be used to analyze future FMP amendments
- MSA reporting requirements to determine if program is attaining its goals
- Work closely with the Council, advisory panels, industry, participants and others to
  - Develop a valid and useful data collection program
  - Minimize burden

# Economic Analysis

- Regional economy economic impacts
  - Effects on communities and regions: employment, income and output
  - Changes in expenditures
  - Changes in distribution of economic activity
- Economic returns and performance
  - Net benefits
  - Economic efficiency

# Data Needed to Monitor Rationalization

- More data than currently collected voluntarily
  - Catcher vessels: some additional information
  - Catcher processors, and motherships, first receivers and shorebased processors: new surveys
- Need data for several years prior to rationalization – baseline data
- Annual surveys

# Program Overview

- Baseline data from 2009 and 2010 (collected in 2011)
- Ongoing annual data collection starting with 2011 data collected in 2012
- EDC Questionnaires
  - Catcher Vessels
  - Catcher processors
  - Motherships
  - First receivers and shorebased processors

# Program Overview (continued)

- Unit of analysis is an operating entity.  
One EDC for each operation.
  - Each person who operates a vessel (i.e., owner, lessee, and charter)
  - Each person who is a first receiver or shorebased processor
- Data confidentiality



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COMMITTEE ON  
ENERGY AND COMMERCE

COMMITTEE ON  
NATURAL RESOURCES



## Congress of the United States

### House of Representatives

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May 10, 2010

RECEIVED

MAY 12 2010

PFMC

Jane Lubchenco, Ph.D.  
Administrator  
National Oceanic and Atmospheric Administration  
1401 Constitution Avenue, NW  
Washington, DC 20230

Dear Dr. Lubchenco:

I commend your leadership in innovating fishery management tools that support healthy fisheries and economies in coastal communities, including well designed catch share programs. Catch shares may prove to address some of the economic and environmental problems facing our Nation's fisheries and fishing families.

I believe catch share management is not a simple "silver bullet" solution. Catch shares can have many benefits, including bringing harvesting capacity into alignment with resource availability, helping fishers avoid bycatch of overfished species, and increasing the quality and value of their harvest. However, catch shares can also have drawbacks. If the catch share is designed improperly, it could result in fleet consolidation that makes it difficult for small boat owner-operators to enter or remain in the fishery, change fishing and landing patterns, and distribution of fishery revenues that disrupt the economies of fishing communities.

I firmly believe that in developing catch share programs, we must involve coastal communities and fishery stakeholders in the design, with the goal of preventing or mitigating these undesirable side effects, while capturing the potential benefits that catch shares may offer to a particular region.

Today, I am writing to request that NOAA Fisheries participate in and support a unique project that could contribute substantially to the economic and social health of fishing communities in my congressional district, and could provide a model for structuring catch share systems to directly benefit fishing communities.

As you know, my district is home to the Central Coast Groundfish Project (CCGP), an innovative partnership among fishers, community representatives, The Nature Conservancy and others. This partnership is working to maximize the local economic, social and environmental benefits of the soon-to-be implemented West Coast groundfish trawl Individual Quota (IQ) program. Their work has focused on improving the economic and environmental performance of the fishery through transitioning traditional trawl fishing to more selective gear types as well as beginning to develop a local Community Fishing Association (CFA). This CFA would act as a collective fishing arrangement that could hold and manage quota share for local fishers and ensure that the Central Coast communities do not lose their traditional fishing access to local groundfish resources as the result of consolidation or migration of quota under the new IFQ program.

The Pacific Fishing Management Council and the National Marine Fisheries Service are striving mightily to implement catch shares in the Pacific Coast groundfish fishery by January 1, 2011. Under the program rules, the Central Coast quota will be initially allocated to TNC, and will remain intact and non-transferable for the first two years of the program. After the two year moratorium on transfer expires, TNC would like to transfer the quota it receives to a Central Coast CFA, to maintain CCGP continuity. However, unless the program is modified to allow CFAs to hold quota in excess of the program's IFQ accumulation limits, the CFA may be limited to holding only up to the amount of quota intended to be the maximum for an individual, not a collective of fishers working together. This will impede a CFA's ability to anchor enough quota in a small scale fishing community to keep it economically viable. For TNC, the absence of a CFA term in the program will mean that it will be forced to divest of approximately two-thirds of the quota it receives, to be transferred to two or more unrelated parties, or it would be revoked and redistributed among the remainder of the shoreside trawl fleet. Either of those results would have a significant adverse impact on the Central Coast fishing communities and the model and lessons this project could provide for the Pacific Coast groundfish IQ program and other new catch share programs.

The Pacific Fishery Management Council has tentatively scheduled CFA scoping for September, 2010, as part of a trawl IQ program trailing amendment. However, to prevent the CCGP from being disrupted, a CFA alternative must be developed, adopted and fully implemented on an expedited basis, and in any event not later than January 1, 2013, the date on which the IQ program moratorium on quota transfer expires.

Given the demand placed on their staffs by IQ program implementation and the obligation to adopt Annual Catch Limits (ACLs) and Accountability Measures (AMs) for the fisheries under their jurisdiction, I believe that it will be difficult for the Pacific Council and NMFS Northwest Region to move forward expeditiously with CFA implementation unless they receive additional support from NOAA. That support should include additional staff to assist the Council and the NMFS Northwest Region developing and analyzing CFA alternatives, and additional staff to assist the NMFS Northwest Region and NOAA General Counsel with tasks such as drafting regulations. I encourage NOAA to make the Central Coast CFA project a priority, and ask that NOAA provide the Pacific Council with the support necessary to have a CFA alternative implemented as soon as possible.

As a separate but related matter, the CCGP and other interests in the industry are encouraging the use of electronic monitoring (video cameras) for hook and line and trap vessels ("fixed gear boats") immediately upon implementation of the program, to avoid significant community impacts that will occur as the smaller boat fleet reacts to the extremely high cost associated with 100% observer coverage. This type of monitoring has proven effective in other similar fisheries and its lower cost is essential for our new fishery model to be economically viable.

Very low quota availability for overfished species, the loss of large processing facilities on the Central Coast, changes in the seafood market, and our interest in improving the environmental performance of the fishery have generated strong fleet-wide interest in transitioning some portion of traditional bottom trawl fishing effort to hook and line and traps. These lower volume/overhead fishing operations allow fish to be harvested in a premium quality condition and fishers to obtain higher value markets. However, IFQ management will require full catch accountability and reporting. If these requirements are met solely through human observer coverage, the costs will be

extremely burdensome, if not prohibitive, for small fixed gear vessels. I am therefore requesting that NOAA make development and implementation of a cost effective electronic monitoring program for fixed gear vessels a top priority item.

Specifically, I request that NOAA initiate that program by providing the funding necessary to restart an experimental electronic monitoring program that the CCGP began two years ago, but had to drop due to cost considerations. Contractors experienced with conducting electronic monitoring experiments estimate that a full year of research including hardware leasing, data analysis and reporting would cost approximately \$200,000. This would be a wise upfront investment for the fishery, facilitating the development of a monitoring program that results in improved data collection and reduced costs for fishers and fishery managers. The development of electronic monitoring for fixed gear fishing can also help us test and prove the use of modern monitoring and reporting technologies into the rest of the fishery. Another exciting technological advancement in the CCGP is an online database, coined "eCatch", which is used to turn catch information—traditionally captured on paper forms—into spatial depictions. Fishers in the project have formed a type of "information-collective," sharing all their catch data so it can be mapped and accessed by all fishers participants by simply logging into their eCatch online account. The collection and spatial assessment of this large stream of information is allowing fishers to work together to avoid overfished species while also more effectively fish for target species. CCGP project managers are now working on the next phase of eCatch – remote entry of catch data directly from the boat to improve data quality, shorten the time it takes to make information accessible, and reduce data management costs. I look forward to updating you on the progress made on eCatch.

The West Coast groundfish trawl fleet's transition to catch shares will provide us with invaluable lessons and models as we work toward our common goal of restoring our marine ecosystems. I look forward to collaborating with you and your staff on this exciting endeavour. In that spirit, I request that you provide me with a written response that identifies the actions NOAA will take to address my requests related to CFA and electronic monitoring program implementation.

Thank you in advance for your prompt response.

Sincerely,

A handwritten signature in black ink, reading "Lois Capps". The signature is fluid and cursive, with the first name "Lois" and last name "Capps" clearly distinguishable.

**LOIS CAPPS**  
**Member of Congress**

cc: Mr. Eric Schwaab, NOAA Assistant Administrator for Fisheries  
Mr. Galen Tromble, Chief, Domestic Fisheries Division, NMFS  
Mr. David Ortmann, Chair, Pacific Fishery Management Council  
Mr. Barry Thom, Acting Regional Administrator, Northwest Region, NMFS

DRAFT COMPONENT REGULATIONS  
REPORT OF THE REGULATORY DEEMING WORKGROUP (WORKGROUP)

The Regulatory Deeming Workgroup (Workgroup) met May 20-21 in Seattle Washington and reviewed a draft version of the trawl rationalization components rule provided to the group May 19, 2010. This document showed in track changes modifications to the component rule that were made since the April 2010 Council meeting. The Workgroup had numerous comments on the May 19 version of the rule. Some of its thematic concerns are summarized below.

The Workgroup will meet again on June 10 and 11 to review an updated version of the rule. The Workgroup ***strongly*** requests that the version of the components rule that it will be expected to review at its next meeting be provided at least 48 hours in advance of that meeting.

**General Comments**

The following are some of the general categories of concern identified by the Workgroup. At its June 10-11 meeting, the Workgroup will review the next version of the regulations to determine whether its specific concerns remain and will develop a more detailed report for the Council on remaining concerns. That report will also cover any new concerns that arise as a result of its review of the version of the draft regulations available at its June meeting.

Gear Switching and Declarations. Consideration should be given to allowing more than one gear to be used on an IFQ trip (see 660.12 (d)(5)(A)). The Council does not appear to have addressed this issue previously. The workgroup also recommends that in order to provide flexibility, both for gear usage and in the use of management measures such as closed areas, the declarations for IFQ gear switching should be divided into two nontrawl types: hook-and-line, and pot.

Observers and Shoreside Catch Monitors. Some of the major concerns of the Workgroup related to the impacts of the regulations on recruiting from local communities. One of these concerns was that conflict of interest provisions not encompass more potential conflicts than is necessary. Some other concerns were that the maximum lengths of deployment not be too restrictive and that overnight accommodation reimbursement provisions take into account the fact that observers and catch monitors may live in the local communities or establish temporary residences there. The Workgroup also questioned the need for a provision preventing an IFQ observer from being used to comply with observer coverage requirements for any other Pacific Coast groundfish fishery (see 660.16(c)).

With respect to observers for the shoreside IFQ fishery, the Workgroup was concerned that regulations placed a responsibility on the plant for ensuring that the vessel they receive fish from was in compliance with the observer provision. This did not seem appropriate (see 660.112(b)(2) (v))

The Workgroup felt observers should be able to access and view data on the vessel's position but not use the equipment. It therefore recommends deleting "and the use of" where it pertains to observer access to navigational equipment (e.g. 660.140(h)(2)(iv)).

Sections specifying the observer providers' obligation to provide observers to vessels need to be revised to take into account how an observer provider's contractual obligation to particular vessels arises (e.g. 660.140(h)(4)(v)). An observer provider is not required to provide an observer to any vessel that requests an observer without there being some established agreement.

QS Renewal. Requiring QS permit renewal by December 31 is too late (660.140(d)(3)(i)). QS is held in the accounts of QS permit holders. What happens to the QP that would go to a QS permit which is not renewed? Is it withheld pending QS permit renewal; or does it get redistributed to the remainder of the QS permits (i.e. the non-renewed QS permit loses QP distribution for the coming year, providing an incentive for renewing on time)?

QP Account Information. Since QP control has a bearing on QS control, add a requirement for the submission of ownership information similar to what is required for QS permits (see 660.140(e)(2)(ii)).

Whiting Fishery. The workgroup had numerous concern about provisions related to management of the whiting fishery including: whether or not a season start date needed to be maintained, whether there is a need to specify a season end date, whether there is a need to use trip limits to control harvest outside the primary whiting season, how the 5% limit on early season harvest in the south would be implemented, and that various conservation zones for the whiting fishery (marked for deletion) would need to be maintained.

Co-ops (Mothership and Catcher Processor). The Workgroup had numerous concerns about responsibilities being assigned to co-ops including requirements that they collect mandatory economic data forms and fees from their members for submission to NMFS. All mandatory economic data submissions and fees should be the responsibility of the harvesting vessels (including vessels that participate in the at-sea non-co-op fishery).

On another matter related to co-op responsibilities, it should be clarified that the co-ops will be responsible for ensuring that they do not go over the individual allocations and NMFS should only close co-ops when such allocations are reached (not when they are *projected* to be reached). This would be consistent with the Council's final preferred alternatives.

Three days is an unnecessarily tight time frame for notifying NMFS of changes to co-op agreements, particularly given that it is not even three business days (e.g. 660.150(e)(1)(iii)(B)(4)). Thirty days would be more reasonable. Consideration needs to be given to differentiating between those changes that are important to monitoring and enforcing the program and those which are less important. Less important changes need to be treated with more latitude.

Co-ops (Mothership). Draft regulations need to be adjusted to indicate that vessels without mothership catcher vessel endorsements that are fishing for members of the co-op are not themselves members of the co-op.

Mothership coop failure provisions seem unnecessary. These regulations should be written from the perspective of "mothership co-op permit validity."

Co-ops (Catcher-Processor). The Workgroup expressed concern with the role that NMFS would play in defining co-op failure (660.160(b)(3)(iii)(A)). Is it the Council's intent that NMFS determine a failure has occurred or that this determination be made by the Council after notice to the Council that certain criteria have not been?

Cost Recovery. Eliminate language in sections specifying measures related to cost recovery and leave for development as part of the full regulatory package on cost recovery.

ENFORCEMENT CONSULTANTS REPORT ON REGULATORY DEEMING FOR  
FISHERY MANAGEMENT PLAN (FMP) AMENDMENT 20 (TRAWL  
RATIONALIZATION) AND AMENDMENT 21 (INTERSECTOR ALLOCATION)

The Enforcement Consultants (EC) have reviewed Agenda Item B.6.a, Proposed Groundfish Fishery Management Plan Amendment 20 (Trawl Rationalization); Agenda Item B.6.b Supplemental NMFS Report 2, Draft Proposed Regulations for Amendment 20 and 21, Program Components Rule; Supplemental NMFS Report 3, NMFS Interpretations and Request for Clarifications; the Regulatory Deeming Workgroup Report on Draft Components Regulations; and Supplemental Regulatory Deeming Workgroup Report 2, Regulatory Deeming Workgroup Report on Regulations Deeming for Fisheries Management Plan Amendment 20 and Amendment 21. We have also received the briefing from National Marine Fisheries Service (NMFS) on their response to the Regulatory Deeming Workgroup Report that you received earlier in this agenda item. Having reviewed the above mentioned documents and taking into account the response briefing from NMFS, we find no conflicts or inconsistencies within the Components Rule (inclusive of the NMFS response briefing) and Council intent as reflected by Council decisions to date.

We would like to take this opportunity to congratulate those who have been involved in bringing this Draft Components Rule to this deeming decision point. We especially appreciate that NMFS has taken this opportunity during this regulation development process to reorganize the regulations for all West Coast groundfish fisheries. We believe this reorganization is an important and helpful step in clarifying a complex, yet necessary, regulation package.

PFMC  
06/15/10

GROUND FISH ADVISORY SUBPANEL REPORT ON REGULATORY DEEMING FOR  
FISHERY MANAGEMENT PLAN (FMP) AMENDMENT 20 (TRAWL  
RATIONALIZATION) AND AMENDMENT 21 (INTERSECTOR ALLOCATION)

The Groundfish Advisory Subpanel (GAP) received information from Ms. Jamie Goen, Ms. Janell Majewski, and Mr. Dayna Matthews (National Marine Fisheries Service). Mr. Merrick Burden summarized the Regulatory Deeming Workgroup (RDW) meetings and their two reports. The GAP appreciates the work of the RDW in facilitating consideration of the draft Components Rule. We agree with their finding that the current draft is generally consistent with Council action. However, we also understand that some sections of the rule have yet to be developed and issues raised by the RDW have not been fully addressed. Therefore, the GAP recommends the RDW meet again to review the final draft Components rule. The GAP also recommends the Council delegate authority to the Executive Director for final deeming of the Components Rule.

The GAP discussed in detail the Mandatory Economic Data Collection (EDC) provisions in the Components Rule. The GAP recommends the Council request from NMFS clear assurance that EDC information will be kept in the strictest confidence. Related to the EDC, the GAP agrees with the RDW that current language preventing renewal of all permits owned by a person is unnecessarily punitive and could have dramatic consequences. For example, the proposed regulations deny renewal of all permits in which a person holds a direct or indirect interest if EDC information is not submitted by a third-party operating under one of those permits. The GAP agrees with the RDW that this is excessively punitive on a person with no control over actions of a third-party. The GAP recommends NMFS not take this approach. An alternative approach is already provided in regulations, which makes it a regulatory violation for a person to not submit EDC information. The GAP prefers this direct approach.

PFMC  
06/16/10

## NMFS Rulemaking Schedule

### 1. DATA COLLECTION RULE (75 FR 4684, January 29, 2010)

Rule includes:

- Requirement for ownership interest forms to be completed by May 1, 2010
- Notice for industry to make data requests & any necessary corrections by late May (when the initial issuance proposed rule publishes)

### 2. INITIAL ISSUANCE RULE

(proposed rule available for public inspection June 1, 2010; published June 10, 2010)

Rule would go forward with the Amendment 20 & 21 FMP Review (approval/disapproval) package, and would include:

- Allocations (from Am 21)
- Initial issuance/appeals regulations (IFQ, MS, C/P)
- Groundfish program regulation reorganization (necessary because of the trawl rationalization program and must be before spex; includes existing groundfish observer program regulations)

Deeming: March & April Council meetings

PR: June 2010

FR: Aug 2010

Implementation:

Application/initial issuance process: Aug - Dec 2010

Appeals: Sep 2010 – early/mid 2011

### 3. PROGRAM COMPONENTS RULE

Rule would include:

- Program components (IFQ gear switching, new observer program requirements, retention requirements, equipment requirements, catch monitors, catch weighing requirements, coop permits/agreements, first receiver site licenses, vessel QP accounts, etc.)
- Further tracking & monitoring components
- Mandatory economic data collection requirements

Deeming: April & June Council meetings

PR: Aug 2010

FR: Nov 2010

Implementation: January 1, 2011



<b>Projected Date (2010)</b>	<b>Action</b>
April 10-15	Council meeting (deeming initial issuance rule)
April 30	initial issuance proposed rule submitted to HQ
May 7	Am 20 & 21 transmitted from Council to NMFS
May 12	NOA for Am 20 & 21 publishes
June 1	initial issuance proposed rule available for public inspection, comment period opens
June 10	initial issuance proposed rule publishes
June 12-17	Council meeting (deeming program components rule)
June 18	NEPA: Am 20 & 21 FEISs submitted to EPA
June 25	NEPA: NOA for Am 20 & 21 FEISs published by EPA
July 12	Public comment period ends for NOA and initial issuance proposed rule
July 19	program components proposed rule submitted to HQ
July 26	NEPA: cooling off period ends for Am 20 & 21 FEISs
July 30	NEPA: Am 20 & 21 RODs signed
August 3	initial issuance final rule submitted to HQ
August 10	NMFS Decision on Am 20 & 21
August 18	program components proposed rule publishes
August 27	initial issuance final rule publishes; <b>Applications available</b> (for initial issuance of QS, MS permit, MS/CV endorsement with catch history assignment, or C/P endorsement)
September 11-16	Council meeting (program components proposed rule open for public comment)
September 17	Public comment period ends for program components proposed rule
September 27	initial issuance final rule effective, 30-day cooling off ends
October 26	<b>Application deadline</b> (for initial issuance of QS, MS permit, MS/CV endorsement with catch history assignment, or C/P endorsement)
November 1	program components final rule submitted to HQ
November 4-9	Council meeting
November 30	program components final rule publishes
December 28	program components final rule effective, 30-day cooling off ends
January 1, 2011	Implementation

**Key:**

C/P: catcher/processor

EPA: Environmental Protection Agency

FEIS: final environmental impact statement

MS: mothership

MS/CV: mothership catcher vessel

NEPA: National Environmental Policy Act

NOA: Notice of Availability

QS: quota share

ROD: record of decision

## Draft Proposed Regulations for Am 20 & 21

# PROGRAM COMPONENTS RULE

### comparison between 5/19 and 6/7 versions

This rule will include:

- Program components  
(IFQ gear switching, new observer program requirements, retention requirements, equipment requirements, catch monitors, catch weighing requirements, coop permits/agreements, first receiver site licenses, vessel accounts, etc.)
- Further tracking and monitoring components
- Mandatory economic data collection

Below are the page numbers for certain sections of this draft rule:

660.140 Shorebased IFQ Program (p. 38)  
660.150 Mothership Coop Program (p. 70)  
660.160 Catcher/Processor Coop Program (p. 107)

**Note:** Cross references to other sections within the regulations are highlighted in yellow and have not yet been updated.

**Disclaimer:** These draft regulations will be reorganized and/or revised as they go through the agency review process. Additional issues may arise as the program is reviewed by NMFS. Amendments 20 & 21 to the Groundfish FMP have not yet been approved or implemented by NMFS. NMFS and the Council staff are currently clarifying issues raised by these amendments and working on implementation issues.

**KEY:**

Yellow highlighted text = cross references

Grey highlighted text = paragraphs from initial issuance rule that aren't changing and will not be published in the program components rule, but are included here to orient the reader

\* \* \* = language in that paragraph remains the same

\* \* \* \* \* = some language is skipped, look at instructions for the section for more details.

For the reasons set out in the preamble, 15 CFR Chapter IX and 50 CFR Chapter VI are proposed to be amended as follows:

15 CFR Chapter IX

PART 902--NOAA INFORMATION COLLECTION REQUIREMENTS UNDER THE  
PAPERWORK REDUCTION ACT: OMB CONTROL NUMBERS

1. The authority citation for part 902 continues to read as follows:

Authority: 44 U.S.C. 3501 et seq.

2. Amend the table in § 902.1(b) under 50 CFR by:

a. Removing the entries and corresponding OMB numbers for §§ XXXXX.

b. Adding new entries and corresponding OMB numbers for §§ 660.20, 660.25, 660.55, 660.113, 660.131, 660.213, 660.219, 660.313, 660.319, and 660.353.

The revisions and additions read as follows:

§ 902.1 OMB control numbers assigned pursuant to the Paperwork Reduction Act.

\* \* \* \* \*

(b) Display.

-----  
CFR part or section where the  
information collection requirement is      Current OMB control number  
located      (all numbers begin with 0648-)  
-----

\* \* \* \* \*

50 CFR

\* \* \* \* \*

660.113.....	—0271
660.131.....	—0243
660.20.....	—0355
660.213.....	—0271
660.219.....	—0355
660.25.....	—0203

660.313.....	-0271
660.319.....	-0355
660.353.....	-0271
660.55.....	-0352
660.55.....	-0243

\* \* \* \* \*

## 50 CFR Chapter VI

### PART 660--FISHERIES OFF WEST COAST STATES

3. The authority citation for part 660 continues to read as follows:

Authority: 16 U.S.C. 1801 et seq. and 16 U.S.C. 773 et seq.

4. INSTRUCTION – In section 660.11, new definitions for “charterer,” “complete economic data collection questionnaire,” and “lessee” are added in alphabetical order to read as follows:

#### § 660.11 General definitions. \* \* \*

\* \* \* \* \*

Charterer means, for the purpose of defining who is responsible for submitting the EDC, a person, other than the owner of the vessel, who: signed any agreement or commitment by which the possession or services of the vessel are secured for a period of time, or for one or more voyages, for the bareboat use of the vessel. A long-term or exclusive contract for the sale of all or a portion of the vessel's catch or processed products is not considered a charter.

\* \* \* \* \*

Complete economic data collection questionnaire means that a response is supplied for each question, sub-question, and answer-table cell. If particular question or sub-question is not applicable, “NA”, must be entered in the appropriate space on the questionnaire. The questionnaire must also be signed and dated to certify that the information is true and complete to the best of the signatory’s knowledge.

\* \* \* \* \*

Lessee means, for the purpose of defining who is responsible for submitting the EDC, a person, other than the owner of the vessel or facility, who: was identified as the leaseholder, in a written lease, of the vessel or facility, or paid expenses of the vessel or facility, or claimed expenses for the vessel or facility as a business expense on a federal income tax return, or on a state income tax return.

\* \* \* \* \*

4. INSTRUCTION – In section 660.12, paragraph (f) is renumbered paragraph (g), and a new paragraph (f) is added to read as follows:

#### § 660.12 General groundfish prohibitions. \* \* \*

\* \* \* \* \*

##### (a) General. \* \* \*

(b) Reporting and recordkeeping. \* \* \*

(c) Limited entry fisheries. \* \* \*

(d) Limited entry permits. \* \* \*

(e) Groundfish observer program. \* \* \*

(f) Groundfish catch monitor program.

(1) Forcibly assault, resist, oppose, impede, intimidate, harass, sexually harass, bribe, or interfere with a catch monitor.

(2) Interfere with or bias the sampling monitoring procedure employed by a catch monitor, including either mechanically or manually sorting or discarding catch before sampling its monitored.

(3) Tamper with, destroy, or discard a catch monitor's collected samples, equipment, records, photographic film, papers, or personal effects ~~without the express consent of the catch monitor~~.

(4) Harass a catch monitor by conduct that:

(i) Has sexual connotations,

(ii) Has the purpose or effect of interfering with the catch monitor's work performance, and/or

(iii) Otherwise creates an intimidating, hostile, or offensive environment. In determining whether conduct constitutes harassment, the totality of the circumstances, including the nature of the conduct and the context in which it occurred, will be considered. The determination of the legality of a particular action will be made from the facts on a case-by-case basis.

(5) Receive, purchase, or take custody, control, or possession of a delivery without catch monitor coverage when such coverage is required under § 660.140, subpart D.

(6) Fail to allow the catch monitor unobstructed access to catch sorting, processing, catch counting, catch weighing, or electronic or paper fish tickets.

(7) Fail to provide reasonable assistance to the catch monitor.

~~(8) Fail to provided notification of a delivery in person, by personal communications radio, or by telephone of planned facility operations, including the receipt of fish, at least 30 minutes and not more than 2 hours prior to the start of the planned operation, unless the catch monitor specifically requests other arrangements.~~

~~(9)(8)~~ Require, pressure, coerce, or threaten a catch monitor to perform duties normally performed by employees of the first receiver, including, but not limited to duties associated with the receiving of landing, processing of fish, sorting of catch, or the storage of the finished product.

(g) Vessel monitoring systems. \* \* \*

3. INSTRUCTION- In section 660.13, paragraph (d)(5)(iv) introductory text and paragraphs (d)(5)(iv)(A)(1) through (4), ~~(7)~~, and (6) through (8) are revised to read as follows: § 660.13 Recordkeeping and reporting.

\* \* \* \* \*

(d) Declaration reporting requirements. \* \* \*

(5) Declaration reports.

~~(iv)~~ \* \* \*

(iv) Declaration reports will include: the vessel name and/or identification number, and gear type (as defined in paragraph (d)(5)(iv)(A) of this section). Upon receipt of a declaration report, NMFS will provide a confirmation code or receipt to confirm that a valid declaration report was received for the vessel. Retention of the confirmation code or receipt to verify that a valid declaration report was filed and the declaration requirement was met is the responsibility of the vessel owner or operator. Vessels using nontrawl gear may declare more than one gear type with the exception of vessels participating in the Shorebased IFQ Program (i.e. gear switching), however, vessels using trawl gear may only declare one of the trawl gear types listed in paragraph (d)(5)(iv)(A) of this section on any trip and may not declare nontrawl gear on the same trip in which trawl gear is declared.

(A) One of the following gear types or sectors must be declared:

- (1) Limited entry fixed gear, not including shorebased IFQ fishery
- (2) Limited entry fixed gear, shorebased IFQ
- (3) Limited entry midwater trawl, non-whiting shorebased IFQ,
- (4) Limited entry midwater trawl, Pacific whiting shorebased IFQ,

\* \* \*

(5) Limited entry midwater trawl, Pacific whiting catcher/processor sector,

(6) Limited entry midwater trawl, Pacific whiting mothership sector; (catcher vessel or mothership),

(7) Limited entry bottom trawl, shorebased IFQ, not including demersal trawl,

(8) Limited entry demersal trawl, shorebased IFQ,

\* \* \*

(B) [Reserved]

\* \* \* \* \*

5. INSTRUCTION – In section 660.14, paragraph (b)(1) is revised to read as follows:  
§660.14 Vessel Monitoring System (VMS) requirements. \* \* \*

(b) Who is required to have a VMS?

(1) Any vessel registered for use with a limited entry “A” endorsed permit (i.e., not a MS permit) that fishes in state or Federal waters seaward of the baseline from which the territorial sea is measured off the States of Washington, Oregon or California (0–200 nm offshore).

\* \* \* \* \*

5. INSTRUCTION – In section 660.15, paragraphs (a) through (d) are revised to read as follows:

§ 660.15 Equipment requirements.

(a) Applicability. This section contains the equipment and operational requirements for scales used to weigh catch at sea, scales used to weigh catch at IFQ first receivers, computer hardware for electronic fish ticket software, and computer hardware for electronic logbook software. ~~All~~ The operator or manager must retain a copy of all records described in this section

~~must be retained as specified at § 660.113, subpart D, and made~~ make available the records upon request of NMFS staff or ~~NMFS-authorized personnel officer.~~

(b) ~~Performance and technical requirements for scales~~ Scales used to weight catch at sea - performance and technical requirements.

(1) Scales approved by NMFS for MS and C/P coop programs. A scale used to weigh catch in the MS and C/P coop programs must meet the type evaluation and initial inspection requirements set forth in § 679.28(b)(1) and (2)-, and must be approved by NMFS.

(2) Annual inspection. Once a scale is installed on a vessel and approved by NMFS for use, it must be inspected annually as described in § 679.28(b).

(3) Daily testing. Each scale must be tested daily and meet the maximum permissible error (MPE) requirements described at described at §§ 660.150 in MP catch weighing section 660.160 CP catch weighing sections, subpart D paragraph (b)(4) of this section.

(4) At-sea scale tests. To verify that the scale meets the maximum permissible errors (MPEs) specified in this paragraph, the vessel operator must ensure that vessel crew test each scale used to weigh catch at least one time during each 24-hour period when use of the scale is required. The vessel owner must ensure that these tests are performed in an accurate and timely manner.

(i) Belt scales. The MPE for the daily at-sea scale test is plus or minus 3 percent of the known weight of the test material. The scale must be tested by weighing at least 400 kg (882 lb) of fish or an alternative material supplied by the scale manufacturer on the scale under test. The known weight of the fish or test material must be determined by weighing it on a platform scale approved for use under § 679.28 (b)(7).

(ii) Platform scales used for observer sampling on MSs, ~~MS/CVs,~~ and C/Ps. A platform scale used for observer sampling must be tested at 10, 25, and 50 kg (or 20, 50, and 100 lb if the scale is denominated in pounds) using approved test weights. The MPE for the daily at-sea scale test is plus or minus 0.5 percent.

(iii) Approved test weights. Each test weight must have its weight stamped on or otherwise permanently affixed to it. The weight of each test weight must be annually certified by a National Institute of Standards and Technology approved metrology laboratory or approved for continued use by the NMFS authorized inspector at the time of the annual scale inspection.

~~—(c) Performance and technical requirements~~ (iv) Requirements for all at-sea scale tests.  
The vessel operator must ensure that vessel crew:

(A) Notify the observer at least 15 minutes before the time that the test will be conducted, and conduct the test while the observer is present.

(B) Conduct the scale test and record the following information on the at-sea scale test report form:

(1) Vessel name;

(2) Month, day, and year of test;

(3) Time test started to the nearest minute;

(4) Known weight of test weights;

(5) Weight of test weights recorded by scale;

(6) Percent error as determined by subtracting the known weight of the test weights from the weight recorded on the scale, dividing that amount by the known weight of the test weights, and multiplying by 100; and

(7) Sea conditions at the time of the scale test.

(C) Maintain the test report form on board the vessel until the end of the fishing year during which the tests were conducted, and make the report forms available to observers, NMFS staff, or authorized officers. In addition, the vessel owner must retain the scale test report forms for 3 years after the end of the fishing year during which the tests were performed. Each scale test report form must be signed by the vessel operator immediately following completion of each scale test.

(5) Scale maintenance. The vessel owner must ensure that the vessel operator maintains the scale in proper operating condition throughout its use, that adjustments made to the scale are made so as to bring the performance errors as close as practicable to a zero value, and that no adjustment is made that will cause the scale to weigh inaccurately.

(6) Printed reports from the scale. The vessel owner must ensure that the printed reports are provided to NMFS as required by this paragraph. Printed reports from the scale must be maintained on board the vessel until the end of the year during which the reports were made, and be made available to NMFS staff or authorized officers. In addition, the vessel owner must retain printed reports for 3 years after the end of the year during which the printouts were made.

(i) Reports of catch weight and cumulative weight. Reports must be printed at least once every 24 hours. Reports must also be printed before any information stored in the scale computer memory is replaced. Scale weights must not be adjusted by the scale operator to account for the perceived weight of water, mud, debris, or other materials. Scale printouts must show:

(A) the vessel name and Federal vessel permit number;

(B) the date and time the information was printed;

(C) the haul number;

(D) the total weight of the haul; and

(E) the total cumulative weight of all fish and other material weighed on the scale since the last annual inspection.

(ii) Printed report from the audit trail. The printed report must include the information specified in sections 2.3.1.8, 3.3.1.7, and 4.3.1.8 of appendix A to 50 CFR part 679. The printed report must be provided to the authorized scale inspector at each scale inspection and must also be printed at any time upon request of NMFS staff or other authorized officer.

(iii) Platform scales used for observer sampling. A platform scale used for observer sampling is not required to produce a printed record.

(c) Scales used to weigh catch at IFQ first receivers- - performance and technical requirements. Scale requirements in this paragraph are in addition to those requirements set forth by the State in which the scale is located, and nothing in this paragraph may be construed to



reduce or supersede the authority of the State to regulate, test, or approve scales within the State. Scales used to weigh catch that are also required to be approved by the State must meet the following requirements:

(1) Verification of approval. The scale must display a valid ~~State~~ sticker indicating that the scale is currently approved in accordance with the laws of the state where the scale is located.

(2) Visibility. ~~A first receiver~~ NMFS staff or authorized officers must ~~ensure that be~~ allowed to observe the weighing of catch on the scale and be allowed to read the scale display ~~are visible simultaneously at all times~~.

(3) Printed scale weights. ~~All scales~~

(i) An IFQ first receiver must ensure that printouts of the scale weight of each delivery or offload are made available to NMFS staff or to authorized officers at the time printouts are generated. A first receiver must maintain printouts on site until the end of the fishing year during which the printouts were made and make them available upon request by NMFS staff or authorized officers for 3 years after the end of the fishing year during which the printout was made.

(ii) Unless specifically exempted as set forth below, all scales identified in a catch monitoring plan (see § 660.140(f)(3), subpart D) must produce a printed record for each delivery, or portion of a delivery, weighed on that scale. ~~During~~ If approved by NMFS as part of the catch monitoring plan approval process NMFS may determine that a scale, scales not designed for automatic bulk weighing, may be exempted from part or all of the printed record requirements. The printed record must include:

~~(i)~~ A The IFQ first receiver's name;

~~(ii)~~ B The weight of each load in the weighing cycle;

~~(iii)~~ C The total weight of fish in each landing, or portion of the landing that was weighed on that scale;

~~(iv)~~ D The date ~~and time~~ the information is printed; and

~~(v)~~ E The name and vessel registration or documentation number of the vessel making the landing delivery. The scale operator may write this information on the scale printout in ink at the time of printing.

(4) Inseason scale testing. ~~Scales used to weigh Shorebased IFQ Program catch must meet inseason testing criteria specified at 660.140(k).~~ IFQ first receivers must allow, and provide reasonable assistance to, NMFS staff and authorized officers to test scales used to weigh IFQ catch. A scale that does not pass an inseason test may not be used to weigh IFQ catch until the scale passes an inseason test or is approved for continued use by the weights and measures authorities of the State in which the scale is located.

~~(5)~~ i Inseason testing criteria. To pass an inseason test, ~~a catch monitor,~~ NMFS staff or a NMFS-authorized agent officers must be able to verify ~~the following that~~:

~~(i)~~ A the scale display and printed information are clear and easily read under all conditions of normal operation;

~~(ii)~~ the B weight values are visible on the display until the value is printed; ~~and~~

(~~iii~~C) the scale does not exceed the maximum permissible errors specified in the following table:

<u>Test Load in Scale Divisions</u>	<u>Maximum Error in Scale Divisions</u>
(A) 0-500	1
(B) 501-2,000	2
(C) 2,001-4,000	3
(D) >4,000	4

(~~6~~D) Automatic weighing systems. ~~The~~An automatic weighing system must be provided and operational that will prevent ~~catch~~fish from passing over the scale or entering any weighing hopper unless the following criteria are met:

(~~i~~1) No catch may enter or leave a weighing hopper until the weighing cycle is complete and no catch can leave the hopper;

(~~ii~~2) No ~~catch~~product may be cycled and weighed ~~until~~ if the weight recording element is not operational; and

(~~iii~~3) No ~~catch~~product may enter a weighing hopper until the prior weighing cycle has been completed and the scale indicator has returned to a zero.

(ii) [Reserved]

(d) Electronic fish tickets. IFQ first receivers using the electronic fish ticket software provided by Pacific States Marine Fish Commission are required to meet the hardware and software requirements below. Those IFQ first receivers who have NMFS-approved software compatible with the standards specified by Pacific States Marine Fish Commission for electronic fish tickets are not subject to any specific hardware or software requirements.

(1) Hardware and software requirements. (i) A personal computer with Pentium 75–MHz or higher. Random Access Memory (RAM) must have sufficient megabyte (MB) space to run the operating system, plus an additional 8 MB for the software application and available hard disk space of 217 MB or greater. A CD-ROM drive with a Video Graphics Adapter (VGA) or higher resolution monitor (super VGA is recommended).

(ii) Microsoft Windows 2000 (64 MB or greater RAM required), Windows XP (128 MB or greater RAM required) or later operating system.

(iii) Microsoft Access 2003 or newer.

(2) NMFS approved software standards and internet access. The IFQ first receiver is responsible for obtaining, installing, and updating electronic fish tickets software either provided by Pacific States Marine Fish Commission, or compatible with the data export specifications specified by Pacific States Marine Fish Commission and for maintaining internet access sufficient to transmit data files via email. Requests for data export specifications can be submitted to: Attn: Electronic Fish Ticket Monitoring, National Marine Fisheries Service, Northwest Region Sustainable Fisheries Division, 7600 Sand Point Way NE, Seattle, WA 98115.

(3) Maintenance. The IFQ first receiver is responsible for ensuring that all hardware and software required under this subsection are fully operational and functional whenever they receive, purchase, or take custody, control, or possession of an IFQ landing.

(4) Improving data quality. Vessel owners and operators, IFQ first receivers, or shoreside processor owners, or managers may contact NMFS in writing to request assistance in improving data quality and resolving issues. Requests may be submitted to: Attn: Electronic Fish Ticket Monitoring, National Marine Fisheries Service, Northwest Region Sustainable Fisheries Division, 7600 Sand Point Way NE, Seattle, WA 98115.

6. INSTRUCTION – In section 660.16, paragraphs (d) and (e) are removed and paragraph (c) is revised to read as follows:

§ 660.16 Groundfish observer program.

\* \* \* \* \*

(a) General. \* \* \*

(b) Purpose. The purpose of the Groundfish Observer Program is to collect fisheries data necessary and appropriate for, among other relevant purposes, management, compliance monitoring, and research in the groundfish fisheries and for the conservation of living marine resources.

(c) Observer coverage requirements. The following table provides references to the paragraphs in the Pacific coast groundfish subparts that contain fishery specific requirements. Observer coverage required for the Shorebased IFQ Program, MS Coop Program, or C/P Coop Program shall not be used to comply with observer coverage requirements for any other Pacific coast groundfish fishery in which that vessel may also participate.

<u>West Coast Groundfish Fishery</u>	<u>Regulation section</u>
(1) Shorebased IFQ Program- Trawl Fishery	§ 660.140, subpart D
(2) MS Coop Program- Whiting At-sea Trawl Fishery	§ 660.150, subpart D
(3) C/P Coop Program- Whiting At-sea Trawl Fishery	§ 660.160, subpart D
(4) Fixed Gear Fisheries	§ 660.216, subpart E
(5) Open Access Fisheries	§ 660.316, subpart F

7. INSTRUCTION – Section 660.17 is revised to read as follows:

§ 660.17 Catch monitors and catch monitor providers.

(a) Catch monitor certification. Catch monitor certification authorizes an individual to fulfill duties as specified by NMFS while under the employ of a certified catch monitor provider.

(b) Certification requirements. NMFS may certify individuals who:

(1) are employed by a certified catch monitor provider at the time of the issuance of the certification and qualified, as described at § 660.315 (e)(1)(i) through (viii) and have provided proof of qualifications to NMFS, through the certified catch monitor provider.

(2) have successfully completed NMFS-approved training.

(i) Successful completion of training by an applicant consists of meeting all attendance and conduct standards issued in writing at the start of training; meeting all performance standards issued in writing at the start of training for assignments, tests, and other evaluation tools; and completing all other training requirements established by NMFS.

(ii) If a candidate fails training, he or she will be notified in writing on or before the last day of training. The notification will indicate: the reasons the candidate failed the training; whether the candidate can retake the training, and under what conditions. If a determination is made that the candidate may not pursue further training, notification will be in the form of an IAD denying certification, as specified under §XXXX of this section.

(3) Have not been decertified as an observer or catch monitor under provisions in § 660.XXX.

(c) Catch monitor standards of behavior.

(1) Catch monitors must avoid any behavior that could adversely affect the confidence of the public in the integrity of the catch monitor program or of the government.

(2) Catch monitors must do the following:

(i) perform their assigned duties as described in manuals or other written instructions provided by NMFS.

(ii) accurately record the required data, write complete reports, and report accurately any observations of suspected violations of regulations.

(iii) must not disclose data and observations collected at the processing facility to any person except, NMFS ~~O&E~~ staff or authorized officers or others as specifically authorized by NMFS.

(d) Catch monitor provider certification. Persons seeking to provide catch monitor services under this section must obtain a catch monitor provider certification from NMFS.

(1) Applications. Persons seeking to provide catch monitor services must submit a completed application by mail to the NMFS Northwest Region, Permits Office, 7600 Sand Point Way NE, Seattle, WA 98115. An application for a catch monitor provider permit shall consist of a narrative that contains the following:

(i) Identification of the management, organizational structure, and ownership structure of the applicant's business, including identification by name and general function of all controlling management interests in the company, including but not limited to owners, board members, officers, authorized agents, and staff. If the applicant is a corporation, the articles of incorporation must be provided. If the applicant is a partnership, the partnership agreement must be provided.

(ii) Contact information.

(A) The owner's permanent mailing address, telephone, and fax numbers.

(B) The business mailing address, including the physical location, email address, telephone and fax numbers.

(C) Any authorized agent's mailing address, physical location, email address, telephone and fax numbers. An authorized agent means a person appointed and maintained within the

United States who is authorized to receive and respond to any legal process issued in the United States to an owner or employee of a catch monitor provider.

(iii) Prior experience. A statement identifying prior relevant experience in recruiting, hiring, deploying, and providing support for individuals in marine work environments in the groundfish fishery or other fisheries of similar scale.

(iv) Ability to perform or carry out responsibilities of a catch monitor provider. A description of the applicant's ability to carry out the responsibilities of a catch monitor provider is set out under **paragraph § XXXX**

(v) A statement signed under penalty of perjury describing any criminal convictions of each owner and board member, officer, authorized agent, and staff; a list of Federal contracts held and related performance ratings; and, a description of any previous decertification actions that may have been taken while working as an observer or observer provider.

(vi) A statement signed under penalty of perjury describing each owner and board member, officer, authorized agent, and staff indicating that they are free from conflict of interest as described under **§ 660.316 (c)**

(2) Application review.

(i) The certification official, described in **§ 660.XXX**, may issue catch monitor provider certifications upon determination that the application submitted by the candidate meets all requirements specified in **§ 660.XXX**.

(ii) Issuance of the certification will, at a minimum, be based on the completeness of the application, as well as the following criteria:

- (A) The applicant's ability to carry out the responsibilities and relevant experience;
- (B) Satisfactory performance ratings on any Federal contracts held by the applicant.
- (C) Absence of a conflict of interest.
- (D) Absence of relevant criminal convictions.

(3) Agency determination. The certification official will make a determination to approve or deny the application and notify the applicant by letter via certified return receipt mail, within 60 days of receipt of the application. Certification and decertification procedures that apply to catch monitor providers are specified in **§ 660.016**.

(e) Catch monitor provider responsibilities.

(1) Provide qualified candidates to serve as catch monitors. To be qualified a candidate must:

- (i) Be a U.S. citizen or have authorization to work in the United States;
- (ii) Be at least 18 years of age;
- (iii) Have a high school diploma and;
  - (A) At least two years of study from an accredited college with a major study in natural resource management, natural sciences, earth sciences, natural resource anthropology, law enforcement/police science, criminal justice, public administration, behavioral sciences, environmental sociology, or other closely related subjects pertinent to the management and protection of natural resources, or;

(B) One year of specialized experience performing duties which involved communicating effectively and obtaining cooperation, identifying and reporting problems or apparent violations of regulations concerning the use of protected or public land areas, and carrying out policies and procedures within a recreational area or natural resource site.

(iv) Have a current and valid driver's license.

(v) Have had a background investigation and been found to have had no criminal or civil convictions that would affect their performance or credibility as a catch monitor.

(vi) Have had health and physical fitness exams and been found to be fit for the job duties and work conditions;

(A) Physical fitness exams shall be conducted by a medical doctor who has been provided with a description of the job duties and work conditions and who provides a written conclusion regarding the candidate's fitness relative to the required duties and work conditions;

(B) Physical exams may include testing for illegal drugs;

(C) Candidates must have a minimum visual acuity of 20/100 corrected to 20/20 in at least one eye.

(vii) Have signed a statement under penalty of perjury indicating that they are free from conflict of interest as described under §660.316 (c)

(viii) Priority shall be given to qualified candidates who have and show proof of their knowledge of West Coast marine fish species, ability to effectively communicate in writing and orally, and have technical expertise in weights and measures.

(2) Standards. Provide to the candidate a copy of the standards of conduct, responsibilities, conflict of interest standards and drug and alcohol policy.

(3) Contract. Provide to the candidate a copy of a written contract signed by the catch monitor and catch monitor provider that shows among other factors the following provisions for employment:

(i) Compliance with the standards of conduct, responsibilities, conflict of interest standards and drug and alcohol policy;

(ii) Willingness to complete all responsibilities of current deployment prior to performing jobs or duties which are not part of the catch monitor responsibilities.

(iii) Commitment to return all sampling or safety equipment issued for the deployment.

8. INSTRUCTION – Section 660.18 is revised to read as follows:

§ 660.18 Certification and decertification procedures for catch monitors and catch monitor providers.

(a) Certification official. The Regional Administrator (or a designee) will designate a NMFS catch monitor certification official who will make decisions on whether to issue or deny catch monitor certification pursuant to the regulations at § 660.17, subpart C.

(b) Agency determinations on certifications.

(1) Issuance of certifications. Certification may be issued upon determination by the certification official that the candidate has successfully met all requirements for certification as specified in:

- (A) § 660.17 (X) for catch monitors; and
- (B) § 660.17 (X) for catch monitor providers

(2) Denial of a certification. The NMFS certification official will issue a written IAD identifying the reasons certification was denied and what requirements were deficient when the certification official determines that a candidate has irresolvable deficiencies in meeting the requirements for certification as specified in:

- (A) § 660.17 (X) for catch monitors; and
- (B) § 660.17 (X) for catch monitor providers

(3) Appeals. A candidate or applicant who receives an IAD that denies his or her certification may appeal pursuant to § 660.XXX. A candidate or applicant who appeals the IAD will not be issued an interim certification, and will not receive a certification unless the final resolution of that appeal is in the candidate's favor.

(c) Limitations on conflict of interest for catch monitors.

(1) Catch monitors must not have a direct financial interest, other than the provision of observer or catch monitor services, in a North Pacific fishery managed pursuant to an FMP for the waters off the coast of Alaska, Alaska state waters, or in a Pacific Coast fishery managed by either the state or Federal governments in waters off Washington, Oregon, or California, including but not limited to:

- (i) Any ownership, mortgage holder, or other secured interest in a vessel, shore-based or floating stationary processor facility involved in the catching, taking, harvesting or processing of fish,
- (ii) Any business involved with selling supplies or services to any vessel, shore-based or floating stationary processing facility; or
- (iii) Any business involved with purchasing raw or processed products from any vessel, shore-based or floating stationary processing facilities.

(2) Must not solicit or accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from anyone who either conducts activities that are regulated by NMFS or has interests that may be substantially affected by the performance or nonperformance of the catch ~~monitor~~'monitor's official duties.

(3) May not serve as a catch monitors on any vessel or at any shoreside or floating stationary processing facility owned or operated where a person was previously employed.

(4) May not solicit or accept employment as a crew member or an employee of a vessel, or shoreside processor while employed by a catch monitor provider.

(5) Provisions for remuneration of catch monitors under this section do not constitute a conflict of interest.

(d) Limitations on conflict of interest for catch monitor providers. Catch monitor providers must not have a direct financial interest, other than the provision of observer or catch



monitor services, in a North Pacific fishery managed pursuant to an FMP for the waters off the coast of Alaska, or in a Pacific Coast fishery managed by either the state or Federal governments in waters off Washington, Oregon, or California, including but not limited to:

(1) Any ownership, mortgage holder, or other secured interest in a vessel, shore-based or floating stationary processor facility involved in the catching, taking, harvesting or processing of fish,

(2) Any business involved with selling supplies or services to any vessel, shore-based or floating stationary processing facility; or

(3) Any business involved with purchasing raw or processed products from any vessel, shore-based or floating stationary processing facilities.

(e) Decertification.

(1) Decertification review official. The Regional Administrator (or a designee) will designate a decertification review official(s), who will have the authority to review certifications and issue IADs of decertification.

(2) Causes for decertification. The decertification official may initiate decertification proceedings when it is alleged that any of the following acts or omissions have been committed:

(i) Failed to satisfactorily perform the ~~specified~~specified duties and responsibilities;

(ii) Failed to abide by the specified standards of conduct;

(iii) Upon conviction of a crime or upon entry of a civil judgment for:

(A) Commission of fraud or other violation in connection with obtaining or attempting to obtain certification, or in performing the duties and responsibilities specified in this section;

(B) Commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(C) Commission of any other offense indicating a lack of integrity or honesty that seriously and directly affects the fitness of catch monitors.

(3) Issuance of IAD. Upon determination that decertification is warranted under § 660.316(c) or (d), the decertification official will issue a written IAD. The IAD will identify the specific reasons for the action taken. Decertification is effective 30 days after the date of issuance, unless there is an appeal.

(4) Appeals. A catch monitor or catch monitor provider who receives an IAD that revokes certification may appeal. The appeal must be in writing, and must allege facts or circumstances to show why the certification should be granted, or revoked, under the criteria in this section. An appeal must be filed with the Regional Administrator within 30 days of the IAD denying, or revoking the certification.

(i) Decisions on appeals of an IAD denying certification or decertifying will be made by the Regional Administrator (or designated official).

(ii) Absent good cause for further delay, the Regional Administrator (or designated official) will issue a written decision on the appeal within 45 days of receipt of the appeal and shall state the reasons for the decision. The Regional Administrator's decision is the final administrative decision of the Department of Commerce as of the date of the decision.



§ 660.20 Vessel and gear identification. \* \* \*

§ 660.24 Limited entry and open access fisheries. \* \* \*

9. INSTRUCTION – In section 660.25, paragraphs (b)(1)(i)(A) and (B) are removed~~and~~  
; paragraph (b)(4)(i)(F) is added; paragraphs (b)(4)(iv)(A), (b)(4)(v)(C), (b)(4)(vi)(C), and (e)  
is~~are~~ revised to read as follows:

§ 660.25 Permits.

\* \* \* \* \*

(a) General. \* \* \*

(b) Limited entry permit. \* \* \*

(4) Limited entry permit actions- renewal, combination, stacking, change of permit  
ownership or permit holdership, and transfer-- \* \* \*

(i) Renewal of limited entry permits and gear endorsements. \* \* \*

(F) A limited entry permit will not be renewed if a complete economic data collection  
questionnaire is not submitted as required under § 660.113(b), (c) and (d), subpart D.

\* \* \* \* \*

(iv) Changes in permit ownership and permit holder.

(A) General. The permit owner may convey the limited entry permit to a different person.  
The new permit owner will not be authorized to use the permit until the change in permit  
ownership has been registered with and approved by the SFD. The SFD will not approve a  
change in permit ownership for a limited entry permit with a sablefish endorsement that does not  
meet the ownership requirements for such permit described at paragraph (b)(3)(iv)(C) of this  
section. The SFD will not approve a change in permit ownership for a limited entry permit with  
a MS/CV endorsement or an MS permit that does not meet the ownership requirements for such  
permit described at § 660.150(g)(3), subpart D, and § 660.150(f)(3), subpart D, respectively.  
Change in permit owner and/or permit holder applications must be submitted to SFD with the  
appropriate documentation described at paragraph (b)(4)(vii) of this section. During the initial  
issuance application period for the trawl rationalization program, NMFS will not review or  
approve any request for a change in limited entry trawl permit owner at any time during the  
application period as specified at § 660.140(d)(8)(viii) for QS applicants, at § 660.150(g)(6)(vii)  
for MS/CV endorsement applicants, and at § 660.160(d)(7)(vii) for C/P endorsement applicants.

\* \* \*

\* \* \* \* \*

(v) Changes in vessel registration- transfer of limited entry permits and gear  
endorsements-- \* \* \*

(C) Effective date. Changes in vessel registration on permits will take effect no sooner  
than the first day of the next major limited entry cumulative limit period following the date that  
SFD receives the signed permit transfer form and the original limited entry permit, except for  
MS permits and C/P endorsed permits will take effect immediately upon reissuance to the new

vessel. No transfer is effective until the limited entry permit has been reissued as registered with the new vessel.

\* \* \* \* \*

(vi) Restriction on frequency of transfers— \* \* \*

(C) Limited entry MS permits and limited entry permits with MS/CV or C/P endorsements. Limited entry MS permits and limited entry permits with MS/CV or C/P endorsements may be registered to another vessel up to two times during the fishing season as long as the second transfer is back to the original vessel. The original vessel is either the vessel registered to the permit as of January 1, or if no vessel is registered to the permit as of January 1, the original vessel is the first vessel to which the permit is registered after January 1. After the original vessel has been established, the first transfer would be to another vessel, but any second transfer must be back to the original vessel. For MS/CV endorsed permits on the second transfer back to the original vessel, that vessel must be used to fish exclusively in the MS Coop Program described § 660.150, and declare in to the limited entry midwater trawl, Pacific whiting mothership sector as specified at § 660.13(d)(5)(iv).

(c) Quota share (QS) permit. \* \* \*

(d) First receiver site license. \* \* \*

\* \* \* \* \*

(e) Coop permit.

(1) MS coop permit. A MS coop permit conveys a conditional privilege to a person to harvest a coop's allocation of designated species and species groups. A MS coop permit is not a limited entry permit. The provisions for the MS coop permit, including eligibility, renewal, change of permit ownership, fees, and appeals are described in the MS Coop Program at § 660.150, subpart D.

(2) C/P coop permit. A C/P coop permit conveys a conditional privilege to a person to harvest a coop's allocation of designated species and species groups. A C/P coop permit is not a limited entry permit. The provisions for the C/P coop permit, including eligibility, renewal, change of permit ownership, fees, and appeals are described in the C/P Coop Program at § 660.160, subpart D.

\* \* \* \* \*

(f) Permit fees. \* \* \*

(g) Permit appeals process. \* \* \*

(h) Permit sanctions. \* \* \*

10. INSTRUCTION – Section 660.26 is removed.

§ 660.30 Compensation with fish for collecting resource information – EFPs. \* \* \*

§ 660.40 Overfished species rebuilding plans. \* \* \*

§ 660.50 Pacific coast treaty Indian fisheries. \* \* \*

9. INSTRUCTION – In section 660.55, paragraphs (i)(2) is revised to read as follows:  
§ 660.55 Allocations. \* \* \*

(a) General. \* \* \*

(b) Fishery harvest guidelines and reductions made prior to fishery allocations. \* \* \*

(c) Trawl/Nontrawl allocations. \* \* \*

(d) Commercial harvest guidelines for remaining groundfish species. \* \* \*

(e) Limited Entry (LE)/Open Access (OA) allocations. \* \* \*

(f) Catch accounting. \* \* \*

(g) Recreational fisheries. \* \* \*

(h) Sablefish allocations (north of 36° N. lat.). \* \* \*

\* \* \* \* \*

(i) Pacific whiting allocation. \* \* \*

(1) \* \* \*

(2) The commercial harvest guideline for Pacific whiting is allocated among three sectors, as follows: 34 percent for the C/P Coop Program; 24 percent for the MS Coop Program; and 42 percent for the Shorebased IFQ Program. No more than 5 percent of the Shorebased IFQ Program allocation may be taken and retained south of 42° N. lat. before the start of the primary Pacific whiting season north of 42° N. lat. Specific sector allocations for a given calendar year are found in Tables 1a and 2a of this subpart. Set asides for other species for the at-sea whiting fishery for a given calendar year are found in Tables 1d and 2d of this subpart.

\* \* \* \* \*

(j) Fishery set-asides. \* \* \*

(k) Exempted fishing permit set-asides. \* \* \*

(l) Black rockfish harvest guideline. \* \* \*

(m) Pacific halibut bycatch allocation. \* \* \*

11. INSTRUCTION – In section 660.60, paragraph (d)(1), paragraph (h)(2), and paragraph (h)(5)(ii) are revised; and paragraphs (h)(5)(v) and (vi) are added to read as follows:  
§ 660.60 Specifications and management measures.

(a) General. \* \* \*

(b) Biennial actions. \* \* \*

(c) Routine management measures. \* \* \*

\* \* \* \* \*

(d) Automatic actions. \* \* \*

(1) Automatic actions are used in MS Coop Program and C/P Coop Program to:

(i) Close at-sea sectors of the fishery when a sector's Pacific whiting or non-whiting species with allocations are reached, or are projected to be reached;

(ii) Close all at-sea sectors or a single sector of the fishery when a bycatch limit is reached or projected to be reached;

(iii) Reapportion unused allocations of non-whiting groundfish species to other at-sea sectors of the Pacific whiting fishery.

(iv) Implement the Ocean Salmon Conservation Zone, described at § 660.131(c)(3), subpart D, when NMFS projects the Pacific whiting fishery may take in excess of 11,000 Chinook within a calendar year.

(v) Implement Pacific Whiting Bycatch Reduction Areas, described at § 660.131(c)(4) Subpart D, when NMFS projects a sector-specific bycatch limit will be reached before the sector's whiting allocation.

\* \* \* \* \*

(e) Prohibited species. \* \* \*

(f) Exempted Fishing Permits (EFP). \* \* \*

(g) Applicability. \* \* \*

(h) Fishery restrictions. \* \* \*

(2) Landing. As stated at § 660.11, subpart C (in the definition of “Landing”), once the offloading of any species begins, all fish aboard the vessel are counted as part of the landing and must be reported as such. Transfer of fish at sea is prohibited under § 660.12, subpart C, unless a vessel is participating in the primary whiting fishery as part of the mothership or catcher/processor sectors, as described at § 660.131(a), subpart D. Catcher vessels in the mothership sector must transfer all catch from a haul to the same vessel registered to a MS permit prior to the gear being set for a subsequent haul. Catch may not be transferred to a tender vessel.

\* \* \* \* \*

(5) Size limits, length measurement, and weight limits.

(ii) Weight limits and conversions. For species other than Pacific whiting and rockfish, the weight limit conversion factor established by the state where the fish is or will be landed will be used to convert the processed weight to round weight for purposes of applying the trip limit, QP, or other allocation. Weight conversions provided herein are those conversions currently in use by the States of Washington, Oregon, and California and may be subject to change by those states. Fishery participants should contact fishery enforcement officials in the state where the fish will be landed to determine that state's official conversion factor. To determine the round weight, multiply the processed weight times the conversion factor.

\* \* \* \* \*

(v) Pacific whiting. The following conversion applies to vessels landing sorted catch in the Shorebased IFQ Program: for headed and gutted Pacific whiting (head removed just in front of the collar bone and viscera removed,) the conversion factor is 1.67; for headed and gutted Pacific whiting with the tail removed the conversion factor is 2.0.

(vi) Rockfish. The following conversion applies to vessels landing sorted catch in the Shorebased IFQ Program: for headed and gutted, western cut (head removed just in front of the collar bone and viscera removed,) the conversion factor is 1.66; for headed and gutted, eastern

cut (head removed just in behind the collar bone and viscera removed,) the conversion factor is 2.0.

\* \* \* \* \*

§ 660.65 Groundfish harvest specifications. \* \* \*

§ 660.70-99 Closed area - GCA's and EFH. \* \* \*

#### Subpart D – West Coast Groundfish – Trawl Fisheries

§ 660.100 Purpose and Scope. \* \* \*

12. INSTRUCTION – In section 660.111, the following definitions are removed: “Pacific whiting shoreside or shore-based fishery”, “Pacific whiting shoreside first receivers”, and “Pacific whiting shoreside vessel”. New definitions are added in alphabetical order for: “IFQ trip”, “Pacific whiting IFQ fishery”, “Pacific whiting IFQ trip”.

§ 660.111 Trawl fishery - definitions.

\* \* \* \* \*

Accumulation limits refers to permits or QS and means **XXXXXX**

\* \* \* \* \*

IFQ trip means a trip in which the vessel has a valid fishing declaration for any of the following: Limited entry midwater trawl, non-whiting shorebased IFQ; Limited entry midwater trawl, Pacific whiting shorebased IFQ; Limited entry bottom trawl, shorebased IFQ, not including demersal trawl; Limited entry demersal trawl, shorebased IFQ; or Limited entry fixed gear, shorebased IFQ.

\* \* \* \* \*

Pacific whiting IFQ fishery means the Shorebased IFQ Program fishery composed of vessels making Pacific whiting IFQ trips pursuant to the requirements at § 660.131 during the primary season fishery dates for the Shorebased IFQ Program.

Pacific whiting IFQ trip means a trip in which a vessel registered to a limited entry permit uses legal midwater groundfish trawl gear with a valid declaration for limited entry midwater trawl, Pacific whiting shorebased IFQ, as specified at § 660.13(d)(5) during the dates that the Pacific whiting IFQ fishery primary season.

\* \* \* \* \*

Usage limit refers to vessel QP or processed catch and means **XXXXXX**.

\* \* \* \* \*

13. INSTRUCTION – In section 660.112, paragraph (f) is removed; paragraph (a)(2) is revised; paragraph (a)(3)(iii) is added; paragraph (a)(4) is renumbered as (a)(5), and a new (a)(4) is added; paragraphs (b) through (e) are revised to read as follows:

§ 660.112 Trawl fishery - prohibitions. \* \* \*

(a) General. \* \* \*

(2) Sorting. ~~It is unlawful for any person to fail~~ Fail to sort catch consistent with the requirements specified at § 660.130(d).

\* \* \* \* \*

(3) Recordkeeping and reporting.

(iii) Failure to submit a complete EDC questionnaire to NMFS as required by § 660.113.

\* \* \* \* \*

(4) Observers.

(i) Fish (including processing, as defined at § 600.10) in the Shorebased IFQ Program, the MS Coop Program, or the C/P Coop Program if NMFS determines the vessel is unsafe for an observer.

(ii) Fish in the Shorebased IFQ Program, the MS Coop Program, or the C/P Coop Program without observer coverage.

(iii) Retain any IFQ species/species group onboard a vessel unless the vessel has observer coverage. A vessel may deliver IFQ species/species groups to more than one IFQ first receiver, but must maintain observer coverage until all IFQ species from the trip are offloaded.

(5) Fishing in conservation areas with trawl gear. \* \* \*

\* \* \* \* \*

(b) Shorebased IFQ program.

(1) General.

(i) Own or control by any means whatsoever an amount of QS that exceeds the Shorebased IFQ Program accumulation limits.

(ii) Fish in the Shorebased IFQ Program with a vessel that does not have a valid vessel account and has ~~no~~ deficits (negative balance) for any species/species group.

(iii) Have any IFQ species/species group catch (landings and discards) from an IFQ trip not covered by QP for greater than 30 days from the date of landing for that trip or from the time the overage from that trip is documented in the vessel account, whichever is earlier, unless the overage is within the limits of the carryover provision specified at § 660.140, subpart D, in which case the vessel has 30 days after the QP for the following year are issued, ~~whichever is greater~~.

(iv) Participate in fishing that is within the scope of the Shorebased IFQ Program from any vessel with an overage (catch not covered by QP) until the overage is covered, regardless of the amount of the overage.

~~(v)~~ Transfer the limited entry trawl endorsed permit to another vessel or sell the limited entry trawl endorsed permit to another owner if the vessel registered to the permit has an overage (catch not covered by QP), until the overage is covered, regardless of the amount of the overage.

(vi) Use QP by vessels not registered to a limited entry trawl permit with a valid vessel account.

~~(vii)~~ Use QP in an area or for species/species groups other than that for which it is designated.

~~(viii)~~ Fish in more than one IFQ management area, specified at § 660.140(c)(2), on the same trip.

(ix) Fish on a Pacific whiting IFQ trip with a gear other than legal midwater groundfish trawl gear.

~~(viii)~~ Fish on a Pacific whiting IFQ trip without a valid declaration for limited entry midwater trawl, Pacific whiting shorebased IFQ, as specified at § 660.13(d)(5), subpart C.

~~(ix)~~ Use midwater trawl gear to fish for Pacific whiting within an RCA outside the Pacific whiting IFQ fishery primary season as specified at § 660.XXX.

~~(xii)~~ Dumping catch from a new haul until all catch from the previous haul is removed from the deck or stored in a location isolated from the new haul's catch.

(xiii) Process groundfish at-sea ("at-sea processing") by vessels in the shorebased IFQ program regardless of the type of gear used, with the following exceptions:

(A) a vessel that is 75-ft (23-m) or less LOA that harvests whiting and, in addition to heading and gutting, cuts the tail off and freezes the whiting, is not considered to be a catcher/processor nor is it considered to be processing fish, and

(B) a vessel that has a sablefish at-sea processing exemption, defined at § 660.25(b)(3)(iv)(D), subpart C may process sablefish at-sea.

(2) IFQ first receivers.

(i) Accept an IFQ landing without a valid first receiver site license.

(ii) Fail to sort fish received from a IFQ landing prior to first weighing after offloading as specified at § 660.XXX for the Shorebased IFQ Program, except the vessels declared in to the limited entry midwater trawl, Pacific whiting shorebased IFQ at § 660.13(d)(5), subpart C may weigh catch on a bulk scale before sorting as described at § 660.140 (X).

(iii) Process, sell, or discard any groundfish received from an IFQ landing that has not been weighed on a scale that is in compliance with requirements at § 660.15, subpart C.

(iv) Transport catch away from the point of landing before that catch has been sorted and weighed by federal groundfish species or species group, and recorded for submission on an electronic fish ticket. (If fish will be trucked to a different location for processing, all sorting and weighing to federal groundfish species groups must occur before transporting the catch away from the point of landing).

(v) Receive for transport or processing an IFQ landing without first obtaining verification from vessel personnel that the vessel had an observer on the vessel as required by Federal regulation.

(vi) Process an IFQ landing without coverage by a catch monitor when one is required by regulations, unless NMFS has granted a written waiver ~~specifically~~ exempting the IFQ first receiver from the catch monitor coverage requirements.

(vii) Process catch without a NMFS-accepted catch monitoring plan or not in accordance with their NMFS-accepted catch monitoring plan.

(viii) Mix catch from more than one IFQ landing prior to the catch being sorted and weighed.

(ix) Fail to comply with the IFQ first receiver responsibilities specified at § 660.140.



(x) Process, sell, or discard any groundfish received from an IFQ landing that has not been accounted for on an electronic fish ticket with the identification number for the vessel that delivered the fish.

(xi) Fail to submit, or submit incomplete or inaccurate information on any report, application, or statement required under this part.

(c) MS and C/P coop programs.

(1) Process Pacific whiting in the fishery management area during times or in areas where at-sea processing is prohibited for the sector in which the vessel fishes, unless:

(i) The fish are received from a member of a Pacific Coast treaty Indian tribe fishing under § 660.50, subpart C;

(ii) The fish are processed by a waste-processing vessel according to § 660.131(j), subpart D; or

(iii) The vessel is completing processing of Pacific whiting taken on board during that vessel's primary season.

(2) During times or in areas where at-sea processing is prohibited, take and retain or receive Pacific whiting, except as cargo or fish waste, on a vessel in the fishery management area that already has processed Pacific whiting on board. An exception to this prohibition is provided if the fish are received within the tribal U&A from a member of a Pacific Coast treaty Indian tribe fishing under § 660.50, subpart C.

(3) Operate as a waste-processing vessel within 48 hours of a primary season for Pacific whiting in which that vessel operates as a catcher/processor or mothership, according to § 660.131(j), subpart D.

(4) On a vessel used to fish for Pacific whiting, fail to keep the trawl doors on board the vessel, when taking and retention is prohibited under § 660.131(f), subpart D.

(5) Sort or discard any portion of the catch taken by a catcher vessel in the mothership sector before the catcher vessel observer completes sampling of the catch, with the exception of minor amounts of catch that are lost when the codend is separated from the net and prepared for transfer.

(d) MS coop program (coop and non-coop fisheries).

(1) Fish with a vessel in the mothership non-coop fishery that is not registered to a current MS/CV-endorsed limited entry trawl permit.

(2) Receive catch, process catch, or otherwise fish as a mothership vessel if ~~that it~~ is not registered to a current MS permit.

(3) Fish with a vessel in the mothership sector, if that vessel was used to fish in the C/P fishery in the same calendar year.

(4) Fish in the MS Coop Program with a vessel that does not have ~~has~~ a valid VMS declaration for limited entry midwater trawl, Pacific whiting mothership sector, as specified at § 660.13(d)(5), subpart C.

(5) Transfer catch to a vessel that is not registered to a MS permit. (i.e. a tender vessel).



(6) Use a vessel registered to a limited entry permit with a trawl endorsement (with or without a MS/CV endorsement) to catch more than 30 percent of the Pacific whiting allocation for the mothership sector.

(7) Fish before all catch from a haul has been transferred to a single vessel registered to a MS permit.

(8) Transfer catch from a single haul to more than one permitted MS vessel.

(9) Fish for a MS coop with a vessel that is not identified on the MS coop permit or with a vessel that does not have permission from the coop to fish for that coop.

~~(10)~~ Use an MS/CV endorsed permit to fish in both the non-coop and coop fishery in the same year. Fish in the non-coop fishery in the same year the MS/CV endorsed permit was registered to a vessel that fished as a member of a coop in the MS coop program.

(11) Take deliveries without a valid scale inspection report signed by an authorized scale inspector on board the vessel.

~~(12)~~ Sort, process, or discard catch before the catch is weighed on a scale that meets the requirements of § 679.15(b), including the daily test requirements.

~~(13)~~ Discard any catch from the codend or net (i.e. bleeding) before the observer has completed their data collection.

~~(14)~~ Mix catch from more than a one haul before the observer completes their collection of catch for sampling.

(e) C/P coop program.

(1) Fish with a vessel in the catcher/processor sector that is not registered to a current C/P-endorsed limited entry trawl permit.

(2) Fish as a catcher/processor vessel in the same year that the vessel fishes as a catcher vessel in the mothership fishery.

(3) Fish in the C/P Coop Program with a vessel that does not have has a valid VMS declaration for limited entry midwater trawl, Pacific whiting catcher/processor sector, as specified at § 660.13(d)(5).

(4) Fish in the C/P Coop Program with a vessel that is not identified on the C/P coop permit.

(5) Fish in the C/P Coop Program without a valid scale inspection report signed by an authorized scale inspector on board the vessel.

(6) Sort, process, or discard catch before the catch is weighed on a scale that meets the requirements of § 679.15(b), including the daily test requirements.

(7) Discard any catch from the codend or net (i.e. bleeding) before the observer has completed their data collection.

(8) Mix catch from more than one haul before the observer completes their collection of catch for sampling.

14. INSTRUCTION – In section 660.113, paragraph (d) is removed; paragraphs (a) through (c) are renumbered as (b) through (d); and a new paragraph (a) is added to read as follows:

§ 660.113 Trawl fishery - recordkeeping and reporting. \*\* \* \*

(a) General requirements.

(~~i~~1) All records or reports required by this paragraph must: be maintained in English, be accurate, be legible, be based on local time, and be submitted in a timely manner as required in paragraph (e)(1)(iv) of this section.

(~~ii~~2) Retention of Records. All records used in the preparation of records or reports specified in this section or corrections to these reports must be maintained XXwhereXX for a period of not less than three years after the date of landing and must be immediately available upon request for inspection by NMFS or authorized officers or others as specifically authorized by NMFS. Records used in the preparation of required reports specified in this section or corrections to these reports that are required to be kept include, but are not limited to, any written, recorded, graphic, electronic, or digital materials as well as other information stored in or accessible through a computer or other information retrieval system; worksheets; weight slips; preliminary, interim, and final tally sheets; receipts; checks; ledgers; notebooks; diaries; spreadsheets; diagrams; graphs; charts; tapes; disks; or computer printouts. All relevant records used in the preparation of electronic fish ticket reports or corrections to these reports must be maintained XXwhereXX for a period of not less than three years after the date and must be immediately available upon request for inspection by NMFS or authorized officers or others as specifically authorized by NMFS.

(3) Economic data collection program. The following fishery participants in the limited entry groundfish trawl fisheries are responsible for complying with the following economic data collection (EDC) program survey requirements:

<u>Fishery Participant</u>	<u>Economic data collection</u>	<u>Who is required to submit an EDC</u>	<u>Permit renewal or license issuance requirement</u>
<u>Limited entry trawl catcher vessels</u>	<u>Baseline (2009 and 2010) economic data</u>	<u>All owners, lessees, and charterers of a catcher vessel registered to a limited entry trawl endorsed permit at any time in 2009 or 2010</u>	<u>Limited entry trawl permit will not be renewed if any required EDC's for that permit or the permit owner are not complete</u>
	<u>Annual/ongoing (2011 and beyond) economic data</u>	<u>All owners, lessees, and charterers of a catcher vessel registered to a limited entry trawl endorsed permit at any time in 2011 and beyond</u>	<u>Limited entry trawl permit will not be renewed if any required EDC's for that permit or permit owner are not complete</u>

<u>Motherships</u>	<u>Baseline (2009 and 2010) economic data</u>	<u>All owners, lessees, and charterers of a mothership vessel that received whiting in 2009 or 2010 as recorded in NMFS' NORPac database</u>	<u>Mothership permit will not be renewed if any required EDC's for that permit or permit owner are not complete</u>
	<u>Annual/ongoing (2011 and beyond) economic data</u>	<u>All owners, lessees, and charterers of a mothership vessel registered to a mothership permit at any time in 2011 and beyond</u>	<u>Mothership permit will not be renewed if any required EDC's for that permit or permit owner are not complete</u>
<u>Catcher processors</u>	<u>Baseline (2009 and 2010) economic data</u>	<u>All owners, lessees, and charterers of a catcher processor vessel that harvested whiting in 2009 or 2010 as recorded in NMFS' NORPac database</u>	<u>Catcher processor permit will not be renewed if any required EDC's for that permit or permit owner are not complete</u>
	<u>Annual/ongoing (2011 and beyond) economic data</u>	<u>All owners, lessees, and charterers of a catcher processor vessel registered to a catcher processor permit at any time in 2011 and beyond</u>	<u>Catcher processor permit will not be renewed if any required EDC's for that permit or permit owner are not complete</u>
<u>First receivers/ shore-based processors</u>	<u>Baseline (2009 and 2010) economic data</u>	<u>All owners and lessees of a shore-based processor and all buyers that received groundfish or whiting harvested with a limited entry trawl permit as listed in the PacFIN database in 2009 or 2010</u>	<u>First receiver site license will not be issued if any required EDC's for that processor or buyer are not complete</u>
	<u>Annual/ongoing (2011 and beyond) economic data</u>	<u>All holders of a first receiver site license in 2011 and beyond, and all owners and lessees of a</u>	<u>First receiver site license will not be issued if any required EDC's for</u>

<u>shore-based processor</u> <u>that received round or</u> <u>headed-and-gutted IFQ</u> <u>species groundfish or</u> <u>whiting from a first</u> <u>receiver in 2011 and</u> <u>beyond</u>	<u>that processor or</u> <u>buyer are not</u> <u>complete</u>
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(b) Shorebased IFQ program.

(1) ~~General~~-Economic data collection.

(i) ~~Any person with~~Catcher vessel registered to a limited entry groundfish trawl endorsed permit ~~or IFQ first receiver site license participating in the Shorebased IFQ Program must.~~

(A) Requirement to submit an EDC program questionnaire. All owners, lessees, and charterers of a catcher vessel registered to a limited entry trawl endorsed permit at any time in 2009 or 2010 are responsible for submitting a complete ~~the mandatory~~ economic data collection form questionnaire for the baseline data collection. All owners, lessees, and charterers of a catcher vessel registered to a limited entry trawl endorsed permit at any time in 2011 and beyond are responsible for submitting a complete economic data collection questionnaire each year for the annual/on-going data collection.

(ii) ~~Any person taking, retaining, and landing groundfish in the Shorebased IFQ Program must report their landings and discards through the electronic “?????” fish ticket report.~~

(B) Submission of EDC questionnaire. Submit and retain a copy of the questionnaire as per instructions on questionnaire.

(C) Deadline. Complete EDC questionnaires must be received by NMFS not later than September 1, 2011 for baseline data, and September 1 each year thereafter for the annual/ongoing data collection.

(D) EDC program questionnaire. A complete EDC must contain responses for all data fields, which include but are not limited to costs, labor, earnings, activity in a fishery, vessel or plant characteristics, value, quota, operational information, location of expenditures and earnings, ownership information and leasing information.

(ii) IFQ first receiver / shorebased processor.

(A) Requirement to submit an EDC program questionnaire. All owners and lessees of a shore-based processor and all buyers that received groundfish or whiting harvested with a limited entry trawl permit as listed in the PacFIN database in 2009 or 2010 are responsible for submitting a complete economic data collection questionnaire for the baseline data collection. All holders of a first receiver site license in 2011 and beyond, and all owners and lessees of a shore-based processor that received round or headed-and-gutted IFQ species groundfish or whiting from a first receiver in 2011 and beyond are responsible for submitting a complete economic data collection questionnaire each year for the annual/on-going data collection.

(B) Submission of EDC questionnaire. Submit and retain a copy of the questionnaire as per instructions on questionnaire.

(C) Deadline. Complete EDC questionnaires must be received by NMFS not later than September 1 2011 for baseline data, and September 1 each year thereafter for the annual/ongoing data collection.

(D) EDC program questionnaire. A complete EDC must contain responses for all data fields, which include but are not limited to costs, labor, earnings, activity in a fishery, vessel or plant characteristics, value, quota, operational information, location of expenditures and earnings, ownership information and leasing information.

(iii) EDC audit procedures.

(A) NMFS reserves the right to conduct verification of economic data with the questionnaire submitter. NMFS may employ a third party agent to conduct the audits.

(B) The EDC questionnaire submitter must respond to any inquiry by NMFS or NMFS' agent within 20 days of the date of issuance of the inquiry.

(C) The questionnaire submitter must provide copies of additional data to facilitate verification by NMFS or NMFS' agent upon request. The NMFS auditor may review and request copies of additional data provided by the submitter, including but not limited to, previously audited or reviewed financial statements, worksheets, tax returns, invoices, receipts, and other original documents substantiating the economic data submitted.

(2) Electronic vessel logbook. [Reserved]

~~(3) Gear switching declaration. [Reserved]~~

(3) Gear switching declaration. Any person with a limited entry trawl permit participating in the Shorebased IFQ Program using fixed gear (i.e., gear switching) must submit a valid gear declaration reporting such participation as specified in § 660.13(d)(5)(iv)(A)(2).

(4) Electronic fish ticket. The IFQ first receiver is responsible for compliance with all reporting requirements described in this paragraph.

(i) Required information. All IFQ first receivers must provide the following types of information: date of landing, vessel that made the delivery, gear type used, first receiver, round weights of species landed listed by species or species group including species with no value, number of salmon by species, number of Pacific halibut, and any other information deemed necessary by the Regional Administrator as specified on the appropriate electronic fish ticket form.

(ii) Submissions. The IFQ first receiver must:

~~(A) Sort all fish, prior to first weighing, by species or species groups as specified at § 660.370 (h)(6)(iii).~~

~~(B)~~(A) Include as part of each electronic fish ticket submission, the actual scale weight for each groundfish species as specified by requirements at §660.XXX and the vessel identification number.

~~(C)~~(B) Use for the purpose of submitting electronic fish tickets, and maintain in good working order, computer equipment as specified at §660.XXX;

(~~DC~~) Install, use, and update as necessary, any NMFS-approved software described at §660.XXX;

(~~ED~~) Submit a completed electronic fish ticket for every IFQ landing no later than 24 hours after the date the fish are received, unless a waiver of this requirement has been granted under provisions specified at paragraph (e)(1)(~~vi~~)(vii) of this section.

(iii) Revising a submission. In the event that a data error is found, electronic fish ticket submissions may be revised by resubmitting the revised form. Electronic fish tickets are to be used for the submission of final data. Preliminary data, including estimates of fish weights or species composition, shall not be submitted on electronic fish tickets.

(iv) Retention of records. All records used in the preparation of electronic fish tickets or corrections to these reports must be maintained in the first receiver's office for a period of not less than three years after the date of landing and must be immediately available upon request for inspection by NMFS staff or authorized officers or others as specifically authorized by NMFS. Records used in the preparation of electronic fish tickets or corrections to these reports that are required to be kept include, but are not limited to, any written, recorded, graphic, electronic, or digital materials as well as other information stored in or accessible through a computer or other information retrieval system; worksheets; weight slips; preliminary, interim, and final tally sheets; receipts; checks; ledgers; notebooks; diaries; spreadsheets; diagrams; graphs; charts; tapes; disks; or computer printouts. All relevant records used in the preparation of electronic fish ticket reports or corrections to these reports must be maintained in the first receiver's office for a period of not less than three years after the date and must be immediately available upon request for inspection by NMFS staff or authorized officers or others as specifically authorized by NMFS.

(v) Waivers for submission. On a case-by-case basis, a temporary written waiver of the requirement to submit electronic fish tickets may be granted by the Assistant Regional Administrator or designee if he/she determines that circumstances beyond the control of a first receiver would result in inadequate data submissions using the electronic fish ticket system. The duration of the waiver will be determined on a case-by-case basis.

(vi) Reporting requirements when a temporary waiver has been granted. IFQ First receivers that have been granted a temporary waiver from the requirement to submit electronic fish tickets must submit on paper the same data as is required on electronic fish tickets within 24 hours of the date received during the period that the waiver is in effect. Paper fish tickets must be sent by facsimile to NMFS, Northwest Region, Sustainable Fisheries Division, 206-526- 6736 or by delivering it in person to 7600 Sand Point Way NE, Seattle, WA 98115. The requirements for submissions of paper tickets in this paragraph are separate from, and in addition to existing state requirements for landing receipts or fish receiving tickets.

(c) MS coop program (coop and non-coop fisheries).

(1) Economic data collection.

(i) ~~For the coop fishery, the designated coop manager listed in the coop agreement for the Catcher vessel registered to a limited entry trawl MS-coop/CV endorsed permit must.~~

(A) Requirement to submit an EDC program questionnaire. All owners, lessees, and charterers of a catcher vessel registered to a limited entry trawl MS/CV endorsed permit at any time in 2009 or 2010 are responsible for submitting a complete ~~the mandatory~~ economic data collection ~~form~~ questionnaire for the baseline data collection. All owners, lessees, and charterers of a catcher vessel registered to a limited entry trawl MS/CV endorsed permit at any time in 2011 and beyond are responsible for submitting a complete economic data collection questionnaire each year for the annual/on-going data collection.

(B) Submission of EDC questionnaire. Submit and retain a copy of the questionnaire as per instructions on questionnaire.

(C) Deadline. Complete EDC questionnaires must be received by NMFS not later than September 1, 2011 for baseline data, and September 1 each year thereafter for the annual/ongoing data collection.

(D) EDC program questionnaire. A complete EDC must contain responses for all data fields, which include but are not limited to costs, labor, earnings, activity in a fishery, vessel or plant characteristics, value, quota, operational information, location of expenditures and earnings, ownership information and leasing information.

(ii) ~~For~~MS vessel.

(A) Requirement to submit an EDC program questionnaire. All owners, lessees, and charterers of a mothership vessel that received whiting in 2009 or 2010 as recorded in NMFS' NORPac database are responsible for submitting a complete economic data collection questionnaire for the baseline data collection. All owners, lessees, and charterers of a vessel registered to a mothership permit at any time in 2011 and beyond are responsible for submitting a complete economic data collection questionnaire each year for the ~~non-eeo~~ annual/on-going data collection.

(B) Submission of EDC questionnaire. Submit and retain a copy of the questionnaire as per instructions on questionnaire.

(C) Deadline. Complete EDC questionnaires must be received by NMFS not later than September 1 2011 for baseline data, and September 1 each year thereafter for the annual/ongoing data collection.

(D) EDC program questionnaire. A complete EDC must contain responses for all data fields which include, but are not limited to costs, labor, earnings, activity in a fishery, ~~any person~~ vessel or plant characteristics, value, quota, operational information, location of expenditures and earnings, ownership information and leasing information.

(iii) EDC audit procedures.

(A) NMFS reserves the right to conduct verification of economic data ~~with a limited~~ entry groundfish permit (MS/CV or mothership permit), must complete the mandatory economic data collection ~~form~~ the questionnaire submitter. NMFS may employ a third party agent to conduct the audits.

(B) The EDC questionnaire submitter must respond to any inquiry by NMFS or NMFS' agent within 20 days of the date of issuance of the inquiry.



(C) The questionnaire submitter must provide copies of additional data to facilitate verification by NMFS or NMFS' agent upon request. The NMFS auditor may review and request copies of additional data provided by NMFS the submitter, including but not limited to, previously audited or reviewed financial statements, worksheets, tax returns, invoices, receipts, and other original documents substantiating the economic data submitted.

(2) NMFS-approved scales.

(i) Scale test report form. Mothership vessel operators are responsible for conducting scale tests and for recording the scale test information on the at-sea scale test report form as specified at § 660.150(X)15(b), subpart C. for mothership vessels.

(ii) Printed scale reports. Specific requirements pertaining to printed scale reports and scale weight print outs are specified at § 660.150(X)15(b), subpart C. for mothership vessels.

(iii) Retention of scale records and reports. ~~(iii) Retention of scale records and reports.~~ The vessel must maintain the test report form on board until the end of the fishing year during which the tests were conducted, and make the report forms available to observers, NMFS staff, or ~~NMFS-~~authorized personnel-officers. In addition, the vessel owner must retain the scale test report forms for 3 years after the end of the fishing year during which the tests were performed. All scale test report forms must be signed by the vessel operator.

(3) Annual coop report.

(i) The designated coop manager for the mothership coop must submit an annual report. The complete annual coop report will contain information about the current year's fishery, including:

(A) the mothership sector's annual allocation of Pacific whiting and the permitted mothership coop allocation;

(B) the mothership coop's actual retained and discarded catch of Pacific whiting, salmon, Pacific halibut, rockfish, groundfish, and other species on a vessel-by-vessel basis;

(C) a description of the method used by the mothership coop to monitor performance of coop vessels that participated in the fishery;

(D) a description of any actions taken by the mothership coop in response to any vessels that exceed their allowed catch and bycatch; and

(E) plans for the next year's mothership coop fishery, including the companies participating in the cooperative, the harvest agreement, and catch monitoring and reporting requirements.

(ii) The annual coop report must be submitted to the Pacific Fishery Management Council for their November meeting each year. ~~A final~~An annual coop report must be submitted to NMFS ~~with~~ by March 31 of the following year and before a coop permit is issued for the following year.

(4) Cease fishing report.

~~(5) Mandatory logbook. XXproduction report, transfer logXX~~ (d) C/P coop program.

(1) Economic data collection. ~~The designated coop manager listed in the coop agreement for the C/P coop permit must complete the mandatory economic data collection form by NMFS.~~



(i) Requirement to submit an EDC program questionnaire. All owners, lessees, and charterers of a catcher processor vessel that harvested whiting in 2009 or 2010 as recorded in NMFS' NORPac database are responsible for submitting a complete economic data collection questionnaire for the baseline data collection. All owners, lessees, and charterers of a vessel registered to a catcher processor permit at any time in 2011 and beyond are responsible for submitting a complete economic data collection questionnaire each year for the annual/on-going data collection.

(ii) Submission of EDC questionnaire. Submit and retain a copy of the questionnaire as per instructions on questionnaire.

(iii) Deadline. Complete EDC questionnaires must be received by NMFS not later than September 1 2011 for baseline data, and September 1 each year thereafter for the annual/ongoing data collection.

(iv) EDC program questionnaire. A complete EDC must contain responses for all data fields which include, but are not limited to costs, labor, earnings, activity in a fishery, vessel or plant characteristics, value, quota, operational information, location of expenditures and earnings, ownership information and leasing information.

(v) EDC audit procedures.

(A) NMFS reserves the right to conduct verification of economic data with the questionnaire submitter. NMFS may employ a third party agent to conduct the audits.

(B) The EDC questionnaire submitter must respond to any inquiry by NMFS or NMFS' agent within 20 days of the date of issuance of the inquiry.

(C) The questionnaire submitter must provide copies of additional data to facilitate verification by NMFS or NMFS' agent upon request. The NMFS auditor may review and request copies of additional data provided by the submitter, including but not limited to, previously audited or reviewed financial statements, worksheets, tax returns, invoices, receipts, and other original documents substantiating the economic data submitted.

(2) NMFS-approved scales.

(i) Scale test report form. Catcher/processor vessel operators are responsible for conducting scale tests and for recording the scale test information on the at-sea scale test report form as specified at § 660.460(X)15(b), subpart C, for C/P vessels.

(ii) Printed scale reports. Specific requirements pertaining to printed scale reports and scale weight print outs are specified at § 660.460(X)15(b), subpart C, for C/P vessels.

(iii) Retention of scale records and reports.~~(iii) Retention of scale records and reports.~~ The vessel must maintain the test report form on board until the end of the fishing year during which the tests were conducted, and make the report forms available to observers, NMFS staff, or ~~NMFS-authorized personnel/officers~~. In addition, the vessel owner must retain the scale test report forms for 3 years after the end of the fishing year during which the tests were performed. All scale test report forms must be signed by the vessel operator.

(3) Annual coop report.

- (i) The designated coop manager for the C/P coop must submit an annual report. The complete annual coop report will contain information about the current year's fishery, including:
- (A) the C/P sector's annual allocation of Pacific whiting;
  - (B) the C/P coop's actual retained and discarded catch of Pacific whiting, salmon, Pacific halibut, rockfish, groundfish, and other species on a vessel-by-vessel basis;
  - (C) a description of the method used by the C/P coop to monitor performance of cooperative vessels that participated in the fishery;
  - (D) a description of any actions taken by the C/P coop in response to any vessels that exceed their allowed catch and bycatch; and
  - (E) plans for the next year's C/P coop fishery, including the companies participating in the cooperative, the harvest agreement, and catch monitoring and reporting requirements.
- (ii) The annual coop report must be submitted to the Pacific Fishery Management Council for their November meeting each year. A final report must be submitted to NMFS with by March 31 of the following year and before a coop permit is issued for the following year.

(4) Cease fishing report.

~~(5) Mandatory logbook. ~~XX~~production report, transfer log~~XX~~~~

15. INSTRUCTION –Section 660.116 is removed.

§ 660.116 Trawl fishery - observer requirements.

§ 660.120 Trawl fishery - crossover provisions. \* \* \*

16. INSTRUCTION - In section 660.130, paragraph (a) and paragraph (d) are revised to read as follows:

§ 660.130 Trawl fishery - management measures.

(a) General. Limited entry trawl vessels ~~include~~are those vessels registered to a limited entry permit with a trawl endorsement; and ~~to those~~ vessels registered to a MS permit. Most species taken in limited entry trawl fisheries will be managed with quotas (see § 660.140), allocations or set-asides (see § 660.150 or § 660.160), or cumulative trip limits (see trip limits in Tables 1 (North) and 1 (South) of this subpart), size limits (see § 660.60 (h)(5), subpart C), seasons (see Pacific whiting at § 660.131(b), subpart D), gear restrictions (see paragraph (b) of this section) and closed areas (see paragraph (e) of this section and §§ 660.70 through 660.79, subpart C). The trawl fishery has gear requirements and harvest limits that differ by the type of trawl gear on board and the area fished. Cowcod retention is prohibited in all fisheries and groundfish vessels operating south of Point Conception must adhere to CCA restrictions (see paragraph (e)(1) of this section and § 660.70, subpart C). The trip limits in Tables 1 (North) and 1 (South) of this subpart apply to vessels participating in the limited entry groundfish trawl fishery and may not be exceeded. Federal commercial groundfish regulations are not intended to supersede any more restrictive state commercial groundfish regulations relating to federally-managed groundfish.

\* \* \* \* \*

(b) Trawl gear requirements and restrictions. \* \* \*

(c) Cumulative trip limits and prohibitions by limited entry trawl gear type. \* \* \*

(d) Sorting. Under § 660.12 (a)(8), subpart C, it is unlawful for any person to “fail to sort, prior to the first weighing after offloading, those groundfish species or species groups for which there is a trip limit, size limit, scientific sorting designation, quota, harvest guideline, or OY, if the vessel fished or landed in an area during a time when such trip limit, size limit, scientific sorting designation, quota, harvest guideline, or OY applied.” The states of Washington, Oregon, and California may also require that vessels record their landings as sorted on their state landing receipt.

(1) Species and areas.

(i) Coastwide. Widow rockfish, canary rockfish, darkblotched rockfish, yelloweye rockfish, shortbelly rockfish, black rockfish, blue rockfish, minor nearshore rockfish, minor shelf rockfish, minor slope rockfish, shortspine and longspine thornyhead, Dover sole, arrowtooth flounder, petrale sole, starry flounder, English sole, other flatfish, lingcod, sablefish, Pacific cod, spiny dogfish, other fish, longnose skate, and Pacific whiting;

(ii) North of 40°10' N. lat. POP, yellowtail rockfish;

(iii) South of 40°10' N. lat. Minor shallow nearshore rockfish, minor deeper nearshore rockfish, California scorpionfish, chilipepper rockfish, bocaccio rockfish, splitnose rockfish, Pacific sanddabs, cowcod, bronzespotted rockfish and cabezon.

(2) Sorting requirements for the shorebased IFQ program.

(i) Fish landed at IFQ first receivers (including shoreside processing facilities and buying stations that intend to transport catch for processing elsewhere) must be sorted, prior to first weighing after offloading from the vessel and prior to transport away from the point of landing, except ~~as allowed the vessels declared in § 660.140(k) for to~~ the limited entry midwater trawl, Pacific whiting ~~fishery-shorebased IFQ at § 660.13(d)(5), subpart C may weigh catch on a bulk scale before sorting as described at~~ 660.140 (X).

(ii) All catch must be sorted to the species groups specified in paragraph (h)(6)(i)(A) of this section for vessels with limited entry permits. Prohibited species must be sorted according to the following species groups: Dungeness crab, Pacific halibut, Chinook salmon, other salmon. Non-groundfish species must be sorted as required by the state of landing.

(3) Sorting requirements for the at-sea sectors of the Pacific whiting fishery.

(i) Pacific whiting at-sea processing vessels may use an accurate in-line conveyor or hopper type scale to derive an accurate total catch weight prior to sorting. Immediately following weighing of the total catch, the catch must be sorted to the species groups specified in paragraph (h)(6)(i)(A) and all incidental catch (groundfish and non-groundfish species) must be accurately weighed and the weight of incidental catch deducted from the total catch weight to derive the weight of target species.

(ii) Catcher vessels in the MS sector. If sorting occurs on the catcher vessel, the catch must not be discarded from the vessel and the vessel must not resume fishing until the catcher vessel observer has obtained an accurate weight by species for the sorted catch.

\* \* \* \* \*

(e) Groundfish conservation areas (GCAs) applicable to trawl vessels. \* \* \*

16. INSTRUCTION - In section 660.131, paragraphs (a) through (c) and paragraphs (e) and (f) are revised; paragraphs (g), (h), and (k) are removed; paragraphs (i) and (j) are renumbered as paragraphs (g) and (h); and the new paragraph (g) is revised to read as follows:  
§ 660.131 Pacific whiting fishery management measures.

(a) Sectors.

(1) The catcher/processor sector, or C/P Coop Program, is composed of catcher/processors which are vessels registered to a limited entry permit with a C/P endorsement.

(2) The mothership sector, or MS Coop Program, is composed of motherships and catcher vessels that harvest Pacific whiting for delivery to motherships. Motherships are vessels registered to a MS permit, and catcher vessels are vessels registered to a limited entry permit with a MS/CV endorsement or vessels registered to a limited entry permit without a MS/CV endorsement if the vessel is identified as a member vessel of a permitted MS coop.

(3) The Pacific whiting IFQ fishery is composed of vessels that harvest Pacific whiting for delivery shoreside to IFQ first receivers during the primary season. Notwithstanding the other provisions of **50 CFR part 660, subpart C or D**, a vessel that is 75 feet or less LOA that harvests Pacific whiting and, in addition to heading and gutting, cuts the tail off and freezes the Pacific whiting, is not considered to be processing fish. Such a vessel is subject to regulations and allocations for the Shoreside IFQ Program.

(b) Pacific whiting seasons.

(1) Primary seasons. The primary seasons for the Pacific whiting fishery are:

(i) For the Shorebased IFQ Program, Pacific whiting IFQ fishery, the period(s) of the large-scale target fishery is conducted after the season start date and ends when an vessel has no more whiting QP in their vessel account;

(ii) For catcher/processors, the period(s) when at-sea processing is allowed and the fishery is open for the catcher/processor sector; and

(iii) For vessels delivering to motherships, the period(s) when at-sea processing is allowed and the fishery is open for the mothership sector.

(2) Before and after the primary seasons. Before and after the primary seasons .

(3) Different primary season start dates. North of 40°30' N. lat., different starting dates may be established for the catcher/processor sector, the mothership sector, and in the Pacific whiting IFQ fishery for vessels delivering to IFQ first receivers north of 42° N. lat. and vessels delivering to IFQ first receivers between 42° through 40°30' N. lat.

(i) Procedures. The primary seasons for the whiting fishery north of 40°30' N. lat. generally will be established according to the procedures of the PCGFMP for developing and implementing harvest specifications and apportionments. The season opening dates remain in effect unless changed, generally with the harvest specifications and management measures.

(ii) Criteria. The start of a primary season may be changed based on a recommendation from the Council and consideration of the following factors, if applicable: Size of the harvest guidelines for whiting and bycatch species; age/size structure of the whiting population; expected harvest of bycatch and prohibited species; availability and stock status of prohibited species; expected participation by catchers and processors; environmental conditions; timing of alternate or competing fisheries; industry agreement; fishing or processing rates; and other relevant information.

(iii) Primary whiting season start dates and duration. After the start of a primary season for a sector of the whiting fishery, the season remains open for that sector until the quota is taken or a bycatch limit is reached and the fishery season for that sector is closed by NMFS. The starting dates for the primary seasons for the whiting fishery are as follows:

(A) Catcher/processor sector—May 15.

(B) Mothership sector—May 15.

(C) Shorebased IFQ program, Pacific whiting IFQ fishery.

(1) North of 42° N. lat.— June 15;

(2) Between 42°–40°30' N. lat.— April 1; and

(3) South of 40°30' N. lat.— April 15.

(4) Trip limits in the whiting fishery. The “per trip” limit for whiting before and after the regular (primary) season for the shore-based sector is announced in Table 1 of this subpart, and is a routine management measure under § 660.60(c). This trip limit includes any whiting caught shoreward of 100–fm (183–m) in the Eureka, CA area. The “per trip” limit for other groundfish species before, during, and after the regular (primary) season are announced in Table 1 (North) and Table 1 (South) of this subpart and apply as follows:

(i) During the groundfish cumulative limit periods both before and after the primary whiting season, vessels may use either small and/or large footrope gear, but are subject to the more restrictive trip limits for those entire cumulative periods.

(ii) If, during a primary whiting season, a whiting vessel harvests a groundfish species other than whiting for which there is a midwater trip limit, then that vessel may also harvest up to another footrope-specific limit for that species during any cumulative limit period that overlaps the start or end of the primary whiting season.

(c) Closed areas. Vessels fishing in the Pacific whiting primary seasons for the Shorebased IFQ Program, MS Coop Program, or C/P Coop Program shall not target Pacific whiting with midwater trawl gear in the following portions of the fishery management area: \* \* \*  
\* \* \* \* \*

(d) Eureka Area Trip Limits. \* \* \*

(e) At-sea processing. Whiting may not be processed at sea south of 42°00' N. lat. (Oregon-California border), unless by a waste-processing vessel as authorized under paragraph (g) of this section.

(f) Time of day. Vessels fishing in the Pacific whiting primary seasons for the Shorebased IFQ Program, MS Coop Program or C/P Coop Program shall not target Pacific

whiting with midwater trawl gear in the fishery management area south of 42°00' N. lat. between 0001 hours to one-half hour after official sunrise (local time). During this time south of 42°00' N. lat., trawl doors must be on board any vessel used to fish for whiting and the trawl must be attached to the trawl doors. Official sunrise is determined, to the nearest 5° lat., in The Nautical Almanac issued annually by the Nautical Almanac Office, U.S. Naval Observatory, and available from the U.S. Government Printing Office.

(g) Bycatch reduction and full utilization program for at-sea processors (optional). If a catcher/processor or mothership in the whiting fishery carries more than one NMFS-approved observer for at least 90 percent of the fishing days during a cumulative trip limit period, then groundfish trip limits may be exceeded without penalty for that cumulative trip limit period, if the conditions in paragraph (g)(1) of this section are met. For purposes of this program, “fishing day” means a 24-hour period, from 0001 hours through 2400 hours, local time, in which fishing gear is retrieved or catch is received by the vessel, and will be determined from the vessel's observer data, if available. Changes to the number of observers required for a vessel to fish under in the bycatch reduction program will be announced prior to the start of the fishery, generally concurrent with the harvest specifications and management measures. Groundfish consumed on board the vessel must be within any applicable trip limit and recorded as retained catch in any applicable logbook or report. [Note: For a mothership, non-whiting groundfish landings are limited by the cumulative landings limits of the catcher vessels delivering to that mothership.]

(1) Conditions. Conditions for participating in the voluntary full utilization program are as follows:

(i) All catch must be made available to the observers for sampling before it is sorted by the crew.

(ii) Any retained catch in excess of cumulative trip limits must either be: Converted to meal, mince, or oil products, which may then be sold; or donated to a bona fide tax-exempt hunger relief organization (including food banks, food bank networks or food bank distributors), and the vessel operator must be able to provide a receipt for the donation of groundfish landed under this program from a tax-exempt hunger relief organization immediately upon the request of an authorized officer.

(iii) No processor or catcher vessel may receive compensation or otherwise benefit from any amount in excess of a cumulative trip limit unless the overage is converted to meal, mince, or oil products. Amounts of fish in excess of cumulative trip limits may only be sold as meal, mince, or oil products.

(iv) The vessel operator must contact the NMFS enforcement office nearest to the place of landing at least 24 hours before landing groundfish in excess of cumulative trip limits for distribution to a hunger relief agency. Cumulative trip limits and a list of NMFS enforcement offices are found on the NMFS, Northwest Region homepage at [www.nwr.noaa.gov](http://www.nwr.noaa.gov).

(v) If the meal plant on board the whiting processing vessel breaks down, then no further overages may be retained for the rest of the cumulative trip limit period unless the overage is donated to a hunger relief organization.

(vi) Prohibited species may not be retained.

(vii) Donation of fish to a hunger relief organization must be noted in the transfer log (Product Transfer/Offloading Log (PTOL)), in the column for total value, by entering a value of "0" or "donation," followed by the name of the hunger relief organization receiving the fish. Any fish or fish product that is retained in excess of trip limits under this rule, whether donated to a hunger relief organization or converted to meal, must be entered separately on the PTOL so that it is distinguishable from fish or fish products that are retained under trip limits. The information on the Mate's Receipt for any fish or fish product in excess of trip limits must be consistent with the information on the PTOL. The Mate's Receipt is an official document that states who takes possession of offloaded fish, and may be a Bill of Lading, Warehouse Receipt, or other official document that tracks the transfer of offloaded fish or fish product. The Mate's Receipt and PTOL must be made available for inspection upon request of an authorized officer throughout the cumulative limit period during which such landings occurred and for 15 days thereafter.

(h) Processing fish waste at sea. A vessel that processes only fish waste (a "waste-processing vessel") is not considered a whiting processor and therefore is not subject to the allocations, seasons, or restrictions for catcher/processors or motherships while it operates as a waste-processing vessel. However, no vessel may operate as a waste-processing vessel 48 hours immediately before and after a primary season for whiting in which the vessel operates as a catcher/processor or mothership. A vessel must meet the following conditions to qualify as a waste-processing vessel:

(1) The vessel makes meal (ground dried fish), oil, or minced (ground flesh) product, but does not make, and does not have on board, surimi (fish paste with additives), fillets (meat from the side of the fish, behind the head and in front of the tail), or headed and gutted fish (head and viscera removed).

(2) The amount of whole whiting on board does not exceed the trip limit (if any) allowed under § 660.60(c), subpart C, or Tables 1 (North) or 1 (South) in subpart D.

(3) Any trawl net and doors on board are stowed in a secured and covered manner, and detached from all towing lines, so as to be rendered unusable for fishing.

(4) The vessel does not receive codends containing fish.

(5) The vessel's operations are consistent with applicable state and Federal law, including those governing disposal of fish waste at sea.

16. INSTRUCTION - In section 660.140, paragraphs (a), (b), (d)(2), (d)(3), (d)(5), (d)(7), and paragraphs (e) through (m) are revised; paragraph (c) introductory text is revised, paragraph (c)(2) is renumbered (c)(3) and a new paragraph (c)(2) is added, and the new paragraph (c)(3)(vi) is revised to read as follows:

§ 660.140 Shorebased IFQ Program.

(a) General. The ~~Shorebased~~shorebased IFQ ~~Program~~program requirements in § 660.140 will be effective beginning January 1, 2011, except for paragraphs (d)(4), (d)(6), and (d)(8) of this section, which are effective immediately. The shorebased IFQ ~~Program~~program applies to



qualified participants in the Pacific Coast Groundfish fishery and includes a system of transferable QS for most groundfish species or species groups ~~and trip limits or set-asides for the remaining groundfish species or species groups (and transferable IBQ for Pacific halibut) and trip limits or set-asides for the remaining groundfish species or species groups.~~ NMFS will issue a QS permit to eligible participants and will establish a QS account for each QS permit owner to track the amount of QS or IBQ and QP or IBQ pounds owned by that owner. ~~QS permit owners may own QS or IBQ for IFQ species, expressed as a percent of the allocation to the shorebased IFQ program for that species. NMFS will issue QP or IBQ pounds to QS permit owners, expressed in pounds, on an annual basis, to be deposited in the corresponding QS account. NMFS will establish a vessel account for each eligible vessel owner participating in the shorebased IFQ program, which is independent of the QS permit and QS account. In order to use QP or IBQ pounds, a QS permit owner must transfer the QP or IBQ pounds from the QS account in to the vessel account for the vessel to which the QP or IBQ pounds is to be assigned. Harvests of IFQ species may only be delivered to an IFQ first receiver with a first receiver site license.~~ In addition to the requirements of this section, the shorebased IFQ program is subject to the following groundfish regulations of subparts C and D:

(1) Regulations set out in the following sections of subpart C: § 660.11 Definitions, § 660.12 Prohibitions, § 660.13 Recordkeeping and reporting, § 660.14 VMS requirements, § 660.15 Equipment requirements, § 660.16 Groundfish observer program, § 660.20 Vessel and gear identification, § 660.25 Permits, § 660.55 Allocations, § 660.60 Specifications and management measures, § 660.65 Groundfish harvest specifications, and §§ 660.70 through 660.79 Closed areas.

(2) Regulations set out in the following sections of subpart D: § 660.111 Trawl fishery definitions, § 660.112 Trawl fishery prohibitions, § 660.113 Trawl fishery recordkeeping and reporting, § 660.120 Trawl fishery crossover provisions, § 660.130 Trawl fishery management measures, and § 660.131 Pacific whiting fishery management measures.

(3) The shorebased IFQ fishery may be restricted or closed as a result of projected overages within the Shorebased IFQ Program, the MS Coop Program, or the C/P Coop Program. As determined necessary by the Regional Administrator, area restrictions, season closures, or other measures will be used to prevent the trawl sector in aggregate or the individual trawl sectors (Shorebased IFQ, MS Coop, or C/P Coop) from exceeding an OY, or formal allocation specified in the PCGFMP or regulation at § 660.55, subpart C, or §§ 660.140, 660.150, or 660.160, subpart D.

(b) Participation requirements and responsibilities.

(1) ~~QS permit owners.~~

~~(2) IFQ vessels.~~

(i) Vessels must be registered to a groundfish limited entry permit, endorsed for trawl gear with no C/P endorsement.

(ii) ~~Vessels must be registered to a vessel account.~~



~~(iii)~~ To fish-start a trip in the Shorebased IFQ Program, ~~any a~~ vessel and its owner(s) (as described on the USCG documentation) must ~~have a valid~~ be registered to the same vessel account. ~~A valid vessel account is an account established for the vessel for a specific calendar year with at least one pound of QS for any species and has by NMFS with~~ no deficits (negative balance) for any species/species group.

~~(iviii)~~ All IFQ species/species group catch (landings and discards) must be covered by QP or IBQ pounds within 30 days ~~offrom~~ the date of landing for that ~~IFQ trip trip or from the time the overage from that trip is documented in the vessel account, whichever is earlier,~~ unless the overage (catch not covered by QP or IBQ pounds) is within the limits of the carryover provision at ~~XXX.XXX~~ paragraph (e)(5) of this section, in which case the vessel may declare out of the IFQ fishery for the year in which the overage occurred and has 30 days after the QP or IBQ pounds for the following year are issued.

~~(v)-iv)~~ Any vessel with an overage (catch not covered by QP or IBQ pounds) is prohibited from fishing that is within the scope of the Shorebased IFQ Program until ~~the overagesufficient QP or IBQ pounds is covered~~ transferred in to the vessel account to remove any deficit, regardless of the amount of the overage.

~~(vi)~~ ~~Vessels are subject to limits on the amount of QP that~~ ~~v)~~ A vessel account may be registered to a single vessel during the year ~~(not have QP or IBQ pounds in excess of the QP Vessel Limit) in any year,~~ and, for some species, ~~on the amount of unused QP registered to a vessel account at any one time (covered by Unused QP Vessel Limit),~~ may not have QP or IBQ pounds in excess of the Unused QP Vessel Limit at any time. These amounts are specified at 660.XXX.

~~(vii)~~ ~~Vessels~~ vi) Vessels must use ~~one of~~ either trawl gear as specified at § 660.130(b), or fixed gear under the groundfish gears listed at XXgear switching sectionXXX ~~provisions as specified at § 660.140(I).~~

~~(viii)~~ vii) Vessels that are registered to MS/CV endorsed permits may be used to fish in the ~~Shorebased~~ shorebased IFQ program ~~if provided that~~ the vessel ~~has a valid~~ is registered to an open vessel account.

~~(ixviii)~~ In the same calendar year, a vessel registered to a trawl endorsed limited entry permit with no MS/CV or C/P endorsements may be used to fish in the shorebased IFQ program if the vessel has ~~a valid~~ an open vessel account, and to fish in the mothership sector for a permitted MS coop as agreed upon with the MS coop.

~~(3ix)~~ Vessels that are registered to C/P endorsed permits may not be used to fish in the shorebased IFQ program.

(2) IFQ first receivers-. The IFQ first receiver must:

(i) Ensure that all catch removed from a vessel making an IFQ delivery is weighed on a scale or scales meeting the requirements described in § 660.15(c)-IFQ), subpart C;

(ii) Ensure that all catch is landed, sorted, and weighed in accordance with a valid catch monitoring plan as described in § 660.140(f)(3)(iii), subpart D.

(iii) Ensure that all catch is sorted, prior to first weighing, by species or species groups as specified at § 660.370 (h)(6)(iii), except the vessels declared in to the limited entry midwater trawl, Pacific whiting shorebased IFQ at § 660.13(d)(5), subpart C may weigh catch on a bulk scale before sorting as described at 660.140 (X).

(iv) Provide uninhibited access to all areas where fish are or may be sorted or weighed to NMFS staff or authorized officer at any time when a delivery of IFQ species, or the processing of those species, is taking place.

(v) Ensure that each scale produces a complete and accurate printed record of the weight of all catch in a delivery, unless exempted in the NMFS-accepted catch monitoring plan.

(vi) Retain and make available to NMFS staff or an authorized officer, all printed output from any scale used to weigh catch, and any hand tally sheets, worksheets, or notes used to determine the total weight of any species.

(vii) Ensure that each delivery of IFQ catch is monitored by a catch monitor and that the catch monitor is on site the entire time the delivery is being weighed or sorted.

(viii) Ensure that sorting and weighing is completed prior to catch leaving the area that can be monitored from the observation area.

\* \* \* \* \*

(c) IFQ species, management areas, and allocations. \* \* \*

(1) IFQ species. \* \* \*

(2) IFQ (2) IFQ management areas. A vessel participating in the shorebased IFQ program may not fish in more than one IFQ management area during a trip. IFQ management areas are as follows:

(i) between the US/Canada border and 40°10' N. lat.,

(ii) between 40°10' N. lat. and 36° N. lat.,

(iii) between 36° N. lat. and 34°27' N. lat., and

(iv) between 34°27' N. lat. and the US/Mexico border.

\* \* \* \* \*

(3) IFQ program allocations. \* \* \*

(vi) For each IFQ species, NMFS will determine annual sub-allocations to individual QS accounts by multiplying the percent of QS or IBQ registered to the account by the amount of each respective IFQ species allocated to the Shorebased IFQ Program for that year. For each IFQ species, NMFS will issue QP or IBQ pounds to the respective QS account in the amount of each sub-allocation determined.

\* \* \* \* \*

(d) QS permits and QS accounts.

(1) General. \* \* \*

(2) Eligibility and registration.

(i) Eligibility. Only the following persons are eligible to own QS permits:

(A) a United States citizen, that is eligible to own and control a U.S. fishing vessel with a fishery endorsement pursuant to 46 USC 12113 (general fishery endorsement requirements and 75 percent citizenship requirement for entities);

(B) a permanent resident alien, that is eligible to own and control a U.S. fishing vessel with a fishery endorsement pursuant to 46 USC 12113 (general fishery endorsement requirements and 75 percent citizenship requirement for entities); or

(C) a corporation, partnership, or other entity established under the laws of the United States or any State, that is eligible to own and control a U.S. fishing vessel with a fishery endorsement pursuant to 46 USC 12113 (general fishery endorsement requirements and 75 percent citizenship requirement for entities). However, there is an exception for any entity that owns a mothership that participated in the west coast groundfish fishery during the allocation period and is eligible to own or control that U.S. fishing vessel with a fishery endorsement pursuant to sections 203(g) and 213(g) of the AFA.

~~((ii) Registration. A QS account must be registered with the NMFS SFD Permits Office. A QS account will be established by NMFS with the issuance of a QS permit. The QS permit owner may designate other persons that can access the QS account by submitting a request in writing to NMFS.~~

(3) Renewal, change of permit ownership, and transfer.

(i) Renewal. The holder of a QS permit must renew the QS permit by December

(A) QS permits expire at the end of each calendar year, and must be renewed between June 15 and August 31 of each year. Failure to renew a QS Permit will result in the suspension of the associated QS account until such time that the permit is renewed in order to remain in force the following year. A completed complete QS permit renewal package must be received by SFD or postmarked no later than August 31 to be accepted by NMFS.

(B) Notification to renew QS permits will be issued by SFD prior to June 15 each year to the QS permit owner's most recent address in the SFD record. The permit owner shall provide SFD with notice of any address change within 15 days of the change.

(C) For QS permit renewal requests received in SFD or postmarked after March 31, the QS permit and its associated QS or IBQ and QS account will be inactivated at the end of the calendar year and NMFS will not renew the QS permit and its associated QS or IBQ for the following year. The QS permit owner will not have access to the QS or IBQ or associated QPs or IBQ pounds for the following year. Any QPs or IBQ pounds derived from the expired permit will be redistributed among all other QS permit owners who renewed their permit by the deadline. Redistribution to QS permit owners will be proportional to their QS for each IFQ species or IBQ for halibut. The QS permit owner will have an opportunity to renew their QS permit at the next renewal period in the following year. A QS permit that is allowed to expire and becomes inactive will not be renewed unless the permit owner requests reissuance by March 31 of the following year and the SFD determines that failure to renew was proximately caused by illness, injury, or death of the permit owner.

(1) If failure to renew the QS permit was a result of illness, injury or death of the permit owner, the permit owner or authorized representative may request to renew the permit after August 31. The permit owner or authorized representative must submit a letter to NMFS postmarked no later than September 30 that states failure to submit the renewal form by the August 31 deadline date was due to illness, injury or death of the permit owner. The permit owner must provide credible evidence from a licensed physician that describes the illness or injury and how it prevented the permit owner from submitting the renewal by the deadline. In the case of death, a death certificate will be required for the permit owner.

(2) If failure to renew the QS permit was a result of illness, injury or death of the permit owner, NMFS will make a determination regarding the renewal of the QS permit based on the letter and documentation provided by, or on behalf of, the QS permit owner. NMFS will notify the permit owner or authorized representative of its determination and will provide reasons for its determination. If a renewal is disapproved, the QP or IBQ pounds associated with the QS permit will be redistributed among all valid QS permit owners in proportion to their QS or IBQ in the following year.

(D) QS permits will not be renewed until SFD has received a complete application for a QS permit renewal, which includes payment of required fees, complete documentation of permit ownership on the trawl identification of ownership interest form is required as part of renewal of a QS permit required under XXXXX, and a complete economic data collection form as required under XXXXX.

(E) Effective Date. A QS permit is effective on the date given on the permit and remains in effective until the end of the calendar year.

(F) IAD and appeals. QS permit renewals are subject to the permit appeals process specified at § 660.25 (g), subpart C.

(ii) Change of permit ownership and transfer. All changes in permit ownership and transfer are subject to accumulation limits and approval by NMFS.

(A) Restriction on the transfer of ownership for QS permits. A QS permit cannot be transferred to another individual or entity. The QS permit owner cannot change or add additional individuals or entities as owners of the permit. Any change to the owner of the QS permit requires the new owner to apply for a QS permit.

(B) Restriction on the transfer of QS or IBQ between QS permits/QS-accounts. After the second year of the trawl rationalization program, QS permit owners may transfer QS or IBQ to another QS permit owner. For the purposes of transfer, QS or IBQ is transferred as a percent and is highly divisible. During the first 2 years after implementation of the program, QS or IBQ cannot be transferred to another QS Permitpermit owner. However, NMFS will allow for the transfer of QS during the first two years on a limited basis and only when the action is directed by a, except under U.S. court that directs the reassignment of QS order and as part of a legal proceeding approved by NMFS. QS or IBQ may not be transferred between December 1 through December 31.

(C) Restriction on the transfer of QP ~~ir~~ IBQ pounds from a QS account to a vessel account. All QP or IBQ pounds from a QS account must be transferred to one or more vessel accounts by September 1 each year. Once QP or IBQ pounds are transferred from a QS account to a vessel account, they cannot be transferred back to a QS account and may only be transferred to another vessel account. QP or IBQ pounds may not be transferred from one QS account to another QS account.

(~~iii~~D) Effective Date.

~~(A) A QS permit is effective on the date approved by NMFS and remains in effective until the end of the calendar year, unless XXXX.~~

~~(B1)~~ Transfer of QS or IBQ between QS permits/QS accounts is effective on the date approved by NMFS.

~~(E2)~~ Transfer of QP or IBQ pounds from a QS account to a vessel account is effective on the date approved by NMFS.

(E) IAD and appeals. Transfers are subject to the permit appeals process specified at § 660.25 (g), subpart C.

(4) Accumulation limits.-- (i) QS and IBQ control limits. \* \* \*

(ii) Ownership - individual and collective rule. \* \* \*

(iii) Control. \* \* \*

(iv) Trawl identification of ownership interest form. \* \* \*

(v) Divestiture. \* \* \*

\* \* \* \* \*

(5) Appeals. An appeal to a QS permit or QS account action follows the same process as the general permit appeals process is defined at § 660.25(g), subpart C.

(6) Fees. \* \* \*

\* \* \* \* \*

~~(7) Cost recovery. A QS permit owner will not be responsible to pay cost recovery fees. Vessel account owners will be required to pay all cost recovery fees based on the annual usage of QPs as specified at paragraph (e)(7) of this section. [Reserved]~~

(8) Application requirements and initial issuance for QS permit and QS. \* \* \*

\* \* \* \* \*

(e) Vessel ~~accounts~~account.

(1) General. QP or IBQ pounds will have the same species/species groups and area designations as the QS or IBQ from which it was issued. Annually, QS or IBQ (expressed as a percent) are converted to QP or IBQ pounds (expressed as a weight) in a QS account. QP or IBQ pounds are then transferred to a vessel account. QPs or IBQ pounds are required to cover catch of all groundfish IFQ species/species group (landings and discards) by limited entry trawl vessels, except for:

(i) Gear exception. Vessels with a limited entry trawl permit using the following gears would not be required to cover groundfish catch with QP: ~~open access exempted or Pacific halibut catch with IBQ pounds: non-groundfish~~ trawl, gear types defined in the coastal pelagic

species PCGFMP, gear types defined in the highly migratory species PCGFMP, salmon troll, crab pot, and limited entry fixed gear when the vessel also has a limited entry permit endorsed for fixed gear and has declared that they are fishing in the limited entry fixed gear fishery.

(ii) Species exception. QP are not required for the following species, longspine thornyheads south of 34°27 N. lat., minor nearshore rockfish (north and south), black rockfish (coastwide), California scorpionfish, cabezon, kelp greenling, shortbelly rockfish, and “other fish” (as defined at § 660.11, subpart C, under the definition of “groundfish”). For these species, trip limits remain in place as specified in the trip limit tables at **Table 1 (North) and Table 1 (South) of this subpart**.

(2) Eligibility and registration.

(i) Eligibility. To ~~behave a~~ registered ~~a~~ vessel account, a person must own a vessel and that vessel must be registered to a groundfish limited entry permit endorsed for trawl gear.

(ii) Registration. A vessel account must be registered with the NMFS SFD Permits Office. A vessel account may be established at any time during the year. An eligible vessel owner must request in writing that NMFS establish a vessel account. The request must include the vessel name; USCG vessel registration number (as given on USCG Form 1270); ~~the~~all vessel owner ~~name;~~names (as given on USCG Form 1270); if the vessel owner is a business entity, then include the name of the authorized ~~representative~~vessel account manager that may act on behalf of the entity; business ~~contact information, including:~~ address, phone number, fax number, and email. Any change in the legal name of the vessel owner~~(s)~~ will require the new owner to register with NMFS for a vessel account. ~~In addition, the vessel owner may designate other persons that can access the vessel account by submitting a request in writing to NMFS.~~

(3) Renewal, change of account ownership, and transfer of QP or IBQ pounds.  
[Reserved]]

(4) Accumulation limits. ~~Vessels are subject to limits on the amount of QP that Vessel accounts may be registered to a single vessel during the not have QP or IBQ pounds in excess of the QP Vessel Limit in any year (QP Vessel Limit), and, for some species, on the amount covered by Unused QP Vessel Limits, may not have QP or IBQ pounds in excess of unused QP registered to a vessel account at any one time (the Unused QP Vessel Limit). at any time.~~ These amounts are as follows:

<b>Species Category</b>	<b>QP Vessel Limit (Annual Limit)</b>	<b>Unused QP Vessel Limit (Daily Limit)</b>
Nonwhiting Groundfish Species	3.2%	
Lingcod - coastwide	3.8%	
Pacific Cod	20.0%	
Pacific whiting (shoreside)	15.0%	
Sablefish		
N. of 36° (Monterey north)	4.5%	
S. of 36° (Conception area)	15.0%	
PACIFIC OCEAN PERCH	6.0%	4.0%
WIDOW ROCKFISH *	8.5%	5.1%
CANARY ROCKFISH	10.0%	4.4%
Chilipepper Rockfish	15.0%	
BOCACCIO	15.4%	13.2%
Splitnose Rockfish	15.0%	
Yellowtail Rockfish	7.5%	
Shortspine Thornyhead		
N. of 34°27'	9.0%	
S. of 34°27'	9.0%	
Longspine Thornyhead		
N. of 34°27'	9.0%	
COWCOD	17.7%	17.7%
DARKBLOTCHED	6.8%	4.5%
YELLOWEYE	11.4%	5.7%
Minor Rockfish North		
Shelf Species	7.5%	
Slope Species	7.5%	
Minor Rockfish South		
Shelf Species	13.5%	
Slope Species	9.0%	
Dover sole	3.9%	
English Sole	7.5%	
Petrale Sole	4.5%	
Arrowtooth Flounder	20.0%	
Starry Flounder	20.0%	
Other Flatfish	15.0%	
Other Fish	7.5%	
Pacific Halibut	14.4%	5.4%

\* If widow rockfish is rebuilt before initial allocation of QS, the vessel limit will be set at ~~limit will be~~ 1.5 times the control limit.

~~(5) Carryover. [Reserved]~~ (5) Carryover. The carryover provision allows surplus QP or IBQ pounds in a vessel account to be carried over from one year to the next or allows a deficit in a vessel account for one year to be carried over and covered with QP or IBQ pounds from a subsequent year. The percentage is calculated based on the total QP or IBQ pounds (used and unused) in a vessel account for the current fishing year. The percentage used for the carryover provision may be changed during the biennial specifications and management measures process.

(i) Carryover of surplus QP or IBQ pounds. A vessel account with a surplus of QP or IBQ pounds for any IFQ species at the end of the fishing year may carryover, or use, up to 10% of that QP or IBQ pounds in the immediately following year. If there is a decline in the OY between the fishing year and the following year in which the QP or IBQ pounds are being carried over, the amount of QP or IBQ pounds carried over as a surplus will be reduced in proportion to the reduction in the OY. Surplus QP or IBQ pounds may not be carried over for more than one year.

(ii) Carryover of deficit QP or IBQ pounds. A vessel account with a deficit of QP or IBQ pounds for any IFQ species in the current year may cover that deficit with QP or IBQ pounds from the following year without incurring a violation if the following conditions are met:

(A) the vessel declares out of the shorebased IFQ fishery for the year in which the overage occurred.

(B) the amount of QP or IBQ pounds required to cover the overage from the current fishing year is within up to 10% of the QP or IBQ pounds available from the following year (this carryover amount is calculated based on the amount of QP or IBQ pounds in the vessel account (cumulative used and unused QP or IBQ pounds minus QP or IBQ pounds that have been transferred to another vessel's account) at the end of the 30 day period during which a vessel must cover its overage), and

(C) the QP or IBQ pounds are acquired within 30 days from the date of landing for that trip or from the time the overage from that trip is documented in the vessel account, whichever is earlier, as specified in **paragraph (X) of this section**.

(6) Appeals. An appeal to a vessel account action follows the same process as the general permit appeals process defined at § 660.25(g), subpart C.

(7) Fees. The Regional Administrator is authorized to charge fees for administrative costs associated with the vessel accounts consistent with the provisions given at § 660.25(f), subpart C.

~~—— (8) Cost recovery. Vessel account owners will be required to pay all cost recovery fees based on the annual usage of QPs. Cost recovery fees will not be collected until further cost recovery regulations are implemented by NMFS.~~

~~—— (8) Cost recovery. [Reserved]~~

(f) First receiver site license.



(1) General. Any IFQ first receiver that receives IFQ landings must ~~have been issued~~hold a valid first receiver site license. The first receiver site license authorizes the holder to receive purchase, or takes custody, control, or possession of an IFQ landing at a specific physical site onshore directly from a vessel.

(2) Issuance.

(i) First receiver site licenses will only be issued to a person registered to a valid ~~fish buyer's~~ license issued by the state of Washington, Oregon, or California, which allows the person to receive fish from a catcher vessel.

(ii) A first receiver may apply for a first receiver site license at any time during the calendar year.

(iii) A first receiver site license is valid until the end of the calendar year. IFQ first receivers must reapply for a first receiver site license each year and whenever a change in the ownership occurs.

(3) Application process. Persons interested in being licensed as an IFQ first receiver must submit a complete application for a first receiver site license. NMFS will only consider complete applications for approval. A complete application includes:

(i) State ~~fish buyer's~~ license. A copy of ~~the~~ valid ~~fish buyer's~~ license issued by the state in which they operate, which allows the person to receive fish from a catcher vessel.

(ii) Contact information.

(A) The name of the first receiver,

(B) The physical location of the first receiver, including the street address where the IFQ landings will be received and/or processed.

(C) The name and phone number of the plant manager and any other authorized representative who will serve as a point of contact with NMFS.

(iii) A NMFS –accepted catch monitoring plan. All IFQ first receivers must prepare and operate under a NMFS-accepted catch monitoring plan. NMFS will not issue a first receiver site license to a processor that does not have a current, NMFS-accepted catch monitoring plan.

(A) Catch monitoring plan ~~approval~~review process. NMFS will accept a catch monitoring plan if it meets all the requirements specified in paragraph (f)(3)(iii)(C) of this section. The site must be inspected by NMFS staff or a NMFS ~~authorized representative~~designated inspector prior to acceptance to ensure that the ~~processor~~first receiver conforms to the elements addressed in the catch monitoring plan. NMFS will complete its review of the catch monitoring plan within 14 working days of receiving a complete catch monitoring plan and conducting a ~~catch~~-monitoring plan inspection. If NMFS does not accept a catch monitoring plan for any reason, a new or revised catch monitoring plan may be submitted.

(B) Arranging an inspection. The time and place of a ~~catch~~ monitoring plan inspection must be arranged by submitting a written request for an inspection to NMFS, Northwest Region at NMFS, Northwest Region, Permits Office, Bldg. 1, 7600 Sand Point Way NE, Seattle, WA 98115. NMFS will schedule an inspection within ten working days after receiving a complete application for an inspection. The inspection request must include:

(1) Name and signature of the person submitting the application and the date of the application;

(2) Address, telephone number, fax number, and email address (if available) of the person submitting the application;

(3) A proposed catch monitoring plan detailing how the ~~processor~~IFQ first receiver will meet each of the performance standards in ~~paragraph (d)(3)(iii)(C)~~ of this section.

(C) Contents of a catch monitoring plan. The catch monitoring plan must:

(1) Catch sorting. Describe the amount and location of all space used for sorting catch, the number of staff assigned to catch sorting, and the maximum rate that catch will flow through the sorting area.

(2) Monitoring for complete sorting. Detail how ~~processor~~IFQ first receiver staff will ensure that sorting is complete ~~and~~; what steps will be taken to prevent unsorted catch from entering the factory or other areas beyond the location where catch sorting and weighing can be monitored from the observation area ~~;~~ and what steps will be taken if unsorted catch enters the factory or other areas beyond the location where catch sorting and weighing can be monitored from the observation area.

(3) Scales used for weighing IFQ landings. Identify each scale that will be used to weigh IFQ landings by ~~serial number~~the type and capacity and describe where it is located and what it will be used for. Each scale must be appropriate for its intended use.

~~—— (4) Scale testing procedures. For each scale identified in the catch monitoring plan, describe the procedures the plant will use to test the scale; list the test weights and equipment required to test the scale; list where the test weights and equipment will be stored; and list the plant personnel responsible for conducting the scale testing.~~

~~—— (5) Printed record.~~ (4) Printed record. Identify all scales that will be used to weigh IFQ landings that cannot produce a complete printed record as specified at ~~§ 660.140~~ § 660.140(X)(X)-15(c), subpart C. State how the scale will be used, and how the plant intends to produce a complete and accurate record of the total weight of each delivery.

(65) Weight monitoring. ~~The catch monitoring plan must detail~~Detail how ~~the IFQ first receiver~~ will ensure that all catch is weighed and the process ~~will~~used to meet the catch weighing requirements specified at ~~§ 660.140(X)-paragraph (k) of this section.~~ If a catch monitoring plan proposes the use of totes in which IFQ species will be weighed, or a deduction for the weight of ice, the catch monitoring plan must detail how the process will ~~be~~accurately accounted account for the weight of ice and/or totes.

(76) Delivery point. ~~Each catch monitoring plan must identify a point.~~ Identify specific delivery points where catch is removed from an IFQ vessel. The delivery point is the first location where fish removed from a delivering catcher vessel can be sorted or diverted to more than one location. If the catch is pumped from the hold of a catcher vessel or a codend, the delivery point will be the location where the pump first discharges the catch. If catch is removed

from a vessel by brailing, the delivery point normally will be the bin or belt where the brailer discharges the catch.

(87) Observation area. ~~A description of~~ Designate and describe the observation area. The observation area is a location where a catch monitor may monitor the flow of fish during a delivery, including: access to the observation area, the flow of fish, and lighting used during periods of limited visibility. Standards for the observation area are specified at paragraph (j)(4)(ii) of this section.

(98) Lockable cabinet. ~~The~~ Identify the location of a secure, dry, and lockable cabinet or locker with the minimum dimensions of two feet wide by two feet tall by two feet deep for the exclusive use of the catch monitor, NMFS staff, or ~~NMFS-authorized personnel/officers.~~

(109) Plant liaison. ~~The catch monitoring plan must identify the designate a~~ Identify the designated plant liaison. The plant liaison responsibilities are specified at paragraph (j)(6) of this section.

(110) First receiver diagram. The catch monitoring plan must be accompanied by a ~~scale drawing~~ diagram of the plant showing:

- (i) The delivery point~~-(s);~~
- (ii) The observation area;
- (iii) The lockable cabinet;
- (iv) The location of each scale used to weigh catch; and
- (v) Each location where catch is sorted.

(D) Catch monitoring plan acceptance period and changes. NMFS will accept a catch monitoring plan if it meets the performance standards specified in paragraph (f)(3)(iii)(C) of this section. For the first receiver site license to remain in effect through the calendar year, an owner or manager must notify NMFS in writing of any and all changes made in IFQ first receiver operations or layout that do not conform to the catch monitoring plan.

(E) Changing an NMFS-accepted catch monitoring plan. An owner and manager may change an ~~approved~~ accepted catch monitoring plan by submitting a plan addendum to NMFS. NMFS will accept the modified catch monitoring plan if it continues to meet the performance standards specified in ~~requirements of~~ paragraph (Xf)(3)(iii)(C) of this section. Depending on the nature and magnitude of the change requested, NMFS may require an additional catch monitoring plan inspections. A catch monitoring plan addendum must contain:

- (1) Name and signature of the person submitting the addendum;
- (2) Address, telephone number, fax number and email address (if available) of the person submitting the addendum;
- (3) A complete description of the proposed catch monitoring plan change.

(iv) Completed EDC questionnaire. A first receiver site license will not be issued if the required economic data is not submitted as required under § 660.113 (b).

(4) Initial administrative determination. For all complete applications, NMFS will issue an IAD that either approves or disapproves the application. If approved, the IAD will include a first receiver site license. If disapproved, the IAD will provide the reasons for this determination.

(5) Effective date. The first receiver site license is effective upon approval by NMFS and will be effective until December 31 of the same year.

(6) Reissuance in subsequent years. Existing license holders must reapply by December 31. If the existing license holder fails to reapply by December 31, the first receiver's site license will expire and they will not be authorized to receive or process groundfish IFQ species. Any applications received after November 30 may not be approved for a first receiver site license by January 1 of the following year. If a first receiver applies for and is issued a first receiver site license after September 1 in a given year, NMFS will send an application form for the subsequent year when issuing the site license for the current year.

(7) Change in ownership of an IFQ first receiver. If there are any changes to the owner of a first receiver registered to a first receiver site license during a calendar year, the first receiver site license is void. The new owner of the first receiver must apply to NMFS for a first receiver site license. A first receiver site license is not transferrable by the license holder to any other person.

(8) Fees. The Regional Administrator is authorized to charge fees for administrative costs associated with processing the application consistent with the provisions given at § 660.25(f), subpart C.

(9) Appeals. If NMFS does not accept the first receiver site license application through an IAD, the applicant may appeal the IAD consistent with the general permit appeals process ~~is~~ defined at § 660.25(g), subpart C.

(g) Retention requirements (whiting and non-whiting vessels).

(1) IFQ species. [Reserved]

(2) Pacific halibut IFQ. [Reserved]

(3) Pacific whiting IFQ fishery. [Reserved]

(h) Observer Requirements.

(1) ~~General~~.

(2) Coverage requirements.

(i) Any vessel fishing in the Shorebased IFQ Program is required to carry a NMFS-certified observer ~~including any trip on all trips~~.

(ii) The observer deployment limitations and workload. ~~The time required for the observer to complete sampling duties~~ While aboard a vessel, ~~observers~~ must ~~not exceed 16 consecutive~~ be given a minimum 6 hour continuous period of rest every 24 hours ~~in each 24-hour period. An~~ fishing activity is occurring. Fishing activity includes the deployment of gear, retrieval of gear, sorting of catch, and storing of catch. In addition, an observer must not be deployed for more than 22 calendar days in a calendar month ~~and given the time necessary to enter data as per~~. The observer program ~~protocol~~ may issue waivers to allow observers to work

more than 22 calendar days per month when it's anticipated one trip will last over 20 days or for issues with observer availability due illness or injury of other observers.

(A) If an observer is unable to sample for any reason for a period greater than 24 hours, the vessel is required to return to port within 36 hours of the last haul sampled by the observer.

(B) [Reserved]

(iii) Any boarding refusal on the part of the observer or vessel is reported to the observer program and ~~NMFS OLE observer compliance coordinator~~ NOAA OLE by the observer provider and observer. Observer must be available for an interview with the observer program or NOAA OLE if necessary.

(32) Vessel responsibilities.

(i) Accommodations and food.

(A) Accommodations and food for trips less than 24 hours must be equivalent to those provided for the crew.

(B) Accommodations and food for trips of 24 hours or more must be equivalent to those provided for the crew and must include berthing space, a space that is intended to be used for sleeping and is provided with installed bunks and mattresses. A mattress or futon on the floor or a cot is not acceptable if a regular bunk is provided to any crew member, unless other arrangements are approved in advance by the Regional Administrator ~~of designator their~~ designee.

(ii) Safe conditions.

(A) Maintain safe conditions on the vessel for the protection of observers including adherence to all U.S. Coast Guard and other applicable rules, regulations, statutes, and guidelines pertaining to safe operation of the vessel, including, but not limited to rules of the road, vessel stability, emergency drills, emergency equipment, vessel maintenance, vessel general condition and port bar crossings. An observer may refuse boarding or reboarding a vessel and may request a vessel to return to port if operated in an unsafe manner or if unsafe conditions are identified.

(B) Have on board: a valid Commercial Fishing Vessel Safety Decal ~~issued within the past 2 years or at a time interval consistent with current USCG regulations or policy~~ that certifies compliance with regulations found in 33 CFR Chapter I and 46 CFR Chapter I, a certificate of compliance issued pursuant to 46 CFR 28.710 or a valid certificate of inspection pursuant to 46 U.S.C. 3311.

(3iii) Computer hardware and software. [Reserved]

(iv) Vessel position. Allow observer(s) access to, ~~and the use of,~~ the vessel's navigation equipment and personnel, on request, to determine the vessel's position.

(v) Access. Allow observer(s) free and unobstructed access to the vessel's bridge, trawl or working deck, holding bins, sorting areas, cargo hold, and any other space that may be used to hold, process, weigh, or store fish at any time.

(vi) Prior notification. Notify observer(s) at least 15 minutes before fish are brought on board to allow sampling the catch.

(vii) Records. Allow observer(s) to inspect and copy any state or Federal logbook maintained voluntarily or as required by regulation.

(viii) Assistance. Provide all other reasonable assistance to enable observer(s) to carry out their duties, including, but not limited to:

(A) Measuring decks, codends, and holding bins.

(B) Providing a designated working area on deck for the observer(s) to collect, sort and store catch samples. ~~—As much as possible, the area should be free and clear of hazards including, but not limited to moving fishing gear, stored fishing gear, inclement weather conditions, and open hatches.~~

(C) Collecting samples of catch.

(D) Collecting and carrying baskets of fish.

(E) Allowing the observer(s) to collect biological data and samples.

(F) Providing adequate space for storage of biological samples.

(G) Providing time between hauls to sample and record all catch.

(H) Sorting retained and discarded catch into quota pound groupings.

(I) Stowing all catch from a haul before the next haul is brought aboard.

(ix) Sampling Station. To allow the observer to carry out the required duties, the vessel owner must provide an observer sampling station that is:

(A) Accessible. The observer sampling station must be available to the observer at all times.

(B) Limits Hazards. To the extent possible, the area should be free and clear of hazards including, but not limited to, moving fishing gear, stored fishing gear, inclement weather conditions, and open hatches.

(x) Transfers at sea. Transfers at-sea are prohibited.

(3) Procurement of observer services.

(i) Owners of vessels required to carry observers under paragraph (a)(1) of this section must arrange for observer services from an Observer provider permitted by the North Pacific Groundfish Observer Program under **50 CFR 679.50 120 i**, except that:

~~(A) Vessels are required to procure observer services directly from NMFS when NMFS has determined and given notification that the vessel must carry NMFS staff or an individual authorized by NMFS in lieu of an observer provided by a permitted observer provider.~~

~~(B) Vessels are required to procure observer services directly from NMFS and a permitted observer provider when NMFS has determined and given notification that the vessel must carry NMFS staff and/or individuals authorized by NMFS, in addition to an observer provided by a permitted observer provider.~~

(4)(A) Vessels are required to procure observer services directly from NMFS when NMFS has determined and given notification that the vessel must carry NMFS staff or an individual authorized by NMFS in lieu of an observer provided by a permitted observer provider.

(B) Vessels are required to procure observer services directly from NMFS and a permitted observer provider when NMFS has determined and given notification that the vessel



must carry NMFS staff and/or individuals authorized by NMFS, in addition to an observer provided by a permitted observer provider.

(ii) [Reserved]

(4) Application to become an observer provider. Regulations applicable to this section will not be in place until a later date. Until new regulations are published, any observer provider certified by the North Pacific observer program as of 2008 can supply observer services to the west coast trawl fishery.

(5) Observer provider responsibilities. Observer providers must:

(i) Provide qualified candidates to serve as observers.

(A) To be qualified, a candidate must have:

(1) A Bachelor's degree or higher from an accredited college or university with a major in one of the natural sciences;

(2) Successfully completed a minimum of 30 semester hours or equivalent in applicable biological sciences with extensive use of dichotomous keys in at least one course;

(3) Successfully completed at least one undergraduate course each in math and statistics with a minimum of 5 semester hours total for both; and

(4) Computer skills that enable the candidate to work competently with standard database software and computer hardware.

(ii) Prior to hiring an observer candidate, the observer provider must:

(A) Provide the candidate a copy of NMFS-provided pamphlets, information and other literature describing observer duties, for example, the West Coast Groundfish Observer Program's sampling manual. Observer job information is available from the Observer Program Office's web site at <http://www.nwfsc.noaa.gov/research/divisions/fram/observer/index.cfm>

(B) For each observer employed by an observer provider, either a written contract or a written contract addendum must exist that is signed by the observer and observer provider prior to the observer's deployment and that contains the following provisions for continued employment:

(1) That all the observer's in-season catch messages between the observer and NMFS are delivered to the Observer Program Office as specified by the Observer Program instructions;

(2) The observer inform the observer provider prior to the time of embarkation if he or she is experiencing any new mental illness or physical ailments or injury since submission of the physician's statement as required as a qualified observer candidate that would prevent him or her from performing their assigned duties;

(3) Ensure that every observer completes a basic cardiopulmonary resuscitation/first aid course prior to the end of the NMFS West Coast Groundfish Observer Training class.

~~(4) NMFS may reject a candidate for training if the candidate does not meet the minimum qualification requirements as outlined by NMFS Minimum Eligibility Standards for observers listed above in paragraph XX.~~

(iii) Ensure that observers complete duties in a timely manner. ~~An observer provider~~  
Observer providers must ensure that observers employed by that observer provider do the following in a complete and timely manner:

(A) Submit to NMFS all data, logbooks and reports and biological samples as required under the observer program policy deadlines.

(B) Report for his or her scheduled debriefing and complete all debriefing responsibilities; and

(C) Return all sampling and safety gear to the Observer Program Office at the termination of their contract.

(iv) Provide vessels only observers:

(A) With a valid West Coast Groundfish observer certification;

(B) Who have not informed the provider prior to the time of embarkation that he or she is experiencing a mental illness or a physical ailment or injury developed since submission of the physician's statement, as required in paragraph XX of this section that would prevent him or her from performing his or her assigned duties; and

(C) Who have successfully completed all NMFS required training and briefing before deployment.

(v) Respond to industry requests for observers. An observer provider must provide an observer for deployment as requested by vessels to fulfill vessel requirements for observer coverage under sections XX of this section. An alternate observer must be supplied in each case where injury or illness prevents the observer from performing his or her duties or where the observer resigns prior to completion of his or her duties. If the observer provider is unable to respond to an industry request for observer coverage due to the lack of available observers by the estimated embarking time of the vessel, the provider must report it to NMFS, at ~~minimum,~~least 4 hours prior to the vessel's estimated embarking time.

(vi) Provide observer salaries and benefits. An observer provider must provide to its observer employees salaries and any other benefits and personnel services in accordance with the terms of each observer's contract. ~~The provider must also confirm that its observers are compensated with salaries that meet or exceed the U.S. Department of Labor guidelines for marine fishery observers. Observers shall be compensated as Fair Labor Standards Act non-exempt employees. Observer providers shall provide any other benefits and personnel services in accordance with the terms of each observer's contract or employment status.~~

(vii) Provide observer deployment logistics.

(A) An observer provider must ensure each of its observers under contract:

(1) Has an individually assigned mobile or cell phones, in working order, for all necessary communication. An observer provider may alternatively compensate observers for the use of the observer's personal cell phone or pager for communications made in support of, or necessary for, the observer's duties.



(2) Calls into the NMFS deployment hotline upon departing and arriving into port for each trip to leave the following information: observer name, phone number, vessel departing on, expected trip end date and time.

(3) Remains available to ~~NMFS~~NOAA Office for Law Enforcement and ~~NMFS~~the Observer Program until the conclusion of debriefing.

(4) ~~Reeeive~~Receives all necessary transportation, including arrangements and logistics, of observers to the initial location of deployment, to all subsequent vessel assignments during that deployment, and to the debriefing location when a deployment ends for any reason; and

(5) ~~Reeeive~~Receives lodging, per diem, and any other services necessary to observers assigned to fishing vessels.

(~~B~~i) An observer under contract may be housed on a vessel to which he or she is assigned:

(~~1~~)~~Prior~~ prior to their vessel's initial departure from port;

(~~2~~)~~For~~ for a period not to exceed twenty-four hours following the completion of an offload when the observer has duties and is scheduled to disembark; or

(~~3~~)~~For~~ for a period not to exceed twenty-four hours following the vessel's arrival in port when the observer is scheduled to disembark.

(~~E~~ii) During all periods an observer is housed on a vessel, the observer provider must ensure that the vessel operator or at least one crew member is aboard.

(~~D~~\_\_\_\_(iii) Otherwise, each observer between vessels, while still under contract with a permitted observer provider, shall be provided with accommodations in accordance with the contract between the observer and the observer provider. If the observer provider is responsible for providing accommodations under the contract with the observer, the accommodations must be at a licensed hotel, motel, bed and breakfast, or other shoreside accommodations ~~for the duration of each period between vessel or shoreside assignments. Such accommodations must include~~that ~~has~~ an assigned bed for each observer ~~and that~~ no other person may be assigned ~~that bed~~to for the duration of that observer's stay. Additionally, no more than four beds may be in any room housing observers at accommodations meeting the requirements of this section.

(viii) Observer deployment limitations and workload. Not deploy an observer on the same vessel more than ~~45~~90 calendar days in a 12-month period. Not exceed observer deployment limitations and workload as outlined in paragraph (~~h~~)(~~C~~)(ii) above.

(ix) Verify vessel's safety decal. An observer provider must verify that a vessel has a valid USCG safety decal as required under paragraph XX of this section before an observer may get underway aboard the vessel. One of the following acceptable means of verification must be used to verify the decal validity:

(A) An employee of the observer provider, including the observer, visually inspects the decal aboard the vessel and confirms that the decal is valid according to the decal date of issuance; or

(B) The observer provider receives a hard copy of the USCG documentation of the decal issuance from the vessel owner or operator.

(x) Maintain communications with observers. An observer provider must have an employee responsible for observer activities on call 24 hours a day to handle emergencies involving observers or problems concerning observer logistics, whenever observers are at sea, in transit, or in port awaiting vessel reassignment.

(xi) Maintain communications with the observer program office. An observer provider must provide all of the following information by electronic transmission (e-mail), fax, or other method specified by NMFS.

(A) Observer training ~~and~~, briefing, and debriefing registration materials. This information must be submitted to the Observer Program Office at least 7 business days prior to the beginning of a scheduled West Coast groundfish observer certification training or briefing session.

(1) Training registration materials consist of the following:

- (i) Date of requested training;
- (ii) A list of observer candidates. ~~The list must include that includes~~ each candidate's full name (i.e., first, middle and last names), date of birth, and sex;
- (iii) A copy of each candidate's academic transcripts and resume; ~~and~~
- (iv) A statement signed by the candidate under penalty of perjury which discloses the candidate's criminal convictions;

(v) Projected observer assignments. Prior to the observer's completion of the training or briefing session, the observer provider must submit to the Observer Program Office a statement of projected observer assignments that include that includes each observer's name, current mailing address, e-mail address, phone numbers and port of embarkation ("home port"); and

(vi) Length of observers contract.

(2) Briefing registration materials consist of the following:

- (i) Date and type of requested briefing session ~~and briefing location; and;~~
- (ii) List of observers to attend the briefing session. ~~Each, that includes each~~ observer's full name (first, middle, and last names) ~~must be included;~~

(iii) Projected observer assignments. Prior to the observer's completion of the training or briefing session, the observer provider must submit to the Observer Program Office a statement of projected observer assignments that include that includes each observer's name, current mailing address, e-mail address, phone numbers and port of embarkation ("home port"); and

(iv) Length of observer contract.

(3) Debriefing. The West Coast Groundfish Observer Program will notify the observer provider by the 15<sup>th</sup> of each month which observers require debriefing and the specific time period the provider has to schedule a date, time, and location for debriefing. The observer provider must contact the West Coast Groundfish Observer program within 5 business days by telephone to schedule debriefings.

(i) Observer providers must immediately notify the observer program when observers end their contract earlier than anticipated.

(ii) [Reserved]

(B) Physical examination. A signed and dated statement from a licensed physician that he or she has physically examined an observer or observer candidate. The statement must confirm that, based on that physical examination, the observer or observer candidate does not have any health problems or conditions that would jeopardize that individual's safety or the safety of others while deployed, or prevent the observer or observer candidate from performing his or her duties satisfactorily. The statement must declare that, prior to the examination, the physician was made aware of the duties of the observer and the dangerous, remote, and rigorous nature of the work by reading the NMFS-prepared information. The physician's statement must be submitted to the Observer Program Office prior to certification of an observer. The physical exam must have occurred during the 12 months prior to the observer's or observer candidate's deployment. The physician's statement will expire 12 months after the physical exam occurred. A new physical exam must be performed, and accompanying statement submitted, prior to any deployment occurring after the expiration of the statement.

(C) Certificates of insurance. Copies of “certificates of insurance”, that names the NMFS Observer Program leader as the “certificate holder”, shall be submitted to the Observer Program Office by February 1 of each year. The certificates of insurance shall verify the following coverage provisions and state that the insurance company will notify the certificate holder if insurance coverage is changed or canceled.

(1) Maritime Liability to cover “seamen's” claims under the Merchant Marine Act (Jones Act) and General Maritime Law (\$1 million minimum).

(2) Coverage under the U.S. Longshore and Harbor Workers' Compensation Act (\$1 million minimum).

(3) States Worker's Compensation as required.

(4) Commercial General Liability.

(D) Observer provider contracts. If requested, observer providers must submit to the Observer Program Office a completed and unaltered copy of each type of signed and valid contract (including all attachments, appendices, addendums, and exhibits incorporated into the contract) between the observer provider and those entities requiring observer services under **paragraph XX of this section**. Observer providers must also submit to the Observer Program Office upon request, a completed and unaltered copy of the current or most recent signed and valid contract (including all attachments, appendices, addendums, and exhibits incorporated into the contract and any agreements or policies with regard to observer compensation or salary levels) between the observer provider and the particular entity identified by the Observer Program or with specific observers. Said copies must be submitted to the Observer Program Office via fax or mail within 5 business days of the request ~~for the contract at the address or fax number listed in paragraph (e)(3) of this section.~~ Signed and valid contracts include the contracts an observer provider has with:

(1) Vessels required to have observer coverage as specified at **paragraph XX of this section**; and

(2) Observers.

(E) Change in observer provider management and contact information. Except for changes in ownership addressed under paragraph XX of this section, an observer provider must submit notification of any other change to the information submitted on the provider's permit application under paragraphs XX of this section. Within 30 days of the effective date of such change, this information must be submitted by fax or mail to the Observer Program Office at the address listed in paragraph XX of this section.

(F) Boarding refusals. The observer service provider must report to NMFS any trip that has been refused by an observer within 24 hours of the refusal.

(G) Biological samples. The observer service provider must ensure that biological ~~samples~~are samples are stored/handled properly prior to delivery/transport to NMFS.

(H) Observer status report. Each ~~week~~Tuesday, observer providers must provide NMFS with an updated list of contact information for all observers that includes the observer's name, mailing address, e-mail address, phone numbers, port of embarkation ("home port"), fishery deployed the previous week and whether or not the observer is "in service", indicating when the observer has requested leave and/or is not currently working for the provider.

(I) Providers must submit to NMFS, if requested, copies of any information developed and used by the observer providers distributed to vessels, such as informational pamphlets, payment notification, description of observer duties, etc.

(J) Other reports. Reports of the following must be submitted in writing to the West Coast Groundfish Observer Program Office by the observer provider via fax or email address designated by the Observer Program Office within 24 hours after the observer provider becomes aware of the information:

- (1) Any information regarding possible observer harassment;
- (2) Any information regarding any action prohibited under XX or § 600.725(o), (t) and (u);
- (3) Any concerns about vessel safety or marine casualty under 46 CFR 4.05–1 (a)(1) through (7)~~);~~);
- (4) Any observer illness or injury that prevents the observer from completing any of his or her duties described in the observer manual; and
- (5) Any information, allegations or reports regarding observer conflict of interest or breach of the standards of behavior described in observer provider policy.

(xii) Replace lost or damaged gear. An observer provider must replace all lost or damaged gear and equipment issued by NMFS to an observer under contract to that provider. All replacements must be in accordance with requirements and procedures identified in writing by the Observer Program Office.

(xiii) Maintain confidentiality of information. An observer provider must ensure that all records on individual observer performance received from NMFS under the routine use provision of the Privacy Act remain confidential and are not further released to anyone outside the employ of the observer provider company to whom the observer was contracted except with written permission of the observer.

(ivx) Must meet limitations on conflict of interest. Observer providers:

(A) Must not have a direct financial interest, other than the provision of observer services, in the West Coast Groundfish fishery managed under an FMP for the waters off the coasts of Washington, Oregon, and California, including, but not limited to,

(1) Any ownership, mortgage holder, or other secured interest in a vessel, or shoreside processors facility involved in the catching, taking, harvesting or processing of fish,

(2) Any business involved with selling supplies or services to any vessel or shoreside processors participating in a fishery managed pursuant to an FMP in the waters off the coasts of California, Oregon, and Washington, or

(3) Any business involved with purchasing raw or processed products from any vessel or shoreside processor participating in a fishery managed pursuant to an FMP in the waters off the coasts of California, Oregon, and Washington.

(B) Must assign observers without regard to any preference by representatives of vessels other than when an observer will be deployed.

(C) Must not solicit or accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from anyone who conducts fishing or fish processing activities that are regulated by NMFS, or who has interests that may be substantially affected by the performance or nonperformance of the official duties of observer providers.

(vx) Must develop and maintain a policy addressing observer conduct and behavior for their employees that serve as observers.

(A) The policy shall address the following behavior and conduct regarding:

(1) Observer use of alcohol;

(2) Observer use, possession, or distribution of illegal drugs and;

(3) Sexual contact with personnel of the vessel or processing facility to which the observer is assigned, or with any vessel or processing plant personnel who may be substantially affected by the performance or non-performance of the observer's official duties.

(B) An observer provider shall provide a copy of its conduct and behavior policy to each observer candidate and to the Observer Program by February 1 of each year.

(vix) Refuse to deploy an observer on a requesting vessel if the observer service provider has determined that the requesting vessel is inadequate or unsafe pursuant to those described at § 600.746 or U.S. Coast Guard and other applicable rules, regulations, statutes, or guidelines pertaining to safe operation of the vessel.

~~(56)~~ Observer certification and responsibilities.

(i) Applicability. Observer certification authorizes an individual to fulfill duties as specified in writing by the NMFS Observer Program Office while under the employ of a NMFS-permitted observer provider and according to certification requirements as designated under **paragraph XX of this section.**

(ii) Observer certification official. The Regional Administrator will designate a NMFS observer certification official who will make decisions for the Observer Program Office on whether to issue or deny observer certification.

(iii) Certification requirements.

(A) Initial certification. NMFS ~~will~~may certify individuals who, in addition to any other relevant considerations:

(1) Are employed by an observer provider company permitted pursuant to 50 CFR 660.120 at the time of the issuance of the certification;

(2) Have provided, through their observer provider:

(i) Information identified by NMFS at 50 CFR 660.120 regarding an observer candidate's health and physical fitness for the job;

(ii) Meet all observer candidate education and health standards as specified in 50 CFR 660.120 and

(iii) Have successfully completed NMFS-approved training as prescribed by the West Coast Groundfish Observer Program.

(B) Successful completion of training by an observer applicant consists of meeting all attendance and conduct standards issued in writing at the start of training; meeting all performance standards issued in writing at the start of training for assignments, tests, and other evaluation tools; and completing all other training requirements established by the Observer Program.

(C) Have not been decertified under paragraph XX of this section, or pursuant to 50 CFR 660.120.

(iv) Denial of ~~an initial observer certification~~-Certification. The NMFS observer certification official will issue a written determination denying observer certification if the candidate fails to successfully complete training, or does not meet the qualifications for certification for any other relevant reason.

(v) Issuance of an ~~initial~~ observer certification. An observer certification may be issued upon determination by the observer certification official that the candidate has successfully met all requirements for certification as specified at XX. The following endorsements must be obtained in addition to observer certification, in order for an observer deploy.

(A) West Coast Groundfish Observer Program Training certification endorsement. A training certification endorsement signifies the successful completion of the training course required to obtain observer certification. This endorsement expires when the observer has not been deployed and performed sampling duties as required by the observer Program office for a period of time, specified by the Observer Program, after his or her most recent debriefing. The observer can renew the endorsement by successfully completing training once more.

(B) West Coast Groundfish Observer Program Annual general endorsement. Each observer must obtain an annual general endorsement to their certification prior to his or her first deployment within any calendar year subsequent to a year in which a training certification endorsement is obtained. To obtain an annual general endorsement, an observer must successfully complete the annual briefing, as specified by the Observer Program. All briefing attendance, performance, and conduct standards required by the Observer Program must be met.



(C) West Coast Groundfish Observer Program deployment endorsement. Each observer who has completed an initial deployment after their certification or annual briefing must receive a deployment endorsement to their certification prior to any subsequent deployments for the remainder of that year. An observer may obtain a deployment endorsement by successfully completing all briefing requirements, when applicable. The type of briefing the observer must attend and successfully complete will be specified in writing by the Observer Program during the observer's most recent debriefing.

(vi) Maintaining the validity of an observer certification. After initial issuance, an observer must keep their certification valid by meeting all of the following requirements specified below:

(A) Successfully perform their assigned duties as described in the Observer Manual or other written instructions from the Observer Program Office including calling into the NMFS deployment hotline upon departing and arriving into port each trip to leave the following information: observer name, phone number, vessel name departing on, date and time of departure and date and time of expected return.

(B) Accurately record their sampling data, write complete reports, and report accurately any observations of suspected violations of regulations relevant to conservation of marine resources or their environment.

(C) Not disclose collected data and observations made on board the vessel or in the processing facility to any person except the owner or operator of the observed vessel or an authorized officer or NMFS.

(D) Successfully complete NMFS-approved annual briefings as prescribed by the West Coast Groundfish Observer Program.

(E) Successful completion of briefing by an observer applicant consists of meeting all attendance and conduct standards issued in writing at the start of training; meeting all performance standards issued in writing at the start of training for assignments, tests, and other evaluation tools; and completing all other briefing requirements established by the Observer Program.

(F) Hold current basic cardiopulmonary resuscitation/first aid certification as per American Red Cross Standards.

(G) Successfully meet all expectations in all debriefings including reporting for assigned debriefings.

(H) Submit all data and information required by the observer program within the program's stated guidelines.

(I) Meet the minimum annual deployment period of 3 months at least once every 12 months.

~~(A)~~ (vii) Limitations on conflict of interest. Observers:

~~(1A)~~ Must not have a direct financial interest, other than the provision of observer services, in a North Pacific fishery managed pursuant to an FMP for the waters off the coast of

Alaska, or in a Pacific Coast fishery managed by either the state or Federal governments in waters off Washington, Oregon, or California, including but not limited to:

(~~1~~) Any ownership, mortgage holder, or other secured interest in a vessel, shore-based or floating stationary processor facility involved in the catching, taking, harvesting or processing of fish,

(~~2~~) Any business involved with selling supplies or services to any vessel, shore-based or floating stationary processing facility; or

(~~3~~) Any business involved with purchasing raw or processed products from any vessel, shore-based or floating stationary processing facilities.

(~~2~~B) Must not solicit or accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from anyone who either conducts activities that are regulated by NMFS or has interests that may be substantially affected by the performance or nonperformance of the observers' official duties.

(~~3~~C) May not serve as observers on any vessel or at any shore-based ~~or floating stationary processing facility~~ owned or operated by a person who ~~previously~~ employed the ~~observers~~ observer in the last two years.

(~~4~~D) May not solicit or accept employment as a crew member or an employee of a vessel or shore-based processor while employed by an observer provider.

(~~5~~E) Provisions for remuneration of observers under this section do not constitute a conflict of interest.

~~(vii) Probation~~ (viii) Standards of Behavior. Observers must:

(A) Perform their duties as described in the Observer Manual or other written instructions from the Observer Program Office.

(B) Report to the Observer Program office and the NOAA OLE any time they refuse to board a vessel.

(C) Accurately record their sampling data, write complete reports, and report accurately any observations of suspected violations of regulations relevant to the conservation of marine resources of their environment.

(D) Not disclose collected data and observations made on board the vessel to any person except the owner or operator of the observed vessel, an authorized officer, or NMFS.

(xiv) Suspension and decertification.

~~(viii) Issuance of~~ (A) Suspension and decertification. ~~Upon determination that review official. The Regional Administrator (or a designee) will designate an observer suspension and decertification is warranted under paragraph XX of this section, NMFS shall issue a written decision to decertify~~ review official(s), who will have the authority to review observer ~~to the observer certifications and approved issue initial administrative determinations of observer providers. The decision shall identify whether a certification is revoked and shall identify the specific reasons for the action taken. Decertification is effective immediately as of the date of issuance, unless the suspension and/or decertification official notes a compelling reason for maintaining.~~



(B) Causes for suspension or decertification. The suspension and decertification official may initiate suspension or decertification proceedings against an observer:

(1) When it is alleged that the observer has committed any acts or omissions of any of the following:

(i) Failed to satisfactorily perform the duties of observers as specified in writing by the NMFS Observer Program; or

(ii) Failed to abide by the standards of conduct for observers as prescribed under paragraph XX of this section;

(2) Upon conviction of a crime or upon entry of a civil judgment for:

(i) Commission of fraud or other violation in connection with obtaining or attempting to obtain certification for a specified period and under, or in performing the duties as specified conditions. Decertification is the final decision of in writing by the NMFS Observer Program;

(ii) Commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(iii) Commission of any other offense indicating a lack of integrity or honesty that seriously and directly affects the fitness of observers.

(C) Issuance of initial administrative determination. Upon determination that suspension or decertification is warranted under paragraph XX of this section, the suspension/decertification official will issue a written IAD to the observer via certified mail at the observer's most current address provided to NMFS. The IAD will identify whether a certification is suspended or revoked and will identify the specific reasons for the action taken. If the IAD issues a suspension for an observer certification, the terms of the suspension will be specified. Suspension or decertification is effective immediately as of the date of issuance, unless the suspension/decertification official notes a compelling reason for maintaining certification for a specified period and under specified conditions.

and the Department of Commerce and may (D) Appeals. A certified observer who receives an IAD that suspends or revokes his or her observer certification may appeal to the Office of Administrative Appeals.

(1) Decisions on appeals of initial administrative decisions denying certification to, or suspending, or decertifying, an observer, will be made by the Regional Administrator (or designated official).

(2) Appeals decisions shall be in writing and shall state the reasons therefore.

(3) An appeal must be filed with the Regional Administrator within 30 days of the initial administrative decision denying, suspending, or revoking the observer's certification.

(4) The appeal must be in writing, and must allege facts or circumstances to show why the certification should be granted, or should not be appealed suspended or revoked, under the criteria in this section.

(5) Absent good cause for further delay, the Regional Administrator (or designated official) will issue a written decision on the appeal within 45 days of receipt of the appeal. The

Regional Administrator's decision is the final administrative decision of the Department as of the date of the decision.

(i) [Reserved]

(j) Catch monitor requirements for IFQ first receivers.

(1) Catch monitor coverage requirements. A catch monitor is required be present at each IFQ first receiver whenever an IFQ landing is received, unless the first receiver has been granted a written waiver from the catch monitor requirements by NMFS.

(2) Procurement of catch monitor services. Owners or managers of each IFQ first receiver must arrange for catch monitor services from a certified catch monitor provider prior to accepting IFQ landings. IFQ first receivers are responsible for all associated costs including training time, debriefing time, and lodging while deployed.

(3) Catch monitor safety.

(i) Each IFQ first receiver must adhere to all applicable rules, regulations, or statutes pertaining to safe operation and maintenance of a processing and/or receiving facility.

(ii) The working hours of each individual catch monitor will be limited as follows:

(A) An individual catch monitor shall not be required or permitted to work more than 16 hours per calendar day, with maximum of 14 hours being work other than the summary and submission of catch monitor data.

(B) Following monitoring shift of more than 10 hours, each catch monitor must be provided with a minimum 6 hours break before they may resume monitoring.

~~(4) IFQ landing notification requirements. Each IFQ first receiver must provide the catch monitor notification in person, by personal communications radio, or by telephone of the offloading schedule for each IFQ landing at least 30 minutes prior to, but not more than two hours before, offloading begins.~~

~~(5)~~(4) Catch monitor access.

(i) Each IFQ first receiver must allow catch monitors free and unobstructed access to the catch throughout the sorting process and the weighing process.

(ii) The IFQ first receiver must ensure that there is an observation area available to the catch monitor that meets the following standards:

(A) ~~Accessible~~Access to catch monitors, the observation area. The observation area must be freely accessible to NMFS staff or ~~NMFS-~~authorized ~~agents~~officers at any time a valid catch monitoring plan is required.

(B) Monitoring the flow of fish. The catch monitor must have an unobstructed view or otherwise be able to monitor the entire flow of fish between the delivery point and a location where all sorting has takes place and each species has been weighed.

(C) Adequate lighting. Adequate lighting must be provided during periods of limited visibility.

(iii) Each IFQ first receiver must allow catch monitors free and unobstructed access to any documentation required by regulation including fish tickets, scale printouts and scale test results.

(iv) Each IFQ first receiver must provide the catch monitors free and unobstructed access to a telephone line during the hours that Pacific whiting is being processed at the facility and 30 minutes after the processing of the last delivery each day.

~~(65)~~ Lockable cabinet. Each IFQ first receiver must provide a secure, dry, and lockable cabinet or locker with the minimum dimensions of two feet wide by two feet tall by two feet deep for the exclusive use the catch monitor and NMFS staff or NMFS-authorized agents.

~~(7) Catch monitor~~ (6) Plant liaison- for the catch monitor. Each IFQ first receiver must designate a plant liaison. The ~~catch monitor~~ plant liaison is responsible for:

~~(A)~~ (i) Orienting new catch monitors to the facility;

~~(B)~~ (ii) Assisting in the resolution of catch monitoring concerns; and

~~(C)~~ (iii) Informing NMFS if changes must be made to the catch monitoring plan.

~~(87)~~ Reasonable assistance. Each IFQ first receiver must provide reasonable assistance to the catch monitors to enable each catch monitor to carry out his or her duties. Reasonable assistance includes, but is not limited to: informing the monitor when bycatch species will be weighed, and providing a secure place to store equipment and gear.

(k) Catch weighing requirements.

(1) Catch monitoring plan. All first receivers must operate under a NMFS-accepted catch monitoring plan.

(2) Sorting and weighing IFQ landings.

(i) Approved scales. The owner of an IFQ first receiver must ensure that all IFQ species received from a vessel making an IFQ landing are weighed on a scale(s) that meets the requirements specified at **§ 660.15(c)**.

(ii) Printed record. All scales identified in the catch monitoring plan ~~approved~~ accepted by NMFS during the first receiver site license application process, must produce a printed record for each delivery, or portion of a delivery, weighed on that scale, with the following exception: If approved by NMFS as part of the catch monitoring plan, scales not designed for automatic bulk weighing may be exempted from part or all of the printed record requirements. The printed record must include:

(A) The first receiver's name;

(B) The weight of each load in the weighing cycle;

(C) The total weight of fish in each landing, or portion of the landing that was weighed on that scale;

(D) The date the information is printed; and

(E) The name and vessel registration or documentation number of the vessel making the delivery. The scale operator may write this information on the scale printout in ink at the time of printing.

(iii) Scales that may be exempt from printed report. ~~A First Receiver~~ An IFQ first receiver that ~~received~~ receives no more than 200,000 pounds of groundfish in any calendar month ~~during the prior calendar year~~ will be ~~exempted~~ exempt from the requirement to produce a printed record provided that:

(A) The first receiver has not previously operated under a catch monitoring plan where a printed record was required; ~~and~~

(B) The first receiver ~~is able to ensure~~ ensures that all catch is weighed; ~~and that it is possible for a~~

(C) The catch monitor, NMFS staff, or ~~NMFS-~~authorized agent to ensure officer can verify that all catch is weighed.

(iv) Retention of printed records. ~~A An IFQ~~ first receiver must maintain printouts on site until the end of the fishing year during which the printouts were made and make them available upon request by NMFS staff or ~~NMFS~~ an authorized ~~personnel~~ officer for 3 years after the end of the fishing year during which the printout was made.

(v) Weight monitoring. ~~A First Receiver~~ An IFQ first receiver must ensure that it is possible for the catch monitor, NMFS staff, or ~~NMFS-~~authorized ~~agent~~ officer to verify the weighing of all catch.

(vi) Catch sorting. All fish delivered to the plant must be sorted and weighed by species as specified at § 660.130 (X).

(vii) Complete sorting. Sorting and weighing must be completed prior to catch leaving the area that can be monitored from the catch monitor's observation area.

(viii) Pacific whiting. For Pacific Whiting taken with midwater trawl gear, IFQ first receivers may use ~~an~~ in-line conveyor or hopper type scale to derive an accurate total catch weight prior to sorting. Immediately following weighing of the total catch and prior to processing or transport away from the point of landing, the catch must be sorted to the species groups specified in paragraph (h)(6)(i)(A) and all incidental catch (groundfish and non groundfish species) must be accurately weighed and the weight of incidental catch deducted from the total catch weight to derive the weight of target species.

(ix) For all other IFQ landings the following weighing standards apply:

~~(A)~~ (A) A belt or automatic hopper scale may be used to weigh all of the catch prior to sorting. All but a single predominant species must then be reweighed.

(B) An in-line conveyor or automatic hopper scale may be used to weigh the predominant species after catch has been sorted. Other species must be weighed in a manner that facilitates tracking of the weights of those species.

~~(B)~~ (C) IFQ species or species group may be weighed in totes on a platform scale capable of printing a label or tag and recording the label or tag information to memory for printing a report as specified XXXXXX. The label or tag must remain affixed to the tote until the tote is emptied. The label or tag must show the following information:

(1) The species or species group;

- (2) The weight of the fish in the tote;
- (3) The date the label or tag was printed.

(D) An alternate approach accepted by NMFS in the catch monitoring plan.

(C) Totes and ice. If a catch monitoring plan proposes the use of totes in which fish will be weighed, or a deduction for the weight of ice, the deduction must be accurately accounted for. No deduction may be made for the ~~perceived~~-weight of water or slime. This standard may be met by:

- (1) Taring the empty or pre-iced tote on the scale prior to filling with fish;
- (2) Labeling each tote with an individual tare weight. This weight must be accurate within 500 grams (1 pound if scale is denominated in pounds) for any given tote and the average error for all totes may not exceed 200 grams (8 ounces for scales denominated in pounds);
- (3) An alternate approach approved by NMFS. NMFS will only approve approaches that do not involve the estimation of the weight of ice or the weight of totes and allow NMFS staff or ~~NMFS~~an authorized ~~personnel~~officer to verify that the deduction or tare weight is accurate.

(23) IFQ first receiver responsibilities relative to catch weighing and monitoring of catch weighing. The owner of an IFQ first receiver must:

(i) General.

(A) Ensure that all IFQ landings are sorted, and weighed as specified at § 660.XXX and in accordance with an approved catch monitoring plan.

(ii) Catch monitors, NMFS staff, and ~~NMFS~~-authorized agentofficers.

(A) Have a ~~Catch Monitor~~catch monitor on site the entire time an IFQ landing is being offloaded, sorted, or weighed.

(B) Notify the catch monitor of the offloading schedule as specified at § 660.140(j)(4).

(C) Provide catch monitors, NMFS staff, or ~~a NMFS-an~~ authorized agent~~officer~~ with unobstructed access to any areas where IFQ species are or may be sorted or weighed at any time IFQ species are being landed or processed.

(D) Allow catch monitors, NMFS ~~personnel~~staff, or ~~a NMFS-an~~ authorized agent~~officer~~ to observe the weighing of catch on the scale and to read the scale display at any time.

(E) Ensure that printouts of the scale weight of each delivery or offload are made available to catch monitors, NMFS staff, or ~~to NMFS-an~~ authorized agent~~officer~~ at the time printouts are generated.

(3) Scale tests.

(i) All testing must meet the scale test standards specified at § 660.15(c).

(ii) Inseason scale testing. First receivers must allow, and provide reasonable assistance to a catch monitor, NMFS ~~personnel~~staff or ~~a NMFS-an~~ authorized agent~~officer~~ to test scales used to weigh IFQ catch. A scale that does not pass an inseason test may not be used to weigh IFQ catch until the scale passes an inseason test or is approved for continued use by the weights and measures authorities of the state in which the scale is located.

(iv) Equipment failure. [Reserved]

(i) Any vessel registered to a trawl endorsed limited entry permit fishing for shorebased IFQ Program QP is exempt from the gear endorsement restrictions specified at 660.334 (b) if the following gears are used to harvest QP provided all fishing is conducted pursuant to the management measures specified of the gear:

(A) Limited entry longline gear, consistent with the provisions in Subpart E.

(B) Limited entry pot or trap gear, consistent with the provisions in Subpart E.

(ii) Any vessel registered to a trawl endorsed limited entry permit that fishes in the Shorebased IFQ Program would not be required to cover their groundfish catch with QP if the groundfish are caught with non-groundfish trawl gear; legal gear defined for the harvest of species managed under the coastal pelagic species FMP; legal gear defined for the harvest of species managed under the highly migratory species FMP; salmon troll; crab pot; or and LE fixed gear if the vessel also has a LE permit endorsed for fixed-gear (longline or fish pot) AND has a valid declaration as specified at 660.XXXX for the Limited Entry fixed-gear fishery.

(iii) The following species would be ~~accepted~~exempted from the QP requirement:

(A) longspine thornyheads south of 34°27' N latitude,

(B) minor nearshore rockfish (north and south),

(C) black rockfish (WOC),

(D) California scorpionfish,

(E) cabezon, kelp greenling,

(F) shortbelly rockfish, and

(G) spiny dogfish.

(I) Gear switching. ~~[Reserved]~~

(1) Participants in the Shorebased IFQ Program may take IFQ species using fixed gear (i.e., gear switching), provided the following requirements are met:

(a) The vessel must be registered to a limited entry trawl permit.

(b) The vessel must be registered to a vessel account that is not in deficit on any IFQ species.

(c) The vessel operator must have submitted a valid gear declaration for the trip that declares "limited entry fixed gear, shorebased IFQ," as specified in § 660.13(d)(5)(iv)(A)(2), and does not declare any other designation (a Shorebased IFQ Program trip may not be combined with any other designation).

(d) The vessel must comply with prohibitions applicable to limited entry fixed gear fishery as specified at § 660.212, gear restrictions applicable to limited entry fixed gear as specified in §§ 660.219 and 660.230(b), and management measures specified in § 660.230(d), including restrictions on the fixed gear allowed onboard, its usage, and applicable fixed gear groundfish conservation area restrictions, except that the vessel will not be subject to trip limits when fishing in the Shorebased IFQ Program. If the vessel has trawl gear on board, the vessel must also comply with gear restrictions applicable to limited entry trawl gear as specified in § 660.130(b) and management measures specified in § 660.230(d), including restrictions on the trawl gear allowed onboard and applicable trawl gear groundfish conservation area restrictions.

(e) The vessel must comply with recordkeeping and reporting requirements applicable to limited entry trawl gear as specified in § 660.113.

(f) The vessel must comply with and observer requirements and all other provisions of the Shoreside IFQ Program as specified in this section.

(m) Adaptive management program. [Reserved]

(1) General. The adaptive management program (AMP) is a set-aside of 10 percent of the non-whiting QS to address the following objectives:

(i) community stability;

(ii) processor stability;

(iii) conservation;

(iv) unintended/unforeseen consequences of IFQ management; or

(v) facilitating new entrants.

(2) Years one and two. The AMP will not be implemented until year three of the shorebased IFQ program, after further development by the Council. The 10 percent of non-whiting QS will be reserved for the AMP during years one and two of the shorebased IFQ program, but the resulting AMP QP will be issued to all QS permit owners in proportion to their non-whiting QS during years one and two.

(3) Years three through five. QP will be distributed through the organizational structure, decision process, formulas and criteria developed in years one and two and implemented through subsequent Council recommendation and NMFS rule making processes. Consideration will be given to the multiyear commitment of QP to particular projects (three year commitments).

(4) Review and duration. The set aside of QP for the identified objectives will be reviewed as part of the year five comprehensive review and a range of sunset dates will be considered, including 10, 15, 20 year and no sunset date options.

\* \* \* \* \*

16. INSTRUCTION - In section 660.150, paragraph (g)(1) introductory text and (g)(1)(iv) is revised and paragraph (g)(1)(v) is removed; paragraph (a) introductory text and paragraphs (a)(3), (a)(4), (b) through (e), (f)(2) through (f)(4), (g)(2) through (g)(4), (h) through (k) are revised; and paragraph (l) is removed to read as follows:

§ 660.150 Mothership (MS) coop program.

\* \* \* \* \*

——(a) General. (a) General. The MS Coop Program requirements in this section will be effective beginning January 1, 2011, except for paragraphs (f)(3), (f)(5), (f)(6), (g)(3), (g)(5), and (g)(6) which are effectively immediately. The MS Coop Program is a general term to describe the limited access program that applies to eligible harvesters and processors in the mothership sector of the Pacific whiting at-sea trawl fishery. Eligible harvesters and processors, including coop and non-coop fishery participants, must meet the requirements set forth in this section of the Pacific Coast groundfish regulations. Each year a vessel registered to a MS/CV-endorsed permit may fish in either the coop or non-coop portion of the MS Coop Program, but not both.



In addition, a vessel registered to a MS/CV endorsed permit may not fish for more than one permitted MS coop in a calendar year unless there is an inter-coop agreement. In addition to the requirements of this section, the MS coop program is subject to the following groundfish regulations of subparts C and D: \* \* \*

\* \* \* \* \*

(3) Regulations set out in the following sections of subpart C: § 660.11 Definitions, § 660.12 Prohibitions, § 660.13 Recordkeeping and reporting, § 660.14 VMS requirements, § 660.15 Equipment requirements, § 660.16 Groundfish Observer Program, § 660.20 Vessel and gear identification, § 660.25 Permits, § 660.55 Allocations, § 660.60 Specifications and management measures, § 660.65 Groundfish harvest specifications, and §§ 660.70 through 660.79 Closed areas.

(4) Regulations set out in the following sections of subpart D: § 660.111 Trawl fishery definitions, § 660.112 Trawl fishery prohibitions, § 660.113 Trawl fishery recordkeeping and reporting, § 660.120 Trawl fishery crossover provisions, § 660.130 Trawl fishery management measures, and § 660.131 Pacific whiting fishery management measures.

\* \* \* \* \*

(b) Participation requirements and responsibilities.

(1) Mothership vessels.

(i) Mothership vessel participation requirements. A vessel is eligible to receive and process catch as a mothership in the MS coop program if:

(A) The vessel is registered to a MS permit.

(B) The vessel is not used to fish as a catcher vessel in the mothership sector of the Pacific whiting fishery in the same calendar year.

(C) The vessel is not used to fish as a C/P in the Pacific whiting fishery in the same calendar year.

~~(D) If the vessel is a bareboat charter XXXXXX~~

~~(E)~~

(ii) Mothership vessel responsibilities. The owner and operator of a mothership vessel must:

(A) Recordkeeping and reporting. Maintain a valid declaration as specified at § 660.13(d), subpart C; and, maintain and submit all records and reports specified at § 660.113(c) including, economic data, scale tests records, and cease fishing declarations.

(B) Observers. Procure observer services as specified at § 660.XXX, maintain the appropriate level of coverage as specified at § 660.XXX, and meet the vessel responsibilities specified at § 660.XXX.

(C) Catch weighing requirements. The owner and operator of a MS vessel must:

(1) Ensure that all catch is weighed in its round form on a NMFS-approved scale that meets the requirements described in section § 660.15 (b), is tested as is required at § 660.XXX, and is operated as required at § 660.XXXsubpart C;



(2) Provide a NMFS-approved platform scale, belt scale, and test weights that meet the requirements of described in section § 660.15 (b) ~~and that is tested as is required at § 660.XXX~~, subpart C.

~~(B) Centralized registry of ownership. [Reserved]~~ (2) Mothership catcher vessels.

(i) Mothership catcher vessel participation requirements.

(A) A vessel is eligible to harvest in the MS coop program if the following conditions are met:

(1) If the vessel is used to fish as a mothership catcher vessel for a permitted MS coop, the vessel is registered to a limited entry permit with a trawl endorsement and is listed on the MS coop permit.

(2) If the vessel is used to harvest fish in the non-coop fishery, the vessel is registered to a MS/CV endorsed limited entry permit.

(3) The vessel is not used to harvest fish or process as a mothership or catcher/processor vessel in the same calendar year.

(4) The vessel does not catch more than 30 percent of the Pacific whiting allocation for the mothership sector.

(ii) Mothership catcher vessel responsibilities.

(A) Observers. Procure observer services as specified at § 660.XXX, maintain the appropriate level of coverage as specified at § 660.XXX, and meet the vessel responsibilities specified at § 660.XXX.

(B) ~~Recordkeeping and reporting—Provide.~~ Maintain a valid ~~declarations for the XXXfisheryXXX~~ declaration as specified at § 660.XX;13(d), subpart C; and, maintain and submit all ~~required logbooks as records and reports~~ specified at ~~XXXXXX~~; ~~Economic Data; Centralized registry of ownership; § 660.113(c) including, economic data and scale tests records, if applicable.~~

(3) MS coops.

(i) MS coop participation requirements. For a MS coop to participate in the Pacific whiting mothership sector fishery it must:

(A) be issued a MS coop permit;

(B) be owned and operated by MS/CV endorsed limited entry permit owners;

(C) be formed voluntarily;

(D) be a legally recognized entity that represents its members ~~and employs a designated coop manager; ;~~

~~(E)~~ (E) designate an individual as a coop manager; and

(F) have at least 20 percent of all MS/CV permits as members. The coop membership percentage will be interpreted by rounding to the nearest whole permit (i.e. 0.1 through 0.4 rounds down and 0.5 through 0.9 rounds up).

(ii) MS coop responsibilities. A MS coop is responsible for:

(A) ~~Applying~~ applying for and ~~receive being registered to~~ a MS ~~Coop Permit~~ coop permit;

- (B) ~~Organizing~~organizing and coordinating harvest activities of vessels registered to member permits;
- (C) ~~Reassigning~~reassigning catch history assignments for use by coop members;
- (D) ~~Organizing~~organizing and coordinating the transfer and leasing of catch allocations with other permitted coops through inter-coop agreements;
- (E) ~~Monitoring~~monitoring harvest activities and enforcing the catch limits of coop members;
- (F) ~~Submitting~~submitting an annual report.
- (G) ~~Having~~having a designated coop manager. The designated coop manager must:
  - (1) ~~Serve~~serve as the contact person between NMFS, the Council, and other coops;
  - (2) ~~Organize~~organize the annual distribution of catch and bycatch between coop members;
  - (3) ~~Oversee~~oversee reassignment of catch within the coop;
  - (4) ~~Oversee~~oversee inter-coop catch reassignments;
  - (5) ~~Prepare~~prepare and submit an annual ~~reports~~report on behalf of the coop; and,
  - (6) ~~Be~~authorized to receive or respond to any legal process in which the coop is involved; and

(7) notify NMFS if the coop dissolves.

(iii) Liability for violations. A MS coop must comply with the provisions of this section. The permit owners, and ~~vessels~~vessel owners and operators registered to the member permits; ~~including vessels under contract;~~ are ~~responsible jointly and severally liable~~ for the ~~fishery cooperative comply~~permitted coop's compliance with the provisions of this section.

~~(iv) MS coop failure.~~

~~(A) A permitted MS coop is considered to have failed if:~~

- ~~(1) the coop members voluntarily dissolve the coop, or~~
- ~~(2) the coop membership falls below 20 percent of the MS/CV endorsed limited entry permits, or~~

~~(3) the coop agreement is no longer valid, or~~

~~(4) the coop fails to meet the MS coop responsibilities specified at § 660.XXX.~~

~~(B) If a permitted MS coop dissolves, the designated coop manager must notify NMFS SFD in writing of the dissolution of the coop.~~

~~(C) The Regional Administrator may make an independent determination of a permitted coop failure based on factual information collected by or provided to NMFS.~~

~~(D) In the event of a NMFS determined coop failure, or reported failure, the designated coop manager will be notified in writing about NMFS' determination. Upon notification of a coop failure, the MS coop permit will no longer be in effect. Should a coop failure determination be made during the Pacific whiting primary season for the mothership sector, unused allocation associated with the catch history will not be available for harvest by the coop that failed or any other MS coop.~~

~~(e) Inter-coop agreements.~~

~~(1) Permitted MS coops may voluntarily enter into inter-coop agreements for the purpose of sharing permitted MS coop allocations of Pacific whiting and allocated non-whiting groundfish.~~

~~(2) (c) If two or more permitted MS coops enter into an inter-coop agreement, the inter-coop agreement must incorporate and honor the provisions of each permitted MS coop. Changes or modifications to the existing permitted MS coop agreements must be submitted to NMFS and accepted by NMFS prior to the permitted MS coop entering in to an inter-coop agreement.~~

~~(d) MS coop program species and allocations--~~(1) MS coop program species. MS ~~Coop~~ Program Species coop program species are as follows:

(i) Species with formal allocations to the MS Programcoop program are Pacific whiting, canary rockfish, darkblotched rockfish, Pacific Ocean perch, and widow rockfish;

(ii) Species with set-asides for the MS and C/P Programscoop programs combined, as described in Tables 1d and 2d, subpart C.

(2) Annual mothership sector sub-allocations. Annual allocation amount(s) will be determined using the following procedure:

(i) MS/CV catch history assignments. Catch history assignments will be based on catch history using the following methodology:

(A) Pacific whiting catch history assignment. For each MS/CV endorsed limited entry permit, the entire catch history assignment of Pacific whiting will be annually allocated to a single permitted MS coop or to the non-coop fishery. A MS/CV permit owner cannot divide the catch history assignment to more than one MS coop or to the non-coop fishery for that year. Once assigned to a permitted MS coop or the non-coop fishery, it remains with that permitted MS coop or non-coop fishery for that calendar year. When the mothership sector allocation is established through the final Pacific whiting specifications, the information for the conversion of catch history assignment to pounds will be made available to the public through a Federal Register announcement and/or public notice and/or the NMFS website. The amount of whiting from the catch history assignment will be issued to the nearest whole pound using standard rounding rules (i.e. 0.1 through 0.4 rounds down and 0.5 through 0.9 rounds up).

(B) Non-whiting groundfish species catch.

(1) ~~Groundfish~~Non-whiting groundfish species with a mothership sector allocation established in regulation at § 660.55(X), ~~including overfished species,~~ will be divided annually between the permitted coops and the non-coop fisheries. The pounds associated with each permitted MS coop will be provided when the coop permit is issued.

(2) Groundfish species with at-sea sector set-asides, will be managed on an annual basis unless there is a risk of a harvest specification being exceeded, unforeseen impact on another fisheries, or conservation concerns in which case inseason action may be taken. Set asides may be adjusted through the biennial specifications and management measures process as necessary.

(3) Groundfish species not addressed in paragraph (1) or (42) above, will be managed on an annual basis unless there is a risk of a harvest specification being exceeded, unforeseen

impact on another fisheries, or conservation concerns in which case inseason action may be taken.

(4) Halibut set-asides. Annually a specified amount of the Pacific halibut will be held in reserve as a shared set-aside for bycatch in the at-sea Pacific whiting mothership fisheries and the shorebased trawl sector: south of 40°10' N lat.

(ii) Annual coop allocations.

(A) Pacific whiting. Each permitted MS coop is authorized to harvest a quantity of Pacific whiting that is based on the sum of the catch history assignments for each MS/CV endorsed permit identified in the accepted coop agreement for a given calendar year. Eligible vessels registered to limited entry permits without a MS/CV endorsement do not bring catch allocation to a permitted MS coop.

(B) Non-whiting groundfish with allocations. Sub-allocations of non-whiting groundfish species with allocations to permitted MS coops will be in proportion to the Pacific whiting catch history assignments assigned to each permitted MS coop.

(iii) Annual non-coop allocation.

(A) Pacific whiting. The non-coop whiting fishery is authorized to harvest a quantity of Pacific whiting that is remaining in the mothership sector annual allocation after the deduction of all coop allocations.

(B) Non-whiting groundfish with allocations. The sub-allocation to the non-coop fishery will be in proportion to the mothership catcher vessel Pacific whiting catch history assignments for the non-coop fishery.

(C) Announcement of the non-coop fishery allocations. Information on the amount of Pacific whiting and non-whiting groundfish with allocations that will be made available to the non-coop fishery when the final Pacific whiting specifications for the mothership sector is established and will be announced to the public through a Federal Register announcement and/or public notice and/or the NMFS website.

(3) Reaching an allocation or sub-allocation. When the mothership sector Pacific whiting allocation, Pacific whiting sub-allocation, or non-whiting groundfish catch allocation is reached or is projected to be reached, the following action may be taken:

(i) Further harvesting, receiving or at-sea processing ~~of~~ by a mothership or catcher vessel in the mothership sector is prohibited when the mothership sector Pacific whiting allocation or non-whiting groundfish allocation is projected to be reached. No additional unprocessed groundfish may be brought on board after at-sea processing is prohibited, but a mothership may continue to process catch that was on board before at-sea processing was prohibited. Pacific whiting may not be taken and retained, possessed, or landed by a catcher vessel participating in the mothership sector.

(ii) When a permitted MS coop sub-allocation of Pacific whiting or non-whiting groundfish species is projected to be reached, further harvesting or receiving of groundfish by vessels fishing in the permitted MS coop must cease, unless the permitted MS coop is operating under an accepted inter-coop agreement. ~~No additional unprocessed groundfish may be brought~~

~~on-board a mothership, but a mothership may continue to process catch that was on-board before at-sea processing was prohibited.~~

(iii) When the non-coop fishery sub-allocation of Pacific whiting or non-whiting groundfish species is projected to be reached, further harvesting or receiving of groundfish by vessels fishing in under the non-coop fishery must cease. ~~No additional unprocessed groundfish may be brought on-board a mothership, but a mothership may continue to process catch that was on-board before at-sea processing was prohibited.~~

(4) Non-whiting groundfish species reapportionment. This paragraph describes the process for reapportioning non-whiting groundfish species with allocations between permitted MS coops and the catcher/processor sector. Reapportionment of mothership sector allocations to the catcher/processor will not occur until all permitted MS coops and the non-coop fishery have been closed by NMFS or have informed NMFS that they have ceased operations for the remainder of the calendar year.

(i) Within the mothership sector. The Regional Administrator may make available for harvest to permitted coops and the non-coop fishery that have not notified NMFS that they have ceased fishing for the year, the amounts of a permitted MS coop's non-whiting catch allocation remaining when a coop reaches its Pacific whiting allocation or when the designated coop manager notifies NMFS that a permitted coop has ceased fishing for the year. The reapportioned allocations will be in proportion to their original allocations.

(ii) Between the mothership and catcher/processor sectors. The Regional Administrator may make available for harvest to the catcher/processor sector of the Pacific whiting fishery identified in § 660.373, the amounts of the mothership sector's non-whiting catch allocation remaining when the Pacific whiting allocation is reached or participants in the sector do not intend to harvest the remaining allocation. The designated coop manager, or in the case of an inter-coop, all of the designated coop managers must submit a cease fishing report to NMFS indicating that harvesting has concluded for the year. At any time after greater than 80 percent of the Mothership sector Pacific whiting allocation has been harvested, the Regional Administrator may contact designated coop managers to determine whether they intend to continue fishing. When considering redistribution of non-whiting catch allocation, the Regional Administrator will take in to consideration the best available data on total projected fishing impacts. Reapportionment between permitted MS coops and the non-coop fishery within the mothership sector will be in proportion to their original coop allocations for the calendar year.

(iii) Set-aside species. No inseason management actions are associated with set asides.

(5) Announcements. The Regional Administrator will announce in the Federal Register when the mothership sector or the allocation of Pacific whiting or non-whiting groundfish with an allocation is reached, or is projected to be reached, and specify the appropriate action. In order to prevent exceeding an allocation and to avoid underutilizing the resource, prohibitions against further taking and retaining, receiving, or at-sea processing of Pacific whiting, or reapportionment of non-whiting groundfish with allocations may be made effective immediately by actual notice to fishers and processors, by e-mail, internet ( [www.nwr.noaa.gov/Groundfish-](http://www.nwr.noaa.gov/Groundfish-)

Halibut/Groundfish-Fishery-Management/Whiting-Management/index.cfm ), phone, fax, letter, press release, and/or USCG Notice to Mariners (monitor channel 16 VHF), followed by publication in the Federal Register, in which instance public comment will be sought for a reasonable period of time thereafter.

(6) Redistribution of annual allocation.

~~(i) Between members of a permitted MS coop. The owners of MS/CV endorsed limited entry permits may lease or otherwise redistribute Pacific whiting catch shares between catcher vessels identified on the same MS coop permit through a private agreement, providing the processor obligation (§ 660.150(d)(7)) has been met or a mutual agreement exception (§ 660.150(d)(7)(i)) has been submitted to NMFS.~~

~~(ii) Between permitted MS coops (inter-coop).~~ (i) Between permitted MS coops (inter-coop). Through an inter-coop agreement, the designated coop managers of permitted MS coops may distribute Pacific whiting and non-whiting groundfish allocations among one or more permitted MS coops, providing the processor obligations (§ 660.150(d)(7)) have been met or a mutual agreement exception (§ 660.150(d)(7)(i)) has been submitted to NMFS.

~~(iii) Between Pacific whiting sectors.~~ Pacific whiting may not be redistributed between the mothership sector and catcher/processor sector. Whiting may not be redistributed to the Shorebased IFQ Program.

(7) Processor obligation and mutual agreement exceptions.

(i) Processor obligation. Through the annual MS Coop permit application process, the MS/CV endorsed permit owner must identify to NMFS to which MS permit the MS/CV permit owner intends to have the vessel registered to the MS/CV endorsed permit deliver its catch.

(ii) Expiration of a processor obligation. Processor obligations expire at the end of each calendar year when the MS Coop Permit expires. A processor obligation from the prior year may be changed for the following the calendar year through a new application for a MS Coop Permit.

(iii) Processor obligation when MS coop allocation is redistributed. When a permitted MS coop redistributes Pacific whiting allocation within the permitted MS coop or from one permitted MS coop to another permitted MS coop through an inter-coop agreement, such allocations must be delivered to the mothership registered to the MS permit to which the allocation was obligated to through the processor obligation submitted to NMFS, unless a mutual agreement exception has been submitted to NMFS.

(iv) Mutual agreement exception. A catcher vessel can be released from a processor obligation through a mutual agreement exception. The MS/CV endorsed permit owner must submit a copy to NMFS of the written agreement that includes the initial MS permit owner's acknowledgment of the termination of the MS/CV endorsed permit owner's processor obligation and the MS/CV endorsed permit owner must identify a processor obligation for a new MS permit.

(v) MS permit withdrawal. If a MS Permit withdraws from the mothership fishery XXX before the resulting amounts of catch history assignment have been announced by NMFSXXX



the MS/CV endorsed permit that is obligated to the MS permit is free to participate in the coop or non-coop fishery. In such an event, the MS/CV endorsed permit owner must provide to NMFS a written notification of the withdrawal of the MS permit that includes the initial MS permit owner's acknowledgment of the withdrawal along with a request to revise the processor obligation for a new MS permit or the non-coop fishery.

(vi) Submission of a mutual agreement exception or MS permit withdrawal. Written notification of a mutual exception agreement or MS permit withdrawal must be submitted to NMFS, Northwest Region, Permits Office, Bldg. 1, 7600 Sand Point Way NE, Seattle, WA 98115.

(ed) MS coop permit and agreement.

(1) Eligibility and ~~application requirements to register for a MS coop permit~~ registration.

(i) Eligibility. To be an eligible coop entity a group of MS/CV endorsed permit owners (coop members) must be a recognized entity under the laws of the United States or the laws of a State and that represents all of the coop members.

(ii) Annual registration and deadline. ~~A~~Each year, a coop entity intending to participate as a coop under the MS Coop Program must submit an application for a MS coop permit ~~by~~between February 1 and March 31 of the year in which they intend to ~~participate in~~fish. NMFS will not consider any applications received after ~~XXXX~~DATEXXMarch 31. A MS coop permit expires on December 31 of the year in which it was issued.

(iii) Application for ~~a~~ MS coop permit. The designated coop manager, on behalf of the coop entity, must submit a complete application form and include each of the items listed in paragraphs (e)(2)(iii)(A) through (B). Only complete applications will be considered for issuance of a MS coop permit. An application will not be considered complete if any required fees and annual reports have not been received by NMFS. NMFS may request additional supplemental documentation as necessary to make a determination of whether to approve or disapprove the application. Application forms and instruction are available on the NMFS NWR website ([www.nwr.noaa.gov](http://www.nwr.noaa.gov)) or by request from NMFS. The designated coop manager must sign the application acknowledging the responsibilities of a designated coop manager defined in §660.XXX.

(A) Coop agreement. Signed copies of the coop agreement must be submitted to NMFS and the Council and available for public review before the coop is authorized to engage in fishing activities. A coop agreement must include all of the information listed in this paragraph to be considered a complete coop agreement. NMFS will only review complete coop agreements. ~~Coop agreements~~A coop agreement will not be accepted ~~when the agreement~~ unless it includes all of the required information; the descriptive items listed in this paragraph appear to meet the stated purpose; and information ~~is~~ submitted is correct and accurate.

(1) Coop agreement contents. Each coop agreement must be signed by all of the coop members (MS/CV endorsed permit owners) and include the following information:

(i) A listing list of all vessels, ~~including those registered to a MS/CV endorsed limited entry permit or a trawl endorsed limited entry permit without a MS/CV endorsement that and~~

which must match the member amount distributed to individual permit owners intend to use for fishing under the requested coop permit by NMFS.

(ii) All MS/CV endorsed limited entry member permits identified by permit number.

~~(iii) The mothership sector catch history assignment associated with each member MS/CV endorsed limited entry permit.~~

~~(iv) All MS permits obligated to coop member permits by MS permit number and vessel registered to each MS permit.~~

~~(v)(iii)~~ A processor obligation clause indicating that each MS/CV permit was obligated to a specific MS permit by July/September 1 of the previous year.

~~(viiv)~~ A clause indicting that each member MS/CV endorsed permit's catch history assignment is based on the catch history assignment ~~that the member permit brings~~calculation by NMFS used for distribution to the coop.

~~(viiv)~~ A description of the coop's plan to adequately monitor and account for the catch of Pacific whiting and non-whiting groundfish allocations, and to monitor and account for the catch of prohibited species.

~~(viiiiv)~~ A ~~new member permit owner~~ clause stating that ~~requires~~ new owners of a member permit's permit are coop members and are required to comply with membership restrictions in the coop ~~agreements~~agreement.

~~(ixvii)~~ A description of the coop's enforcement and penalty provisions adequate to maintain catch of Pacific whiting and non-whiting groundfish within the allocations and that Pacific halibut set-aside overages do not occur.

~~(xviii)~~ A description of measures to reduce catch of overfished species.

~~(xiix)~~ A description of how the responsibility to manage inter-coop reassignment of catch history assignments will be met, should any occur.

~~(xiix)~~ A description of how the ~~responsibility to produce an~~ annual report ~~documenting will be produced to document~~ the coop's catch, bycatch data, inseason catch history reassignments and any other significant activities undertaken by the coop during the year ~~will be met by XX due date XX~~.

~~(xiixi)~~ Identification of the designated coop manager.

~~(xivxii)~~ A ~~signed clause requirement that agreement~~ by at least a majority of the designated coop manager acknowledging members is required to dissolve the responsibilities of a designated coop manager defined coop.

(xiii) Provisions that prohibit members permit owners that have incurred legal sanctions from fishing in §660.XXX the coop.

~~(xv) A description for how the coop will be dissolved. ———~~

~~(xvi)~~

(2) Department of Justice correspondence. Each coop must submit a letter to the Department of Justice requesting a business review letter on the fishery coop. Copies of the letter and any correspondence with the Department of Justice regarding the request must be included in the application to NMFS for a MS Coop Permit.



(3) Inter-coop agreement. The coop entity must provide, at the time of annual application, copies of any inter-coop agreement(s) into which the coop has entered. Such agreements must incorporate and honor the provisions of the individual coop agreements for each coop that is a party to the inter-coop agreement. Inter-coop agreements are specified at paragraph (d) of this section.

(B) Acceptance of a coop agreement.

(1) If NMFS does not accept the coop agreement, the coop permit application will be returned to the applicant with a letter stating the reasons the coop agreement was not accepted by NMFS.

(2) Coop agreements that are not accepted may be resubmitted for review by sufficiently addressing the deficiencies identified in the NMFS letter-of-rejection and resubmitting the entire coop permit application by the date specified in the NMFS letter-of-rejection.

(3) An approved/accepted coop agreement that was submitted with the MS coop permit application and for which a MS coop permit was issued will remain in place through the end of the calendar year. The designated coop manager must resubmit a complete coop agreement to NMFS consistent with the coop agreement contents described in this paragraph if there is a material change to the coop agreement.

(4) Within 3 calendar days following a material change, at the designated coop manager must notify NMFS of the material change. Within 30 calendar days, the designated coop manager must submit to NMFS the revised coop agreement ~~must be submitted to NMFS~~ with a letter that describes such changes. NMFS will review the material changes and provide a letter to the coop manager that either accepts the changes as given or does not accept the revised coop agreement with a letter stating the reasons that it was not accepted by NMFS. The coop may resubmit the coop agreement with further revisions to the material changes responding to NMFS concerns.

(iv) Effective date of MS coop permit. A MS coop permit will be effective upon the date approved by NMFS and remain in effect until the end of the calendar year or until one or more of the following events occur, whichever comes first:

(A) NMFS closes the fishing season for the mothership sector or a specific MS coop or the designated coop manager notifies NMFS that the coop has completed fishing for the calendar year,

(B) the coop has reached its Pacific whiting allocation,

(C) a material change to the coop agreement has occurred and the designated coop manager failed to provide a revised coop agreement to NMFS within ~~three~~3 calendar days of the material change, or

(D) NMFS has determined that a coop failure occurred.

(2) Initial administrative determination. ~~(D) NMFS has determined that a coop failure occurred.~~

~~(2) Initial administrative determination.~~ For all complete applications, NMFS will issue an ~~Initial Administrative Determination (IAD)~~ that either approves or disapproves the

application. If approved, the IAD will include a MS coop permit. If disapproved, the IAD will provide the reasons for this determination.

(3) Appeals. An appeal to a MS coop permit action follows the same process as the general permit appeals process defined at § 660.25(g), subpart C.

(4) Fees. The Regional Administrator is authorized to charge fees for administrative costs associated with the issuance of a MS coop permit consistent with the provisions given at § 660.25(f), subpart C.

~~An application will be disapproved if any required fees~~(5) Cost recovery. [Reserved]

(e) Inter-coop agreements.

(1) General. Permitted MS coops may voluntarily enter into inter-coop agreements for the purpose of sharing permitted MS coop allocations of Pacific whiting and allocated non-whiting groundfish. If two or more permitted MS coops enter into an inter-coop agreement, the inter-coop agreement must incorporate and honor the provisions of each permitted MS coop. annual reports have not been received. Changes or modifications to the existing permitted MS coop agreements must be submitted to and accepted by NMFS prior to the permitted MS coop entering in to an inter-coop agreement.

(23) Submission of inter-coop agreements. Inter-coop agreements must be submitted to NMFS for acceptance.

(34) Inter-coop agreement review process. Each designated coop manager must submit a copy of the inter-coop agreement signed by both designated coop managers for review. Complete coop agreements containing all items listed **under paragraph (C) below** will be reviewed by NMFS.

~~(4) Appeals. An appeal to a MS coop permit action follows the same process as the general permit appeals process defined at § 660.25(g), subpart C.~~

~~(5) Fees. The Regional Administrator is authorized to charge fees for administrative costs associated with the issuance of a MS coop permit consistent with the provisions given at § 660.25(f), subpart C.~~

~~(6) Cost recovery. The owner of a MS coop permit (coop entity) will be required to pay all cost recovery fees based on the harvest of Pacific whiting by the coop members in a given year. Cost recovery fees will not be collected until further cost recovery regulations are implemented by NMFS.~~

\* \* \* \* \*

(f) Mothership (MS) permit.

(1) General. \* \* \*

(2) Renewal, change of permit ownership, or vessel registration. ~~[Reserved]~~

(i) Renewal. A MS permit must be renewed annually consistent with the limited entry permit regulations given at § 660.25(b)(4), subpart C. If a vessel registered to the MS permit will operate as a mothership in the year for which the permit is renewed, the permit owner must make a declaration as part of the permit renewal that they will operate solely as a mothership in the whiting fishery during the calendar year to which its limited entry permit applies. Any such

declaration is binding on the vessel for the calendar year, even if the permit is transferred during the year, unless it is rescinded in response to a written request from the permit owner. Any request to rescind a declaration must be made by the permit holder and granted in writing by the Regional Administrator before any unprocessed whiting has been taken on board the vessel that calendar year.

(ii) Change of permit ownership. A MS permit is subject to the limited entry permit change in permit ownership regulations given at § 660.25(b)(4), subpart C.

(iii) Change of vessel registration. A MS permit is subject to the limited entry permit change of vessel registration regulations given at § 660.25(b)(4), subpart C.

(3) Accumulation limits. \* \* \*

(i) MS permit usage limit. No person who owns an MS permit(s) may register the MS permit(s) to vessels that cumulatively process more than 45 percent of the annual mothership sector Pacific whiting allocation. For purposes of determining accumulation limits, NMFS requires that permit owners submit a complete trawl ownership interest form for the permit owner as part of annual renewal for the MS permit. An ownership interest form will also be required whenever a new permit owner obtains a MS permit as part of a permit transfer request. Accumulation limits will be determined by calculating the percentage of ownership interest a person has in any MP permit. Determination of ownership interest will subject to the individual and collective rule.

(ii) Ownership - individual and collective rule. The ownership that counts toward a person's accumulation limit will include:

(A) Any MS permit owned by that person, and

(B) A portion of any MS permit owned by an entity in which that person has an interest, where the person's share of interest in that entity will determine the portion of that entity's ownership that counts toward the person's limit.

(iii) [Reserved]

(iv) Trawl identification of ownership interest form. Any person that is applying for an MS permit shall document those individuals that have greater than or equal to 2 percent ownership interest in the permit. This ownership interest must be documented with the SFD via the Trawl Identification of Ownership Interest Form sent to the permit owner with their application. SFD will not issue an MS Permit unless the Trawl Identification of Ownership Interest Form has been completed.

(4) Appeals. An appeal to a MS permit action follows the same process as the general permit appeals process defined at § 660.25(g), subpart C.

(5) Fees. \* \* \*

(6) Application requirements and initial issuance for MS permit. \* \* \*

\* \* \* \* \*

(g) Mothership catcher vessel (MS/CV) endorsed permit.

(1) General. \* \* \*

~~(2) Change~~ (1) General. Any vessel that delivers whiting to a mothership processor in the Pacific whiting fishery mothership sector must be registered to an MS/CV-endorsed permit, except that a vessel registered to limited entry trawl permit without an MS/CV or C/P endorsement may fish for a coop with permission from a coop. Within the MS Coop Program, an MS/CV endorsed permit may participate in an MS coop or in the non-coop fishery. A MS/CV endorsed permit is a limited entry permit and is subject to the limited entry permit provisions given at § 660.25(b), subpart C. \* \* \*

\* \* \* \* \*

(iv) Restrictions on processing by MS/CV endorsed permit. A vessel registered to an MS/CV-endorsed permit in a given year shall not engage in processing of Pacific whiting during that year.

\* \* \* \* \*

~~(2) Renewal, change of permit owner, vessel registration, vessel owner, or combination.~~

(i) ~~During Renewal.~~ A MS/CV endorsed permit must be renewed annually consistent with the ~~annual~~ limited entry permit regulations given at § 660.25(b)(4), subpart C. ~~During renewal processes,~~ all MS/CV ~~endorsed~~ limited entry permit owners must make a preliminary declaration regarding their intent to participate in the coop or non-coop portion of the MS coop program ~~for the following year.~~ If the vessel intends to participate in the coop portion of the MS coop program, they must also declare which MS vessel they intend to deliver to. MS/CV endorsed permits ~~non-not~~ obligated to a permitted MS coop by ~~XX the annual deadline date to register as a MS coop XX~~ March 31 of the fishing year, will be assigned to the non-coop fishery. For an MS/CV endorsed permit that is not renewed, the following occurs:

(A) For the first year after the permit is not renewed, the catch history assignment from that permit will be assigned to the non-coop fishery.

(B) In the second year after the permit is not renewed, the catch history assignment from that permit will be redistributed proportionally to all valid MS/CV endorsed permits in the second year after non-renewal.

(ii) ~~Change of permit ownership.~~ A MS/CV endorsed permit is subject to the limited entry permit change in permit ownership regulations given at § 660.25(b)(4), subpart C.

(iii) ~~Change of vessel registration.~~ A MS/CV endorsed permit is subject to the limited entry permit change of vessel registration regulations given at § 660.25(b)(4), subpart C.

(iv) ~~Combination.~~ ~~An action by NMFS to combine~~ If two or more permits ~~results on are combined, the resulting permit is~~ one permit with an increased size endorsement. If a MS/CV endorsed permit is combined with another limited entry ~~trawl-endorsed~~ permit, the resulting permit will be MS/CV endorsed. If a MS/CV endorsed permit is combined with a C/P endorsed permit, the resulting permit will be a C/P endorsed permit. If a MS/CV endorsed permit is combined with another MS/CV endorsed permit, the combined catch history assignment of the permit(s) will be added to the active permit (the permit remaining after combination) and the other permit will be retired. NMFS will not approve a permit combination if it results in a person exceeding the accumulation limits specified at § 660.XXX. Any request to combine

permits is subject to the provision provided at §§ 660.335(b) and 660.334(C)(2)(iii-), including the combination formula for resulting size endorsements.

(3) Accumulation Limits. \* \* \*

(4) Appeals. An appeal to a MS/CV endorsed permit action follows the same process as the general permit appeals process defined at § 660.25(g), subpart C.

(5) Fees. \* \* \*

(6) Application requirements and initial issuance for MS/CV endorsement. \* \* \*

\* \* \* \* \*

(h) Non-coop fishery.

~~(A) Catch history assignments. The owner of MS vessel must submit in writing to NMFS a letter indicating if it will participate in the non-coop fishery and which vessels are obligated to it.~~

~~(B1) Access to non-coop fishery allocation.~~ All vessels registered to the MS/CV endorsed permits assigned to the non-coop fishery will have access to harvest and deliver the aggregate catch history assignment of all MS/CV permits assigned to the non-coop fishery.

~~(C2) Non-coop fishery processor obligation.~~ Permits opting to participate in a non-coop are tied to the mothership until the end of the calendar year. ~~Permits opting to participate in a non-coop are tied to the mothership until the end of the calendar year.~~

~~(D3) Non-coop fishery closure.~~ The non-coop fishery will be closed by automatic action as specified at § 660.XXX when the Pacific whiting or non-whiting allocations to the non-coop fishery have been reached or are projected to be reached.

(i) Retention requirements. [Reserved]

(j) Observer requirements.

(1) Observer coverage requirements.

(i) Coverage.

(A) Motherships. Any vessel registered to a MS permit 125 ft (38.1 m) LOA or longer must carry two NMFS-certified observers, and any vessel registered to a MS permit mothership shorter than 125 ft (38.1 m) LOA must carry one NMFS-certified observer, each day that the vessel is used to take, retain, receive, land, process, or transport groundfish.

~~(ii)B) Catcher vessels.~~ Any vessel delivering catch to any mothership must carry one NMFS-certified observer each day that the vessel is used to take groundfish.

(ii) Observer workload.

(A) Motherships. The time required for the observer to complete sampling duties must not exceed 12 consecutive hours in each 24-hour period.

(B) Catcher vessels. While aboard a vessel, observers must be given a minimum 6 hour continuous period of rest every 24 hours fishing activity is occurring. Fishing activity includes the deployment of gear, retrieval of gear, sorting of catch, and storing of catch. In addition, an observer must not be deployed for more than 22 calendar days in a calendar month. The observer program may issue waivers to allow observers to work more than 22 calendar days per month

when it's anticipated one trip will last over 20 days or for issues with observer availability due illness or injury of other observers.

(1) If an observer is unable to sample for any reason for a period greater than 24 hours, the vessel is required to return to port within 36 hours of the last haul sampled by the observer.

(2) [Reserved]

(iii) Refusal to ~~Board-board~~. Any boarding refusal on the part of the observer or vessel is reported to the observer program and ~~NMFSNOAA~~ OLE ~~observer compliance coordinator~~ by the observer provider and observer. Observer must be available for an interview with the observer program or NOAA OLE if necessary.

~~(iv) Observer Workload. For observers deployed on mothership vessels, the time required for the observer to complete sampling duties must not exceed 12 consecutive hours in each 24-hour period. For observers deployed aboard mothership catcher vessels, not exceed observer deployment limitations and workload as outlined in § 660.140 (h)(ii).~~

(2) Vessel ~~Responsibilities-responsibilities~~. An operator and/or crew of a vessel required to carry an observer must provide:

(i) Accommodations and food.

(A) Motherships. Provide accommodations and food that are equivalent to those provided for officers, engineers, foremen, deck-bosses or other management level personnel of the vessel.

(B) Catcher vessels. ~~Provide accommodations~~

(1) Accommodations and food ~~that are for trips less than 24 hours must be~~ equivalent to those provided ~~to~~ for the crew.

(2) Accommodations and food for trips of 24 hours or more must be equivalent to those provided for the crew and must include berthing space, a space that is intended to be used for sleeping and is provided with installed bunks and mattresses. A mattress or futon on the floor or a cot is not acceptable if a regular bunk is provided to any crew member, unless other arrangements are approved in advance by the Regional Administrator or their designee.

(ii) Safe ~~Conditions-conditions~~. Motherships and Catcher Vessels must:

~~(1A)~~ Maintain safe conditions on the vessel for the protection of observers including adherence to all U.S. Coast Guard and other applicable rules, regulations, or statutes pertaining to safe operation of the vessel including, but not limited to, rules of the road, vessel stability, emergency drills, emergency equipment, vessel maintenance, vessel general condition, and port bar crossings. An observer may refuse boarding of reboarding a vessel and may request a vessel return to port if operated in an unsafe manner or if unsafe conditions are indentified.

~~(CB)~~ Have on board: a valid Commercial Fishing Vessel Safety Decal ~~issued at a time interval consistent with current USCG regulations or policy~~ that certifies compliance with regulations found in 33 CFR Chapter I and 46 CFR Chapter I, a certificate of compliance issued pursuant to 46 CFR 28.710 or a valid certificate of inspection pursuant to 46 U.S.C. 3311.

~~(Diii)~~ Computer hardware and software.

(A) Motherships ~~vessels~~ must:

(1) ~~provide~~Provide hardware and software pursuant to regulations at 50 CFR 679.50(g)(1)(iii)(B)(1) through 50 CFR 679.50(g)(1)(iii)(B)(3), as follows:

(2) ~~provide~~Provide the observer(s) access to a computer required under paragraph XXX of this section, and that is connected to a communication device that provides a point-to-point connection to the NMFS host computer.

(3) Ensure that the mothership has installed the most recent release of NMFS data entry software provided by the Regional Administrator, or other approved software prior to the vessel receiving, catching or processing IFQ species.

~~(iii)~~4 Ensure that the communication equipment required in this paragraph (g)(1)(iii)(B) of this section and that is used by observers to enter and transmit data, is fully functional and operational. “Functional” means that all the tasks and components of the NMFS supplied, or other approved, software described at paragraph (g)(1)(iii)(B)(2) of this section and the data transmissions to NMFS can be executed effectively aboard the vessel by the communications equipment.

~~(2B)~~ Catcher vessels. [Reserved]

~~(Eiv)~~ Vessel position. Allow observer(s) access to, ~~and the use of,~~ the vessel's navigation equipment and personnel, on request, to determine the vessel's position.

~~(Fv)~~ Access. Allow observer(s) free and unobstructed access to the vessel's bridge, trawl or working decks, holding bins, processing areas, freezer spaces, weight scales, cargo holds, and any other space that may be used to hold, process, weigh, or store fish or fish products at any time.

~~(Gvi)~~ Prior notification. Notify observer(s) at least 15 minutes before fish are brought on board, or fish and fish products are transferred from the vessel, to allow sampling the catch or observing the transfer, ~~unless the observer specifically requests not to be notified.~~

~~(Hvii)~~ Records. Allow observer(s) to inspect and copy any state or Federal logbook maintained voluntarily or as required by regulation.

~~(Iviii)~~ Assistance. Provide all other reasonable assistance to enable observer(s) to carry out their duties, including, but not limited to:

~~(1A)~~ Measuring decks, codends, and holding bins.

~~(2B)~~ Providing the observer(s) with a safe work area.

~~(3C)~~ Collecting samples of catch.

~~(4D)~~ Collecting and carrying baskets of fish.

~~(5E)~~ Allowing the observer(s) to collect biological data and samples.

~~(6F)~~ Providing adequate space for storage of biological samples.

~~(Jix)~~ Sample Station and Operational Requirements For Mothership and Mothership Catcher Vessels.

~~(1) Observer sampling station on Motherships. This paragraph contains the requirements for observer sampling stations on mothership vessels and operational requirements.~~



(A) Motherships. To allow the observer to carry out required duties, the vessel owner must provide an observer sampling station that meets the following requirements of paragraph (X)(X) (i) through (viii) of this section:

(i) Accessibility. The observer sampling station must be available to the observer at all times.

(ii) Location. The observer sampling station must be located within 4 m of the location from which the observer samples unsorted catch.

(iii) Access. Unobstructed passage must be provided between the observer sampling station and the location where the observer collects sample catch.

(iv) Minimum work space. The observer must have a working area of at least 4.5 square meters, including the observer's sampling table, for sampling and storage of fish to be sampled. The observer must be able to stand upright and have a work area at least 0.9 m deep in the area in front of the table and scale.

(v) Table. The observer sampling station must include a table at least 0.6 m deep, 1.2 m wide and 0.9 m high and no more than 1.1 m high. The entire surface area of the table must be available for use by the observer. Any area for the observer sampling scale is in addition to the minimum space requirements for the table. The observer's sampling table must be secured to the floor or wall.

(vi) Diverter Board. The conveyor belt conveying unsorted catch must have a removable board ("diverter board") to allow all fish to be diverted from the belt directly into the observer's sampling baskets. The diverter board must be located downstream of the scale used to weigh total catch. At least 1 m of accessible belt space, located downstream of the scale used to weigh total catch, must be available for the observer's use when sampling.

(vii) Other Requirements. The sampling station must be in a well-drained area that includes floor grating (or other material that prevents slipping), lighting adequate for day or night sampling, and a hose that supplies fresh or sea water to the observer.

(viii) Observer Sampling Scale. The observer sample station must include a NMFS-approved platform scale (pursuant to requirements at § 679.28(j)(2)) with a capacity of at least 50 kg located within 1 m of the observer's sampling table. The scale must be mounted so that the weighing surface is no more than 0.7 m above the floor.

(2) Sampling Stations on B) Catcher Vessels Delivering To Motherships. This paragraph contains the requirements for observer sampling stations on mothership-catcher vessels. To allow the observer to carry out the required duties, the vessel owner must provide an observer sampling station that meets the requirements of paragraphs (i) through (XX) of this section:

(i) Accessibility (1) Accessible. The observer sampling station must be available to the observer at all times.

(ii) Hazards. As much as (2) Limits hazards. To the extent possible, the area should be free and clear of hazards including, but not limited to, moving fishing gear, stored fishing gear, inclement weather conditions, and open hatches.

(x) Transfer at-sea.



(A) Motherships must:

(1) Ensure that transfers of observers at sea via small boat under its own power are carried out during daylight hours, under safe conditions, and with the agreement of observers involved.~~(A) Ensure that transfers of observers at sea via small boat under its own power are carried out during daylight hours, under safe conditions, and with the agreement of observers involved.~~

~~(B) Notify observers at least 3 hours before observers are transferred, such that the observers can finish any sampling work, collect personal belongings, equipment, and scientific samples.~~

(2) Notify observers at least 3 hours before observers are transferred, such that the observers can finish any sampling work, collect personal belongings, equipment, and scientific samples.~~(C)~~

(3) Provide a safe pilot ladder and conduct the transfer to ensure the safety of observers during transfers.

~~(D) Provide an experienced crew member to assist observers in the small boat in which any transfer is made.~~

(4) Provide an experienced crew member to assist observers in the small boat in which any transfer is made.

(B) Catcher vessels. Transfers at-sea are prohibited.

(3) Procurement of observer services.

(i) Motherships.

(A) Owners of vessels required to carry observers under paragraph XXXXX of this section must arrange for observer services from an observer provider permitted by the North Pacific Groundfish Observer Program under 50 CFR 679.50(i), except that:

~~(A) Vessels are required to procure observer services directly from NMFS when NMFS has determined and given notification that the vessel must carry NMFS staff or an individual authorized by NMFS in lieu of an observer provided by a permitted observer provider.~~

~~(B) Vessels are required to procure observer services directly from NMFS and a permitted observer provider when NMFS has determined and given notification that the vessel must carry NMFS staff and/or individuals authorized by NMFS, in addition to an observer provided by a permitted observer provider.~~

(4)(1) Vessels are required to procure observer services directly from NMFS when NMFS has determined and given notification that the vessel must carry NMFS staff or an individual authorized by NMFS in lieu of an observer provided by a permitted observer provider.

(2) Vessels are required to procure observer services directly from NMFS and a permitted observer provider when NMFS has determined and given notification that the vessel must carry NMFS staff and/or individuals authorized by NMFS, in addition to an observer provided by a permitted observer provider.

(ii) Catcher vessels.

(A) Owners of vessels required to carry observers under paragraph (a)(1) of this section must arrange for observer services from an Observer provider permitted by the West Coast Groundfish Observer Program under 50 CFR 660.120 (i), except that:

(1) Vessels are required to procure observer services directly from NMFS when NMFS has determined and given notification that the vessel must carry NMFS staff or an individual authorized by NMFS in lieu of an observer provided by a permitted observer provider.

(2) Vessels are required to procure observer services directly from NMFS and a permitted observer provider when NMFS has determined and given notification that the vessel must carry NMFS staff and/or individuals authorized by NMFS, in addition to an observer provided by a permitted observer provider.

(B) [Reserved]

(4) Application to become an observer provider.

(i) Mothership observers. Observer providers must be certified with the North Pacific Groundfish Observer Program. Refer to AK REGS OBS for application instructions.

(ii) Catcher vessel observers. To become an observer provider for catcher vessels, refer to the shorebased IFQ program regulations at 660.140 (4)

(5) Observer provider responsibilities.

(i) ~~Qualifies Candidates~~ Provide qualified candidates. Observer providers must provide qualified candidates to serve as observers. To be qualified, a candidate must have:

(A) A Bachelor's degree or higher from an accredited college or university with a major in one of the natural sciences;

(B) Successfully completed a minimum of 30 semester hours or equivalent in applicable biological sciences with extensive use of dichotomous keys in at least one course;

(C) Successfully completed at least one undergraduate course each in math and statistics with a minimum of 5 semester hours total for both; and

(D) Computer skills that enable the candidate to work competently with standard database software and computer hardware.

(ii) ~~Description of Observer Duties.~~ Prior to hiring a candidate.

(A) Motherships.

(1) The observer provider must provide the candidate a copy of NMFS-provided pamphlets, information and other literature describing observer duties (i.e. The At-Sea Hake Observer Program's Observer Manual) prior to hiring the candidate. Observer job information is available from the Observer Program Office's web site at [www.nwfsc.noaa.gov/research/divisions/fram/observer/atseahake.cfm](http://www.nwfsc.noaa.gov/research/divisions/fram/observer/atseahake.cfm)

(~~iii~~2) ~~Observer Contracts~~-contracts. The observer provider must provide for each observer, either a written contract or a written contract addendum that is signed by the observer and observer provider prior to the observer's deployment and that contains the following provisions for continued employment:

(~~A~~i) That all the observer's catch reports required to be sent ~~during the season while deployed~~ are delivered to the Observer Program Office as specified by written Observer Program instructions;

(~~B~~ii) Prior to the time of embarkation, disclosure of any mental illness or physical ailments or injury that would prevent the candidate from performing their assigned duties of an observer and which were not documented in the physician's statement submitted by the candidate as required in **paragraph XX** of this section;

(~~C~~iii) Requirement that ensures the observers complete duties in a timely manner. An observer provider must ensure that observers employed by that observer provider do the following in a complete and timely manner: once an observer is scheduled for a final deployment debriefing, submit to NMFS all data, reports required by the Observer Manual, and biological samples from the observer's deployment by the completion of the electronic vessel and/or processor survey(s); report for the scheduled debriefing and complete all debriefing responsibilities; report to the observer program office and the NOAA OLE any refusal to board an assigned vessel.

~~(1) Once an observer is scheduled for a final deployment debriefing under **paragraph XX of this section**, submit to NMFS all data, reports required by the Observer Manual, and biological samples from the observer's deployment by the completion of the electronic vessel and/or processor survey(s);~~

~~(2) Report for the scheduled debriefing and complete all debriefing responsibilities;~~

~~(3) Report to the observer program office and the NMFS OLE observer compliance coordinator any refusal to board an assigned vessel.~~

~~(4~~(iv) Return all sampling and safety gear to the Observer Program Office.

~~(iv) Providing~~**B) Catcher vessels.**

(1) Provide the candidate a copy of NMFS-provided pamphlets, information and other literature describing observer duties, for example, the West Coast Groundfish Observer Program's sampling manual. Observer job information is available from the Observer Program Office's web site at <http://www.nwfsc.noaa.gov/research/divisions/fram/observer/index.cfm>

(2) For each observer employed by an observer provider, either a written contract or a written contract addendum must exist that is signed by the observer and observer provider prior to the observer's deployment and that contains the following provisions for continued employment:

(i) That all the observer's in-season catch messages between the observer and NMFS are delivered to the Observer Program Office as specified by the Observer Program instructions;

(ii) The observer inform the observer provider prior to the time of embarkation if he or she is experiencing any new mental illness or physical ailments or injury since submission of the physician's statement as required as a qualified observer candidate that would prevent him or her from performing their assigned duties;

(iii) Ensure that every observer completes a basic cardiopulmonary resuscitation/first aid course prior to the end of the NMFS-certified Observers to West Coast Groundfish Observer Training class.

(iii) Provide vessels only observers.

(A) Motherships. The observer provider must only provide observers to mothership vessels that have:

(A1) a valid North Pacific groundfish observer certification endorsements and an At-Sea Hake Observer Program certification to provide observer services;

(B2) not informed the provider prior to the time of embarkation that he or she is experiencing a mental illness or a physical ailment or injury developed since submission of the physician's statement, as required in paragraph XX of this section that would prevent him or her from performing his or her assigned duties; and

(C3) successfully completed all NMFS required training and briefing before deployment.

(v) Providing NMFS-certified Observers to Motherships. Observer providers must only provide observers to mothership catcher vessels that meet the certification and training requirements specified at 660.140 (h) for vessels in the shorebased IFQ Program. B) Catcher vessels.

(vi)(1) With a valid West Coast Groundfish observer certification;

(2) Who have not informed the provider prior to the time of embarkation that he or she is experiencing a mental illness or a physical ailment or injury developed since submission of the physician's statement, as required in paragraph XX of this section that would prevent him or her from performing his or her assigned duties; and

(3) Who have successfully completed all NMFS required training and briefing before deployment.

(iv) Respond to industry requests for observers. An observer provider must provide an observer for deployment as requested by vessels to fulfill vessel requirements for observer coverage specified at sections XX. An alternate observer must be supplied in each case where injury or illness prevents the observer from performing his or her duties or where the observer resigns prior to completion of his or her duties. If the observer provider is unable to respond to an industry request for observer coverage due to lack of available observers by the estimated embarking time of the vessel, the provider must report it to the observer program at least 4 hours prior to the vessel's estimated embarking time.

(viiv) Provide Observer Salariesobserver salaries and Benefits.benefits. An observer provider must provide to its observer employees salaries and any other benefits and personnel services in accordance with the terms of each observer's contract.

(viiiiv) Provide Observer Deployment Logisticsobserver deployment logistics.

(A) Motherships. An observer provider must provide to each of its observers under contract:

(~~A~~1) All necessary transportation, including arrangements and logistics, of observers to the initial location of deployment, to all subsequent vessel assignments during that deployment, and to the debriefing location when a deployment ends for any reason; and

(~~B~~2) Lodging, per diem, and any other services necessary to observers assigned to fishing vessels.

(~~C~~3) An observer under contract may be housed on a vessel to which he or she is assigned:

(~~1~~i) Prior to their vessel's initial departure from port;

(~~2~~ii) For a period not to exceed twenty-four hours following the completion of an offload when the observer has duties and is scheduled to disembark; or

(~~3~~iii) For a period not to exceed twenty-four hours following the vessel's arrival in port when the observer is scheduled to disembark.

(4iv) During all periods an observer is housed on a vessel, the observer provider must ensure that the vessel operator or at least one crew member is aboard.

(~~5~~v) An observer under contract who is between vessel assignments must be provided with shoreside accommodations at a licensed hotel, motel, bed and breakfast, or other shoreside accommodations for the duration of each period between vessel or shoreside assignments. Such accommodations must include an assigned bed for each observer and no other person may be assigned that bed for the duration of that observer's stay. Additionally, no more than four beds may be in any room housing observers at accommodations meeting the requirements of this section.

(ix) ~~Not Exceed Observer Deployment Limitations.~~(B) Catcher vessels. An observer provider must ensure each of its observers under contract:

(1) Has an individually assigned mobile or cell phones, in working order, for all necessary communication. An observer provider may alternatively compensate observers for the use of the observer's personal cell phone or pager for communications made in support of, or necessary for, the observer's duties.

(2) Calls into the NMFS deployment hotline upon departing and arriving into port for each trip to leave the following information: observer name, phone number, vessel departing on, expected trip end date and time.

(3) Remains available to NOAA OLE and the Observer Program until the conclusion of debriefing.

(4) Receives all necessary transportation, including arrangements and logistics, of observers to the initial location of deployment, to all subsequent vessel assignments during that deployment, and to the debriefing location when a deployment ends for any reason; and

(5) Receives lodging, per diem, and any other services necessary to observers assigned to fishing vessels.

(i) An observer under contract may be housed on a vessel to which he or she is assigned: prior to their vessel's initial departure from port; for a period not to exceed 24 hours following the completion of an offload when the observer has duties and is scheduled to disembark; or for a

period not to exceed twenty-four hours following the vessel's arrival in port when the observer is scheduled to disembark.

(ii) During all periods an observer is housed on a vessel, the observer provider must ensure that the vessel operator or at least one crew member is aboard.

(iii) Otherwise, each observer between vessels, while still under contract with a permitted observer provider, shall be provided with accommodations in accordance with the contract between the observer and the observer provider. If the observer provider is responsible for providing accommodations under the contract with the observer, the accommodations must be at a licensed hotel, motel, bed and breakfast, or other shoreside accommodations that has an assigned bed for each observer that no other person may be assigned to for the duration of that observer's stay. Additionally, no more than four beds may be in any room housing observers at accommodations meeting the requirements of this section.

(vii) Observer deployment limitations.

(A) Motherships. Unless alternative arrangements are approved by the Observer Program Office, an observer provider must not:

~~(A1)~~ Deploy an observer on the same vessel more than 90 days in a 12-month period;

~~(B2)~~ Deploy an observer for more than 90 days in a single deployment;

~~(C3)~~ Include more than four vessels assignments in a single deployment, or

~~(D4)~~ Disembark an observer from a vessel before that observer has completed his or her sampling or data transmission duties.

~~(B) Catcher vessels. Not deploy an observer on the same vessel more than 90 calendar days in a 12-month period. Not exceed observer deployment limitations and workload as outlined in paragraph (g)(ii)(B) above.~~

(viii) Verify vessel's safety decal. An observer provider must verify that a vessel has a valid USCG safety decal as required under paragraph XX of this section before an observer may get underway aboard the vessel. One of the following acceptable means of verification must be used to verify the decal validity:

(A) The observer provider or employee of the observer provider, including the observer, visually inspects the decal aboard the vessel and confirms that the decal is valid according to the decal date of issuance; or

(B) The observer provider receives a hard copy of the USCG documentation of the decal issuance from the vessel owner or operator.

(ix) Maintain communications with observers. An observer provider must have an employee responsible for observer activities on call 24 hours a day to handle emergencies involving observers or problems concerning observer logistics, whenever observers are at sea, in transit, or in port awaiting vessel reassignment.

~~(xi) Maintain communications with observers. An observer provider must have an employee responsible for observer activities on call 24 hours a day to handle emergencies involving observers or problems concerning observer logistics, whenever observers are at sea, in transit, or in port awaiting vessel reassignment.~~

~~(xix)~~ Maintain Communications With The Observer Program Office. An observer provider must provide all of the following information by electronic transmission (e-mail), fax, or other method specified by NMFS.

(A) Motherships.

~~(1) Training and Briefing Registration Materials.~~ briefing registration materials. The observer provider must submit training and briefing registration materials to the Observer Program Office at least 5 business days prior to the beginning of a scheduled observer at-sea hake training or briefing session.

~~(i)~~ Registration materials consist of the date of requested training or briefing with a list of observers. Each including each observer's full name (i.e., first, middle and last names).

~~(ii)~~ Projected observer assignments. Prior to the observer's completion of the training or briefing session, the observer provider must submit to the Observer Program Office a statement of projected observer assignments that include the observer's name; vessel, gear type, and vessel/processor code; port of embarkation; and area of fishing.

~~(B) Projected Observer Assignments. Prior to the observer's completion of the training or briefing session, the observer provider must submit to the Observer Program Office a statement of projected observer assignments that include the observer's name; vessel, gear type, and vessel/processor code; port of embarkation; and area of fishing.~~

~~(C) Observer Debriefing Registration.~~ (2) Observer debriefing registration. The observer provider must contact the At-Sea Hake Observer Program within 5 business days after the completion of an observer's deployment to schedule a date, time and location for debriefing. Observer debriefing registration information must be provided at the time of debriefing scheduling and must include the observer's name, cruise number, vessel name(s) and code(s), and requested debriefing date.

~~(D)~~ (3) Observer provider contracts. If requested, observer providers must submit to the Observer Program Office a completed and unaltered copy of each type of signed and valid contract (including all attachments, appendices, addendums, and exhibits incorporated into the contract) between the observer provider and those entities requiring observer services under paragraph XX of this section. Observer providers must also submit to the Observer Program Office upon request, a completed and unaltered copy of the current or most recent signed and valid contract (including all attachments, appendices, addendums, and exhibits incorporated into the contract and any agreements or policies with regard to observer compensation or salary levels) between the observer provider and the particular entity identified by the Observer Program or with specific observers. Said copies must be submitted to the Observer Program Office via fax or mail within 5 business days of the request. Signed and valid contracts include the contracts an observer provider has with:

(i) Vessels required to have observer coverage as specified at paragraph XX of this section; and

(ii) Observers.



(4) Change in observer provider management and contact information. Observer providers must submit notification of any other change to provider contact information, including but not limited to, changes in contact name, phone number, email address, and address.

(5) Boarding refusals. The observer service provider must report to NMFS any trip that has been refused by an observer within 24 hours of the refusal.

(6) Other ~~Reports-reports~~. Reports of the following must be submitted in writing to the At-Sea Hake Observer Program Office by the observer provider via fax or email address designated by the Observer Program Office within 24 hours after the observer provider becomes aware of the information:

(~~i~~) Any information regarding possible observer harassment;

(~~ii~~) Any information regarding any action prohibited under **section XX (660.12 Prohibitions section)** or § 600.725(o), (t) and (u);

(~~iii~~) Any concerns about vessel safety or marine casualty under **46 CFR 4.05–1 (X)(X) through (X)**;

(~~iiii~~) Any observer illness or injury that prevents the observer from completing any of his or her duties described in the observer manual; and

(~~v~~) Any information, allegations or reports regarding observer conflict of interest or breach of the standards of behavior described **at paragraph XX** of this section.

(~~v~~)B) Catcher vessels. An observer provider must provide all of the following information by electronic transmission (e-mail), fax, or other method specified by NMFS.

(1) Observer training, briefing, and debriefing registration materials. This information must be submitted to the Observer Program Office at least 7 business days prior to the beginning of a scheduled West Coast groundfish observer certification training or briefing session.

(i) Training registration materials consist of the following: Date of requested training; a list of observer candidates that includes each candidate's full name (i.e., first, middle and last names), date of birth, and sex; a copy of each candidate's academic transcripts and resume; a statement signed by the candidate under penalty of perjury which discloses the candidate's criminal convictions; projected observer assignments- Prior to the observer's completion of the training or briefing session, the observer provider must submit to the Observer Program Office a statement of projected observer assignments that include that includes each observer's name, current mailing address, e-mail address, phone numbers and port of embarkation ("home port"); and length of observers contract.

(ii) Briefing registration materials consist of the following: Date and type of requested briefing session; list of observers to attend the briefing session, that includes each observer's full name (first, middle, and last names); projected observer assignments- Prior to the observer's completion of the training or briefing session, the observer provider must submit to the Observer Program Office a statement of projected observer assignments that include that includes each observer's name, current mailing address, e-mail address, phone numbers and port of embarkation ("home port"); and length of observer contract.



(iii) Debriefing. The West Coast Groundfish Observer Program will notify the observer provider by the 15<sup>th</sup> of each month which observers require debriefing and the specific time period the provider has to schedule a date, time, and location for debriefing. The observer provider must contact the West Coast Groundfish Observer program within 5 business days by telephone to schedule debriefings. Observer providers must immediately notify the observer program when observers end their contract earlier than anticipated.

(2) Physical examination. A signed and dated statement from a licensed physician that he or she has physically examined an observer or observer candidate. The statement must confirm that, based on that physical examination, the observer or observer candidate does not have any health problems or conditions that would jeopardize that individual's safety or the safety of others while deployed, or prevent the observer or observer candidate from performing his or her duties satisfactorily. The statement must declare that, prior to the examination, the physician was made aware of the duties of the observer and the dangerous, remote, and rigorous nature of the work by reading the NMFS-prepared information. The physician's statement must be submitted to the Observer Program Office prior to certification of an observer. The physical exam must have occurred during the 12 months prior to the observer's or observer candidate's deployment. The physician's statement will expire 12 months after the physical exam occurred. A new physical exam must be performed, and accompanying statement submitted, prior to any deployment occurring after the expiration of the statement.

(3) Certificates of insurance. Copies of "certificates of insurance", that names the NMFS Observer Program leader as the "certificate holder", shall be submitted to the Observer Program Office by February 1 of each year. The certificates of insurance shall verify the following coverage provisions and state that the insurance company will notify the certificate holder if insurance coverage is changed or canceled.

(i) Maritime Liability to cover "seamen's" claims under the Merchant Marine Act (Jones Act) and General Maritime Law (\$1 million minimum).

(ii) Coverage under the U.S. Longshore and Harbor Workers' Compensation Act (\$1 million minimum).

(iii) States Worker's Compensation as required.

(iv) Commercial General Liability.

(4) Observer provider contracts. If requested, observer providers must submit to the Observer Program Office a completed and unaltered copy of each type of signed and valid contract (including all attachments, appendices, addendums, and exhibits incorporated into the contract) between the observer provider and those entities requiring observer services under paragraph XX of this section. Observer providers must also submit to the Observer Program Office upon request, a completed and unaltered copy of the current or most recent signed and valid contract (including all attachments, appendices, addendums, and exhibits incorporated into the contract and any agreements or policies with regard to observer compensation or salary levels) between the observer provider and the particular entity identified by the Observer Program or with specific observers. Said copies must be submitted to the Observer Program

Office via fax or mail within 5 business days of the request. Signed and valid contracts include the contracts an observer provider has with:

(i) Vessels required to have observer coverage as specified at **paragraph XX** of this section; and

(ii) Observers.

(5) Change in observer provider management and contact information. Except for changes in ownership addressed under **paragraph XX** of this section, an observer provider must submit notification of any other change to the information submitted on the provider's permit application under **paragraphs XX** of this section. Within 30 days of the effective date of such change, this information must be submitted by fax or mail to the Observer Program Office at the address listed in **paragraph XX** of this section.

(6) Boarding refusals. The observer service provider must report to NMFS any trip that has been refused by an observer within 24 hours of the refusal.

(7) Biological samples. The observer service provider must ensure that biological samples are stored/handled properly prior to delivery/transport to NMFS.

(8) Observer status report. Each Tuesday, observer providers must provide NMFS with an updated list of contact information for all observers that includes the observer's name, mailing address, e-mail address, phone numbers, port of embarkation ("home port"), fishery deployed the previous week and whether or not the observer is "in service", indicating when the observer has requested leave and/or is not currently working for the provider.

(9) Providers must submit to NMFS, if requested, copies of any information developed and used by the observer providers distributed to vessels, such as informational pamphlets, payment notification, description of observer duties, etc.

(10) Other reports. Reports of the following must be submitted in writing to the West Coast Groundfish Observer Program Office by the observer provider via fax or email address designated by the Observer Program Office within 24 hours after the observer provider becomes aware of the information:

(i) Any information regarding possible observer harassment;

(ii) Any information regarding any action prohibited under **section XX (660.12 Prohibitions section)** or § 600.725(o), (t) and (u);

(iii) Any concerns about vessel safety or marine casualty under **46 CFR 4.05-1 (X)(X) through (X)**;

(iv) Any observer illness or injury that prevents the observer from completing any of his or her duties described in the observer manual; and

(v) Any information, allegations or reports regarding observer conflict of interest or breach of the standards of behavior described at **paragraph XX** of this section.

(xi) **Replace lost or damaged gear.** An observer provider must replace all lost or damaged gear and equipment issued by NMFS to an observer under contract to that provider. All

replacements must be in accordance with requirements and procedures identified in writing by the Observer Program Office.

~~(vixxii)~~ Maintain Confidentiality~~confidentiality of Information-information.~~ An observer provider must ensure that all records on individual observer performance received from NMFS under the routine use provision of the Privacy Act remain confidential and are not further released to anyone outside the employ of the observer provider company to whom the observer was contracted except with written permission of the observer.

~~(viixxiii)~~ Limitations on Conflict~~conflict of Interest-interest.~~ Observer providers must meet limitations on conflict of interest. Observer providers:

(A) Must not have a direct financial interest, other than the provision of observer services, in the West Coast Groundfish fishery managed under an FMP for the waters off the coasts of Washington, Oregon, and California, including, but not limited to,

(1) Any ownership, mortgage holder, or other secured interest in a vessel, or shoreside processor facility involved in the catching, taking, harvesting or processing of fish,

(2) Any business involved with selling supplies or services to any vessel or shoreside processors participating in a fishery managed pursuant to an FMP in the waters off the coasts of California, Oregon, and Washington, or

(3) Any business involved with purchasing raw or processed products from any vessel or shoreside processor participating in a fishery managed pursuant to an FMP in the waters off the coasts of California, Oregon, and Washington.

(B) Must assign observers without regard to any preference by representatives of vessels other than when an observer will be deployed.

(C) Must not solicit or accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from anyone who conducts fishing or fish processing activities that are regulated by NMFS, or who has interests that may be substantially affected by the performance or nonperformance of the official duties of observer providers.

~~(viiixxiv)~~ Observer Conduct~~conduct and Behavior-behavior.~~ Observer providers must develop and maintain a policy addressing observer conduct and behavior for their employees that serve as observers. The policy shall address the following behavior and conduct regarding:

(A) Observer use of alcohol;

(B) Observer use, possession, or distribution of illegal drugs and;

(C) Sexual contact with personnel of the vessel or processing facility to which the observer is assigned, or with any vessel or processing plant personnel who may be substantially affected by the performance or non-performance of the observer's official duties.

(D) An observer provider shall provide a copy of its conduct and behavior policy by February 1 of each year, to: Observers, observer candidates and; the Observer Program Office.

~~45~~(xv) Refusal to deploy an observer. Observer providers may refuse to deploy an observer on a requesting vessel if the observer provider has determined that the requesting vessel is inadequate or unsafe pursuant to those regulations described at §600.746 or U.S. Coast Guard

and other applicable rules, regulations, statutes, or guidelines pertaining to safe operation of the vessel.

(6) Observer certification and responsibilities.

~~(i) Observer Certification for Observers deployed on motherships:~~

~~(A) Applicability.~~ Observer certification authorizes an individual to fulfill duties as specified in writing by the NMFS Observer Program Office while under the employ of a NMFS-permitted observer provider and according to certification endorsements as designated under **paragraph XX** of this section.

~~(Bii) Observer certification official.~~ The Regional Administrator will designate a NMFS observer certification official who will make decisions for the Observer Program Office on whether to issue or deny observer certification.

~~(Ciii) Certification requirements.~~

~~(A) Initial certification.~~ NMFS ~~will~~may certify individuals who, in addition to any other relevant considerations:

~~(1) Are employed by an observer provider company permitted pursuant to 50 CFR 679.50 at the time of the issuance of the certification;~~  
~~(1) Are employed by an observer provider company permitted pursuant to 50 CFR 679.50 at the time of the issuance of the certification;~~

~~(2) Have provided, through their observer provider:~~

~~(i) Information identified by NMFS at 50 CFR 679.50 regarding an observer candidate's health and physical fitness for the job;~~

~~(ii) Meet all observer education and health standards as specified in 50 CFR 679.50 and~~

~~(iii) Have successfully completed NMFS-approved training as prescribed by the At-Sea Hake and/or the West Coast Groundfish Observer Program.~~

~~(A) Successful completion of training by an observer applicant consists of meeting all attendance and conduct standards issued in writing at the start of training;~~

~~(B) meeting all performance standards issued in writing at the start of training for assignments, tests, and other evaluation tools; and completing all other training requirements established by the Observer Program-~~

~~(D) Have; and having~~ not been decertified under **paragraph (X)(X)** of this section, or pursuant to 50 CFR 679.50.

~~(E) Agency determinations on observer certification~~

~~(iv) Denial of a certification.~~ The NMFS observer certification official will issue a written determination denying observer certification if the candidate fails to successfully complete training, or does not meet the qualifications for certification for any other relevant reason.

~~(2v) Issuance of an observer certification.~~ An observer certification will be issued upon determination by the observer certification official that the candidate has successfully met all requirements for certification as **specified XXXXX-**

~~(i) Endorsements.~~ The following endorsements must be obtained, in addition to observer certification, in order for an observer to deploy.

(A) Motherships.

(1) North Pacific Groundfish Observer Program certification training endorsement. A certification training endorsement signifies the successful completion of the training course required to obtain observer certification. This endorsement expires when the observer has not been deployed and performed sampling duties as required by the Observer Program Office for a period of time, specified by the Observer Program, after his or her most recent debriefing. The observer can renew the endorsement by successfully completing certification training once more.

(2) North Pacific Groundfish Observer Program annual general endorsements. Each observer must obtain an annual general endorsement to their certification prior to his or her first deployment within any calendar year subsequent to a year in which a certification training endorsement is obtained. To obtain an annual general endorsement, an observer must successfully complete the annual briefing, as specified by the Observer Program. All briefing attendance, performance, and conduct standards required by the Observer Program must be met.

(3) North Pacific Groundfish Observer Program deployment endorsements. Each observer who has completed an initial deployment after certification or annual briefing must receive a deployment endorsement to their certification prior to any subsequent deployments for the remainder of that year. An observer may obtain a deployment endorsement by successfully completing all pre-cruise briefing requirements. The type of briefing the observer must attend and successfully complete will be specified in writing by the Observer Program during the observer's most recent debriefing.

(4) At-Sea Hake Observer Program endorsements. A Pacific hake fishery endorsement is required for purposes of performing observer duties aboard vessels that process groundfish at sea in the Pacific whiting fishery. A Pacific whiting fishery endorsement to an observer's certification may be obtained by meeting the following requirements:

(i) Be a prior NMFS-certified observer in the groundfish fisheries off Alaska or the Pacific Coast;

(ii) Receive an evaluation by NMFS for his or her most recent deployment that indicated that the observer's performance met Observer Program expectations for that deployment; successfully complete a NMFS-approved observer training and/or Pacific whiting briefing as prescribed by the Observer Program; and comply with all of the other requirements of this section.

(B) Catcher vessels. The following endorsements must be obtained in addition to observer certification, in order for an observer deploy.

(1) West Coast Groundfish Observer Program training certification endorsement. A training certification endorsement signifies the successful completion of the training course required to obtain observer certification. This endorsement expires when the observer has not been deployed and performed sampling duties as required by the ~~Observer-observer~~ Program ~~Officeoffice~~ for a period of time, specified by the Observer Program, after his or her most recent debriefing. The observer can renew the endorsement by successfully completing ~~certification~~ training once more.

~~(B) North Pacific~~ (2) West Coast Groundfish Observer Program annual general endorsement. Each observer must obtain an annual general endorsement to their certification prior to his or her first deployment within any calendar year subsequent to a year in which a training certification ~~training~~-endorsement is obtained. ~~To obtain an annual general endorsement, an observer must successfully complete the annual briefing, as specified by the Observer Program. All briefing attendance, performance, and conduct standards required by the Observer Program must be met.~~

~~(C) North Pacific~~ To obtain an annual general endorsement, an observer must successfully complete the annual briefing, as specified by the Observer Program. All briefing attendance, performance, and conduct standards required by the Observer Program must be met.

(3) West Coast Groundfish Observer Program deployment endorsement. Each observer who has completed an initial deployment after their certification or annual briefing must receive a deployment endorsement to their certification prior to any subsequent deployments for the remainder of that year. An observer may obtain a deployment endorsement by successfully completing all ~~pre-cruise~~ briefing requirements, when applicable. The type of briefing the observer must attend and successfully complete will be specified in writing by the Observer Program during the ~~observer's~~ observer's most recent debriefing.

~~(D) At-Sea Hake Observer Program endorsements. A Pacific hake fishery endorsement is required for purposes of performing observer duties aboard vessels that process groundfish at sea in the Pacific whiting fishery. A Pacific whiting fishery endorsement to an observer's certification may be obtained by meeting the following requirements:~~

~~(2) Be a prior NMFS-certified observer in the groundfish fisheries off Alaska or the Pacific Coast;~~

~~(3) Receive an evaluation by NMFS for his or her most recent deployment (if any) that indicated that the observer's performance met Observer Program expectations for that deployment;~~

~~(a)(vi) Maintaining the validity of observer certification. After initial issuance, an observer must keep their certification valid by meeting all of the following requirements specified below:~~

(A) Motherships.

(1) Successfully ~~complete a NMFS-approved~~ perform their assigned duties as described in the Observer Manual or other written instructions from the Observer Program Office including calling into the NMFS deployment hotline upon departing and arriving into port each trip to leave the following information: observer ~~training and/or Pacific whiting briefing~~ name, phone number, vessel name departing on, date and time of departure and date and time of expected return.

(2) Accurately record their sampling data, write complete reports, and report accurately any observations of suspected violations of regulations relevant to conservation of marine resources or their environment.

(3) Not disclose collected data and observations made on board the vessel or in the processing facility to any person except the owner or operator of the observed vessel or an authorized officer or NMFS.

(4) Successfully complete NMFS-approved annual briefings as prescribed by the At-Sea Hake Observer Program.

(5) Successful completion of briefing by an observer applicant consists of meeting all attendance and conduct standards issued in writing at the start of training; meeting all performance standards issued in writing at the start of training for assignments, tests, and other evaluation tools; and completing all other briefing requirements established by the Observer Program; and.

~~(b) Comply with~~ (6) Successfully meet all expectations in all debriefings including reporting for assigned debriefings.

(7) Submit all data and information required by the observer program within the program's stated guidelines.

(B) Catcher vessels. After initial issuance, an observer must keep their certification valid by meeting all of the other following requirements specified below:

(1) Successfully perform their assigned duties as described in the Observer Manual or other written instructions from the Observer Program Office including calling into the NMFS deployment hotline upon departing and arriving into port each trip to leave the following information: observer name, phone number, vessel name departing on, date and time of this section departure and date and time of expected return.

~~(F)~~(2) Accurately record their sampling data, write complete reports, and report accurately any observations of suspected violations of regulations relevant to conservation of marine resources or their environment.

(3) Not disclose collected data and observations made on board the vessel or in the processing facility to any person except the owner or operator of the observed vessel or an authorized officer or NMFS.

(4) Successfully complete NMFS-approved annual briefings as prescribed by the West Coast Groundfish Observer Program.

(5) Successful completion of briefing by an observer applicant consists of meeting all attendance and conduct standards issued in writing at the start of training; meeting all performance standards issued in writing at the start of training for assignments, tests, and other evaluation tools; and completing all other briefing requirements established by the Observer Program.

(6) Hold current basic cardiopulmonary resuscitation/first aid certification as per American Red Cross Standards.

(7) Successfully meet all expectations in all debriefings including reporting for assigned debriefings.

(8) Submit all data and information required by the observer program within the program's stated guidelines.



(9) Meet the minimum annual deployment period of 3 months at least once every 12 months.

(vii) Limitations on conflict of interest. Observers:

~~(1) Observers:~~ (A) Must not have a direct financial interest, other than the provision of observer services, in a North Pacific fishery managed pursuant to an FMP for the waters off the coast of Alaska, or in a Pacific Coast fishery managed by either the state or Federal governments in waters off Washington, Oregon, or California, including but not limited to:

~~(i)~~ Any ownership, mortgage holder, or other secured interest in a vessel, shore-based or floating stationary processor facility involved in the catching, taking, harvesting or processing of fish,

~~(ii)~~ Any business involved with selling supplies or services to any vessel, shore-based or floating stationary processing facility; or

~~(iii)~~ Any business involved with purchasing raw or processed products from any vessel, shore-based or floating stationary processing facilities.

~~(2B)~~ Must not solicit or accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from anyone who either conducts activities that are regulated by NMFS or has interests that may be substantially affected by the performance or nonperformance of the observers' official duties.

~~(3C)~~ May not serve as observers on any vessel ~~or at any shore-based or floating stationary processing facility~~ owned or operated by a person who ~~previously~~ employed the ~~observers~~ observer in the last two years.

~~(4D)~~ May not solicit or accept employment as a crew member or an employee of a vessel or shoreside processor while employed by an observer provider.

~~(5E)~~ Provisions for remuneration of observers under this section do not constitute a conflict of interest.

~~(Gviii)~~ Standards of behavior.

~~(1) Observers must avoid any behavior that could adversely affect the confidence of the public in the integrity of the Observer Program or of the government, including but not limited to the following~~ A) Observers must:

~~(i) Observers must:~~

~~(A1)~~ perform their assigned duties as described in the Observer Manual or other written instructions from the Observer Program Office.

~~(B2)~~ report to the observer program office and the NMFS OLE any time they refuse to board.

~~(C3)~~ accurately record their sampling data, write complete reports, and report accurately any observations of suspected violations of regulations relevant to conservation of marine resources or their environment.

~~(D4)~~ not disclose collected data and observations made on board the vessel or in the processing facility to any person except the owner or operator of the observed vessel or processing facility, an authorized officer, or NMFS.



~~(H(B) [Reserved]~~

~~(ix) Suspension and decertification—~~

~~(1A) Suspension and decertification review official.~~ The Regional Administrator (or a designee) will designate an observer suspension and decertification review official(s), who will have the authority to review observer certifications and issue initial administrative determinations of observer certification suspension and/or decertification.

~~(2B) Causes for suspension or decertification.~~ The suspension/decertification official may initiate suspension or decertification proceedings against an observer:

~~(1) When it is alleged that the observer has committed any acts or omissions of any of the following:~~

~~(Ai) Failed to satisfactorily perform the duties of observers as specified in writing by the NMFS Observer Program; or~~

~~(Bii) Failed to abide by the standards of conduct for observers as prescribed under paragraph XX of this section;~~

~~(ii)(2) Upon conviction of a crime or upon entry of a civil judgment for:~~

~~(Ai) Commission of fraud or other violation in connection with obtaining or attempting to obtain certification, or in performing the duties as specified in writing by the NMFS Observer Program;~~

~~(Bii) Commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;~~

~~(Ciii) Commission of any other offense indicating a lack of integrity or honesty that seriously and directly affects the fitness of observers.~~

~~—(3) Issuance of initial administrative determination. Upon determination that suspension or decertification is warranted under paragraph XX of this section, the suspension/decertification official will issue a written IAD to the observer via certified mail at the observer's most current address provided to NMFS. The IAD will identify whether a certification is suspended or revoked and will identify the specific reasons for the action taken. If the IAD issues a suspension for an observer certification, the terms of the suspension will be specified. Suspension or decertification is effective immediately as of the date of issuance, unless the suspension/decertification official notes a compelling reason for maintaining certification for a specified period and under specified conditions.~~

~~(4(C) Issuance of initial administrative determination. Upon determination that suspension or decertification is warranted under paragraph XX of this section, the suspension/decertification official will issue a written IAD to the observer via certified mail at the observer's most current address provided to NMFS. The IAD will identify whether a certification is suspended or revoked and will identify the specific reasons for the action taken. If the IAD issues a suspension for an observer certification, the terms of the suspension will be specified. Suspension or decertification is effective immediately as of the date of issuance, unless the suspension/decertification official notes a compelling reason for maintaining certification for a specified period and under specified conditions.~~

(D) Appeals. A certified observer who receives an IAD that suspends or revokes his or her observer certification may appeal pursuant to paragraph XX of this section the Office of Administrative Appeals.

(i1) Decisions on appeals of initial administrative decisions denying certification to, or suspending, or decertifying, an observer, will be made by the Regional Administrator (or designated official).

(ii2) Appeals decisions shall be in writing and shall state the reasons therefore.

(iii3) An appeal must be filed with the Regional Administrator within 30 days of the initial administrative decision denying, suspending, or revoking the observer's certification.

(iv4) The appeal must be in writing, and must allege facts or circumstances to show why the certification should be granted, or should not be suspended or revoked, under the criteria in this section.

(v5) Absent good cause for further delay, the Regional Administrator (or designated official) will issue a written decision on the appeal within 45 days of receipt of the appeal. ~~The Regional Administrator's decision is the final administrative decision of the Department as of the date of the decision.~~

~~(B) Observers deployed on mothership catcher vessels. Certifications and responsibilities for observers deployed aboard mothership catcher vessels are found in 660.140 XXX.~~

~~—— (k) Catch weighing requirements.~~

~~—— (1) Approved scales. The owner and operator of a mothership vessel must:~~

~~—— (i) Ensure that all catch Regional Administrator's decision is weighed in its round form on a NMFS-approved scale that meets the requirements specified at § 660.15(b);~~

~~—— (ii) Provide a NMFS-approved platform scale and test weights that meet final administrative decision of the requirements specified at § 660.15(b) and § 660.150 (j)(2)(J).~~

~~—— (2) At-sea scale tests. To verify that the scale meets the maximum permissible error (MPE) requirements specified at § 660.15(b), subpart C, the vessel operator must ensure that vessel crew test each scale used to weigh IFQ catch at least one time during each 24-hour period when use Department as of the scale is required. The vessel owner must ensure that these tests are performed in an accurate and timely manner date of the decision.~~

~~—— (i) Belt scales. The MPE for the daily at-sea scale test is plus or minus 3 percent of the known weight of the test material. The scale must be tested by weighing at least 400 kg (882 lb) of fish or an alternative material supplied by the scale manufacturer on the scale under test. The known weight of the fish or test material must be determined by weighing it on a platform scale approved for use under § 679.28 (b)(7).~~

~~—— (ii) Platform scales used for observer sampling. A platform scale used for observer sampling must be tested at 10, 25, and 50 kg (or 20, 50, and 100 lb if the scale is denominated in pounds) using approved test weights. The MPE for the daily at-sea scale test is plus or minus 0.5 percent.~~

~~—— (iii) Approved test weights. Each test weight must have its weight stamped on or otherwise permanently affixed to it. The weight of each test weight must be annually certified by~~

~~a National Institute of Standards and Technology approved metrology laboratory or approved for continued use by the NMFS authorized inspector at the time of the annual scale inspection.~~

~~——(iv) Requirements for all scale tests.~~

~~——(A) Notify the observer at least 15 minutes before the time that the test will be conducted, and conduct the test while the observer is present.~~

~~——(B) Conduct the scale test and record the following information on the at-sea scale test report form:~~

~~——(1) Vessel name;~~

~~——(2) Month, day, and year of test;~~

~~——(3) Time test started to the nearest minute;~~

~~——(4) Known weight of test weights;~~

~~——(5) Weight of test weights recorded by scale;~~

~~——(6) Percent error as determined by subtracting the known weight of the test weights from the weight recorded on the scale, dividing that amount by the known weight of the test weights, and multiplying by 100; and~~

~~——(7) Sea conditions at the time of the scale test.~~

~~——(C) Maintain the test report form on board the vessel until the end of the fishing year during which the tests were conducted, and make the report forms available to observers, NMFS staff, or NMFS authorized personnel. In addition, the vessel owner must retain the scale test report forms for 3 years after the end of the crab fishing year during which the tests were performed. All scale test report forms must be signed by the vessel operator.~~

~~——(3) Scale maintenance. The vessel owner must ensure that the vessel operator maintains the scale in proper operating condition throughout its use, that adjustments made to the scale are made so as to bring the performance errors as close as practicable to a zero value, and that no adjustment is made that will cause the scale to weigh inaccurately.~~

~~——(4) Printed reports from the scale. The vessel owner must ensure that the printed reports are provided as required by this paragraph. Printed reports from the scale must be maintained on board the vessel until the end of the year during which the reports were made, and be made available to NMFS staff or NMFS authorized personnel. In addition, the vessel owner must retain printed reports for 3 years after the end of the year during which the printouts were made.~~

~~——(i) Reports of catch weight and cumulative weight. Reports must be printed at least once every 24 hours prior to submitting a landing report as described in § XXXX. Reports must also be printed before any information stored in the scale computer memory is replaced. Scale weights must not be adjusted by the scale operator to account for the perceived weight of water, mud, debris, or other materials. Scale printouts must show:~~

~~——(A) The vessel name and Federal vessel permit number;~~

~~——(B) The date and time the information was printed;~~

~~——(C) The haul number as recorded in the processors DCPL~~

~~——(D) The Total weight of the haul; and~~

~~——(E) The total cumulative weight of all fish and other material weighed on the scale since the last annual inspection~~

~~—— (ii) Printed report from the audit trail. The printed report must include the information specified in sections 2.3.1.8, 3.3.1.7, and 4.3.1.8 of appendix A to 50 CFR part 679. The printed report must be provided to the authorized scale inspector at each scale inspection and must also be printed at any time upon request of NMFS staff or other NMFS authorized personnel.~~

~~—— (iii) Platform scales used for observer sampling. A platform scale used for observer sampling is not required to produce a printed record.~~

~~(5) Equipment failure. [Reserved]~~

~~\* \* \* \* \*~~

(k) MS coop failure.

(1) The Regional Administrator will determine that a permitted MS coop is considered to have failed if:

(i) the coop members dissolve the coop, or

(ii) the coop membership falls below 20 percent of the MS/CV endorsed limited entry permits, or

(iii) the coop agreement is no longer valid.

(2) If a permitted MS coop dissolves, the designated coop manager must notify NMFS SFD in writing of the dissolution of the coop.

(3) In the event of a NMFS determined coop failure, or reported failure, the designated coop manager will be notified in writing about NMFS' determination. Upon notification of a coop failure, the MS coop permit will no longer be in effect. Should a coop failure determination be made during the Pacific whiting primary season for the mothership sector, unused allocation associated with the catch history will not be available for harvest by the coop that failed or any other MS coop.

~~\* \* \* \* \*~~

16. INSTRUCTION - In section 660.160, paragraphs (a)(3) and (a)(4) are revised; paragraphs ~~(g) and (h) are removed; paragraphs (b) through (h)~~ are renumbered as paragraphs (c) through ~~(ig)~~; a new paragraph (b) is added; the new paragraph (c)(2) is revised; the new paragraphs (c)(3) through (c)(7) are added; the new paragraphs (d), (e)~~(1)~~ introductory text, and (e)(2) through (4),e(5) are revised; the new paragraph (e)(6) is removed and paragraph (e)(7) is renumber as (e)(6); the new paragraphs (f) through (ig) are revised; and a new paragraph (h) is added to read as follows:

§ 660.160 Catcher/processor (C/P) coop program

~~\* \* \* \* \*~~

(a) General. \* \* \*

(3) Regulations set out in the following sections of subpart C: § 660.11 Definitions, § 660.12 Prohibitions, § 660.13 Recordkeeping and reporting, § 660.14 VMS requirements, § 660.15 Equipment requirements, § 660.16 Groundfish Observer Program, § 660.20 Vessel and gear identification, § 660.25 Permits, § 660.55 Allocations, § 660.60 Specifications and

management measures, § 660.65 Groundfish harvest specifications, and §§ 660.70 through 660.79 Closed areas.

(4) Regulations set out in the following sections of subpart D: § 660.111 Trawl fishery definitions, § 660.112 Trawl fishery prohibitions, § 660.113 Trawl fishery recordkeeping and reporting, § 660.120 Trawl fishery crossover provisions, § 660.130 Trawl fishery management measures, and § 660.131 Pacific whiting fishery management measures.

\* \* \* \* \*

(b) Participation requirements and responsibilities.

(1) C/P vessels.

(i) C/P vessel participation requirements. A vessel is eligible to fish as a catcher/processor in the C/P coop program if:

(~~iA~~) The vessel is registered to a C/P permit.

(~~iiB~~) The vessel is not used to harvest fish as a catcher vessel in the mothership coop program in the same calendar year.

(~~iiiC~~) The vessel is not used to fish as a mothership in the MS coop program in the same calendar year.

(~~iv~~)

(~~2ii~~) C/P vessel responsibilities. The owner and operator of a catcher/processor vessel must:

(~~iA~~) Recordkeeping and reporting. Maintain a valid declaration as specified at § 660.13(d), subpart C; and maintain and submit all records and reports specified at § 660.113(d) including, economic data, scale tests records, and cease fishing declarations.

(~~iiB~~) Observers. Procure observer services as specified at § 660.XXX, maintain the appropriate level of coverage as specified at § 660.XXX, and meet the vessel responsibilities specified at § 660.XXX.

(~~iiiC~~) Catch weighing requirements. The owner and operator of a C/P vessel must:

(~~A1~~) Ensure that all catch is weighed in its round form on a NMFS-approved scale that meets the requirements described in section § 660.15 (b), is tested as is required at § 660.XXX, and is operated as required at § 660.XXXsubpart C;

(~~B2~~) Provide a NMFS-approved platform scale, belt scale, and test weights that meet the requirements ~~of~~ described in section § 660.15 (b) and that is tested as is required at § 660.XXX, subpart C.

(~~C~~) Centralized registry of ownership. [Reserved]

(~~32~~) C/P coops.

(i) C/P coop participation requirements. For a C/P coop to participate in the catcher/processor sector of the Pacific whiting fishery, the C/P coop must:

(A) be issued a MSC/P coop permit;

(B) be owned and operated by C/P endorsed limited entry permit owners;

(C) be formed voluntarily;

(D) be a legally recognized entity that represents its members ~~and employs a designated coop manager; and;~~

~~(E) designate an individual as a coop manager; and~~

~~(F) have all C/P permit owners as coop members.~~

(ii) C/P coop responsibilities. A C/~~PSP~~ coop is responsible for:

(A) applying for and being registered to a C/P ~~Coop Permit~~coop permit;

(B) organizing and coordinating harvest activities of vessels registered to member permits;

(C) allocating catch for use by specific coop members;

(D) monitoring harvest activities and enforcing the catch limits of coop members;

(E) submitting an annual report.

(F) having a designated coop manager. The designated coop manager must:

(1) serve as the contact person with NMFS and the Council;

(2) organize the annual distribution of catch and bycatch between coop members;

(3) prepare and submit an annual ~~reports~~report on behalf of the coop; and,

(4) be authorized to receive or respond to any legal process in which the coop is involved~~;~~ and

(5) notify NMFS if the coop dissolves.

(iii) Liability for violations. A C/P coop must comply with the provisions of this section. The permit owners, and ~~vessels~~vessel owners and operators ~~of vessels~~ registered to the member permits, ~~including vessels under contract,~~ are ~~responsible~~jointly and severally liable for the ~~fishery cooperative complying~~permitted coop's compliance with the provisions of this section.

~~—(iv) C/P coop failure.~~

~~(A) A coop failure results when:~~

~~(1) any vessel registered to a current C/P endorsed permit fishes without being identified in the C/P coop agreement submitted to NMFS during the coop permit application process;~~

~~(2) any vessel registered to a current C/P endorsed permit withdraws from the C/P coop agreement;~~

~~(3) the coop members voluntarily dissolve the coop;~~

~~(4) the coop agreement is no longer valid; or~~

~~(5) the coop fails to meet the C/P coop responsibilities specified at § 660.XXX.~~

~~(B) If the C/P coop dissolves, the designated coop manager must notify NMFS SFD in writing of the dissolution of the coop.~~

~~(C) The Regional Administrator may make an independent determination of a coop failure based on factual information collected by or provided to NMFS.~~

~~(D) In the event of a NMFS determined coop failure:~~

~~(1) The catcher/processor sector will convert to an IFQ-based fishery beginning the following calendar year after a coop failure, or as soon as practicable thereafter. NMFS will develop additional regulations, as necessary to implement an IFQ fishery for the C/P sector.~~

~~(2) each C/P endorsed permit would receive an equal percent (10 percent) of IFQ QS.~~

\* \* \* \* \*

(c) C/P ~~Coop~~coop program species and allocations--\* \* \*

(2) C/P coop program annual allocations. The C/P ~~Coop Program~~coop program allocation is equal to the catcher/processor sector allocation. Only a single coop, ~~comprised of all C/P endorsed permits~~, may be formed in the catcher/processor sector with the one permitted coop receiving the catcher/processor sector allocation.

(3) Non-whiting groundfish species.

(i) Non-whiting groundfish species with a catcher/processor sector allocation are established in accordance with regulation at § 660.55(X). The pounds associated with each species will be ~~allocated to~~provided when the coop permit is issued.

(ii) Groundfish species with at-sea sector set-asides, will be managed on an annual basis unless there is a risk of a harvest specification being exceeded, unforeseen impact on another fisheries, or conservation concerns in which case inseason action may be taken. Set asides may be adjusted through the biennial specifications and management measures process as necessary.

(iii) Groundfish species not ~~covered~~addressed under paragraph (i) or (ii) above, will be managed on an annual basis unless there is a risk of a harvest specification being exceeded, unforeseen impact on another fisheries, or conservation concerns in which case inseason action may be taken.

(4) Halibut set-asides. Annually a specified amount of the Pacific halibut will be held in reserve as a shared set-aside for bycatch in the at-sea Pacific whiting C/P fisheries and the shorebased trawl sector-- south of 40°10' N lat.

(5) Non-whiting groundfish species reapportionment. The Regional Administrator may make available for harvest to the mothership sector of the Pacific whiting fishery as identified in § 660.131(a), the amounts of a sector's non-whiting catch allocation remaining when a sector reaches its Pacific whiting allocation or participants in the sector do not intend to harvest the remaining sector allocation. The designated coop managers must ~~notify~~submit a cease fishing report to NMFS in writing when indicating that harvesting has concluded for the year. At any time after greater than 80 percent of the catcher/processor sector Pacific whiting allocation has been harvested, the Regional Administrator may contact the designated coop ~~managers~~manager to determine whether they intend to continue fishing. When considering redistribution of non-whiting catch allocation, the Regional Administrator will take into consideration the best available data on total projected fishing impacts.

(6) Reaching the C/P allocation. When the catcher/processor sector allocation of Pacific whiting or non-whiting groundfish catch allocation is reached or is projected to be reached, ~~the following action may be taken:~~

(i) Pacific whiting. ~~Further~~further taking and retaining, receiving, or at-sea processing of Pacific whiting by a catcher/processor is prohibited ~~when the catcher/processor sector Pacific whiting allocation is reached or projected to be reached.~~ No additional unprocessed Pacific whiting groundfish may be brought on board after at-sea processing is prohibited, but a



catcher/processor may continue to process ~~Pacific whiting catch~~ that was on board before at-sea processing was prohibited.

~~(ii) Non-whiting groundfish with allocations.~~ The ~~Catcher~~catcher/processor sector will close when the allocation of any one species is reached or projected to be reached.

(7) Announcements. The Regional Administrator will announce in the Federal Register when the catcher/processor sector ~~or the~~ allocation of Pacific whiting or non-whiting groundfish with an allocation is reached, or is projected to be reached, and specify the appropriate action. In order to prevent exceeding an allocation and to avoid underutilizing the resource, prohibitions against further taking and retaining, receiving, or at-sea processing of Pacific whiting, or reapportionment of non-whiting groundfish with allocations may be made effective immediately by actual notice to fishers and processors, by e-mail, internet ( [www.nwr.noaa.gov/Groundfish-Halibut/Groundfish-Fishery-Management/Whiting-Management/index.cfm](http://www.nwr.noaa.gov/Groundfish-Halibut/Groundfish-Fishery-Management/Whiting-Management/index.cfm) ), phone, fax, letter, press release, and/or USCG Notice to Mariners (monitor channel 16 VHF), followed by publication in the Federal Register, in which instance public comment will be sought for a reasonable period of time thereafter.

(d) C/P coop permit and agreement.

(1) Eligibility and ~~application requirements to register for a C/P coop permit~~ registration.

(i) Eligibility. ~~Only To be~~ an eligible coop entity ~~that is a group of C/P endorsed permit owners (coop members) must be~~ a recognized entity under the laws of the United States or the laws of a State and that represents all of the coop members ~~can apply for and obtain a C/P coop permit.~~

(ii) Annual registration and deadline. Each year, the coop entity must submit a complete application to NMFS for a C/P coop permit. The application must be submitted to NMFS by ~~XXFebruary 1XX~~ between February 1 and March 31 of the year in which they intend to participate. NMFS will not consider any applications received after ~~XXDATEXX~~ March 31. A C/P coop permit expires on December 31 of the year in which it was issued.

(iii) Application for a C/P coop permit. The designated coop manager, on behalf of the coop entity, must submit a complete application form and include each of the items listed in paragraphs (e)(2)(iii)(A) through (B). Only complete applications will be considered for issuance of a C/P coop permit. An application will not be considered complete if any required fees and annual reports have not been received by NMFS. NMFS may request additional supplemental documentation as necessary to make a determination of whether to approve or disapprove the application. Application forms and instruction are available on the NMFS NWR website ([www.nwr.noaa.gov](http://www.nwr.noaa.gov)) or by request from NMFS. The designated coop manager must sign the application acknowledging the responsibilities of a designated coop manager defined in §660.XXX.

(A) Coop agreement. Signed copies of the coop agreement must be submitted to NMFS and the Council and available for public review before the coop is authorized to engage in fishing activities. A coop agreement must include all of the information listed in this paragraph to be considered a complete coop agreement. NMFS will only review complete coop agreements.



~~Coop agreements~~ A coop agreement will not be accepted ~~when the agreement~~ unless it includes all of the required information; the descriptive items listed in this paragraph appear to meet the stated purpose; and information ~~is~~ submitted is correct and accurate.

(1) ~~Coop agreements contents.~~ Each ~~The coop~~ agreement must be signed by the coop members (C/P endorsed permit owners) and include the following information:

(i) A listing ~~list~~ of all vessels registered to C/P endorsed permits that the member permit owners intend to use for fishing under the C/P coop permit.

(ii) ~~A listing of all~~ All C/P endorsed limited entry member permits identified by permit number.

(iii) A description of the coop's plan to adequately monitor and account for the catch of Pacific whiting and non-whiting groundfish allocations, and to monitor and account for the catch of prohibited species.

(iv) A ~~new member permit owner~~ clause stating that ~~requires~~ new owners of a member ~~permit's permit are coop members and are required~~ to comply with membership restrictions in the ~~coop agreements~~ agreement.

(v) A description of the coop's ~~plan for~~ enforcement and penalty provisions adequate to maintain catch of Pacific whiting and non-whiting groundfish within the allocations and that Pacific halibut set-aside overages do not occur.

(vi) A description of measures to reduce catch of overfished species.

(vii) A description of how the ~~coop's responsibility to produce an~~ annual report ~~documenting will be produced to document~~ the coop's catch, bycatch data, and any other significant activities undertaken by the coop during the year ~~will be met by~~ XX due date XX.

(viii) Identification of the designated coop manager.

~~(ix)~~ A signed clause requirement that agreement by at least a majority of the ~~designated coop manager acknowledging members is required to dissolve the responsibilities of a designated coop manager defined~~ coop.

(x) Provisions that prohibit members permit owners that have incurred legal sanctions from fishing in 660.XXXX.

~~(vx) A description for how the coop will be dissolved.~~

~~(vix).~~

(2) Department of Justice correspondence. Each coop must submit a letter to the Department of Justice requesting a business review letter on the fishery coop. Copies of the letter and any correspondence with the Department of Justice regarding the request must be included in the application to NMFS for a ~~MS Coop Permit~~ C/P coop permit.

(B) Acceptance of a coop agreement.

(1) If NMFS does not accept the coop agreement, the coop permit application will be returned to the applicant with a letter stating the reasons the coop agreement was not accepted by NMFS.

(2) Coop agreements that are not accepted may be resubmitted for review by sufficiently addressing the deficiencies identified in the NMFS letter ~~of rejection~~ and resubmitting the entire coop permit application by the date specified in the NMFS letter ~~of rejection~~.

(3) An ~~approved~~accepted coop agreement that was submitted with the C/P coop permit application and for which a C/P permit was issued will remain in place through the end of the calendar year. The designated coop manager must resubmit a complete coop agreement to NMFS consistent with the coop agreement contents described in this paragraph if there is a material change to the coop agreement.

(4) Within 3 calendar days following a material change, at the designated coop manager must notify NMFS of the material change. Within 30 calendar days, the designated coop manager must submit to NMFS the revised coop agreement ~~must be submitted to NMFS with a letter that describes such changes.~~ NMFS will review the material changes and provide a letter to the coop manager that either accepts the changes as given or does not accept the revised coop agreement with a letter stating the reasons that it was not accepted by NMFS. The coop may resubmit the coop agreement with further revisions to the material changes responding to NMFS concerns.

(iv) Effective date of C/P coop permit. A C/P coop permit will be effective on the date approved by NMFS and remain in effect until the end of the calendar year or until one or more of the following events occur, whichever comes first:

(A) NMFS closes the fishing season for the catcher/processor sector or the designated coop manager notifies NMFS that the coop has completed fishing for the calendar year,

(B) the C/P coop has reached ~~the catcher/processor sector's~~ Pacific whiting allocation,

(C) a material change to the coop agreement has occurred and the designated coop manager failed to provide a revised coop agreement to NMFS within ~~three~~3 calendar days of the material change, ~~or~~

(D) NMFS has determined that a coop failure occurred.

(2) Initial administrative determination. For all complete applications, NMFS will issue an IAD that either approves or disapproves the application. If approved, the IAD will include a C/P coop permit. If disapproved, the IAD will provide the reasons for this determination. ~~An application will be disapproved if any required fees and annual reports have not been received by NMFS.~~

(3) Appeals. An appeal to a C/P coop permit action follows the same process as the general permit appeals process defined at § 660.25(g), subpart C.

(4) Fees. The Regional Administrator is authorized to charge fees for administrative costs associated with the issuance of a C/P coop permit consistent with the provisions given at § 660.25(f), subpart C.

~~(5) Cost recovery. The owner of a C/P coop permit (coop entity) will be required to pay all cost recovery fees based on the harvest of Pacific whiting by the coop members in a given year. Cost recovery fees will not be collected until further cost recovery regulations are implemented by NMFS.~~

(5) Cost recovery. [Reserved]

\* \* \* \* \*

(e) C/P endorsed permit.

(1) General. ~~\*\*\*~~ Any vessel participating in the C/P sector of the non-tribal primary Pacific whiting fishery during the season described at § 660.131(b) of this subpart must be registered to a valid limited entry permit with a C/P endorsement. A C/P endorsed permit is a limited entry permit and is subject to the limited entry permit provisions given at § 660.25(b), subpart C. \* \* \*

~~———— (2) Eligibility and renewal for C/P endorsed permit.~~

~~(i) Eligibility. An owner of C/P endorsed limited entry permit must be eligible to own a U.S. documented vessel as given at § 660.333(b).~~

~~———— (ii) \* \* \* \* \*~~

~~———— (2) Renewal of C/P endorsed limited entry permit, change in permit ownership, vessel registration, or combination.~~

~~(i) Renewal. A C/P endorsed permit must be renewed annually consistent with the limited entry permit regulations given at § 660.335(a)-25(b)(4), subpart C. If a vessel registered to the C/P endorsed permit will operate as a mothership in the year for which the permit is renewed, the permit owner must make a declaration as part of the permit renewal that they will operate solely as a mothership in the whiting fishery during the calendar year to which its limited entry permit applies. Any such declaration is binding on the vessel for the calendar year, even if the permit is transferred during the year, unless it is rescinded in response to a written request from the permit owner. Any request to rescind a declaration must be made by the permit holder and granted in writing by the Regional Administrator before any unprocessed whiting has been taken on board the vessel that calendar year.~~

~~(ii) Change of permit ownership. A C/P endorsed permit is subject to the limited entry permit change in permit ownership regulations given at § 660.25(b)(4), subpart C.~~

~~(iii) Change of vessel registration. A C/P endorsed permit is subject to the limited entry permit change of vessel registration regulations given at § 660.25(b)(4), subpart C.~~

~~(iv) Combination. If two or more permits are combined, the resulting permit is one permit with an increased size endorsement. A C/P endorsed permit renewal consistent with the regulations at § 660.373(h)(3).~~

~~———— (iii) Effective date of the C/P endorsed permit. XXX~~

~~———— (3) Change in permit ownership, vessel registration, vessel owner, transfer or combination.~~

~~(i) Changes in permit or vessel owner of C/P endorsed permit. The requirements for making a change in the permit owner or vessel owner found at § 660.335(d) remain in effect with for the exception listed in paragraph (ii).~~

~~(ii) Frequency of changes in vessel registration to a C/P endorsed permit. A limited entry permit with a catcher/processor endorsement may be registered to another vessel only once during a fishing season, except that it may be registered to another vessel two times during the fishing season as long as the second transfer is back to the original vessel. NMFS deems the~~

~~original vessel to mean either the vessel registered to the permit as of January 1 or if no vessel is registered to the permit as of January 1, the original vessel is considered the first registration of a vessel after January 1. The frequency of transfer provisions at § 660.20(b)(3)(x) does not apply to C/P endorsed permit.~~

~~(iii) Effective date of transfer of a C/P endorsed permit. A change in vessel registration to a C/P endorsed permit will be effective upon NMFS approval and not subject to provisions at § 660.20(b)(3)(x).~~

~~(iv) Combination. A C/P endorsed permit that is combined with other another limited entry trawl endorsed limited entry permits permit that do not have a C/P endorsement will result in a single trawl limited entry permit with a C/P endorsement with a larger size endorsement. The resulting size endorsement from a combination involving a C/P endorsed limited entry permit will be determined based on the existing combination formula given at § 660.20(b)(2)(iii). Any request to combine permits is subject to the provisions provided at §§ 660.335(b) and 660.334(C)(2)(iii), including the combination formula for resulting size endorsements.~~

~~(43) Appeals. An appeal to a C/P endorsed permit action follows the same process as the general permit appeals process defined at § 660.25(g), subpart C.~~

~~(5) Fees. \* \* \* 4) Fees. The Regional Administrator is authorized to charge fees for the administrative costs associated with review and issuance of a C/P endorsement consistent with the provisions at § 660.25(f), subpart C.~~

~~\* \* \* \* \*~~

~~(6) Cost recovery. A C/P endorsed permit owner will not be responsible to pay cost recovery fees. The C/P coop permit owner owners will be required to pay all cost recovery fees based as specified at paragraph (e)(7) of this section. If the C/P coop fails, the owner of C/P endorsed permit or the owner of a vessel registered to C/P endorsed permit in a given year may be required to pay cost recovery fees. Cost recovery fees will not be collected until further cost recovery regulations are implemented by NMFS.~~

~~\_\_\_\_ (7)(5) Cost recovery. [Reserved]~~

~~\_\_\_\_ (6) Application requirements and initial issuance for C/P endorsement. \* \* \*~~

~~\* \* \* \* \*~~

~~(f) Retention requirements. [Reserved]]~~

~~(g) Observer requirements.~~

~~(1) Observer coverage requirements.~~

~~(2i) Coverage. Any vessel registered to a C/P permit that is 125 ft (38.1 m) LOA or longer must carry two NMFS-certified observers, and any vessel registered to a C/P permit that is shorter than 125 ft (38.1 m) LOA must carry one NMFS-certified observer, each day that the vessel is used to take, retain, receive, land, process, or transport groundfish.~~

~~(3) Refusal to board. (ii) Observer workload. The time required for the observer to complete sampling duties must not exceed 12 consecutive hours in each 24-hour period.~~

~~(iii) Refusal to board. Any boarding refusal on the part of the observer or vessel is reported to the observer program and NMFS and NOAA OLE observer compliance coordinator~~

by the observer provider and observer. Observer must be available for an interview with the observer program or NOAA OLE if necessary.

~~(4) Observer Workload. The time required for the observer to complete sampling duties must not exceed 12 consecutive hours in each 24-hour period.~~

~~(5) (2) Vessel Responsibilities~~responsibilities. An operator and/or crew of a vessel required to carry an observer must provide:

(i) Accommodations and Food~~food~~. Provide accommodations and food that are equivalent to those provided for officers, engineers, foremen, deck-bosses or other management level personnel of the vessel.

(ii) Safe ~~Conditions~~conditions.

(A) Maintain safe conditions on the vessel for the protection of observers including adherence to all U.S. Coast Guard and other applicable rules, regulations, or statutes pertaining to safe operation of the vessel, including but not limited to, rules of the road, vessel stability, emergency drills, emergency equipment, vessel maintenance, vessel general condition, and port bar crossings. An observer may refuse boarding or reboarding a vessel and may request a vessel to return to port if operated in an unsafe manner or if unsafe conditions are identified.

(B) Have On Board~~on board~~, a valid Commercial Fishing Vessel Safety Decal ~~issued within the past or at a time interval consistent with current USCG regulations or policy~~ that certifies compliance with regulations found in 33 CFR Chapter I and 46 CFR Chapter I, a certificate of compliance issued pursuant to 46 CFR 28.710 or a valid certificate of inspection pursuant to 46 U.S.C. 3311.

(iii) Computer ~~Hardware~~hardware and ~~Software~~software. Catcher/processors vessels must:

(A) provide hardware and software pursuant to regulations at **50 CFR 679.50(g)(1)(iii)(B)(1) through 50 CFR 679.50(g)(1)(iii)(B)(3).**

(B) provide the observer(s) access to a computer required under **paragraph (b)(3)(i) of this section** that is connected to a communication device that provides a point-to-point connection to the NMFS host computer.

(C) ensure that the catcher/processor has installed the most recent release of NMFS data entry software provided by the Regional Administrator, or other approved software prior to the vessel receiving, catching or processing IFQ species.

(D). Ensure that the communication equipment required in paragraph (g)(1)(iii)(B) of this section and used by observers to enter and transmit data, is fully functional and operational. “Functional” means that all the tasks and components of the NMFS supplied, or other approved, software described at paragraph (g)(1)(iii)(B)(2) of this section and the data transmissions to NMFS can be executed effectively aboard the vessel by the communications equipment.

(iv) Vessel ~~Position~~position. Allow observer(s) access to, ~~and the use of,~~ the vessel's navigation equipment and personnel, on request, to determine the vessel's position.

(v) Access. Allow observer(s) free and unobstructed access to the vessel's bridge, trawl or working decks, holding bins, processing areas, freezer spaces, weight scales, cargo holds, and

any other space that may be used to hold, process, weigh, or store fish or fish products at any time.

(vi) Prior ~~Notification-notification~~. Notify observer(s) at least 15 minutes before fish are brought on board, or fish and fish products are transferred from the vessel, to allow sampling the catch or observing the transfer, ~~unless the observer specifically requests not to be notified~~.

(vii) Records. Allow observer(s) to inspect and copy any state or Federal logbook maintained voluntarily or as required by regulation.

(viii) Assistance. Provide all other reasonable assistance to enable observer(s) to carry out their duties, including, but not limited to:

(A) Measuring decks, codends, and holding bins.

(B) Providing the observer(s) with a safe work area.

(C) Collecting samples of catch when requested by the observer(s).

(D) Collecting and carrying baskets of fish when requested by the observer(s).

(E) Allowing the observer(s) to collect biological data and samples.

(F) Providing adequate space for storage of biological samples.

(ix) Sample Station and Operational Requirements for catcher/processor vessels. ~~This paragraph contains the requirements for observer sampling stations. To allow the observer to carry out the required duties, the vessel owner must provide an observer sampling station that meets the requirements of paragraph (b)(9) (i) through (viii) of this section.~~

~~This paragraph contains the requirements for observer sampling stations. To allow the observer to carry out the required duties, the vessel owner must provide an observer sampling station that meets the requirements of paragraph (b)(9) (i) through (viii) of this section.~~

(A) Accessibility. The observer sampling station must be available to the observer at all times.

(B) Location. The observer sampling station must be located within 4 m of the location from which the observer samples unsorted catch.

(C) Access. Unobstructed passage must be provided between the observer sampling station and the location where the observer collects sample catch.

(D) Minimum ~~Work Space-work space~~. The observer must have a working area of at least 4.5 square meters, including the observer's sampling table, for sampling and storage of fish to be sampled. The observer must be able to stand upright and have a work area at least 0.9 m deep in the area in front of the table and scale.

(E) Table. The observer sampling station must include a table at least 0.6 m deep, 1.2 m wide and 0.9 m high and no more than 1.1 m high. The entire surface area of the table must be available for use by the observer. Any area for the observer sampling scale is in addition to the minimum space requirements for the table. The observer's sampling table must be secured to the floor or wall.

(F) Diverter board. The conveyor belt conveying unsorted catch must have a removable board ("diverter board") to allow all fish to be diverted from the belt directly into the observer's sampling baskets. The diverter board must be located downstream of the scale used to weigh

total catch. At least 1 m of accessible belt space, located downstream of the scale used to weight total catch, must be available for the observer's use when sampling.

(G) Other Requirements. The sampling station must be in a well-drained area that includes floor grating (or other material that prevents slipping), lighting adequate for day or night sampling, and a hose that supplies fresh or sea water to the observer.

(H) Observer Sampling Scale. The observer sample station must include a NMFS-approved platform scale (pursuant to requirements at 50 CFR 679.28(d)(5)) with a capacity of at least 50 kg located within 1 m of the observer's sampling table. The scale must be mounted so that the weighing surface is no more than 0.7 m above the floor.

~~(I)~~ Transfer At-sea. To ensure observer safety during at-sea transfers, vessels must:

(A) Ensure that transfers of observers at sea via small boat under its own power are carried out during daylight hours, under safe conditions, and with the agreement of observers involved.

(B) Notify observers at least 3 hours before observers are transferred, such that the observers can finish any sampling work, collect personal belongings, equipment, and scientific samples. ~~(1) Ensure that transfers of observers at sea via small boat under its own power are carried out during daylight hours, under safe conditions, and with the agreement of observers involved.~~

~~(C)(2) Notify observers at least 3 hours before observers are transferred, such that the observers can finish any sampling work, collect personal belongings, equipment, and scientific samples.~~

~~(3)~~ Provide a safe pilot ladder and conduct the transfer to ensure the safety of observers during transfers.

(D) Provide an experienced crew member to assist observers in the small boat in which any transfer is made.

~~(4) Provide an experienced crew member to assist observers in the small boat in which any transfer is made.~~

(3) Procurement of ~~Observer Services~~observer services.

(i) Owners of vessels required to carry observers under **paragraph (a)(1) of** this section must arrange for observer services from an observer provider permitted by the North Pacific Groundfish Observer Program under **50 CFR 679.50 (i)**, except that:

(A) Vessels are required to procure observer services directly from NMFS when NMFS has determined and given notification that the vessel must carry NMFS staff or an individual authorized by NMFS in lieu of an observer provided by a permitted observer provider.

(B) Vessels are required to procure observer services directly from NMFS and a permitted observer provider when NMFS has determined and given notification that the vessel must carry NMFS staff and/or individuals authorized by NMFS, in addition to an observer provided by a permitted observer provider.

(4ii) [Reserved]



(4) Application to become an observer provider. Observer providers must be certified with the North Pacific Groundfish Observer Program. Refer to AK REGS OBS for application instructions.

(5) Observer provider responsibilities.

(i) Qualified ~~Candidates~~candidates. Observer providers must provide qualified candidates to serve as observers.

(A) To be qualified, a candidate must have:

(1) A Bachelor's degree or higher from an accredited college or university with a major in one of the natural sciences;

(2) Successfully completed a minimum of 30 semester hours or equivalent in applicable biological sciences with extensive use of dichotomous keys in at least one course;

(3) Successfully completed at least one undergraduate course each in math and statistics with a minimum of 5 semester hours total for both; and

(4) Computer skills that enable the candidate to work competently with standard database software and computer hardware.

~~(ii) Description of Observer Duties.~~(ii) Prior to hiring observer candidate. The observer provider must provide the candidate a copy of NMFS-provided pamphlets, information and other literature describing observer duties (i.e. The At-Sea Hake Observer Program's Observer Manual) prior to hiring an observer candidate. Observer job information is available from the Observer Program Office's web site at [www.nwfsc.noaa.gov/research/divisions/fram/observer/atseahake.cfm](http://www.nwfsc.noaa.gov/research/divisions/fram/observer/atseahake.cfm)

(iii) Observer ~~Contracts~~-contracts. The observer provider must provide for each observer either a written contract or a written contract addendum that is signed by the observer and observer provider prior to the observer's deployment and that contains the following provisions for continued employment:

(A) That all the observer's catch reports required to be sent during the season~~while deployed~~ are delivered to the Observer Program Office as specified by written Observer Program instructions;

(B) Prior to the time of embarkation, disclosure of any mental illness or physical ailment or injury that would prevent the candidate from performing the assigned duties of an observer and which were not documented in the physician's statement submitted by the candidate as required in paragraph XX of this section;

(C) Requirement that ensures the observers complete duties in a timely manner. An observer provider must ensure that observers employed by that observer provider do the following in a complete and timely manner:

(1) Once an observer is scheduled for a final deployment debriefing under paragraph XX of this section, submit to NMFS all data, reports required by the Observer Manual, and biological samples from the observer's deployment by the completion of the electronic vessel and/or processor survey(s);

(2) Report for the scheduled debriefing and complete all debriefing responsibilities;



(3) Report to the observer program office and the ~~NMFSNOAA~~ OLE ~~observer compliance coordinator~~ any refusal to board an assigned vessel, and

(4) Return all sampling and safety gear to the Observer Program Office.

(iv) ~~Providing NMFS-Certified Observers. Provide vessels only observers.~~ The observer provider must only provide observers to vessels that have:

(A) a valid North Pacific groundfish observer certification endorsements and an At-Sea Hake Observer Program certification ~~to provide observer services;~~

(B) not informed the provider prior to the time of embarkation that he or she is experiencing a mental illness or a physical ailment or injury developed since submission of the physician's statement, ~~as required in paragraph XX of this section~~ that would prevent him or her from performing his or her assigned duties; and

(C) successfully completed all NMFS required training and briefing before deployment.

(v) Respond to ~~Industry Requests~~ industry requests for ~~Observers~~ observers. An observer provider must provide an observer for deployment as requested by vessels to fulfill vessel requirements for observer coverage specified under sections XX of this section. An alternate observer must be supplied in each case where injury or illness prevents the observer from performing his or her duties or where the observer resigns prior to completion of his or her duties. "If the observer provider is unable to respond to an industry request for observer coverage due to lack of available observers by the estimated embarking time of the vessel, the provider must report it to the observer program at least 4 hours prior to the vessel's estimated embarking time."

(vi) Provide ~~Observer Salaries And Benefits~~ observer salaries and benefits. An observer provider must provide to its observer employees salaries and any other benefits and personnel services in accordance with the terms of each observer's contract.

(vii) Provide ~~Observer Deployment Logistics~~ observer deployment logistics. An observer provider must provide to each of its observers under contract:

(A) All necessary transportation, including arrangements and logistics, of observers to the initial location of deployment, to all subsequent vessel assignments during that deployment, and to the debriefing location when a deployment ends for any reason; and

(B) Lodging, per diem, and any other services necessary to observers assigned to fishing vessels.

(1) An observer under contract may be housed on a vessel to which he or she is assigned:

(i) Prior to their vessel's initial departure from port;

(ii) For a period not to exceed twenty-four hours following the completion of an offload when the observer has duties and is scheduled to disembark; or

(iii) For a period not to exceed twenty-four hours following the vessel's arrival in port when the observer is scheduled to disembark.

(2) [Reserved]

(C) During all periods an observer is housed on a vessel, the observer provider must ensure that the vessel operator or at least one crew member is aboard.

~~(C) During all periods an observer is housed on a vessel, the observer provider must ensure that the vessel operator or at least one crew member is aboard.~~

(D) An observer under contract who is between vessel assignments, must be provided with shoreside accommodations ~~including~~ at a licensed hotel, motel, bed and breakfast, or other shoreside accommodations for the duration of each period between vessel or shoreside assignments. Such accommodations must include an assigned bed for each observer and no other person may be assigned that bed for the duration of that observer's stay. Additionally, no more than four beds may be in any room housing observers at accommodations meeting the requirements of this section.

(viii) ~~Deployment Limitations~~. An observer provider must not exceed observer deployment limitations specified in this paragraph unless alternative arrangements are approved by the Observer Program Office. An observer provider must not:

- (A) Deploy an observer on the same vessel for more than 90 days in a 12-month period;
- (B) Deploy an observer for more than 90 days in a single deployment;
- (C) Include more than four vessel assignments in a single deployment, or
- (D) Disembark an observer from a vessel before that observer has completed his or her sampling or data transmission duties.

(ix) ~~Verify Vessel's Safety Decal~~. An observer provider must verify that a vessel has a valid USCG safety decal as required under **paragraph XX of** this section before an observer may get underway aboard the vessel. One of the following acceptable means of verification must be used to verify the decal validity:

(A) The observer provider or employee of the observer provider, including the observer, visually inspects the decal aboard the vessel and confirms that the decal is valid according to the decal date of issuance; or

(B) The observer provider receives a hard copy of the USCG documentation of the decal issuance from the vessel owner or operator.

~~(x) Maintain Communications With Observers~~. ~~An observer provider must have an employee responsible for observer activities on call 24 hours a day to handle emergencies involving observers or problems concerning observer logistics, whenever observers are at sea, in transit, or in port awaiting vessel reassignment.~~

~~An observer provider must have an employee responsible for observer activities on call 24 hours a day to handle emergencies involving observers or problems concerning observer logistics, whenever observers are at sea, in transit, or in port awaiting vessel reassignment.~~

(xi) ~~Maintain Communications With the Observer Program~~. An observer provider must provide all of the following information by electronic transmission (e-mail), fax, or other method specified by NMFS.

(A) ~~Observer Training~~ and ~~Briefing~~. Observer training and briefing registration materials must be submitted to the Observer Program Office at least 5 business days prior to the beginning of a scheduled observer at-sea hake training or briefing session. Registration materials consist of the following: the date of requested training or briefing with a

list of observers. ~~Each including each~~ observer's full name (i.e., first, middle and last names) ~~must be included.~~)

~~(B) Projected Observer Assignments. Prior to the observer's completion of the training or briefing session, the observer provider must submit to the Observer Program Office a statement of projected observer assignments that include the observer's name; vessel, gear type, and vessel/processor code; port of embarkation; and area of fishing.~~

~~(B) Projected observer assignments. Prior to the observer's completion of the training or briefing session, the observer provider must submit to the Observer Program Office a statement of projected observer assignments that include the observer's name; vessel, gear type, and vessel/processor code; port of embarkation; and area of fishing.~~

(C) ~~Observer Debriefing Registration~~ ~~debriefing registration~~. The observer provider must contact the At-Sea Hake Observer Program within 5 business days after the completion of an observer's deployment to schedule a date, time and location for debriefing. Observer debriefing registration information must be provided at the time of debriefing scheduling and must include the observer's name, cruise number, vessel name(s) and code(s), and requested debriefing date.

~~(D) Other Reports.~~ (D) Observer provider contracts. If requested, observer providers must submit to the Observer Program Office a completed and unaltered copy of each type of signed and valid contract (including all attachments, appendices, addendums, and exhibits incorporated into the contract) between the observer provider and those entities requiring observer services under **paragraph XX** of this section. Observer providers must also submit to the Observer Program Office upon request, a completed and unaltered copy of the current or most recent signed and valid contract (including all attachments, appendices, addendums, and exhibits incorporated into the contract and any agreements or policies with regard to observer compensation or salary levels) between the observer provider and the particular entity identified by the Observer Program or with specific observers. Said copies must be submitted to the Observer Program Office via fax or mail within 5 business days of the request. Signed and valid contracts include the contracts an observer provider has with:

(1) Vessels required to have observer coverage as specified at **paragraph XX** of this section; and

(2) Observers.

(E) Change in observer provider management and contact information. Observer providers must submit notification of any other change to provider contact information, including but not limited to, changes in contact name, phone number, email address, and address.

(F) Boarding refusals. The observer service provider must report to NMFS any trip that has been refused by an observer within 24 hours of the refusal.

(G) Other reports. Reports of the following must be submitted in writing to the At-Sea Hake Observer Program Office by the observer provider via fax or email address designated by the Observer Program Office within 24 hours after the observer provider becomes aware of the information:

(1) Any information regarding possible observer harassment;

(2) Any information regarding any action prohibited under **section XX (660.12 Prohibitions section)** or §600.725(o), (t) and (u);

(3) Any concerns about vessel safety or marine casualty under 46 CFR 4.05–1 (a)(1) through (7),;

(4) Any observer illness or injury that prevents the observer from completing any of his or her duties described in the observer manual; and

(5) Any information, allegations or reports regarding observer conflict of interest or breach of the standards of behavior described at **paragraph XX** of this section.

(xii) Replace ~~Lost~~lost or ~~Damaged Gear~~-damaged gear. An observer provider must replace all lost or damaged gear and equipment issued by NMFS to an observer under contract to that provider. All replacements must be in accordance with requirements and procedures identified in writing by the Observer Program Office.

(xiii) Maintain ~~Confidentiality~~confidentiality of ~~Information~~-information. An observer provider must ensure that all records on individual observer performance received from NMFS under the routine use provision of the Privacy Act remain confidential and are not further released to anyone outside the employ of the observer provider company to whom the observer was contracted except with written permission of the observer.

(xiv) Conflict of ~~Interest~~-interest. An observer provider must meet limitations on conflict of interest. Observer providers:

(A) Must not have a direct financial interest, other than the provision of observer services, in the West Coast Groundfish fishery managed under an FMP for the waters off the coasts of Washington, Oregon, and California, including, but not limited to,

(1) Any ownership, mortgage holder, or other secured interest in a vessel or shoreside processor facility involved in the catching, taking, harvesting or processing of fish,

(2) Any business involved with selling supplies or services to any vessel or shoreside processors participating in a fishery managed pursuant to an FMP in the waters off the coasts of California, Oregon, and Washington, or

(3) Any business involved with purchasing raw or processed products from any vessel or shoreside processor participating in a fishery managed pursuant to an FMP in the waters off the coasts of California, Oregon, and Washington.

(B) Must assign observers without regard to any preference by representatives of vessels other than when an observer will be deployed.

(C) Must not solicit or accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from anyone who conducts fishing or fish processing activities that are regulated by NMFS, or who has interests that may be substantially affected by the performance or nonperformance of the official duties of observer providers.

(xv) Observer ~~Conduct~~conduct and ~~Behavior~~-behavior. An observer provider must develop and maintain a policy addressing observer conduct and behavior for their employees that serve as observers. The policy shall address the following behavior and conduct-~~regarding~~:

(A) Observer use of alcohol;

(B) Observer use, possession, or distribution of illegal drugs and;  
(C) Sexual contact with personnel of the vessel or processing facility to which the observer is assigned, or with any vessel or processing plant personnel who may be substantially affected by the performance or non-performance of the observer's official duties.

(D) An observer provider shall provide a copy of its conduct and behavior policy by February 1 of each year, to:

~~Observers~~ observers, observer candidates, and ;  
the Observer Program Office.

~~(5) Observer Certification and Responsibilities.~~

~~(i) Observer Certification.~~

(xvi) Refusal to deploy an observer. Observer providers may refuse to deploy an observer on a requesting vessel if the observer provider has determined that the requesting vessel is inadequate or unsafe pursuant to those regulations described at § 600.746 or U.S. Coast Guard and other applicable rules, regulations, statutes, or guidelines pertaining to safe operation of the vessel.

(6) Observer certification and responsibilities.

(i) Observer certification.

(A) Applicability. Observer certification authorizes an individual to fulfill duties as specified in writing by the NMFS Observer Program Office while under the employ of a NMFS-permitted observer provider and according to certification endorsements as designated under paragraph XX of this section.

(B) Observer ~~Certification Official~~ certification official. The Regional Administrator will designate a NMFS observer certification official who will make decisions for the Observer Program Office on whether to issue or deny observer certification.

(C) Certification ~~Requirements~~ requirements. NMFS ~~will~~ may certify individuals who, in addition to any other relevant considerations:

(1) Are employed by an observer provider company permitted pursuant to 50 CFR 679.50 at the time of the issuance of the certification;

(2) Have provided, through their observer provider:

(i) Information identified by NMFS at 50 CFR 679.50 regarding an observer candidate's health and physical fitness for the job;

(ii) Meet all observer education and health standards as specified in 50 CFR 679.50 and

(iii) Have successfully completed NMFS-approved training as prescribed by the At-Sea Hake Observer Program. Successful completion of training by an observer applicant consists of meeting all attendance and conduct standards issued in writing at the start of training; meeting all performance standards issued in writing at the start of training for assignments, tests, and other evaluation tools; and completing all other training requirements established by the Observer Program.

(3) Have not been decertified under paragraph (f)(3) of this section, or pursuant to 50 CFR 679.50.

(D) ~~Agency Determinations on Observer Certification.~~

~~(1) Denial of a Certification-certification.~~ The NMFS observer certification official will issue a written determination denying observer certification if the candidate fails to successfully complete training, or does not meet the qualifications for certification for any other relevant reason.

~~(2E) Issuance of an Observer Certification-observer certification.~~ An observer certification ~~will~~may be issued upon determination by the observer certification official that the candidate has successfully met all requirements for certification as specified in **paragraph XX** of this section. The following endorsements must be obtained, in addition to observer certification, in order for an observer to deploy.

~~(i1)~~ North Pacific Groundfish Observer Program certification training endorsement. A certification training endorsement signifies the successful completion of the training course required to obtain observer certification. This endorsement expires when the observer has not been deployed and performed sampling duties as required by the Observer Program Office for a period of time, specified by the Observer Program, after his or her most recent debriefing. The observer can renew the endorsement by successfully completing certification training once more.

~~(ii2)~~ North Pacific Groundfish Observer Program annual general endorsements. Each observer must obtain an annual general endorsement to their certification prior to his or her first deployment within any calendar year subsequent to a year in which a certification training endorsement is obtained. To obtain an annual general endorsement, an observer must successfully complete the annual briefing, as specified by the Observer Program. All briefing attendance, performance, and conduct standards required by the Observer Program must be met.

~~(iii3)~~ North Pacific Groundfish Observer Program deployment endorsements. Each observer who has completed an initial deployment after certification or annual briefing must receive a deployment endorsement to their certification prior to any subsequent deployments for the remainder of that year. An observer may obtain a deployment endorsement by successfully completing all pre-cruise briefing requirements. The type of briefing the observer must attend and successfully complete will be specified in writing by the Observer Program during the observer's most recent debriefing.

~~(iv4)~~ At-Sea Hake Observer Program endorsements. A Pacific hake fishery endorsement is required for purposes of performing observer duties aboard vessels that process groundfish at sea in the Pacific whiting fishery. A Pacific whiting fishery endorsement to an observer's certification may be obtained by meeting the following requirements:

~~(i)~~ Be a prior NMFS-certified observer in the groundfish fisheries off Alaska or the Pacific Coast, unless an individual with this qualification is not available;

~~(ii)~~ Receive an evaluation by NMFS for his or her most recent deployment ~~(if any)~~ that indicated that the observer's performance met Observer Program expectations for that deployment; ~~Successfully complete a NMFS-approved observer training and/or Pacific whiting briefing as prescribed by the Observer Program; and Comply with all of the other requirements of this section.~~



(Eiii) Successfully complete a NMFS-approved observer training and/or Pacific whiting briefing as prescribed by the Observer Program; and

(iv) Comply with all of the other requirements of this section.

(F) Maintaining the validity of observer certification. After initial issuance, an observer must keep their certification valid by meeting all of the following requirements specified below:

(1) Successfully perform their assigned duties as described in the Observer Manual or other written instructions from the Observer Program Office including calling into the NMFS deployment hotline upon departing and arriving into port each trip to leave the following information: observer name, phone number, vessel name departing on, date and time of departure and date and time of expected return.

(2) Accurately record their sampling data, write complete reports, and report accurately any observations of suspected violations of regulations relevant to conservation of marine resources or their environment.

(3) Not disclose collected data and observations made on board the vessel or in the processing facility to any person except the owner or operator of the observed vessel or an authorized officer or NMFS.

(4) Successfully complete NMFS-approved annual briefings as prescribed by the At-Sea Hake Observer Program.

(5) Successful completion of briefing by an observer applicant consists of meeting all attendance and conduct standards issued in writing at the start of training; meeting all performance standards issued in writing at the start of training for assignments, tests, and other evaluation tools; and completing all other briefing requirements established by the Observer Program.

(6) Successfully meet all expectations in all debriefings including reporting for assigned debriefings.

(7) Submit all data and information required by the observer program within the program's stated guidelines.

(G) Limitations on ~~Conflict~~conflict of ~~Interest~~interest. Observers:

(1) Must not have a direct financial interest, other than the provision of observer services, in a North Pacific fishery managed pursuant to an FMP for the waters off the coast of Alaska, or in a Pacific Coast fishery managed by either the state or Federal governments in waters off Washington, Oregon, or California, including but not limited to:

(i) Any ownership, mortgage holder, or other secured interest in a vessel, shore-based or floating stationary processor facility involved in the catching, taking, harvesting or processing of fish,

(ii) Any business involved with selling supplies or services to any vessel, shore-based or floating stationary processing facility; or

(iii) Any business involved with purchasing raw or processed products from any vessel, shore-based or floating stationary processing facilities.

(2) Must not solicit or accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from anyone who either conducts activities that are regulated by NMFS or has interests that may be substantially affected by the performance or nonperformance of the observers' official duties.

(3) May not serve as observers on any vessel ~~or at any shore-based or floating stationary processing facility~~ owned or operated by a person who ~~previously~~ employed the ~~observers~~ observer in the last two years.

(4) May not solicit or accept employment as a crew member or an employee of a vessel or shore-based processor while employed by an observer provider.

(5) Provisions for remuneration of observers under this section do not constitute a conflict of interest.

~~(FH)~~ Standards of Behavior:

~~(1)behavior.~~ Observers must ~~avoid any behavior that could adversely affect the confidence of the public in the integrity of the Observer Program or of the government, including but not limited to the following:~~

~~Observers must:~~

~~(i1)~~ perform their assigned duties as described in the Observer Manual or other written instructions from the Observer Program Office.

~~(ii2)~~ report to the observer program office and the NMFSNOAA Office of Law Enforcement any time they refuse to board a vessel.

~~(iii3)~~ accurately record their sampling data, write complete reports, and report accurately any observations of suspected violations of regulations relevant to conservation of marine resources or their environment.

~~(iv4)~~ not disclose collected data and observations made on board the vessel or in the processing facility to any person except the owner or operator of the observed vessel or processing facility, an authorized officer, or NMFS.

~~(GI)~~ Suspension and Decertification~~decertification.~~

(1) Suspension and decertification review official. The Regional Administrator (or a designee) will designate an observer suspension and decertification review official(s), who will have the authority to review observer certifications and issue initial administrative determinations of observer certification suspension and/or decertification.

(2) Causes for suspension or decertification. The suspension/decertification official may initiate suspension or decertification proceedings against an observer:

(i) When it is alleged that the observer has committed any acts or omissions of any of the following: Failed to satisfactorily perform the duties of observers as specified in writing by the NMFS Observer Program; or Failed to abide by the standards of conduct for observers as prescribed under paragraph XX of this section;

(ii) Upon conviction of a crime or upon entry of a civil judgment for: ~~commission~~ Commission of fraud or other violation in connection with obtaining or attempting to obtain certification, or in performing the duties as specified in writing by the NMFS Observer



Program; commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property; or commission of any other offense indicating a lack of integrity or honesty that seriously and directly affects the fitness of observers.

(3) Issuance of ~~Initial Administrative Determination~~ initial administrative determination.

Upon determination that suspension or decertification is warranted under paragraph XX of this section, the suspension/decertification official will issue a written Initial Agency Determination (IAD) to the observer via certified mail at the observer's most current address provided to NMFS. The IAD will identify whether a certification is suspended or revoked and will identify the specific reasons for the action taken. If the IAD issues a suspension for an observer certification, the terms of the suspension will be specified. Suspension or decertification is effective immediately as of the date of issuance, unless the suspension/decertification official notes a compelling reason for maintaining certification for a specified period and under specified conditions.

(4) Appeals. A certified observer who receives an IAD that suspends or revokes his or her observer certification may appeal pursuant to paragraph XX the Office of this section Administrative Appeals.

(i) Decisions on appeals of initial administrative decisions denying certification to, or suspending, or decertifying, an observer, will be made by the Regional Administrator (or designated official).

(ii) Appeals decisions shall be in writing and shall state the reasons therefore.

(iii) An appeal must be filed with the Regional Administrator within 30 days of the initial administrative decision denying, suspending, or revoking the observer's certification.

(iv) The appeal must be in writing, and must allege facts or circumstances to show why the certification should be granted, or should not be suspended or revoked, under the criteria in this section.

(v) Absent good cause for further delay, the Regional Administrator (or designated official) will issue a written decision on the appeal within 45 days of receipt of the appeal. The Regional Administrator's decision is the final administrative decision of the Department as of the date of the decision.

\* \* \* \* \*

(h) ~~{Reserved}~~ C/P coop failure.

~~— (i) Catch weighing requirements.~~

~~— (1) Approved scales. The owner and operator of a catcher/processor vessel must:~~

~~— (i) Ensure Regional Administrator will determine that all catch a permitted C/P coop is weighed in its round form on a NMFS-approved scale that meets the requirements specified at § 660.15(b);~~

~~— (ii) Provide a NMFS-approved platform scale and test weights considered to the observer that meet the requirements specified at § 660.15(b) and § 660.160 (f)(2)(ix).~~

~~—— (2) At-sea scale tests. To verify that the scale meets the maximum permissible errors (MPEs) specified in this paragraph, the vessel operator must ensure that vessel crew test each scale used to weigh catch at least one time during each 24-hour period when use of the scale is required. The vessel owner must ensure that these tests are performed in an accurate and timely manner.~~

~~—— (i) Belt scales. The MPE for the daily at-sea scale test is plus or minus 3 percent of the known weight of the test material. The scale must be tested by weighing at least 400 kg (882 lb) of fish or an alternative material supplied by the scale manufacturer on the scale under test. The known weight of the fish or test material must be determined by weighing it on a platform scale approved for use under § 679.28 (b)(7).~~

~~—— (ii) Platform scales used for observer sampling. A platform scale used for observer sampling must be tested at 10, 25, and 50 kg (or 20, 50, and 100 lb if the scale is denominated in pounds) using approved test weights. The MPE for the daily at-sea scale test is plus or minus 0.5 percent.~~

~~—— (iii) Approved test weights. Each test weight must have its weight stamped on or otherwise permanently affixed to it. The weight of each test weight must be annually certified by a National Institute of Standards and Technology approved metrology laboratory or approved for continued use by the NMFS authorized inspector at the time of the annual scale inspection.~~

~~—— (iv) Requirements for all scale tests.~~

~~—— (A) Notify the observer at least 15 minutes before the time that the test will be conducted, and conduct the test while the observer is present.~~

~~—— (B) Conduct the scale test and record failed if any one of the following information on the at-sea scale test report form occurs:~~

~~(i) any current C/P endorsed limited entry trawl permit is not identified as a C/P coop member in the coop agreement submitted to NMFS during the C/P coop permit application process;~~

~~(ii) any vessel registered to a current C/P endorsed permit withdraws from the C/P coop agreement;~~

~~(iii) the coop members voluntarily dissolve the coop; or~~

~~(iv) the coop agreement is no longer valid.~~

~~(2) If the permitted C/P coop dissolves, the designated coop manager must notify NMFS SFD in writing of the dissolution of the coop.~~

~~(3) The Regional Administrator may make an independent determination of a coop failure based on factual information collected by or provided to NMFS.~~

~~(4) In the event of a NMFS-determined coop failure, or reported failure, the designated coop manager will be notified in writing about NMFS' determination.~~

~~(i) Upon notification of a coop failure, the C/P coop permit will no longer be in effect.~~

~~(ii) The C/P sector will convert to an IFQ-based fishery beginning the following calendar year after a coop failure, or as soon as practicable thereafter. NMFS will develop additional regulations, as necessary to implement an IFQ fishery for the C/P sector.~~

~~—— (1) Vessel name;~~  
~~—— (2) Month, day, and year of test;~~  
~~—— (3) Time test started to the nearest minute;~~  
~~—— (4) Known weight of test weights;~~  
~~—— (5) Weight of test weights recorded by scale;~~  
~~—— (6) Percent error as determined by subtracting the known weight of the test weights from the weight recorded on the scale, dividing that amount by the known weight of the test weights, and multiplying by 100; and~~  
~~—— (7) Sea conditions at the time of the scale test.~~  
~~—— (C) Maintain the test report form on board the vessel until the end of the fishing year during which the tests were conducted, and make the report forms available to observers, NMFS staff, or NMFS authorized personnel. In addition, the vessel owner must retain the scale test report forms for 3 years after the end of the crab fishing year during which the tests were performed. All scale test report forms must be signed by the vessel operator.~~  
~~—— (3) Scale maintenance. The vessel owner must ensure that the vessel operator maintains the scale in proper operating condition throughout its use, that adjustments made to the scale are made so as to bring the performance errors as close as practicable to a zero value, and that no adjustment is made that will cause the scale to weigh inaccurately.~~  
~~—— (4) Printed reports from the scale. The vessel owner must ensure that the printed reports are provided as required by this paragraph. Printed reports from the scale must be maintained on board the vessel until the end of the year during which the reports were made, and be made available to NMFS staff or NMFS authorized personnel. In addition, the vessel owner must retain printed reports for 3 years after the end of the year during which the printouts were made.~~  
~~—— (i) Reports of catch weight and cumulative weight. Reports must be printed at least once every 24 hours prior to submitting a landing report as described in § XXXX. Reports must also be printed before any information stored in the scale computer memory is replaced. Scale weights must not be adjusted by the scale operator to account for the perceived weight of water, mud, debris, or other materials. Scale printouts must show:~~  
~~—— (A) The vessel name and Federal vessel permit number;~~  
~~—— (B) The date and time the information was printed;~~  
~~—— (C) The haul number as recorded in the processors DCPL~~  
~~—— (D) The Total weight of the haul; and~~  
~~—— (E) The total cumulative weight of all fish and other material weighed on the scale since the last annual inspection~~  
~~—— (ii) Printed report from the audit trail. The printed report must include the information specified in sections 2.3.1.8, 3.3.1.7, and 4.3.1.8 of appendix A to 50 CFR part 679. The printed report must be provided to the authorized scale inspector at each scale inspection and must also be printed at any time upon request of NMFS staff or other NMFS authorized personnel.~~  
~~—— (iii) Platform scales used for observer sampling. A platform scale used for observer sampling is not required to produce a printed record.~~

\* \* \* \* \*

(iii) Each C/P endorsed permit would receive an equal percent (10 percent) of IFQ QS.  
\* \* \* \* \*

17. INSTRUCTION - In section 660.212, the introductory text, paragraphs (a)(2) and (c)(1) are revised to read as follows:

§ 660.212 Fixed gear fishery - prohibitions.

These prohibitions are specific to the limited entry fixed gear fisheries and to the limited entry trawl fishery Shorebased IFQ Program under gear switching. General groundfish prohibitions are found at § 660.12, subpart C. In addition to the general groundfish prohibitions specified in § 660.12, subpart C, it is unlawful for any person to:

\* \* \* \*

(a) General. \* \* \*

(2) Take, retain, possess, or land more than a single cumulative limit of a particular species, per vessel, per applicable cumulative limit period, except for sablefish taken in the limited entry, fixed gear sablefish primary season from a vessel authorized to fish in that season, as described at § 660.231, subpart E and except for IFQ species taken in the Shorebased IFQ Program from a vessel authorized under gear switching provisions as described at section 660.140.

\* \* \* \* \*

(c) Fishing in conservation areas—

(1) Operate a vessel registered to a limited entry permit with a longline, trap (pot), or trawl endorsement and longline and/or trap gear onboard in an applicable GCA (as defined at § 660.230(d)), except for purposes of continuous transiting, with all groundfish longline and/or trap gear stowed in accordance with § 660.212(a) or except as authorized in the groundfish management measures at § 660.230.

\* \* \* \* \*

## NMFS Interpretations and Request for Clarifications

*Disclaimer: Additional issues on the trawl rationalization program will arise as the program is reviewed by NMFS. Amendments 20 & 21 to the Groundfish FMP have not yet been approved or implemented by NMFS. NMFS and the Council staff are currently clarifying issues raised by these amendments.*

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### Clarifications Requested of Council

(These are options for the Council to choose from)

#### **Issue 1: QS Permit Renewal.**

##### **What happens if a QS owner fails to renew a QS permit by the deadline?**

###### Option A:

If a QS permit owner fails to timely renew the QS permit, NMFS will not redistribute any QP or IBQ pounds associated with the QS permit. If the QS permit is renewed at a later time prior to the September 1 of the following year (the deadline to transfer QP or IBQ pounds to a vessel account), the QP or IBQ pounds would then be distributed to the QS account.

###### Option B:

If a QS permit owner fails to timely renew the QS permit, NMFS will redistribute on a pro rata basis any QP or IBQ pounds associated with that QS permit to all other QS permit owners who have timely renewed their QS permits.

###### Suboption to Option B:

NMFS would allow a narrow hardship provision for QS permit owners that do not timely renew their QS permits due to illness, injury or death.

Discussion: In the proposed initial issuance rule, NMFS proposed to issue a QS permit to applicants eligible to own QS, with a corresponding QS account to track actual amounts of QS or IBQ associated with the permit. As part of the program components rule, NMFS is developing proposed regulations to require annual renewal of the QS permit in order to maintain current information related to the QS permit owner and provide a mechanism for data collection to

assure compliance with IFQ program rules (e.g., control rules, etc.). In an early draft of the proposed program components rule, NMFS considered a permit renewal deadline of December 31. NMFS believes that this date would be too late to administer annual issuance of QP and IBQ by January 1 of the following year, and thus proposes permit renewal to be completed prior to December, or earlier if a hardship provision is adopted (discussed below).

NMFS has identified an unresolved question with regards to QS permit owners that fail to renew their QS permits before the permit renewal deadline: What would happen to the QP or IBQ pounds associated with a QS permit which is not renewed? Would such QP or IBQ pounds be withheld pending QS permit renewal, or would it get redistributed to the remainder of the QS permits (i.e. the non-renewed QS permit loses QP and IBQ pound distribution for the following year, providing an incentive for renewing on time)?

NMFS has not developed a preferred option to resolve this question. In internal discussions attempting to respond to this issue, NMFS has discussed the above-referenced possibilities, and requests Council guidance for which approach to take (the provision regarding QS permit renewal at § 660.140(d)(3)(i) in the draft program components rule included in the briefing book will be corrected to reflect the Council's guidance).

#### Option A:

Under Option A, NMFS would not redistribute QP or IBQ pounds associated with the QS permit if the QS permit fails to renew by the permit renewal deadline. Instead, if the QS permit is renewed later, NMFS would issue such QP or IBQ pounds after January 1. Under this option, NMFS would require permit renewals to be completed between September 15 and November 30 of the year prior to the year for which QP or IBQ would be issued. No hardship provision would be adopted because the QS owner would be able to renew the QS permit after the deadline.

Under Option A, if the QS permit is not timely renewed and is not late-renewed prior to August 15 of the following year, NMFS would not issue QP or IBQ pounds associated with the QS permit. The August 15 final deadline for renewal would provide NMFS approximately two weeks to issue the QP or IBQ pounds prior to the September 1 deadline for a QS owner to transfer QP or IBQ pounds to a vessel account specified in the March 2010 Council motion.

Option A would maximize the flexibility for an individual QS permit owner to renew the QS permit up to the point when QP or IBQ pounds would not be transferable to a vessel account for use in that year. However, the potential exists that less QP or IBQ pounds could be available to the Shorebased IFQ Program for transfer to a vessel in that year in the event that a QS owner fails to renew the QS permit prior to the August 15 QS permit renewal final deadline.

#### Option B:

Under Option B, if a QS permit owner fails to timely renew the QS permit, NMFS would inactivate the permit and redistribute on a pro rata basis any QP or IBQ pounds associated with that QS permit to all other QS permit owners who have timely renewed their QS permits. A QS

permit owner could restore the QS permit to active status in a subsequent year by timely renewing the QS permit by the applicable deadline for that year. Under this option, NMFS would require permit renewals to be completed between September 15 and November 30; and November 30 would be the final renewal deadline in order for the redistributed QP and IBQ pounds to be issued by January 1 of the following year. There would be no hardship provision under this option.

The reason for the redistribution under Option B is to fully distribute the catch limits in the shorebased IFQ fishery for the following year. The redistribution would be made on a pro rata basis because it would reflect the proportion of QS or IBQ owned by those QS owners that timely renew. Option B would reduce flexibility for an individual QS owner, but would maximize the amount of QP and IBQ available on January 1.

A suboption to Option B discussed by NMFS would allow a hardship provision for QS permit owners that fail to submit a timely QS permit renewal. Under the suboption, NMFS would require permit renewals to be completed between June 15 and August 31. If failure to timely renew the QS permit was a result of illness, injury or death of the permit owner, the permit owner may request to renew the permit in a letter to NMFS postmarked no later than September 30 that provides credible evidence from a certified medical practitioner that describes the illness or injury and how it prevented the permit owner(s) from submitting the renewal by the deadline, or provides a death certificate (submitted by a person authorized to act on behalf deceased owner). The earlier dates under this suboption would provide NMFS with additional time to process hardship requests prior to November 30, so that QP and IBQ pounds can be issued by January 1 of the following year.

If the suboption to Option B were to be selected, an additional question remains: Would the owner of a QS permit which was not timely renewed be able to transfer QS or IBQ prior to November 30, in order for the QP or IBQ pounds to be issued to another QS permit owner, rather than be redistributed? (This would not be a concern for the main options because NMFS would disallow transfers between December 1 and December 31 in order to administer the IFQ program.)

## **Issue 2: QS Highly Divisible.**

### **How many decimal places should transfers of QS be divisible to?**

Option A (*NMFS-preferred*):

QS transfers should be divisible to 0.001%.

Option B:

QS transfers should be divisible to the smallest percent any person is issued for any species during the initial issuance process.

Option C:

QS transfers should be based on a minimum of 1 lb.

Discussion: Appendix D of the Am 20 DEIS (A-2.2.3 d, p.D-14) states that “QS will be highly divisible.” This language is reflected in the draft program components rule at § 660.140(d)(3)(ii)(B). Should there be a limit to how divisible QS is? If so, NMFS prefers Option A because anything beyond that is cumbersome to the agency and the public.

**Issue 3: IBQ transferability.**

**Is halibut IBQ transferable in the first 2 years of the program?**

Option A (*NMFS-preferred*):

IBQ would not be transferable in the first 2 years, but IBQ pounds would be transferable. Same as QS and QP.

Option B:

IBQ and IBQ pounds transferable from the start of the Shorebased IFQ Program .

Discussion: Appendix D to the Am 20 DEIS, (A-2.2.3 c, p.D-14) states, “QS will not be transferred in the first two years of the program (QP will be transferable).” Should NMFS interpret this to also apply to IBQ and its associated IBQ pounds? NMFS believes that the rationale for prohibiting the transfer of QS in the first two years of the program applies equally to IBQ.

**Issue 4: MS Sector Ownership Rules.**

**What are the ownership rules applicable to MS/CV endorsed permits and MS permits?**

Option A:

MS/CV-endorsed permits and MS permits are not subject to the individual and collective rule in determining ownership for the purpose of accumulation and usage limits.

Option B:

MS/CV-endorsed permits and MS permits are subject to the individual and collective rule in determining ownership for the purpose of accumulation and usage limits.

Discussion: Appendix D of the Am 20 DEIS sets forth an accumulation limit for MS/CV-endorsed permits (B-2.2.1.c, p.D-34), which states that “No individual or entity may own CV(MS) permits for which the allocation total is greater than 20 percent.” Appendix D of the Am 20 DEIS also sets forth a usage limit for MS permits (B-2.2.2.d, p.D-35), which states that “No individual or entity owning a MS permit(s) may process more than 45 percent of the total MS sector whiting allocation.” Unlike the ownership and control rules for the Shorebased IFQ



Program, the section of Appendix D that addresses the Mothership Coop Program does not identify ownership rules or control language for either MS/CV-endorsed permits or MS permits. NMFS requests guidance whether ownership of these permits be calculated by applying the individual and collective rule.

## **NMFS Interpretations of Council Intent**

(These are NMFS interpretations of Council intent. Did we get it right?)

### **ALL TRAWL FISHERIES**

#### 5% Limit on Whiting Catch S of 42° N. lat.

1) NMFS will maintain the limit on catch of whiting by the shorebased sector south of 42° N. lat before the start of the primary Pacific whiting season at no more than 5% of the shorebased sector allocation for the year.

#### **Background:**

Current regulations managing the Pacific whiting sector allocates the non-tribal commercial harvest guideline between the catcher/processor sector (34%), mothership sector (24%), and the shorebased sector (42%). The Pacific whiting fishery is subject to a limit of 11,000 Chinook salmon, not apportioned between the three sectors, projected bycatch in excess of this limit triggers automatic area closures applicable to the entire Pacific whiting fishery. The Council initially established starting dates for the whiting season to protect the fishery from high bycatch rates of threatened or endangered salmon species early in the year. However, the Council allowed 5% of the allocation to be taken in the waters south of 42° N. lat. because this was essential to the shorebased sector in this area. The 5% provision limited effort while still providing vessels and shoreside processors the opportunity to access whiting during the time whiting migrates through the waters off California. The current regulations state: “No more than 5 percent of the shore-based allocation may be taken and retained south of 42° N. lat. before the start of the primary whiting season north of 42° N. lat.” (50 CFR § 660.323(a)(2).)

With respect to the MS sector, Appendix D of the Am 20 DEIS states that the Pacific whiting fishery will continue to be subject to ESA-listed salmon bycatch management measures. (B-1.3, p.D-29.) With regards to the Shorebased IFQ Program, Appendix D of the Am 20 DEIS states: “Whiting seasons will not be changed under the IFQ program, and so the current spring openings will be maintained to control impacts on ESA-listed salmon. When the primary whiting season is closed for shoreside deliveries, cumulative

whiting catch limits will apply and shoreside QP will be required to cover whiting incidental catch.” (A-1.5, p.D-7.)

**Rationale:**

It is NMFS understanding that the regulatory language restricting catch of Pacific whiting south of 42° N. lat. before the start of the Pacific whiting season north of 42° N. lat. to 5% of the shore-based allocation may still be necessary under the trawl rationalization program.

Considerable shifts in the Pacific whiting shoreside fishery are likely to occur due to other aspects of the trawl rationalization program. Therefore, the effects of removing the 5% provision are difficult to estimate. However, if the 5% provision were to be removed, effort and landings in the shorebased whiting fishery could potentially increase in the area south of 42° N. lat. prior to June 15<sup>th</sup>. Fishermen may have an incentive to fish during this period as market values for whiting have generally been high during this period because the at-sea processing fleet is not operating and there is a limited supply of whiting on the market. The bycatch rates of Chinook salmon are higher earlier in the season and in the shorebased sector, which fishes closer to shore compared to the at-sea processing fleet, thus there could be more Chinook salmon bycatch during this period. An increase in effort in the early season could have a negative impact on the entire Pacific whiting fishery, and in particular upon northern processors and the at-sea processing fleet, if the salmon limit in the whiting fishery (11,000 Chinook salmon per year) were projected to be reached earlier in the year. Additionally, northern processors could be negatively impacted if an increase in fishing in the shorebased fishery shifted effort and landings to the south.

**Declarations**

3) NMFS believes the best means of implementing catch accounting requirements and gear switching provisions under the shorebased IFQ fishery is through the expanded use of declaration reporting requirements.

**Background:**

The declaration reporting requirements (§ 660.303 (d) of existing groundfish regulations) were initially implemented as a management tool with the VMS requirements. By making a gear type declaration, NMFS could identify which fishery a vessel was participating in and what GCAs apply.

**Rationale:**

Under the trawl rationalization program, NMFS is expanding the purpose of the declaration system to identify fisheries not only for compliance with the GCAs, but also

for catch accounting and gear switching under the shorebased IFQ fishery. The expanded declaration reporting requirements are listed at § 660.13 (d) of the draft program components rule.

#### State Employees as Catch Monitors

4) NMFS is continuing to work with the states to explore the use of state employees as catch monitors on shorebased IFQ vessels and mothership catcher vessels.

##### Background:

At its April 2010 meeting, the Council requested NMFS to work with the states to explore the use of state employees as catch monitors on shorebased IFQ vessels and on mothership catcher vessels.

##### Rationale:

NMFS is continuing to work with the states to explore this possibility with the intent of saving industry money. The discussions are ongoing, and a resolution is not presented in the program components rule. NMFS is optimistic about the potential use of state employees as catch monitors at IFQ first receivers, but less so as observers on IFQ vessels and mothership catcher vessels.

## IFQ PROGRAM

#### Split deliveries

6) For each IFQ trip, deliveries of fish caught as part of the Shorebased IFQ Program can be delivered to more than one IFQ first receiver (i.e., split deliveries allowed) with observer and catch monitor coverage.

##### Background:

In the NMFS Interpretations document from the April 2010 Council meeting (Agenda Item I.1.b, Supplemental NMFS Report 3, #6), NMFS provided some background on split deliveries and stated that no split deliveries would be allowed under the trawl rationalization program. The Council disagreed with NMFS interpretation and passed a motion to allow split deliveries with observer coverage.

##### Rationale:

NMFS will revise the draft regulations to allow split deliveries. Under the trawl rationalization program, there is a 100% observer coverage requirement. An at-sea

observer will cover all IFQ trips while the vessel is at-sea; and once the vessel is at the dock, a catch monitor will observe the offload. A vessel would be permitted to move from one licensed first receiver to another as long as an observer is on board the vessel while it transits from one first receiver to another, but could not fish on another trip until all fish is offloaded. For monitoring, only observers would be allowed to travel on a boat between first receivers (not catch monitors) because of insurance and liability issues and because applicable guidelines have been established for observers on vessels under the Magnuson Act. Allowing split deliveries increases operational flexibility, but would also increase vessel costs of paying for the observer. In addition, a catch monitor would have to be available at both first receivers. An individual could potentially be certified separately as a catch monitor and an observer.

In order to tie the offload to all of the fish caught on that trip for catch accounting, the electronic fish ticket system could be modeled after the Alaska crab IFQ system where a first receiver checks a box for a partial offload or a box for the final offload of the landing to tie all offloads to one trip/landing in the IFQ tracking system.

#### Halibut IBQ

8) NMFS will issue Pacific halibut IBQ pounds each year to a QS account based on a QS permit owner's IBQ (expressed as a percentage) multiplied by the halibut limit for that year.

##### Background:

QS and IBQ will be owned by QS permit owners and managed through QS accounts. A QS owner will be issued QP annually to a QS account based on the percent of QS in the QS account.

##### Rationale:

Appendix D to the Am 20 DEIS, (A-4, p.D-19) does not specify how IBQ will be issued annually to QS permit owners once the program is implemented. NMFS interprets Pacific halibut IBQ to be similar to QS and will issue IBQ pounds annually to QS permit owners based on the percent of IBQ in their QS account. IBQ pounds issued to the IBQ owner's QS account would then be required to be transferred to a vessel account for use by a vessel, in the same way that QP must be transferred.

#### QS or IBQ transfer deadline

9) NMFS will disallow transfers of QS or IBQ between December 1 and December 31 each year to allow sufficient time for the determination and issuance of QP or IBQ pounds to QS accounts for the following year.

Background:

After the second year of the trawl rationalization program, QS permit owners may transfer QS to another QS permit owner.

Rationale:

Appendix D to the Am 20 DEIS, (A-2.2.3 c, p.D-14) states, “NMFS may establish temporary prohibitions on the transfer of QS, as necessary to facilitate program administration. QS will not be transferred in the first two years of the program (QP will be transferable).” NMFS interprets this provision to also authorize NMFS to apply temporary prohibitions on the transfer of Pacific halibut IBQ. In order to issue the QP or IBQ pounds in a timely manner, the QS or IBQ needs to remain stable for a period of time prior to the start of the next fishing year. NMFS has determined that prohibiting transfers of QS or IBQ from December 1 to December 31 will allow enough time for the issuance of QP or IBQ pounds to QS accounts for the next year. QP or IBQ pounds already in a vessel account would continue to be transferable from December 1 through December 31.

QS account & vessel account access

10) NMFS has revised the QS account and vessel account access provisions to allow access using a unique ID and personal identification number (PIN).

Background:

Previously, NMFS had draft language that QS account and vessel account owners would have to make a request to NMFS in writing in order to designate other people with access to the account. NMFS has decided this is unnecessarily burdensome on the agency and the public.

Rationale:

In order to reduce the paperwork burden on NMFS and the public, NMFS will issue an ID and PIN to account owners to access their individual QS account or vessel account. Account owners should ensure privacy of these numbers to ensure that all transactions requested through the account are approved by the account owner.

If an account owner wants to grant access to their account, the account owner may authorize any individual to access their QS account by providing their unique ID and PIN. NMFS does not manage access to the accounts, and the burden of ensuring the integrity of the account falls to the account owner. If preferable, NMFS can issue access level PINs, allowing account owners to grant different levels of account access to other individuals as needed. That is, an account owner would have a PIN that would allow him/her to make a transfer, but another individual may have a different PIN that only

allows for read-only access to the account. NMFS will also allow a QS account owner to designate an account manager (which may or may not be the account owner), in writing, on the QS permit renewal.

## MS & C/P COOP PROGRAMS

### Changes in vessel registration

#### 11) Effective date for changes in vessel registration of MS/CV endorsed permits.

##### Background:

Existing regulatory language which will be continued if trawl rationalization is implemented says all changes in vessel registration for limited entry permits will be effective at the start of next cumulative limit period. At the March 2010 Council meeting, the NMFS interpretations document (Agenda item E.6.b, NMFS Report 1, #4) and the NMFS clarifications document (Agenda item E.6.b, NMFS Report 2, Issue 1) discussed this issue but did not clearly address the effective date of changes in vessel registration for MS/CV endorsed permits that may also participate in the shorebased IFQ program.

##### Rationale:

Under the draft program components rule at § 660.25 (b)(4)(v)(C), changes in vessel registration for MS permits and C/P endorsed limited entry permits would be effective immediately upon reissuance to the new vessel. However, changes in vessel registration for MS/CV endorsed permits would be effective at the start of next cumulative limit period because these vessels may participate in both the IFQ and MS fisheries during the same season. The shorebased IFQ fishery still has some species that are managed with 2-month cumulative trip limits. In order to avoid the possibility of more than one trip limit being harvested on a single permit registered to two different vessels during a cumulative limit period, regulations make changes in vessel registration effective at the start of the next cumulative limit period.

“Changes in vessel registration on permits will take effect no sooner than the first day of the next major limited entry cumulative limit period following the date that SFD receives the signed permit transfer form and the original limited entry permit, except for MS permits and C/P endorsed permits will take effect immediately upon reissuance to the new vessel. No transfer is effective until the limited entry permit has been reissued as registered with the new vessel.”

### MS permit and VMS

12) MS permits, required for motherships, are limited entry permits, but will not be required to have vessel monitoring systems (VMS) onboard.

#### Background:

VMS is required for all groundfish limited entry permits to monitor fishing activity and ensure fishing is not occurring in groundfish conservations areas (GCAs, a type of closed area).

#### Rationale:

Under the trawl rationalization program, a MS permit is a new type of limited entry permit for qualified at-sea mothership processing vessels. Mothership vessels process fish, but do not harvest. They are not subject to the GCAs, and therefore, do not require a VMS.

### Coop report deadline March 31

13) An annual coop report is due to NMFS by March 31 of each year.

#### Background:

An annual coop report details the coop's activities over the fishing year. Appendix D of the Am 20 DEIS (B-4.2, p.D-42) states that the annual coop report must be submitted to the Council for their November Council meeting each year. There is the potential that the whiting fishery, which ends on December 31 if the allocation of whiting and some non-whiting species remains available, would not have ended for the year before the report is due.

#### Rationale:

NMFS has determined that the submission of the annual coop report to NMFS should be a requirement in order to be considered for a coop permit the following year. If the report is tied to having a complete application package for issuance of a coop permit, then NMFS would require the annual report from the previous year's fishing activity to be submitted by the coop permit application deadline, March 31. If the report is received by NMFS prior to March 31 of each year, the report would be available for the April Council meeting for review and discussion. A preliminary coop report could still be submitted to the Council for their November Council meeting as stated in Appendix D.

### Notification of coop agreement changes

14) NMFS will require notification of a material change to an accepted coop agreement within 3 calendar days, and submission of copies of the revised coop agreement within 30 calendar days.

Background:

An accepted coop agreement that was submitted with the coop permit application and for which a coop permit was issued will remain in place through the end of the calendar year. The designated coop manager must resubmit a complete coop agreement to NMFS consistent with the coop agreement contents described in this paragraph, if there is a material change to the coop agreement.

Rationale:

The previous suggested deadline for submission of the revised coop agreement was within 3 days. Upon further review, NMFS believes that a 3-day deadline provides insufficient time for submission of an actual copy of the revised coop agreement, but NMFS would require notification that such a material change was in process and the nature of the material change within 3 calendar days. A copy of the revised coop agreement would then follow, being submitted to NMFS within 30 calendar days of the material change.

Coop failure changes

15) Changes to MS & C/P coop failure language.

Background:

NMFS continues to work through the coop failure regulations for the MS and C/P coop programs. Below is language that has been revised since this issue was outlined in the NMFS reports at the March 2010 Council meeting (Agenda Item E.6.b, NMFS Report 1, #24; and Agenda Item E.6.b, NMFS Report 2, #9).

Comparison from April & June 2010 Council meeting versions of the program components rule.

**§ 660.150 MS Coop Program**

~~(b)(3)(iv)~~

**(k) MS Coop Failure.**

~~(A) A permitted MS coop is considered to have failed if:~~

**(1)** The Regional Administrator will determine that a permitted MS coop is considered to have failed if:

~~(1)~~ **(i)** the coop members ~~voluntarily~~ dissolve the coop, or

~~(2)~~ **(ii)** the coop membership falls below 20 percent of the MS/CV endorsed limited entry permits, or

~~(3)~~ **(iii)** the coop agreement is no longer valid.

~~(4) the coop fails to meet the MS coop responsibilities specified at 660.XXX.~~

~~(B)~~ **(2)** If a permitted MS coop dissolves, the designated coop manager must notify NMFS SFD in writing of the dissolution of the coop.



~~(C) The Regional Administrator may make an independent determination of a permitted coop failure based on factual information collected by or provided to NMFS.~~

(D) (3) In the event of a NMFS determined coop failure, or reported failure, the designated coop manager will be notified in writing about NMFS' determination. Upon notification of a coop failure, the MS coop permit will no longer be in effect. Should a coop failure determination be made during the Pacific whiting primary season for the mothership sector, unused allocation associated with the catch history will not be available for harvest by the coop that failed or any other MS coop.

#### **§ 660.160 C/P Coop Program**

~~(b)(3)(v)~~

**(h) Catcher/processor Coop Failure.**

~~(A) A coop failure results when:~~

(1) The Regional Administrator will determine that a permitted C/P coop is considered to have failed if any one of the following occurs:

~~(1) any vessel registered to a current C/P endorsed permit fishes without being identified in the C/P coop agreement submitted to NMFS during the coop permit application process;~~

(i) any current C/P endorsed limited entry trawl permit is not identified as a C/P coop member in the coop agreement submitted to NMFS during the C/P coop permit application process;

~~(2)~~ (ii) any vessel registered to a current C/P endorsed permit withdraws from the C/P coop agreement;

~~(3)~~ (iii) the coop members voluntarily dissolve the coop;

~~(4)~~ (iv) the coop agreement is no longer valid.

~~(5) the coop fails to meet the C/P coop responsibilities specified at 660.XXX.~~

~~(B)~~ (2) If the C/P coop dissolves, the designated coop manager must notify NMFS SFD in writing of the dissolution of the coop.

~~(C)~~ (3) The Regional Administrator may make an independent determination of a coop failure based on factual information collected by or provided to NMFS.

~~(D) In the event of a NMFS determined coop failure:~~

(4) In the event of a NMFS-determined coop failure, or reported failure, the designated coop manager will be notified in writing about NMFS' determination.

(i) Upon notification of a coop failure, the C/P coop permit will no longer be in effect.

~~(1)~~ (ii) The ~~catcher/processor~~ C/P sector will convert to an IFQ-based fishery beginning the following calendar year after a coop failure, or as soon as practicable

thereafter. NMFS will develop additional regulations, as necessary to implement an IFQ fishery for the C/P sector.

~~(2)~~ (iii) Each C/P endorsed permit would receive an equal percent (10 percent) of IFQ QS.

#### Coop agreement changes

##### 16) Changes to MS & C/P coop agreement language.

###### Background:

NMFS continues to work through the coop agreement regulations for the MS and C/P coop programs. Below is language that has been revised since this issue was outlined in the NMFS report at the March 2010 Council meeting (Agenda Item E.6.b, NMFS Report 1, #22, #23). Some of the items were removed from the coop agreement contents and will instead appear in the application for a coop permit. For example, a signed clause by the designated coop manager acknowledging their responsibilities will be in the application for a coop permit.

Comparison from April & June 2010 Council meeting versions of the program components rule.

#### **§ 660.150 MS Coop Program**

(1) Coop agreement contents. Each coop agreement must be signed by all of the coop members (MS/CV endorsed permit owners) and include the following information:

(i) ~~A listing~~list of all vessels, ~~including those registered to a MS/CV endorsed limited entry permit or a trawl endorsed limited entry permit without a MS/CV endorsement that~~and which must match the member amount distributed to individual permit owners intend to use for fishing under the requested coop permit~~by NMFS.~~

(ii) All MS/CV endorsed limited entry member permits identified by permit number.

~~(iii) The mothership sector catch history assignment associated with each member MS/CV endorsed limited entry permit.~~

~~(iv) All MS permits obligated to coop member permits by MS permit number and vessel registered to each MS permit.~~

~~(v)~~ A processor obligation clause indicating that each MS/CV permit was obligated to a specific MS permit by ~~July~~September 1 of the previous year.

~~(iv)~~ A clause indicting that each member MS/CV endorsed permit's catch history assignment is based on the catch history assignment ~~that the member permit brings~~calculation by NMFS used for distribution to the coop.

- (~~vii~~) A description of the coop's plan to adequately monitor and account for the catch of Pacific whiting and non-whiting groundfish allocations, and to monitor and account for the catch of prohibited species.
- (~~viii~~) A ~~new member permit owner~~ clause stating that ~~requires~~ new owners of a member permit's are coop members and are required to comply with membership restrictions in the coop agreements.
- (~~ixvii~~) A description of the coop's enforcement and penalty provisions adequate to maintain catch of Pacific whiting and non-whiting groundfish within the allocations and that Pacific halibut set-aside overages do not occur.
- (~~xviii~~) A description of measures to reduce catch of overfished species.
- (~~ixi~~) A description of how the responsibility to manage inter-coop reassignment of catch history assignments will be met, should any occur.
- (~~xii~~) A description of how the ~~responsibility to produce an annual report documenting~~ will be produced to document the coop's catch, bycatch data, inseason catch history reassignments and any other significant activities undertaken by the coop during the year ~~will be met by XX due date XX~~.
- (~~xiii~~) Identification of the designated coop manager.
- (~~xiv~~) A ~~signed clause by the designated coop manager acknowledging the responsibilities of a designated coop manager defined in §660.XXX.xii~~ A requirement that agreement by at least a majority of the members is required to dissolve the coop.
- (~~xv~~) A ~~description for how the coop will be dissolved~~. —
- (~~xvi~~)(~~xiii~~) Provisions that prohibit members permit owners that have incurred legal sanctions from fishing in the coop.

#### **§ 660.160 C/P Coop Program**

- (1) Coop agreements contents. ~~Each~~ The coop agreement must be signed by the coop members (C/P endorsed permit owners) and include the following information:
  - (i) A ~~listing~~ of all vessels registered to C/P endorsed permits that the member permit owners intend to use for fishing under the C/P coop permit.
  - (ii) ~~A listing of~~ All C/P endorsed limited entry member permits identified by permit number.
  - (iii) A description of the coop's plan to adequately monitor and account for the catch of Pacific whiting and non-whiting groundfish allocations, and to monitor and account for the catch of prohibited species.
  - (iv) A ~~new member permit owner~~ clause stating that requires new owners of a member permit's are coop members and are required to comply with membership restrictions in the coop agreements.

- (v) A description of the coop's ~~plan for~~ enforcement and penalty provisions adequate to maintain catch of Pacific whiting and non-whiting groundfish within the allocations and that Pacific halibut set-aside overages do not occur.
- (vi) A description of measures to reduce catch of overfished species.
- (vii) A description of how the ~~coop's responsibility to produce an annual report documenting~~ will be produced to document the coop's catch, bycatch data, and any other significant activities undertaken by the coop during the year ~~will be met~~ by ~~XX due date XX~~.
- (viii) Identification of the designated coop manager.
- ~~(ivx) A signed clause by the designated coop manager acknowledging the responsibilities of a designated coop manager defined in 660.XXXX.~~
- ~~(vx) A description for how the coop will be dissolved.~~
- ~~(vix)(ix) A requirement that agreement by at least a majority of the members is required to dissolve the coop.~~
- (x) Provisions that prohibit ~~member~~ members permit owners that have incurred legal sanctions from fishing ~~groundfish in the Council region~~ coop.

REGULATORY DEEMING WORKGROUP REPORT ON REGULATORY DEEMING FOR  
FISHERY MANAGEMENT PLAN (FMP) AMENDMENT 20 (TRAWL  
RATIONALIZATION) AND AMENDMENT 21 (INTERSECTOR ALLOCATION)

The Regulatory Deeming Workgroup (RDW) met on Thursday June 10 and Friday June 11 to discuss the draft regulations for implementing FMP Amendments 20 and 21. The RDW reviewed draft regulations implementing observer requirements, mandatory economic data collection, and other components of the trawl rationalization program. Comments on particular items within those regulations are included as an attachment to this report (Attachment 2), as are the comments on particular items reviewed at the RDW's May 2010 meeting (Attachment 1). General comments upon those draft regulations are included below.

In general, the RDW did not identify any major inconsistencies with the Council's action on trawl rationalization. However, as several pieces of the regulations are still missing, it appears that a third meeting of the RDW will be needed. In order for the trawl rationalization program to remain on schedule, the Council may wish grant the Executive Director with the authority to deem the remainder of the regulations, pending the outcome of the third RDW meeting.

The RDW notes the significant amount of work accomplished by National Marine Fisheries Service (NMFS) staff and is grateful for receiving the draft regulations prior to the RDW meeting.

*Observer Requirements*

The committee discussed the requirement that observers be given a continuous 6 hour rest period. While committee members acknowledged the need for observers to have satisfactory amounts of rest in order to perform duties, members noted that this 6 hour period could limit the operations of fishing vessels under the rationalization program. The committee members indicated that observer rest periods would tend to coincide with rest periods taken by the crew of the fishing vessel and while this may not necessarily mean 6 continuous hours on a daily basis, it should be sufficient.

In May the RDW discussed the language which states an observer provider "must provide an observer for deployment as requested by vessels..." The committee reiterated its concern that this language would appear to have the effect of requiring any observer company to provide an observer to a catcher vessel upon request, or risk being fined. The committee reiterates its recommendation that this language be modified to indicate that an observer provider must provide an observer as requested by a vessel *per the terms of the contract between the observer provider and the catcher vessel*.

The committee also discussed limiting observer placement on mothership catcher vessels to 22 days in a month. NMFS staff indicated that the 22 day limit on catcher vessels was written in to the draft regulations because living conditions on board vessels can be somewhat marginal and lack facilities sufficient for long-term housing. Committee members familiar with the at-sea fishery noted that living conditions on catcher vessels in the mothership fishery are more akin to

catcher-processors and motherships (where the 22 day limit is not proposed) than they are to other shoreside vessels. These at-sea catcher vessels are large and have facilities for laundry, etc. Furthermore, limiting observers to 22 days on mothership catcher vessels could impose logistical difficulties and increase costs on catcher vessels in that sector. Therefore, the committee recommended eliminating the 22 day limit for catcher vessels in the mothership sector while retaining that limit in the shoreside fishery.

The RDW discussed the possibility of observers being transferred at sea from one vessel to another. Committee members noted the logistical benefits of allowing observers to be transferred from one vessel to another in cases where catcher vessels may serve a transportation role to and from the shore and fishing grounds. The committee recommends that observer transfers be allowed to occur between catcher vessels and motherships and between catcher vessels and catcher-processors.

#### *Economic Data Collection (EDC)*

The RDW spent considerable time discussing draft regulations indicating that all permits owned by a permit owner may be un-renewed in cases where an EDC report was not submitted by a vessel owner, charterer, or lessee. The committee noted that this proposed regulation would effectively penalize the permit owner for actions taken by another individual even though the permit owner may not have any control over the actions of that other individual. NMFS staff indicated that the regulation was set up as an administrative action rather than a violation. Committee members stressed the importance of placing the burden (and any penalty) upon the individual required to submit the report. The RDW recommends revising the EDC regulations so that the vessel owner, charter, or lessee would face a penalty for failure to submit an EDC, rather than the permit owner.

The RDW also expressed concerns that the proposed regulation could potentially result in non-renewal of all permits in which a person holds a direct or indirect interest, if an EDC report was not filed in connection with one vessel or entity operating under one of the permits in which that person held a direct or indirect interest. The RDW believed this would be an excessively punitive result, and strongly urges the agency to reconsider this approach.

In reviewing the draft components rule, the RDW notes that “Failure to submit a complete EDC questionnaire to NMFS” is listed as a specific prohibition in regulation. It is redundant and unnecessarily punitive to also include an “administrative remedy” that would deny permit renewal if EDC information is not provided. Therefore, the RDW specifically recommends use of the regulatory prohibition approach specified at 660.112 (3) (iii) and removal of the administrative remedy (that is, the fourth column) at 660.113 (a) (3).

The RDW also spent time discussing the universe of entities required to complete and submit a shoreside processing EDC report. Draft regulations would require the holder of a first receiver site license to fill out a shoreside processor survey, but those regulations would also require entities which process IFQ groundfish that do not have a first receiver site license to fill out the form. Committee members expressed concern over the apparent lack of clarity over who would be considered a “processor” in cases where they do not have a first receiver site license. Furthermore, committee members expressed concern that NMFS staff would not know who

those entities are even if the definition is clarified. The RDW recommends only requiring those with a first receiver license to complete and submit an EDC report. This universe of entities is a representative sample of processors and buyers and will therefore allow NMFS staff to adequately assess the impacts of the trawl rationalization program.

*Program Components Rule*

The RDW noted that NMFS staff has taken into account many of the suggestions from the May RDW meeting. While the RDW has additional detailed comments upon the newly submitted draft Program Components Rule regulations, it appears that the major issues identified in May have been addressed.

PFMC  
06/13/10

Notes from the May 20-21, 2010 meeting the Pacific Fishery Management Council's  
Regulatory Deeming Workgroup (Workgroup)

During its meeting, the Workgroup reviewed a draft version of the trawl rationalization components rule provided to the group May 19, 2010. This document showed in track changes modifications to the component rule that were made since the April 2010 Council meeting. The Workgroup will meet again on June 10 and 11 to review an updated version of this rule. The Workgroup **strongly** requests that the version of the components rule that it will be expected to review at its next meeting be provided at least 48 hours in advance of that meeting (i.e. by close of business on June 7 so that it may be distributed by 8:00 a.m. on June 8).

The Workgroup's comments on the May 19 version of the rule are noted below. In many cases, comments are applicable in multiple locations in the regulations. Those comments which apply in multiple locations are noted but all the locations in which the comments apply are not necessarily specifically identified for every category of Workgroup comment.

Minor editorial comments are noted in track changes in the copy of the regulations accompanying these notes.

### Specific Comments

**Pg. 4.** 660.12 (d)(5)(A) Declarations. Can a vessel use more than one gear on an IFQ trip? The Council does not appear to have addressed this issue. The workgroup does not have a recommendation on this issue but puts this forward as a question to be considered.

Should the "gear switching" declaration be subdivided and, if so, into how many gear types? The workgroup recommends two non-trawl gear-types: hook-and-line, and pot.

**Pg 5.** 660.15(a)(4)(ii) As specified, require platform scales be available on MSCVs. This needs to be consistent with any regulations which may prevent fish from being on brought on board MSCVs. See 663.06(1)(ii) for restrictions on motherships. Also, a conflict may need to be resolved between this requirement and a prohibition on sorting and discard prior to catch being transferred to motherships.

**Pg. 6.** 660.16(c) The workgroup questions the need for a provision preventing an IFQ observer from being used to comply with observer coverage requirements for any other Pacific Coast groundfish fishery. The workgroup was uncertain about the purpose of this provision and how it interacts with requirements to carry observers from the WCGOP.

**Pg. 11.** 660.17(e)(1)(vi)(C) The workgroup had concern about the need to specify a minimum visual acuity of 20/100 for observers. It seems that if an observer's vision can be corrected to 20/20 the minimum visual acuity is not relevant. This should be deemed unnecessary. The testing required only adds to costs.

**Pg. 12.** 660.18(c)(1) and (d). There is some inconsistency in the mention of state waters between these two sections.



**Pg. 12.** 660.18(c)(1) Revise to indicate that catch monitors must not have a direct financial interest in either the first receiver (the entity and its affiliates) or vessels that deliver to the first receiver at which they serve as a monitor. (i) through (iii) should be eliminated. There was concern that the restrictions, as stated in the draft, are too broad and may make it difficult to find monitors who reside in the community, making the program more expensive. ***Similar adjustments are needed for similar provisions in numerous sections on monitors and observers.***

660.18(c)(3) The provision that prevents catch monitors from working on a vessel on which the catch monitor was previously employed does not make sense. Catch monitors do not work on vessels.

**Pg. 16.** 660.25 (e)(1) and (2) Replace “person” with “eligible co-op entity” as the term is used in section 660.15(e)(1)(i). Additionally, it is not the co-op entity that does the harvesting but rather the co-op entity receives and manages the co-op allocation.

**Pg. 17.** 660.55(i)(2) The 5% limit in the southern area should not be implemented as a per vessel limit but rather as a closure of the area on attainment of the 5% limit.

660.60(c) Routine management measures. The workgroup wants to be sure it is clear that management lines may be modified inseason to control impacts on any species, as necessary to prevent excess harvest without shutting down the entire trawl fishery.

**Pg. 18.** 660.60(d) In subsections as appropriate, clarify that when an at-sea sector reaches its allocation limit, it is only the sector that reaches its limit that is closed and not all at-sea sectors.

**Pg. 19.** 660.111 Separate the accumulation limit and usage limit definitions, by sector. This may be useful for clarifying and understanding the regulations.

In the definition of IFQ trip, split the declaration of “limited entry fixed gear” into a limited entry longline and a limited entry pot declaration.

In the definition of Pacific whiting IFQ trip, insert “whiting” between “primary” and “season.”

**Pg. 20.** 660.112(a)(4) Change section header to “Catch Monitors and Observers” and in (i) change “for an observer” to “monitoring personnel.” In (ii) change “observer coverage” to “approved monitoring measures.” While this does not change the observer and monitoring requirements as laid out in the remainder of the regulations, it sets out the approach and lays the groundwork for a future change that might allow monitor’s to provide some at-sea coverage.

**Pg. 20.** 660.112(1)(b)(1)(ii) Replace “and has no deficits” with “or a vessel account that has a deficit”

**Pg. 21.** 660.112(b)(1)(xi) Because of connotations, consider some word other than “dumping” for this section.

660.112(b)(2) (v) It should not be the plant responsibility to check that the vessel has complied with the observer provision.

660.112(b)(2)(vii) Change “Process catch” to “Receive IFQ landings.” Is “catch monitoring plan” defined somewhere in the regulations.

660.112 (c) How much of (c) is a change from the current regulations?

Pg 22. 660.112 (d)(9) Change to read “Prohibited to fish for a mothership co-op with a vessel that has not been identified by the co-op as a vessel authorized to harvest that co-op’s allocation.”

Make a similar language change for the equivalent section for the C/P sector.

660.112 (e) There was concern that the list of prohibition does not include the prohibition on a C/P vessel operating as a mothership in the same year it operated as a C/P, and that a vessel with a C/P permit cannot operate as a mothership unless it also has a MS permit.

**Pg. 24.** 660.113(b)(1)(ii). “Any person” should be “First receiver.”

660.113(b)(4)(i). Add “catch area” to the list of needed information.

**Pg. 25.** 660.113(c)(1)(i). It should be the individual fishing companies, not the co-op manager, that are responsible for submitting the mandatory economic data collection forms for the vessels.

It should also be clear that catcher vessels without MSCV endorsements should be included among those who are subject to the mandatory data collection requirement for the mothership sector. Catcher vessels delivering to motherships without MSCV permits are not co-op members.

With respect to who carries responsibility for submitting the mandatory economic data collection forms, make a similar language change for the equivalent section for the C/P sector.

660.113(c)(3)(i)(E), covering plans for next year’s fishery, should be deleted because this information will be reported later and does not have to do with activities for the year on which the report is due.

Make a similar language change for the equivalent section for the C/P sector.

**Pg 26.** 660.113 (c)(3)(ii) Eliminate the first sentence requiring submission of the report to the Council by November. The fishing year will not be complete.

Make a similar language change for the equivalent section for the C/P sector.

**Pg. 27.** 660.113 (a)(2)(Marked for deletion) Retain this section but remove reference to “selective flatfish gear.”

**Pg 28.** 660.113(a) Section is confusing and out of place. Cowcod is wrong.

**Pg. 29.** 660.113(d)(2). For IFQ vessels, add prohibition on discarding prior to sorting and weighing, comparable to the prohibitions for the at-sea catcher vessels.

660.113(d)(3)(ii). Delete the second clause. “and the vessel must not resume fishing until the catcher vessel observer has obtained an accurate weight by species for the sorted catch.” The Workgroup could see no reason for this provision.

**Pg. 30.** 660.113(a)(1). Delete from the definition of the catcher/processor sector “, or C/P co-op Program,” and “, which are vessels.”

660.113(a)(1). Delete from the definition of the catcher/processor sector “, or MS co-op Program.” Depending on how the term “mothership sector” is being used, consider deleting the end of the last sentence starting with “for vessels registered to limited entry permits without a MS/CV endorsement. . .” In considering the appropriateness of including or deleting this clause, keep in mind that such vessels are not part of the MS co-op. If such vessels are to be included in the sector definition, refer to them as “vessel authorized to harvest the co-op’s allocation.”

660.113(b)(1) Delete the second clause: “and ends when an vessel has no more whiting QP in their vessel account;” Fishing will stop as individual co-ops and vessels exhaust their allocations. There will be no “season end” per se.

660.113(b)(1)(ii) Delete the second clause “and the fishery is open for the catcher/processor sector;”

660.113(b)(2). There will be no “after” the primary whiting season. Consider carefully the provisions to be included in this section with respect to gears (midwater trawl) and areas which are prohibited and allowed (activities in the RCA).

**Pg. 30.** 660.113(b)(3)(ii) To the end of the paragraph (top of page 31), add to the list “the period between when catcher vessels declaration of annual processor obligations and the start of the fishery.”

**Pg. 31.** 660.113(b)(3)(iii)(C)(4) The workgroup feels that trip limits in the whiting fishery are no longer appropriate.

**Pg. 32.** 660.113(c) Maintain all the conservation zones (1) through (4), they still have value as a means for reducing impacts. Note: inconsistency/need for clarification with respect to automatic actions listed in 660.60(d).

660.113(d) Eureka Area Trip Limits, should not be struck.

**Pg 33.** 660.113(g) Bycatch reduction. Workgroup believes that this section is no longer applicable, however, the provision on donations should be preserved.

**Pg. 35.** 660.140(b)(2)(ix) add “member” after “MS co-op” at end of section.

**Pg. 36.** 660.140(d)(3)(i) Requiring QS permit renewal by December 31 is too late. What happens to the QP that would go to a QS permit which is not renewed? Is it withheld pending QS permit renewal; or does it get redistributed to the remainder of the QS permits (i.e. the non-renewed QS permit loses QP distribution for the coming year, providing an incentive for renewing on time)?

**Pg. 37.** 660.140(d)(7) For this section (*and all subsequent sections discussing cost recovery*): eliminate language in sections specifying measures related to cost recovery and leave for development as part of the full regulatory package on cost recovery.

660.140(d)(7) When cost recovery provisions are developed, this section should not preclude the recovery of costs related to the issuance of QP permits.

660.140(e)(1)(i) “Exempted trawl” is the wrong term.

660.140(e)(2)(i) Modify to indicate a person must own or control a vessel (i.e. add “or control”).

660.140(e)(2)(ii) Since QP control has a bearing on QS control, add a requirement for the submission of ownership information similar to what is required for QS permits.

**Pg. 39.** 660.140(f)(2)(i) *and other sections* where there are references to state “fish buyer’s licenses” make sure “buyer’s licenses,” is the correct term for the license required of the first receiver.

**Pg. 43.** 660.140(h)(2)(iv) Delete “and the use of” *here and elsewhere in the regulations* where it pertains to observer access to navigational equipment. Observers should be able to access and view data on the vessel’s position but not use the equipment.

**Pg. 44.** 660.140(h)(4)(v) Review this provision *and similar provisions in numerous other sections* for consistency with how the obligation to provide observers arises within the program. Providers should not be automatically required to provide observers to anyone who requests one.

**Pg. 45.** 660.140(h)(4)(vii)(D) With respect to accommodations provided between vessel assignments, an exception is needed for someone who is permanently or temporarily residing in the community in which they are standing by. *Similar adjustments are needed for similar provisions in numerous other sections.*

660.140(h)(4)(viii) The Workgroup felt that a period of at least 90 days should be considered. A longer period would provide more flexibility in small ports and control costs related to moving observers between ports. A 45 day rule would probably increase the number of trained observers that would have to be kept on hand. *Similar consideration may be needed for similar provisions in other sections.*

**Pg. 50.** 660.140 (h)(5)(vi)(J) Check consistency between conflict of interest information for observers and observer providers (e.g. mention of north Pacific in one section but not the other). Also, check for consistency with the section on conflict of interest for monitors. Use what the workgroup recommended on conflict of interest for catch monitors and observers (see comments above on 660.18(c)(1)). The concern is constraining the pool of observers that might be recruited from coastal communities.

**Pg. 55.** 660.150(b)(1)(i) Restructure to indicate all three conditions are required: (A), (B) and (C).

660.150(b)(1)(i)(D) Delete this section because a special provision for bareboat charter is not needed.

**Pg. 56.** 660.150(b)(3)(ii)(B) This provisions should apply to all vessels fishing for the co-ops. Strike “registered to member permits” and replace with “fish for the co-op”. However, in general, make sure it is understood and reflected in the regulations that vessels that fish on co-op allocations that do not have MSCV endorsements would not be members of the co-op. Think of them as tourists, not citizens.

**Pg. 57.** 660.150(b)(3)(iii). Need clarification that the liability is restricted to the co-op.

660.150(b)(3)(iv) MS coop failure. Provisions seem unnecessary. These regulations should be written from the perspective of “mothership co-op permit validity” rather than “co-op failure”. The workgroup was also concerned with (A)(4) and (C), which are vague and undefined at this point.

660.150(b)(3)(iv)(D) If a co-op permit is invalidated during the year, the co-op’s unharvested allocation should go to the non-co-op fishery and members of the failed co-op should be able to participate in the non-co-op fishery.

660.150(d)(2)(i)(A). Any unassigned quota should be assigned pro rata to all MSCV permits that are participating in the fishery.

**Pg. 58.** 660.150(d)(2)(i)(B)(2) Too vague as to the species covered and the actions which might be taken.

660.150(d)(2)(ii) Annual co-op allocations and (iii) annual non-co-op allocations. For both the co-op and non-co-op fisheries, allocation should be assigned based on the permits participating in each, rather than the approach of using “remaining” for the non-co-op fishery.

**Pg. 59.** 660.150(d)(3)(ii) The last sentence, as written, would preclude a mothership from receiving fish from participants in the non-co-op fishery. This should be revised to allow motherships receiving co-op deliveries to continue to receive non-co-op deliveries after the co-op is closed.

Workgroup members also felt that closure of co-ops should be on reaching allocations rather than on projection (for both the mothership and catcher-processor program). This would be consistent with the Council's final preferred alternatives. ***Similar modifications may be necessary in other sections which reference closure on approach of attainment, including sections on catcher-processors.***

660.150(d)(3)(iii). A similar revision to that for (ii) is needed in this section.

660.150(d)(4)(iii) The statement that there will be no inseason actions for set asides may conflict with provisions in 660.60(d).

660.150(d)(5) It should be clear that closure on projection should not apply to the co-op allocations.

**Pg. 60.** 660.150(d)(7)(i) Replace "vessel" with "permit" and strike everything after "registered."

660.150(d)(7)(ii) Strike everything after "through" and replace with " the processor obligation declaration process." There is a different process specified for the mothership obligation process.

660.150(d)(7)(iv) mutual agreement exception. Replace "termination" with "release" because it may be a temporary release of the obligation rather than a complete termination.

Pg. 61. 660.150(e)(1)(iii)(A)(1)(i) Eliminate referenced to trawl endorsed limited entry permits without a MSCV endorsement. These vessels are not part of the co-op and may change throughout the season. Enforcement needs will be met through the VMS declaration process.

660.150(e)(1)(iii)(A)(1)(v) Revise to be consistent with the Council motion. Both dates need to be included. One on when to inform the mothership (September 1) and the other when to inform NMFS (December 31).

**Pg. 62.** 660.150(e)(1) (iii)(A)(1)(xiv) Delete this section. Does not need to be there. ***Make a similar change for the C/P co-op section.***

660.150(e)(1) (iii)(B)(4). Three days is an unnecessarily tight time frame, particularly given that it is not even three business days. Thirty days would be more reasonable. ***Similar adjustments may be needed for similar provisions in other sections.*** Consideration needs to be given to differentiating between those changes that are important to monitoring and enforcing the program and those which are less important. Less important changes need to be treated with more latitude.

**Pg. 63.** 660.150(e)(1) (iv)(C) Three calendar days is too tight a time frame. See previous comment.

660.150(e)(1)(iv)(D) Revise language to eliminate reference to "co-op failure" and replace with the concept that a permit condition as not been met.

660.150(e)(2) If vessels rather than permits are responsible for paying fees, then the co-op should not be penalized if a vessel has not paid its fees. See Workgroup comments on dropping cost recovery language at this time.

660.150(e)(6) Cost recovery. Individual permit holders should pay the fees. The co-ops should not collect and pay the fees. This language should be dropped and the section reserved until the cost recovery program is fully developed.

**Pg. 64.** 660.150(h)(A) There is no mothership “obligation” in the non-co-op fishery. Drop this section.

**Pg. 65** 660.150(h)(C) There is no mothership “obligation” in the non-co-op fishery. Drop this section.

**Pg. 66.** 660.150(j)(2)(i)(E) Remove “, and the use of,” See previous comment on observer access to navigational equipment.

**Pg. 69.** 660.150(j)(4)(vi) See previous comment about needing to revise sections like this to take into account how contractual obligations to provide observers arise.

660.150(j)(4)(viii)(C)(5) See previous comment about needing to revise sections like this to include possibility that observers may have permanent or temporary residences in the port and not need motel accommodations.

**Pg. 73.** 660.150(j)(5)(i)(F)(1) See previous comment about needing to revise sections like this regarding conflict interest.

**Pg. 77.** 660.160(b)(1)(i) Replace “C/P permit” with “C/P endorsed LE permit.”

660.160(b)(3)(i)(A). Change “MS co-op permit” to “CP co-op permit.”

660.160(b)(3)(i)(B). Replace “be owned and operated by” with “membership must be composed of.”

660.160(b)(3)(ii)(B) clarify what “member permits” means.

**Pg. 78.** 660.160(b)(3)(iii)(A) The Workgroup expressed concern with the role that NMFS would play in defining co-op failure. Sections (4) and (5) should be better defined, particularly given the significant implications of failure of the co-op. (C) should be deleted as there is no indication that there are standards by which this evaluation would be made. With respect to (D), is it the Council’s intent that NMFS determines a failure has occurred or that this determination be made by the Council after notice to the Council that certain criteria have not been met (listed on page 78) (or is the agency’s role only to authorize the co-op by issuance of a permit)?

660.160(c)(3)(iii) It’s not clear what species are in this category.

**Pg. 80.** 660.160(d)(1)(iii)(A)(1)(ix) (listed as (ivx)). Remove, as suggested for the motherships.

660.160(d)(1)(iii)(A)(2) There is only one co-op. Change plural to singular. Change “MS co-op permit” to “CP co-op permit.”

**Pg. 81.** 660.160(d)(1)(iii)(B)(4) and (iv)(C) As suggested for the mothership sector, change three days to 30 days in both places that it occurs.

660.160(d)(5). As suggested elsewhere, drop language on cost recovery until such provisions are fully developed.

**Pg. 82.** 660.160(e)(2)(ii) Eliminate the second sentence. It’s unnecessary, confusing, and redundant with declarations which will occur in MS program.

660.160(e)(3)(ii). Clarify that the changes which are allowed are from, then back to, the vessel on which the starts.

**Pg. 83.** 660.160(e)(6) As mentioned previously, drop the language on cost recovery until such provisions are fully developed. When these provisions are developed, the individual participants, not the co-ops should be responsible for payment of fees.

**Pg. 84.** 660.160(g)(5)(iv) As per previous comments, delete “and the use of,” with respect to observer accessing navigational equipment.

The WCGOP should consider the need for a policy requiring that observers carry backup software with them.

**Pg. 86.** 660.160(?) (4)(v) [numbering designation seems to be off] See previous comments on need for changes that take into account how contractual obligations arise for the provision of observers.

**Pg. 87.** 660.160(?) (4)(v) (continued from previous page). In the case of incapacity of an at-sea observer, there should be a reasonable period of time (“as soon as practicable”) provided for the replacement of the observer.

660.160(?) (4)(viii)(D) Similar comment to previous on need to provide option for observers to stay at their local permanent or temporary residences.

**Pg. 88-89.** 660.160(?) (4)(xiv) Same comment as above on conflict of interest standards. Make sure that observers can work on research cruises without creating a conflict of interest that interferes with their ability to work as a fishery observer.

**Pg. 91.** 660.160(?) (5)(i)(E) Same comment as above on conflict of interest standards.  
660.160(?) (5)(i)(E)(3) Specify that “employed” means “employed other than in the role as an observer” Add a time frame for the duration of the conflict of interest.

There may be one comment missing from this report: **Pg. 20.** 660.112(1)(b)(1)(i). Staff will follow up on this comment with the Workgroup and, if necessary, NMFS.



**Notes from the June 10-11, 2010 meeting the Pacific Fishery Management Council's  
Regulatory Deeming Workgroup (Workgroup)**

The Workgroup's comments on draft regulations are noted below. In many cases, comments are applicable in multiple locations in the regulations. Those comments which apply in multiple locations are noted but all the locations in which the comments apply are not necessarily specifically identified for every category of Workgroup comment.

**Observer Program**

Comments below are to a draft document that was provided to the Workgroup. The same regulatory language was also included in the draft of the trawl rationalization program components rule (Agenda Item B.6.b, Supplemental NMFS Report 2, June 2010).

Shorebased IFQ program

660.140(h)(1) - NMFS mentioned change in coverage requirements to include split deliveries. RDW supports this change.

660.140(h)(1)(ii) – RDW suggests deleting the deployment limitation language that says there must be a minimum 6 hrs continuous rest period. Trend is going to be to make shorter tows. This 6 hr restriction would greatly interrupt the fishing behavior of the fleet. Important to make shorebased IFQ catcher vessels and mothership catcher vessels consistent because of crossover between these fisheries. The 6 hr restriction should be removed from both the IFQ and mothership catcher vessel observer regulations.

660.140(h)(1)(ii)(A) – change to be more specific that it's when “unable to perform their duties for any reason...” rather than “unable to sample for any reason...” It is to capture observers who are ill or injured.

[similar change in MS coop section at 660.150(j)(1)(ii)(B)(1) for MS/CV]

660.140(h)(1)(iii) Boarding refusal- Revise language to reflect that provider must notify NMFS immediately if an observer refuses to board.

[similar change to observer sections in MS & C/P Coop Programs]

660.140(h)(4) – could delete and reserve paragraph (4) because stated in previous paragraph

660.140(h)(5)(v) Respond to industry requests for observers – covered in 5/20 RDW comments. Has to be a contract in place between vessel and provider before provider can supply an observer. Suggest revising the language to read “An observer provider must provide an observer for deployment as requested by vessels pursuant to the terms of their contract between the observer provider and the vessel owner.” Revise paragraph to add “...pursuant to the terms of their contract...” where appropriate. Should this paragraph even be there? Vessel is requirement to meet 100% coverage of program so do we even need to speak to the observer provider. Want

to retain the last sentence and add only for vessels with contractual relationships. "...from the vessel owner with whom the observer provider has a contract."

[Revise in all observer sections (IFQ, MS, C/P).]

660.140(h)(5)(vii) Observer deployment limitations - Is there a possibility for a waiver in cases deemed appropriate by NMFS. Add language "unless otherwise authorized by NMFS,..."

[Revise in all observer sections.]

660.140(h)(5)(xi)... (iv)(3) Debriefing- NMFS suggested deleting "...will notify the observer provider by the 15<sup>th</sup> of each month which observers..." RDW supports this change.

[Revise in all observer sections.]

660.140(h)(5)(xi)(F) - Delete paragraph (F) on boarding refusal because stated earlier.

660.140(h)(5)(xiii) – RDW concerned about confidentiality of observer performance records. This paragraph deserves some further thought. Could add language to paragraph stating "...as otherwise required by law."

[If revise, applies to all observer sections.]

660.140(h)(5)(ivx)(C) Must meet limitations on conflict of interest- Add language to exclude observer provider compensation such as "...gift, favor, entertainment, loan, or anything of monetary value, except for compensation for providing observer services, from anyone who..." Correct numbering under paragraph (h)(5), some 3<sup>rd</sup> level paragraph misnumbered.

660.140(h)(6)(vii)(B) – Regarding limitations on conflict of interest for observers, some concern that language "...anything of monetary value from anyone who either conducts activities that are regulated by NMFS or..." is too broad. Noted that this is stock language that mirrors Alaska language and language observer providers are used to.

660.140(h)(6)(viii)(2) – Regarding observer responsibilities if they refuse to board, change language to state that observer must "Immediately report to the observer provider any time they refuse to board a vessel" rather report to the observer program and OLE. Observer provider required to report to observer program and OLE.

[Similar change to all sections.]

### MS Coop Program

660.150(j)(1)(ii)(B) – will need waivers from limitation to no more than 22 calendar days in a month for catcher vessels in the mothership sector. The vessels have showers and washer/dryers. Priority is to keep shorebased IFQ and mothership catcher vessel observer regulations consistent, but will need a waiver for mothership catcher vessels. RDW suggests making the mothership catcher vessel requirement for the number of consecutive days an observer can be on a vessel the same as the MS and C/P requirement.

660.150(j)(2)(ii)(A) – RDW concerned that language on safe conditions may be too onerous that allows observer to request a vessel return to port. Support intent of this language. Solution may

be for NMFS to clarify vessel's responsibility once the request to return to port has been made.  
[Similar language in all sections.]

660.150(j)(2)(v) Transfer at-sea-- RDW concerned that transfer of observer between MS/CV and MS not permitted. Understand different training requirements between for observer on MS versus observer on MS/CV, but logistically should be allowed for MS/CV to bring an MS observer out to a MS (i.e., serve a transportation function). In addition, C/Ps should be allowed to transfer observers to and from CVs for that same logistic function. Suggest NMFS revise paragraph (B) to allow transfer of observer from MS/CV to MS or CP under certain circumstances. Suggested revised language for paragraph (B), "transfer at-sea between catcher vessels are prohibited. Catcher vessels may transfer observers to and from motherships or catcher-processors. For transfers between mothership or catcher-processors and mothership catcher vessels, they must...[insert (a)(b)(c) from mothership paragraph (A)]."

660.150(j)(5)(iii) [p.39] - Revise header language that says "Provide vessels only observers" to something more clear.  
[Revise in all other observer sections]

660.150(j)(5)(vi)(A)(2) [p.41] – 24 hour lodging on the boat, assuming there will be flexibility (similar to Alaska program) for situations that may be longer than 24-hours (e.g. storms, etc.)

660.150(j)(5)(v)(A)(4)(i) [p.55] Issuance of an observer certification- Remove "or the Pacific Coast" from the sentence "Be a prior NMFS-certified observer in the groundfish fisheries off Alaska or the Pacific Coast."  
[Remove in C/P section, too.]

### **Economic Data Collection Program**

Comments below are to draft documents that were provided to the Workgroup. The same regulatory language was also included in the draft of the trawl rationalization program components rule (Agenda Item B.6.b, Supplemental NMFS Report 2, June 2010).

#### *Regulations:*

660.11 definition of "charterer"- revise definition as follows "...or services of the vessel are secured for a period of time for the purposes of commercially harvesting fish,...." This would exempt research charters, but not bareboat charters. Change "signed any agreement" to "entered in to any agreement" so that it covers agreements that aren't written. Also remove references to "bareboat" within the definition of "charterer".

660.113 (a) –

- Suggest revising language in the permit renewal column to say, "...will not be renewed ~~if any~~ until required EDC's..."
- Baseline data– If a permit owner or first receiver license owner did not own the permit or vessel, or processing facility at any point during the baseline period

(2009 and 2010), then they should not be held accountable for providing information from the prior owner.

- RDW has concern over the permit owner being liable for the vessel owner, lessee, or charterer not submitting their EDC. Similarly, doesn't make sense if there are multiple owners of a permit or first receiver license and one of them does not submit their EDC. For the first receiver site license, the requirement to submit an EDC should not be required to track beyond the first receiver with a site license. The RDW questions the jurisdictional authority to collect information from processors that aren't federally permitted. **Strongly suggest that the party that is submitting the data should be the one held responsible for submitting that data.** Could make it a regulatory violation. This applies to both baseline and ongoing data collections. NMFS stated that a choice was made to make this an administrative requirement rather than a violation of regulation or penalty action. This concerns the RDW because this type of action should be subject to due process, especially because the regulations are set up to require one party to be subject to a response from a third party over which the one party has no control. The consequences of making this an administrative requirement are too high.

660.113 (b) – (f) – Clarify who is the “questionnaire submitter.”

660.113 (f)(1)(ii) – In order to allow some timing flexibility for complex cases (e.g., if there is a substantial amount of data for someone to gather for the audit), the RDW suggests revising this sentence to say “...within 20 days of the date of issuance of the inquiry, unless a waiver is issued by NMFS.” This would allow NMFS to review, on a case by case basis, whether the person being audited should be granted more time to gather information and respond to the audit. Suggest reviewing the approach being taken under Alaska's Amendment 80, which has come to a resolution after issues with their audit process.

#### *Questionnaires:*

The RDW also had an opportunity to review the draft mandatory EDC questionnaires and provide feedback. The RDW appreciates the NWFSC's hard work to date in working with industry to design the questionnaires. It is our understanding that the questionnaires are not subject to regulatory deeming, but the RDW appreciated the opportunity to comment. The RDW has the following comments:

- Clarify on the questionnaires who is required to complete them.
- Suggest define the terms for QS or QP leasing or sales used in the questionnaire to make sure it is very clear so that types of answers will be more similar. Definition could include length of arrangement. (#22 on shoreside processor questionnaire; #16 of the catcher vessel questionnaire)
- In the catcher vessel questionnaire, add West coast groundfish fixed gear and Pacific halibut fishery to #11 & 13.

#### *Additional comment:*

RDW suggests that PacFIN track which processing facilities are the same even though the buyer ID for that facility may change.

## **Regulations for Other Components of the Program**

Comments below are to the draft of the trawl rationalization program components rule (Agenda Item B.6.b, Supplemental NMFS Report 2, June 2010).

Suggest revising the use of the term “C/P permit” to “C/P endorsed limited entry trawl permit” throughout the regulations.

Page 13, “candidates must have a minimum visual acuity of 20/100...” clarify that the previous RDW report should reference catch monitors rather than observers.

Page 14, C.3 – “catch monitors may not serve on a vessel”. Clarify that catch monitors do not serve on vessels.

Page 14, make conflict of interest recommendations consistent with other recommendations. For instance, the two year timeline applying to observers should also apply to catch monitors. This clarification might go under C.1 or C.3

Page 16, (v) It is unlikely that “double dipping” in a cumulative limit period would occur for the species which still have trip limits. These species were not IQ species because the trawl fishery does not catch or target these species. Also, the fact that only a single transfer of a permit can occur in a year makes it even more unlikely that someone would “double dip” on trip limits. The committee recommends that permit transfers be allowed to occur within a cumulative period so as not to restrict the trawl IQ program.

Page 17, last sentence in (C). The committee recognizes that this portion of the regulations has already been deemed, however the restriction on permit transferability could significantly restrict some operations. In general, the restriction on permit transferability is not necessary in a rationalization program. The committee recommends that the issue of permit transferability be taken up in a trailing action since it appears that such restriction is not necessary.

Change reference in May report on “eligible coop entity” 660.150

Page 18, d (i) revise to state that we close an at sea sector of the fishery when that sector’s whiting or bycatch limit is reached.

Page 21, (3) (iii) the committee agrees with the regulatory language identifying the prohibition to fail to submit a complete EDC questionnaire. This regulatory approach is more appropriate than the administrative approach which would fail to renew a permit if the EDC questionnaire is not filled out. The administrative approach could lead to penalizing the permit holder when a vessel owner fails to fill out a form.

Page 3 of May report. 660.12e should be changed to “operate in the mothership sector” instead of “operate as a mothership”.

660.113 a 3 – the committee recommends the final column in the EDC section be removed. This would address the concerns over penalizing a permit holder for a failure on the part of the vessel owner/operator to submit an EDC.

In may draft, coop manager responsible for EDC forms. Recommend that member companies responsible for providing forms.

Page 31, 3 E ii – the committee is concerned that requiring plans for next years coop be included in the draft annual report may effectively mean that the coop plans must be developed by November, which is inconsistent with other regulations indicating the plans must be submitted in the spring preceding the year of fishing. If the plans for next year’s fishery must be included in the November report, then the committee recommends that they not be binding and can be changed during the formal coop permit application process.

Page 33 660.130 a. Cowcod should be allowed to be retained in an IFQ fishery.

Page 34, 3 ii – reword to say “until the observer has sampled the catch”

Page 35, b 1 i – the shorebased IFQ program for Pacific whiting should have no end date. Vessels simply stop targeting whiting as quota is depleted. End the sentence as “...conducted after the season start date.”

Page 35, remove section (2).

Page 37, top of page. Requiring the trawl to be attached to the trawl doors when the trawl doors are on board is logistically impossible unless the net is still in the water. The committee recommends revising the regulations to state that the trawl does not need to be attached to the doors when the doors are on board.

page 37, bycatch reduction and full utilization section. This section is not necessary. MS and CPs will have two observers and under rationalization use of species is fine since they are accounted for against the bycatch cap.

Page 40, iii – strike “from the date of landing” and only retain “from the time the overage from that trip is documented in the vessel account”. The overage may not be known until after the landing has occurred due to QA/QC of observer data. This issue is also referenced from the April Council meeting, Agenda item I1.b. NMFS supplemental report 2, issue 3

The committee discussed quota account deficits. The committee believes that a trailing amendment should be taken up that would consider allowing vessels the flexibility to use their 10 percent “carry over” to avoid a violation, but then fish later in the year if quota becomes available on the market and they cover that deficit later.

Page 43, (D) strike “and a complete economic data collection form as required” as this places the EDR burden on the permit holder even though he/she may not have the ability to fill out the form.

Page 47, ii B read “the amount of QP or IBQ pounds...is within the 10 percent carry over amount. The 10 percent carry over amount is calculated based on....”

Bottom of page 50. same issue with first receiver not issued a site license due to a EDR failing to be submitted.

Page 69 (d) clarify that the gear switched vessels would not be subject to LE FG trip limits, but they would still be held to trip limits specified for the trawl sector

The committee recommends that closing upon projection should apply to the non-coop fishery and to the sector, but not to the individual co-ops within the mothership sector. The co-op structure is akin to an IFQ fishery where vessels are obligated to not exceed their allowable catch amount.

April 11, 2010

Pacific Fisheries Management Council

Dear Council Members,

I am a non-whiting traditional groundfish trawler. I recently discovered the method used for determining Pacific Halibut bycatch. I feel there are significant flaws in the assumptions made in this calculation. Three major discrepancies jump out at me.

1. I feel it is inaccurate to pick two out of eight major shelf flatfish target species to base halibut bycatch. i.e. Arrowtooth Flounder and Petrale, when Rex, English, Dover, Sand Dabs, Sand Sole, and Starry Flounder could just as easily be used.
2. Arrowtooth Flounder probably has one of the lowest bycatch rates of retained weight vs halibut bycatch weight as compared to other shelf species.
3. The years analyzed for bycatch weights of target species are '94-'03 when the years used to model the area specific fishing behavior are '04- and after. Bycatch doesn't match the allocation.
4. Many boats do not target Arrowtooth Flounder. Furthermore, many boats do not retain Arrowtooth Flounder when caught.

I was able to receive my observer bycatch rate data for 2002 and it shows a roughly 5% halibut weight to retained weight ratio. 69,288 lbs. retained weight for 3594 lbs. Pacific Halibut while fishing on the shelf. Only 450 lbs. of Arrowtooth were retained during this period. I am not privy to other boats information, but would expect that targeted Arrowtooth tows do not average this high a percentage of halibut bycatch. In 2002, 21% of NSM target tows contained halibut. 47% of Petrale target tows contained halibut.

For these reasons amongst others, I would strongly urge the council to readdress the Pacific Halibut bycatch allocations.

Thank you for your consideration,

Paul Kujala  
F/V Cape Windy

Also in agreement

Blair Miner	Gary Sjolstrom	David Vandercovering	Thomas Morrison
F/V Columbian Star	F/V Home Brew	F/V Chelissa Michelle	F/V Capt Ryan

Brian Salo  
F/V Lily Marlene



Request for a Trailing Amendment to Establish Control Rule Safe Harbors within the Pacific Coast  
Groundfish Trawl Rationalization Program

Contact:

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Introduction. The Council's final preferred alternative for rationalization of the Pacific coast trawl fishery will impose accumulation limits upon quota shares and quota pounds by restricting the amount of quota poundage that can be assigned or used by a vessel, and by restricting the amount of quota share that can be controlled by an entity. The language defining the term "control" over quota is considered by many to be relatively "tight", meaning the control definition will help ensure the integrity of the accumulation limits which the Council has adopted.

Staff and consultants at The Nature Conservancy and Environmental Defense Fund have reviewed many components of the trawl rationalization program, including the effect of the accumulation limits and control definition. While defaulting to a relatively tight definition of control is necessary in order to ensure the integrity of accumulation limits, it appears that, without specific exceptions to accumulation limits, many outcomes desired as part of this catch share program will not be realized. Specific examples appear to include:

- The inability of quota holders to form risk sharing arrangements for overfished species
- The inability of a community-based entity to hold quota sufficient for maintaining a viable fishing economy
- The inability of financing institutions to use quota as collateral for loans or other financing arrangements

Because of implications like those listed above, it appears that carefully crafted specific exceptions to the accumulation limits are a desirable feature of the Pacific trawl rationalization program. We also believe that there is a relative degree of urgency in allowing for these exceptions if the trawl rationalization program is to be viewed as a success. We respectfully request that the PFMC begin a trailing amendment process in September of 2010, with final adoption in the spring of 2011, to address exceptions to accumulation limits.

Purpose and Need Statement. Certain arrangements under which an individual or entity (a "person") holds or controls quota share ("QS") or quota pounds ("QP") in excess of the applicable accumulation limits may be appropriate and desirable to meet management, social, and economic goals for the trawl rationalization program. To permit those arrangements to exist, it may be necessary to adopt one or

more exemptions to the existing QS and/or QP accumulation limits, or to adopt a higher accumulation limit for such arrangements.

Element 1. Collective Fishing Arrangements. The ability of fishermen to successfully manage the catch of overfished species will be a major hurdle for participants engaged in the fishery. Managing catch of species such as yelloweye rockfish, where catch events are highly sporadic and allowable catch levels are very small, will likely require a collective arrangement of some form among fishermen. One possible concept has been described as “risk pools” where fishermen may wish to pool QP in order to reduce the economic risk associated with inadvertently exceeding ones individual QP allocation. Arrangements like these would also tend to enhance pool members’ opportunity to harvest the full amount of their collective QP allocations.

However, if the aggregate amount of QS or QP held by pool members exceeds the existing QS or QP accumulation limits, pool members may be prohibited from forming a separate legal entity to govern the pool. Such an entity could be considered a “person” controlling QS or QP in its own right. Existing literature combined with our experience with other fisheries indicates that without the ability to form a long term governance structure, the ability to construct an effective pooling arrangement is most likely compromised. The existing accumulation limit structure makes it difficult to form a long term governance structure. For instance, if members collectively hold an amount of QP that does not exceed the QP accumulation limits, that pool may be limited to one year, to avoid implicating the lower QS accumulation limits. In other words, an arrangement which governs quota poundage for more than one year effectively governs the quota shares and the quota share limits are smaller than the quota poundage limits.

Forming a separate legal entity to control the pool may make pooling arrangements more effective, by simplifying administration, facilitating enforcement of pool rules, and allowing for the formation of multi-year incentives, rewards, and penalty mechanisms among pool members. In other words, it appears that longer term arrangements can create more effective incentives for wise use of constraining stock QP, enhancing the ability of fishermen to manage overfished species.

To address these issues, the Council may wish to exempt certain types of QP pooling arrangements from accumulation limit control rule application, and/or to adopt higher QS and/or QP accumulation limits for certain types of QP pooling arrangements.

Element 2. Community Fishing Associations. Allocating QS facilitates consolidation within the Pacific Coast groundfish fleet. While consolidation could improve the economic conditions in fishing communities by improving the efficiency and profitability of the Pacific Coast groundfish fleet, it could also result in landings being concentrated in port communities that have infrastructure or financing advantages, relative to other Pacific Coast fishing communities with a history of participation in and reliance upon the trawl groundfish fishery. Concentration of landings in ports with these advantages could adversely affect the economic health and social well being of ports without them, and could prevent Pacific Coast fishing communities that are in the process of restoring or developing their fishery

economies from attracting the landings necessary to support their desired port infrastructure and processing capacity.

Disadvantaged Pacific Coast fishing communities may wish to address these issues by facilitating formation of fishing associations to acquire and hold quota for use by local fishermen. However, the amount of QS that a community fishing association needs to generate the landings necessary to amortize investments in port infrastructure and local processing capacity may exceed the QS limit.

To address this issue, the Council may wish to adopt higher QS accumulation limits for community fishing associations.

Element 3. QS-Based Financing. The Pacific Coast trawl fleet will need access to additional capital to take advantage of efficiencies and new opportunities, such as gear switching, made available by the trawl rationalization program. In addition, the fleet may need access to additional capital to amortize investments necessary to meet the catch monitoring requirements of the program.

Having QS as an asset should provide fishermen with greater access to capital. However, lenders are unlikely to treat QS as collateral for a loan unless they can impose reasonable restrictions on QS transfer for the life of a loan, and unless they can foreclose upon QS if a loan is in default. While lenders could do so up to the current QS accumulation limits, those limits may not permit lenders to assemble a QS-based loan portfolio large enough to offset the costs of developing the related credit standards and lending practices. This could impair fishermen's ability to obtain the full financial benefit of their QS asset.

On the other hand, lenders with a direct or indirect interest in the fishery may seek to use QS-based financing to exert control over the delivery terms of the related QP. If they are able to do so, the effectiveness of the existing QS accumulation limits in preventing any person from acquiring control of an excessive share of the fishery could be impaired.

To address these issues, the Council may wish to adopt higher QS accumulation limits for certain well-defined types of QS control arrangements and/or for certain types of entities (such as a defined class of financial institutions).

Summary. We believe that there are several reasons to allow specific exceptions to the accumulation limits (or to adopt higher limits) in certain, specific cases. Some specific reasons include: allowances for collective arrangements among fishermen meant to manage overfished species; the allowance of community-based associations to hold quota in order to preserve fishing economies; and allowances for specific types of financing institutions to use quota as collateral. Undoubtedly there may be other reasons. We believe that there is an urgency in allowing for these types of exceptions due to the weak stock management conditions that will exist on day one of the trawl rationalization program, the dramatic change in business operations that will be required of participants in the trawl fishery, and because of the consolidation and shift in fishing activity that is likely to begin on day one of the program. Therefore, we request that the Council start a trailing amendment process to allow "Safe Harbors" in the

trawl rationalization program, and that these Safe Harbors specify specific exceptions to the accumulation limits. We ask that the PFMC use the September 2010 Council meeting to conduct scoping, and that March or April of 2011 be used for final Council action.



June 3, 2010

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Sent via email to [pfmc.comments@noaa.gov](mailto:pfmc.comments@noaa.gov)

## **Report on Trawl IFQ Program (Amendments 20 and 21)**

Dear Chairman Ortmann and Members of the Pacific Fishery Management Council:

Ecotrust respectfully submits the attached report, "Fair Catch," to the Pacific Fishery Management Council in advance of the report's official release date this coming June 8<sup>th</sup>, 2010. This report addresses the catch share proposal for the Pacific Coast groundfish trawl fishery, which we believe runs contrary to the intent and spirit of the Magnuson-Stevens Act and is premised on an unfair design that compromises the program's effectiveness. In this report, Ecotrust presents ten program features that the Pacific Fishery Management Council should address to improve the design of this catch share program.

Ecotrust is not opposed to catch shares in principle and acknowledges catch shares as one instrument within the suite of tools available to fisheries managers. However, it is critical that the design of such management programs consider economic, social and ecological objectives as required by the Magnuson-Stevens Act. The Pacific Fishery Management Council's IFQ proposal fails to fully address these objectives.

We recognize the time and effort invested by the Council in the development of the program, but there is still time to reflect on the impacts the program will generate. In order to avoid administrative remands or expensive programmatic corrections after the fact, the Council should consider cost effective means of resolving the shortcomings highlighted in this report. The Council should also consider whether this program is ready to move ahead without observer and community provisions in place.

It is in the interest of all participants to improve the profitability of the fleet, strengthen conservation, and ensure fair catch shares for all of the communities that depend on the commercial groundfish fishery for their livelihood. We look forward to discussing this report and our recommendations with you.

Sincerely,

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## **FAIR CATCH**

### **Ten ways to improve the catch share proposal for the West Coast trawl fishery**

Eric Enno Tamm

Edward Backus  
Megan Mackey  
Astrid Scholz


A proposal to rationalize the West Coast groundfish trawl fishery using catch shares will likely create as many problems as it purports to solve. The precedent-setting proposal runs contrary to the intent and spirit of the Magnuson-Stevens Act and is premised on an unfair design that compromises the program's effectiveness. Ecotrust presents ten program features that the Pacific Fishery Management Council should address to improve the design of this catch share program.

June 8, 2010



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by Eric Enno Tamm, with Ed Backus, Megan Mackey, and Astrid Scholz

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## **EXECUTIVE SUMMARY**

The Pacific Fishery Management Council is advancing a catch share program to rationalize the West Coast non-whiting trawl fleet with an implementation deadline of January, 2011. The proposed program would downsize the existing trawl fleet and assign quota shares in the fishery to remaining members with the goals of “increase[ing] economic efficiency within the Pacific coast groundfish trawl fishery and reduc[ing]” bycatch.<sup>1</sup> The program fails to address critical economic, social and ecological objectives, and currently stands to disadvantage crews, small owner-operators, fishing communities and new entrants.

In order to balance the interests of all affected parties, the Council needs to address several weaknesses in the program design. Economic flaws should be addressed through the inclusion of owner-on-board rules and caps on leasing, which would keep quota and lease costs affordable. In addition, an online quota exchange would increase market transparency, while auctions would improve quota market liquidity,

To address social shortcomings, the Council’s proposal should invest in fishing communities by including them in initial allocations and facilitating the ability of communities and new entrants to purchase quota. Captains, crew and small operators should also be protected by being included in initial allocations, and monitoring costs should be revisited to ensure small operators are not unduly burdened.

On the ecological front, the Council should create a system that allows fixed-gear vessels to harvest trawl quota through more equitable intersector allocations and gear-switching rules. Further, policies should be included to protect against the economic and ecological impacts of hoarding overfished species quota, and the spillover of trawl vessels into crab, shrimp and other fisheries.

In this report, Ecotrust lays out ten program features that the Council should address to improve the design of this catch share program so that it meets the economic, social and ecological objectives and requirements of the Magnuson-Stevens Act. Our solution would ensure a fair catch share program that fosters efficient, responsible quota markets while ensuring strict conservation to protect the interests of future generations.

## **Summary of Recommendations**

### **Economic**

- Foster an affordable fishery by limiting quota to active fishermen.
- Regulate quota leasing to prevent unfair profiting from absentee quota ownership, and to prevent perpetual leasing.
- Increase market transparency by creating an online quota exchange.
- Improve market liquidity by auctioning a portion of quota for fixed terms.

### **Social**

- Invest in fishing communities through initial quota allocations and allowing Community Fishing Associations to purchase further quota while protecting against excessive concentration.
- Safeguard crew earnings by providing initial allocations to captains and crew.
- Support new entrants and small operators by establishing owner-on-board rules and providing an initial allocation for new entrants.

### **Ecological**

- Provide incentives for low-impact, low-carbon fishing gear by reconsidering intersector allocations and gear-switching rules to provide a more equitable basis and incentives for fixed-gear vessels to harvest trawl quota.
- Prohibit hoarding and profiteering on overfished species by placing overfished species quota in a public conservation trust that leases the quota to fishermen at prorated fees.
- Prevent inter-fleet spillover by implementing policies to prevent or mitigate negative impacts of spillover of trawl vessels into crab, shrimp, and other fisheries.

## **INTRODUCTION**

The proposal of the Pacific Fishery Management Council to implement a catch share system to downsize the non-whiting trawl fleet is the first introduction of new “limited access privileges” on the West Coast since Congress reauthorized the Magnuson-Stevens Fisheries Conservation and Management Act (MSA) in 2006. It will set a precedent that could shape fisheries in the future.

As it currently stands, the Council’s individual fishing quota (IFQ) proposal misses many opportunities to balance social, economic and ecological objectives. It runs contrary to the “national standards” articulated by Congress in the Magnuson-Stevens Act. The proposal appears to contradict sections of the Act, and ignores others. It takes a hands-off approach to regulating the prospective market for leasing, buying and selling fishing quota. The proposal lacks rules to prevent speculative bidding, to increase market transparency and to safeguard the interests of crews, small owner-operators, fishing communities and new entrants – all of whom may be disadvantaged by the Council’s proposal.

Catch shares are controversial, polarizing public debate and pitting prospective “winners” of quota ownership against “losers.” The stakes are high, especially for those whose livelihoods depend on fishing. That’s especially true because revoking or reforming catch share programs is expensive and difficult to do. Those who are initially allocated quota or subsequently invest in quota typically push for rules to maximize their financial returns and oppose any changes that either reallocate quota or otherwise undermine the value of their investments.<sup>2</sup> For this reason, vested interests often come to dominate decision-making in IFQ programs, while non-vested interests, such as communities, crew and prospective new entrants, are marginalized.<sup>3</sup> Based on the Council’s current proposal, the market value of non-whiting groundfish quota could be as high as \$250 million.<sup>4</sup>

But getting the design right is not just a matter of fairness. A poorly designed catch share program will not only lock in imbalances between social equity and market efficiency that will be expensive to correct afterwards, but also compromise the effectiveness of the program. It is therefore critical that responsible rules, fair allocations and smart market design must be enacted from the very beginning of the catch share program. Poor design can lead to unintended – and negative – consequences for conservation, working fishermen and fishing communities.

In reauthorizing the Magnuson-Stevens Act, Congress was explicit in setting forth requirements and criteria for consideration in the design of catch share programs. Lawmakers went so far as to prescribe requirements for limited access privileges, including fair and equitable initial allocations, provisions for fishing communities, strict monitoring and enforcement, and much more. NOAA also recently presented a draft catch share policy, specifically outlining several elements that need to be carefully designed. “The key to success is a thoughtful program design process,” states the draft policy.<sup>5</sup>

When measured against the Magnuson-Stevens Act, the recommendations of the U.S. Commission on Ocean Policy, NOAA's draft catch share policy and current research on market design, the Council's proposal for trawl IFQs comes up short. The Council, in fact, ignores lessons learned from the shortcomings of existing IFQ programs in Alaska, British Columbia and elsewhere.<sup>6</sup>

Ecotrust has identified ten design flaws in the current IFQ proposal and offers solutions to improve it to meet the economic, social and conservation objectives and requirements of the Magnuson-Stevens Act. Our recommendations reflect the desire to balance the interests of crews, communities and vessel owners in a fair and equitable way, that both harnesses market efficiencies and ensures conservation outcomes to protect the interests of future generations. We recommend initial allocations, ownership rules and other market mechanisms and regulations that will foster a responsible quota market and a "fair catch share" for all.<sup>7</sup> The Council or its Committees considered many of these options to a certain extent, but did not incorporate them into the final proposal. We believe they should be a part of U.S. policy on best practices in the design of any catch share program.

## **BACKGROUND**

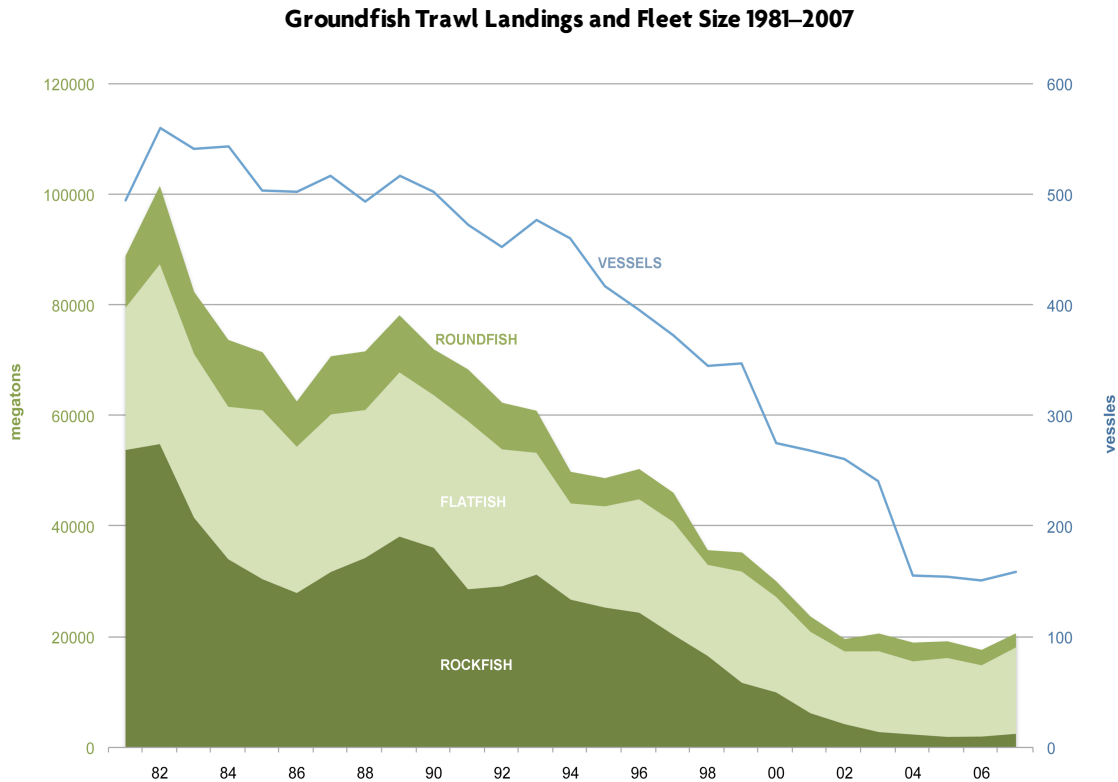
The West Coast groundfish trawl industry is beset by conservation and economic viability challenges that date back to the early 1990s. Some are typical of challenges experienced in fisheries around the world, including overcapitalization in vessels and equipment, ambiguous science and stock assessment, and ineffective management controls. Others are unique to the ecology of this mixed-stock fishery.

The non-whiting trawl fishery spans a coastline stretching 1,300 miles from southern California to Washington. Bottom trawlers catch some 90 species, including rockfish, flatfish, roundfish, sharks, skates and others. A mid-water trawl fishery also targets whiting, by far the largest catch by volume. The abundance, life cycle and commercial value of each species vary widely. In this type of mixed-stock fishery, catch limits are therefore constrained by the conservation requirements of the weakest stock. These are incidentally caught as "bycatch" when fishermen target more abundant or valuable species.

Substantive conservation measures were not introduced into the fishery until the early 1990s. In 1992, the Pacific Fisheries Management Council introduced limited entry into the fishery, which restricted the number of trawl permits. The Council also began to implement effort controls, which led to bimonthly cumulative trip limits for vessels by 1996. Yet these measures proved ineffective. By 1999, three species – bocaccio, lingcod and Pacific Ocean perch – were declared legally "overfished" and the next year the Secretary of Commerce declared the entire trawl fishery a "Federal disaster." Five more rockfish species were subsequently designated overfished. Rebuilding plans were announced for these stocks, which curtailed the catch of more

## FAIR CATCH: Ten ways to improve the catch share proposal for the West Coast trawl fishery

abundant species. In 2002, new Rockfish Conservation Areas also closed some fishing grounds to provide refugia for scarce species. Needless to say, the economics of the fishery deteriorated.



SOURCE: PFMC, Draft Environmental Impact Statement, 2009. Note that roundfish do not include whiting.

In 2003, a buyback of fishing permits downsized the fleet from approximately 260 to 170 trawlers to improve the economic viability of fishermen.<sup>8</sup> The buyback cut 91 vessels, representing 40 percent of the fleet's catch history. Although bimonthly cumulative trip limits prevented fishing mortality from exceeding optimal yields, the regulations did not provide individual accountability for bycatch. The system allowed fishermen to discard species for which they had already reached their cumulative limit. The Council began discussions about an IFQ program to rationalize the fleet further, improve efficiency and provide fishermen with flexibility in their operations.

In November 2008, the Council recommended the introduction of IFQs to further non-whiting trawl rationalization. (See sidebar). The Council is seeking approval of its proposal by the Secretary of Commerce in 2010. Implementation is set for the 2011 fishing season. The Council's "preferred alternative" includes cooperative structures to manage the whiting fishery and IFQs for the non-whiting groundfish fishery.

## ECONOMIC RECOMMENDATIONS

The Council's IFQ proposal will change the economics of the groundfish trawl fishery. Improving the "net economic benefits" and "individual economic stability" of the trawlers is its primary goal.<sup>9</sup> Fleet consolidation will boost the landings of the vessels remaining in the fishery and improve the remaining fishermen's economies of scale. Yet the changes are more fundamental and complex than the Council describes in its Draft Environmental Impact Statement (DEIS). The proposal is set to reshape capitalization and operating costs in the industry, create a new market for intangible capital assets (quota shares), and institutionalize competitive advantages for fishermen gifted initial allocations. Collectively these changes might render the program less effective than the Council anticipates, and raise issues regarding the economics of the catch share program.

### 1. Foster an affordable fishery

The Council should limit eligibility for quota ownership to active fishermen, thereby moderating the market value of quota and ensuring quota purchasing and leasing remains affordable for new entrants, fishing communities and small operators. An owner-on-board rule is one option. However, the requirement would be temporarily suspended in extenuating circumstances such as injury, illness or the sudden death of a fisherman. A sunset clause would require non-fishing interests that receive initial allocations to sell their quota or become active fishermen within a set time period.

#### Trawl Rationalization and IFQs

Also known as Amendment 20 and 21 of the Groundfish Fishery Management Plan, the proposal to rationalize the West Coast trawl fleet through IFQs consists of the following key elements:

- **Intersector allocations:** Approximately 90 percent of all groundfish will be allocated to limited-entry trawl permit holders. The rest will be divided among tribal fisheries, fixed-gear commercial fishermen and the recreational sector.
- **Initial allocations:** Ninety percent of the groundfish trawl quota will be allocated to limited-entry permit holders. Catch shares will be based on a formula combining historical catches and the equal redistribution of the catch history of permits retired in the buyback program.
- **Overfished species.** For "overfished" species, 80 percent of the total allowable catch will be allocated to permit holders based on their need to cover incidental catch under current fishing practices. Fleet average bycatch rates for targeted species will determine these allocations.
- **Adaptive Management:** Ten percent of groundfish quota pounds will be set aside for communities, processors, unintended consequences, new entrants and conservation.
- **Eligibility:** Any American citizen eligible to own a fishing vessel permit can buy, hold, lease or sell quota shares.
- **Transferability:** Vessel and control limits restrict the amount of quota that can be accumulated on a single vessel or by a single entity. There are no owner-on-board rules or other restrictions.
- **Monitoring:** At-sea observers, augmented by video cameras, will be required on all vessels and dockside monitoring for all off-loading.
- **Review:** The IFQ program will be reviewed within five years. The program could be terminated, quota shares revoked or other modifications made.

## **Analysis**

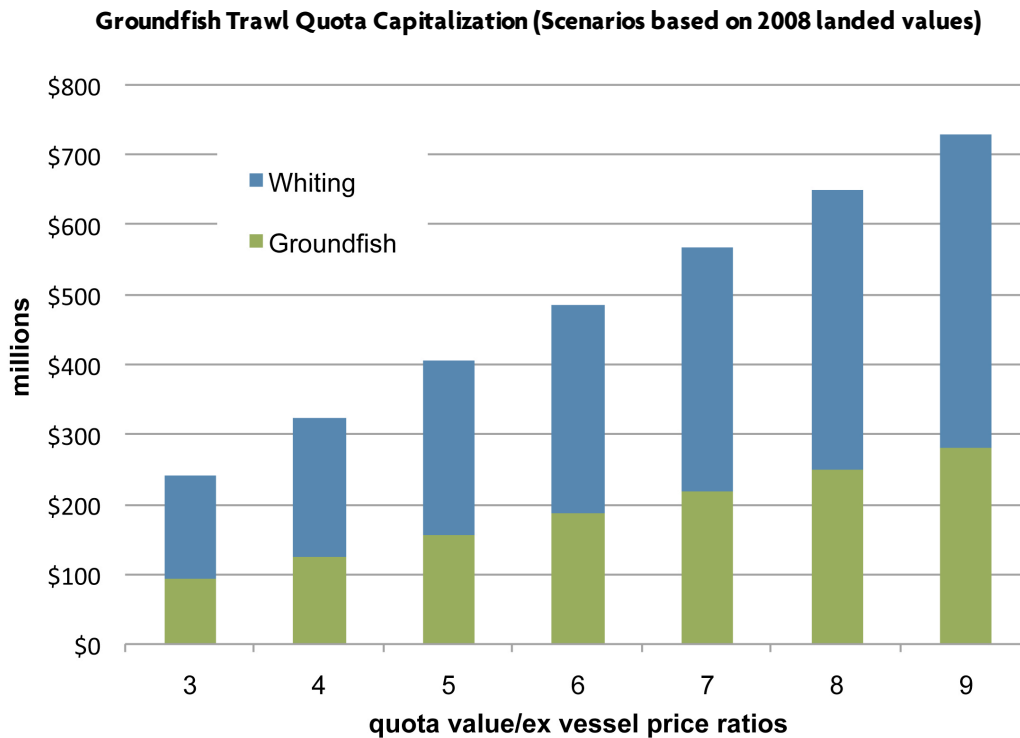
The most immediate impact of the IFQ program will be the downsizing of the fishing fleet, as fishermen buy out each others' quotas and thereby consolidate the fleet.<sup>10</sup> The active trawl fleet of about 120 vessels is expected to decrease by 50 to 66 percent, leaving 40 to 60 vessels remaining. The Council's analysis shows that the downsized fleet could increase its profits by \$14 to \$23 million through consolidation.<sup>11</sup>

However, increased access to more catch per vessel will come at a cost. By gifting initial allocations to vessel owners, the Council is effectively converting a public trust resource into a private capital asset, what one report on IFQs called "private economic gains at public expense."<sup>12</sup> Remaining vessels will need to purchase or lease groundfish quota from fishermen who exit the fishery. The Council's financial model does not take into account lease costs or the capital costs of purchasing additional quota shares. This cost can be high and distort the functioning of the quota market.

The B.C. groundfish trawl IFQ fishery – the model for the Council's rationalization plan – is a case in point. The value of the approximately 75 active trawlers is less than \$45 million (CDN). In contrast, the market value of groundfish trawl quota in B.C. was estimated at \$263 million (CDN) in 2008.<sup>13</sup> Total capitalization in tangible and intangible assets has increased because of IFQs.

As a result of the Council's IFQ proposal, capitalization in intangible assets (quota shares) is estimated to rise by fivefold to eightfold above current levels. One way to estimate prospective quota market values is to look at the ratio of the quota value to ex vessel price in a given year. In the B.C. groundfish trawl industry the ratio has ranged from 4:1 to 9:1. The ratio of halibut IFQs has ranged from 6:1 to 8:1 in B.C. and is currently at 5:1 in Alaska. Based on low (4:1) and high (8:1) ratio estimates, U.S. non-whiting groundfish trawl quota could be worth somewhere between \$125 and \$250 million. Under the Council's preferred alternative, ninety percent of this will be transferred from the public trust to individuals as a private capital asset.

## FAIR CATCH: Ten ways to improve the catch share proposal for the West Coast trawl fishery



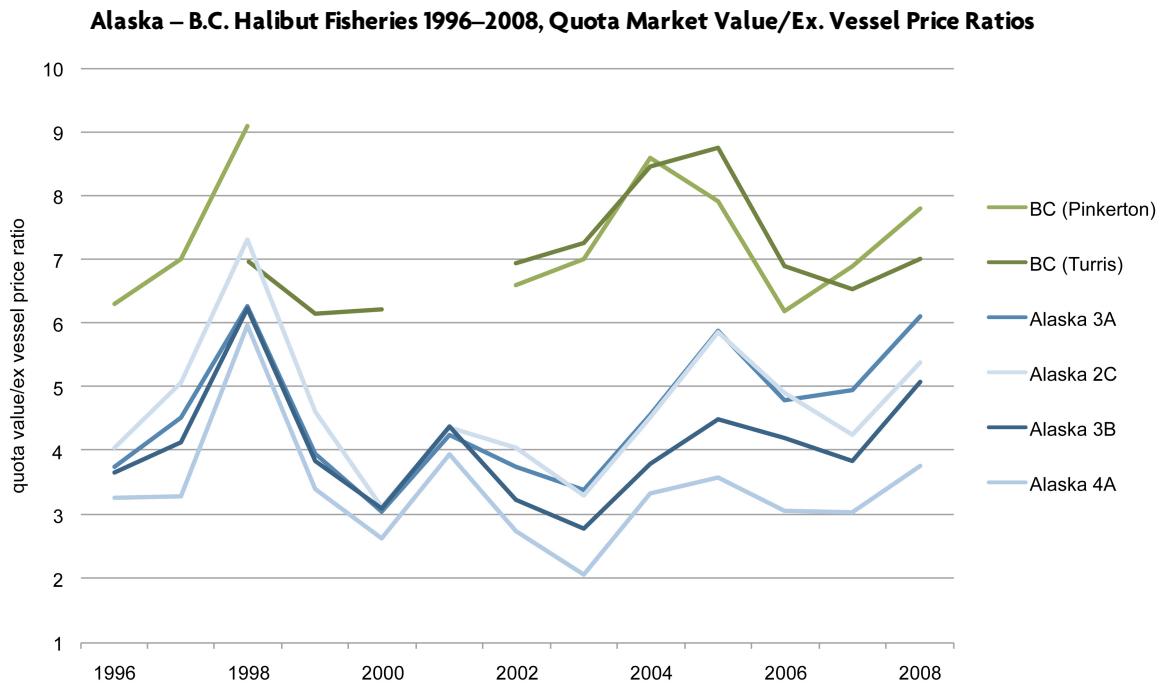
*SOURCE: PFMC, Draft Environmental Impact Statement, 2009*

Under the Council's program design, market prices for quota are likely to be bid to high levels for two reasons. First, gifting allocation will provide those that are initial recipients of quota shares with a financial advantage. Initial allocations will increase their wealth and thereby increase their willingness to pay for additional quota, driving up quota demand and prices. Initial recipients will be able to generate earnings from their "gifted" quota and therefore can afford to make only small margins on subsequent purchases of quota.<sup>14</sup> In other words, they can use their "gifted" quota to leverage the purchase of more quota. This will drive up market prices.

Second, the Council has placed virtually no restrictions on who can own quota<sup>15</sup> and modest caps on quota ownership for vessels and corporate entities. There are no owner-on-board rules or other restrictions limiting ownership to active fishermen. Such rules would lower demand and moderate market prices for quota shares. Processors and non-fishing investors, including speculators, will be able to bid on quota and drive up market prices. This is especially true since processors typically have more collateral and capital than fishermen. By way of example, owner-on-board rules in the Alaskan halibut fishery have lowered quota value/ex vessel price ratios compared to the B.C. halibut fishery which has no such restrictions. Since 1996, the average ratio is about 7:1 in B.C. compared to 4:1 in Alaska.



## FAIR CATCH: Ten ways to improve the catch share proposal for the West Coast trawl fishery



*SOURCE: NMFS Statistics for Alaska halibut quotas in Areas 2C, 3A, 3B and 4A; Fisheries and Oceans Canada does not collect data on quota market values as systematically as Alaska. The B.C. halibut data is from two sources: Pinkerton and Edwards (2009), and Turris (2009).*

## 2. Regulate quota leasing

As part of a catch share proposal, an owner-on-board rule would help keep quota values – and in turn lease costs – affordable. However, recognizing that active fishermen would need to lease some quota among themselves to facilitate fishing flexibility and to meet bycatch needs, caps could be placed on the percentage of quota that a fisherman could lease or the percentage of leased quota that could be fished on a given vessel. The exact cap – either on the owner or leaser or both – would need to be designed to meet the need for fishing flexibility while restricting fishermen from unfairly profiting from absentee quota ownership.

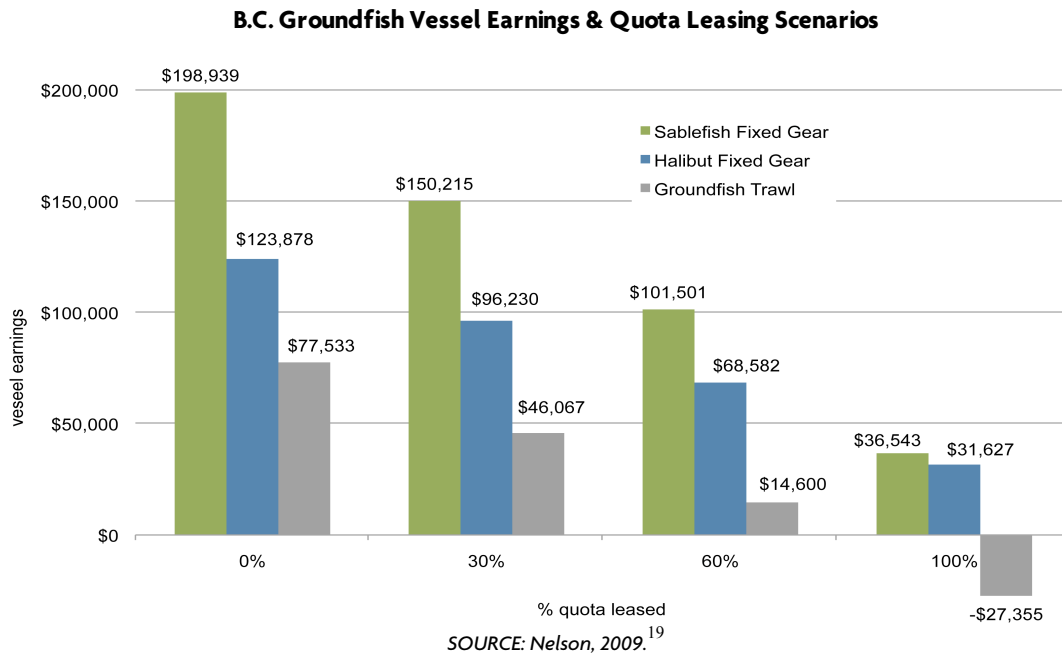
### Analysis

Based on the Council's estimates, 50 to 60 percent of quota shares will need to be purchased or leased from retiring vessels by the remaining, downsized fleet. The high cost of quota shares will force many fishermen to take out loans to finance their purchase or to lease quota pounds each season. Assuming lease rates of 60 to 70 percent of ex- vessel prices (based on experience in other catch share fisheries) and assuming 50 to 60 percent of a fisherman's quota will be leased, total lease fees and financing could consume as much as 30 to 42 percent of total gross revenues in the

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trawl fishery. If a vessel is leasing all of its quota, this cost could be as high as 70 percent of a vessel's gross revenue. This will be money diverted away from working fishermen to banks, finance companies or absentee owners of quota shares.

The Council largely ignores the cost of leasing quota, although research shows this cost is considerable. A study of the Alaskan King crab IFQ program found lease rates equivalent to 50 to 70 percent of ex vessel prices.<sup>16</sup> In British Columbia, lease fees in the fixed-gear groundfish fisheries are as high as 60 to 80 percent of ex vessel prices. Measured another way, a B.C. study in 2009 found that lease fees in the halibut and sablefish IFQ fisheries were the single largest fishing cost, ranging from 44 to 63 percent of total expenses (not including crew shares).<sup>17</sup> A similar study of B.C. groundfish trawlers found that when 40 percent of quota is leased, the associated lease fees range from 28 to 45 percent of total fishing expenses.<sup>18</sup>



Studies have shown that lease fees can decrease the earnings of fishing vessels.<sup>20</sup> An analysis of the 2007 financial performance of the B.C. halibut and sablefish fisheries shows that when 60 percent of quota is leased on a vessel, earnings can decline by 42 percent and 48 percent, respectively.<sup>21</sup> This same analysis uncovered a dilemma in the halibut fishery: “it is difficult to earn the same returns through fishing as it is through leasing.”<sup>22</sup> The study found that an individual leasing 90,000 pounds of halibut quota would receive \$270,000 (CDN) in lease payments, more than the \$239,000 (CDN) in fishing earnings.<sup>23</sup>

### **3. Increase market transparency**

As shares in public companies are traded on government-regulated exchanges, so too should fishing quota shares of a public resource be traded on an official exchange. In fact, as originally enacted in 1996, the Magnuson-Stevens Act (Section 305h) mandates the creation of “an exclusive central registry system.” In its draft catch share policy, NOAA too calls a central registry “an extremely useful service to provide to fishermen interested in buying, selling, leasing or collateralizing catch shares.”<sup>24</sup> The establishment of an online Groundfish Quota Exchange (GQX) would increase market transparency, facilitate trading and create more perfect information between all buyers and sellers. The GQX could also be used to levy resource royalties on quota, collect management fees and facilitate auctions of fixed-term quota allocations. It could also collect mandatory socio-economic and other data needed for the performance evaluation of the program, monitor vessel and control limits on ownership, and register financial liens on quota.

#### **Analysis**

The Council’s proposal provides no provision for facilitating the buying, selling and leasing of quota shares or quota pounds. Without a central quota exchange or registry, it could be time consuming and expensive for fishermen to find out who owns the various species- and area-specific quotas. This can lead to imperfect information in the marketplace and inefficiencies. Private brokerages and processors are likely to step in as the go-betweens in the market – at a cost to both fishermen and the public.

Processors have an inherent competitive advantage in the quota marketplace since they have connections to many fishermen and detailed information on fishermen’s landings. They are product aggregators and information hubs in the supply chain. In the B.C. groundfish fishery, by way of example, some fish processors have hired “quota managers” whose job is to broker quota for fishermen.

A recent California Institute of Technology study on IFQ market design suggests a central registry could also act as an online quota exchange. “At such a website,” states the study, “fishermen could easily see current bids and offers as well as historical information on prices and quantities of previous trades. They could also easily make bids or offers and complete profitable trades.”<sup>25</sup> This would improve market transparency, creating a level playing field about information on quota prices and supply for all market participants.

#### **4. Improve market liquidity**

Besides creating an online quota exchange, the Council should auction a portion of the quota for fixed terms.<sup>26</sup> This would improve the liquidity of the quota market, ensuring full efficiency gains from the IFQ program. Auctions would also foster efficient price discovery and transparency. In determining the portion to be auctioned, the Council will need to weigh the need for secure allocations for fishermen against the need for liquidity in the marketplace. Revenues generated from auctions could be provided to the public as resource royalties. Auctions could also be used to generate revenue from crew and community allocations, or to distribute overfished species.

#### **Analysis**

The Council is sending mixed signals to the market regarding the duration of the initial allocations of quota. On the one hand, the Council rejected auctioning fixed-term allocations for distributing quota; on the other, the Council states that upon the five-year review quota shares could be revoked, terminated or modified. “Holders of quota shares should remain cognizant of this fact when making decisions regarding their quota shares, including buying, selling, and leasing of these shares,” states the Council’s Draft Environmental Impact Statement.<sup>27</sup> However, the Council points out that the MSA stipulates that before the end of the mandatory ten-year period catch shares “will be renewed” unless a fisherman is found in violation of the program or the program itself is modified. That, according to the Council, effectively makes catch shares “more like an unlimited or indefinite term.”<sup>28</sup> The Council appears to be saying that while the law limits initial allocations to a fixed ten-year term, they are, in fact, in perpetuity. This confusion could reduce market liquidity by creating uncertainty about the value and duration of quota shares and thereby hamper buying and selling.

The small size and geographically dispersed nature of the quota market will also create inefficiencies. Ownership will be consolidated onto 40 to 60 vessels, and perhaps even fewer controlling entities that are located in fishing towns along 1,300 miles of coastline. The number of quota transactions may not be sufficient to create an efficient market. According to the California Institute of Technology IFQ study, “Search costs interfere with the finding process and asymmetric information interferes with the negotiation process. Together, these frictions will prevent fishermen from taking advantage of much of the potential gains from trade.”<sup>29</sup> Even with a central quota exchange that improves market transparency, there may not be enough liquidity – that is quota buying and selling transactions – to create an efficient market. “Without both transparency and liquidity, trading will be incomplete,” states the study.<sup>30</sup>

## **SOCIAL RECOMMENDATIONS**

Congress was quite clear in the Magnuson-Stevens Act regarding the need to balance economic and social objectives. In developing limited access privileges, the MSA called for ensuring “fair and equitable allocations” and policies to “promote the sustained participation of small owner-operator fishing vessels and fishing communities, prevent excessive consolidation, and assist new entrants, small operators, captains, crews and fishing communities through set-asides of harvesting allocations.” The MSA even describes eligibility and criteria for initial allocations to fishing communities and regional fishing associations. Despite these legislated provisions, the Council’s proposal provides a meager ten-percent set-aside for “adaptive management” to respond to community and processor stability, conservation, unintended consequences and new entrants.

### **5. Invest in fishing communities**

Because of their financial value, initial allocations are a form of investment. Through eligibility rules and allocation formulas, the Council selects individuals and corporate entities to invest in and thereby transfers resource wealth from the public trust to private capital assets. The Council should consider investing in fishing communities, as defined by the Magnuson-Stevens Act. The Council should reconsider its initial allocation policy in light of the adverse community impacts of IFQs and the need for long-term community investment and stability as envisioned in the MSA and NOAA’s draft catch share policy.

Besides an initial allocation to fishing communities, the Council should establish specific rules that would allow Community Fishing Associations, as defined in the MSA, to purchase further quota, while protecting against excessive quota concentration. Rules could restrict quota purchases to within a specific geographic range of a given community. Furthermore, the Council could require that fishing communities auction their quota to local fishermen through fixed-term allocations, thereby improving the transparency and liquidity of the quota market, and ensuring that all fishermen have an equal opportunity to access their local community quota. A portion of the community quota could also be earmarked for new entrants.

### **Analysis**

The Council’s catch share proposal will result in fleet consolidation and changing fishing patterns. The impact on each community will vary and depend on their economic dependence on groundfish and the overall resilience of the local community economy. Council staff conducted an analysis showing that Neah Bay, Washington, (a Makah Indian reservation) is likely to be the most disadvantaged fishing community and Astoria, Oregon; Coos Bay, Oregon; and Eureka, California, the most advantaged. The analysis also showed that Neah Bay and Moss Landing, California, were the most vulnerable to these impacts. Despite this analysis, the Council has

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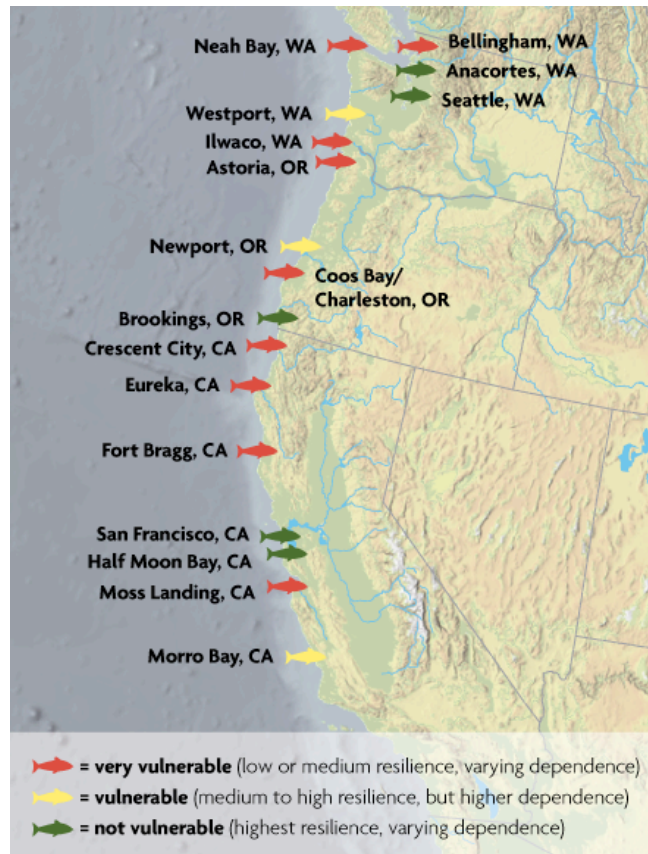
provided only the ten-percent “adaptive management” set-aside to mitigate adverse impacts and has excluded fishing communities from initial allocations.

In a study on IFQs and community protection, the U.S. General Accounting Office found that “the easiest and most direct way to help protect communities under an IFQ program is to allow the communities themselves to hold quota.”<sup>31</sup> In its draft catch share policy, NOAA has also committed to support “the creation of fishing community trusts or permit banks to help retain access to fisheries resources by fishermen in local communities.”<sup>32</sup>

By way of example, in 1993 six Community Development Quota entities were provided initial allocations of groundfish and subsequently halibut and crab quota in Western Alaska. By 2008, these six entities were generating \$190 million in annual revenue and had acquired net assets worth \$427.6 million.<sup>33</sup> In contrast, Community Quota Entities (CQE), established by the state of Alaska in 2004, must purchase or lease quota. As a result, they have struggled to acquire quota due to the financial risks and high costs. As of 2010, only one CQE on Kodiak Island has acquired 30,000 pounds of halibut quota.

Despite the MSA provisions, NOAA’s draft policy and its own socio-economic analysis, the Council has provided no comprehensive mitigation strategy or initial allocations for fishing communities. Nor has the Council provided a sufficient rationale for how a ten-percent “adaptive management” set-aside will meet the needs of multiple social and ecological objectives. In reality, purchasing quota without significant financial assistance may prove unfeasible for communities since they won’t enjoy the financial advantages of being gifted an initial allocation.

### **Impacts on Individual Communities**



*SOURCE :adapted from Pacific Groundfish FMP Amendment 20 Draft Environment Impact Statement, Ch. 4, "Impacts on Individual Communities", pp. 537 - 550*

## **6. Safeguard crew earnings**

The Council should provide an initial allocation to captains and crewmembers, which would provide compensation to those who will lose their jobs from fleet consolidation and protect crew earnings for those remaining in the fishery. The Council should consult with stakeholders regarding the level of allocation, which would need to balance the interests of crewmen, vessel owners (permit holders) and fishing communities. Because of owner-on-board rules, crewmen who initially lose their jobs due to rationalization would need to sell their quota or find active fishing jobs within a period established by a sunset clause. The allocation among crewmen should be determined through a consultation process with captains and crewmembers themselves. Initial allocations could be given to individual crewmen, held in trust by a crew association that could generate revenues through fixed-term auctions or a combination of both. A crew association could also fund pension and medical plans, life insurance, training and professionalization for its members.

## **Analysis**

Captains and crews are likely to face the most negative impact from the Council's proposal for two reasons: first, half are expected to lose their jobs without compensation as a result of fleet downsizing, and second those who remain in the fishery could face reduction in crew shares as a result of rising lease and financing costs of quota. Deteriorating economic conditions for crew over time could, in turn, affect safety,

In its IFQ proposal, the Council plans to allocate 90 percent of quota to trawl permit holders. In its assessment, the Council cites technical challenges in establishing crew participation and adverse financial impacts on "fixed capital assets" (vessels) as reasons why initial allocations were not made to captains and crew. However, in the MSA, Congress also lists "employment in the harvesting" and "dependence upon" the fishery as criteria for initial allocations.<sup>34</sup>

The Council's logic for excluding crews needs to be reexamined for a variety of reasons.<sup>35</sup> First, up to 40 percent of a vessel's gross revenues go to captains and crew,<sup>36</sup> who could claim that this portion of the catch represents their "fair and equitable" allocation since it has been historically used to pay their earnings. Second, technical challenges in determining crew participation cannot be used as an excuse to exclude this group. Crews could receive equal quota shares or their quota could be held in trust by a crew association that could auction the quota as fixed-term allocations. Revenues could then be distributed to captains and crews prorated on their groundfish earnings for that season. In any event, how to distribute quota should be an issue settled fairly among captains and crew themselves. And third, at least half the crewmen will lose their jobs due to consolidation. An initial allocation would provide these individuals with some compensation for their years in the fishery.

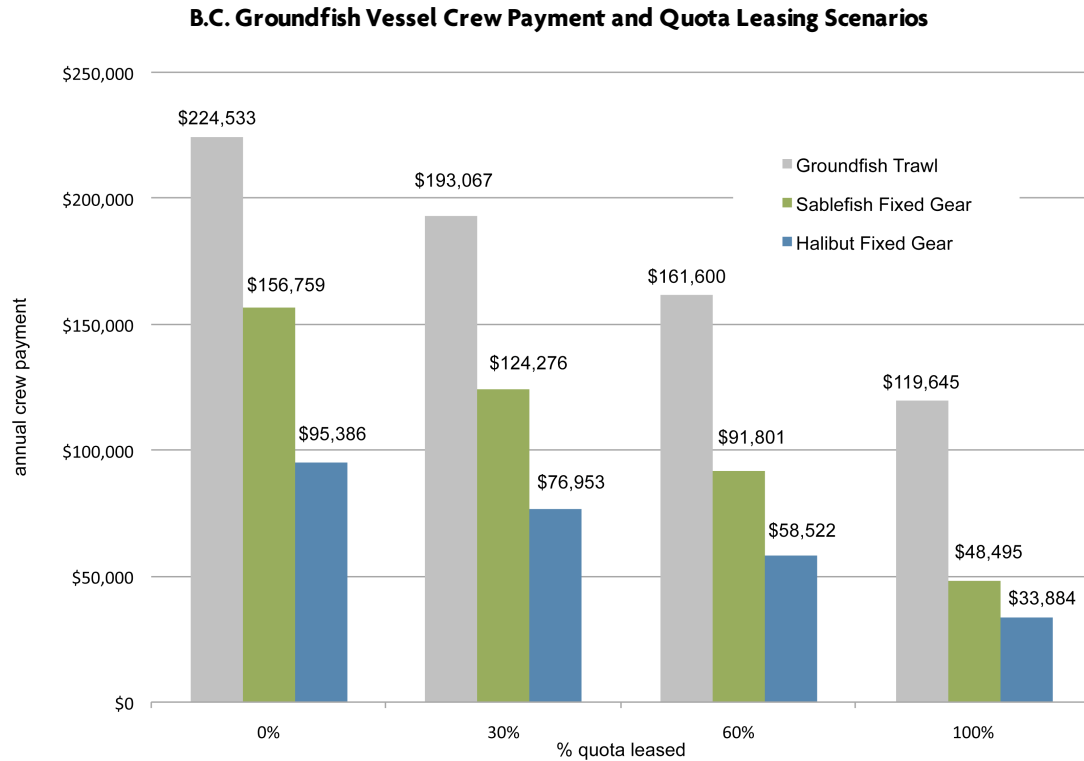
For those who remain in the fishery, there's growing evidence that quota leasing and financing quota purchases drain revenue from working fishermen. One study of scenarios in the B.C. trawl IFQ fishery shows that when 100 percent of quota is leased on a vessel, crew shares can decline by almost fifty percent.<sup>37</sup> The Groundfish Development Authority, which enforces a code of conduct to protect trawler crews in B.C., reported in 2006 that "crew members' take-home pay continues to diminish; sometimes they come back from a trip with deliveries of 80,000 lbs of high-value groundfish only to find that they are actually 'in the hole' after all expenses are deducted."<sup>38</sup> A 2007 financial profile of the B.C. halibut fishery also shows that as quota leasing rises to 60 percent of a vessel's catch, total crew shares decline by 39 percent.<sup>39</sup>

An analysis of the Bristol Bay Red King Crab fishery also estimated that rationalization through IFQs cut total payments to captain and crew by 38 to 50 percent. While earnings per crewmember increased because of rationalization, in reality, this smaller number of crew worked the same number of total days and lifted



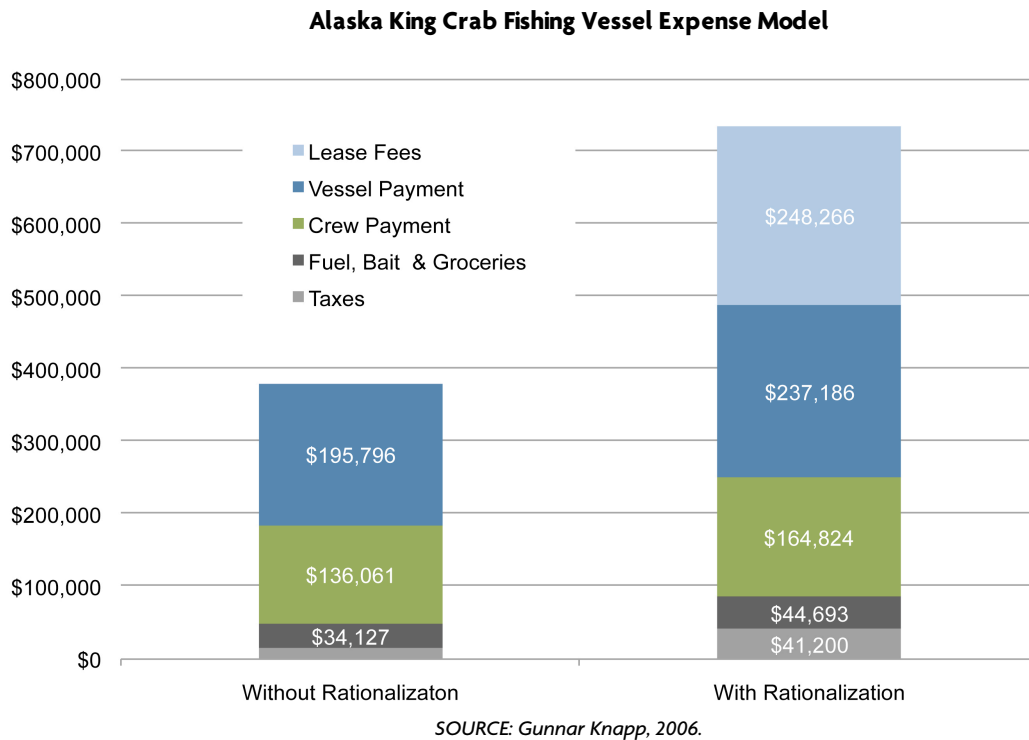
## FAIR CATCH: Ten ways to improve the catch share proposal for the West Coast trawl fishery

the same number of pots as did the much larger labor force before rationalization. Indeed, the study's financial model shows that crew earnings per day at sea declined by 13 percent because of quota leasing costs.<sup>40</sup> In short, crewmen did significantly more work, but for less pay.



SOURCE: All figures in Canadian dollars. Nelson, 2009.<sup>41</sup>

## FAIR CATCH: Ten ways to improve the catch share proposal for the West Coast trawl fishery



Although catch shares can end the “race to fish” and immediately improve safety, deteriorating economic conditions for crews as a result of IFQs can have a gradual and negative effect on safety. In the B.C. IFQ trawl fishery, declining crew shares have caused vessels to go out to sea with fewer crewmen. According to the B.C. Groundfish Development Authority, “This is a major safety concern that crew members believe is a contributing factor in the loss of several vessels in the past few years.” Another trawl industry study confirmed this practice.”<sup>42</sup> The statistics speak for themselves: From 2003 to 2008, seven trawl fishermen have been killed in B.C., double the annual fatality rate compared to the 18-year average. Lost days due to injury on trawl vessels skyrocketed by 76 percent in the same period and the number of fatality and disability claims jumped 48 percent. Anecdotal and statistical evidence suggest that the economics of IFQs have gradually created safety problems of their own.



*SOURCE: Work Safe BC, 2009, and Fish Safe BC, 2009.*

## 7. Support new entrants and small operators

Besides establishing owner-on-board rules to contain quota costs, the Council should provide an initial allocation for new entrants. This set-aside could be folded into the initial allocation for fishing communities and earmarked for new entrants. The Council should also revisit how on-board and dockside monitoring is financed to reduce the burden on small operators.

### Analysis

According to the U.S. General Accounting Office's report on IFQs, consolidation tends to reduce quota availability and increase market prices. "As a result," the report states, "it is harder for new fishermen to enter the fishery, especially fishermen of limited means, such as owners of smaller boats or young fishermen who are just beginning their fishing careers."<sup>43</sup> To support these disadvantaged stakeholders, the GAO recommends allocation set-asides for new entrants and quota transfer rules that constrain demand, thereby making it more affordable to buy quota. The Council, however, has chosen not to implement any of these proactive measures.

Financial analysis of IFQs in the B.C. groundfish trawl, halibut and sablefish fisheries shows that earnings are not sufficient to support the purchase and financing of 100 percent of the quota fished.<sup>44</sup> In other words, it is not financially viable to enter these

fisheries without access to initial allocations, outside capital or special loans. The value of halibut quota, the study states, is “justified more by incremental returns for existing participants than by expected returns for new entrants.” Another study also finds that “fishermen entering the LAPP [limited access privilege program] after the initial quota allocation will realize zero economic profit because of the cost of purchasing quota.”<sup>45</sup>

Although strict on-board monitoring is a welcomed change in the Council’s proposal, the formula for paying for monitoring costs will disadvantage new entrants and small operators. Each vessel will pay the same daily costs for an onboard observer and dockside monitoring, no matter how much fish the vessel catches. This will encourage consolidation onto more efficient vessels and provide an additional barrier to new entrants who may only be able to afford a small fishing operation, both in terms of vessel size and allocation.

## **ECOLOGICAL RECOMMENDATIONS**

Economic efficiency – and not conservation – is the primary goal of the Council’s IFQ rationalization proposal. The Council lists three overriding economic objectives and states that its IFQ proposal merely “*considers* environmental impacts” (emphasis added). Yet Congress is clear in the Magnuson-Stevens Act that conservation must primarily guide management plans.<sup>46</sup> In the Council’s catch share proposal, the only clear conservation measures are mandatory onboard observers and dockside monitoring for all groundfish catches. This is intended to ensure compliance with rules and collection of accurate and timely data on catches and discards. It should be noted that these measures could be implemented irrespective of IFQs. This positive measure, however, is overshadowed by several ecological shortcomings.

### **8. Provide incentives for low-impact, low-carbon fishing gear**

The Council should revisit its intersector allocations and gear-switching rules to provide a more equitable basis and incentives for fixed-gear vessels to harvest trawl quota.

#### **Analysis**

Bottom trawling is well established as the most destructive and least selective fishing technology in use today. Several scientific studies have confirmed this fact.<sup>47</sup> However, the Council, through Amendment 21 on intersector allocation, has decided to allocate some 90 percent of all groundfish to the bottom trawl sector. For some species, the percentage is as high as 95 percent. According to the Council, this sharing arrangement reflects the “understanding that trawl gear is the only gear that can viably harvest much of the groundfish.”<sup>48</sup>

However, that is not the case for several species in question, including lingcod, thornyhead rockfish and sablefish that are viably harvested by fixed gear, including longlines and pots. The Council did not assess the ecological and economic impacts to the fixed-gear sector of this initial allocation to the trawl sector. Nor did it assess the carbon footprint of trawlers versus smaller fixed-gear vessels. Moreover, it put in place gear switching rules that advantage trawlers over fixed-gear vessels. Under the Council's proposal, trawlers can switch to fixed gear and thereby compete with this other harvesting sector. In fact, this measure, according to the Council, "could depress the price of fixed-gear-caught sablefish slightly if IFQ holders are more efficient producers."<sup>49</sup>

By contrast, fixed-gear vessels cannot buy or lease trawl quota without purchasing a limited-entry trawl permit. The rules clearly advantage trawlers over fixed-gear fishermen. If anything, the Council's intersector allocation and gear-switching rules should provide advantages and incentives to fixed-gear vessels to purchase trawl quota. The result would be less habitat damage, more jobs and higher landed value for many species.

## **9. Prohibit hoarding and profiteering on overfished species**

The Council should put in place initial allocation policies and other rules that would penalize fishermen who catch overfished species, but protect against hoarding of and profiteering on this scarce quota. Instead of a cap-and-trade system that lets individuals profit from the initial allocation of overfished species, the Council should place overfished species quota in a public conservation trust that leases the quota to fishermen each season at prorated fees: the more overfished species that a fisherman catches the higher the incremental lease fee. In this way, the Council would maintain a market incentive to avoid overfished species, but protect against profiteering on the scarcity of this quota. A fixed price for overfished species would also create certainty for fishermen.

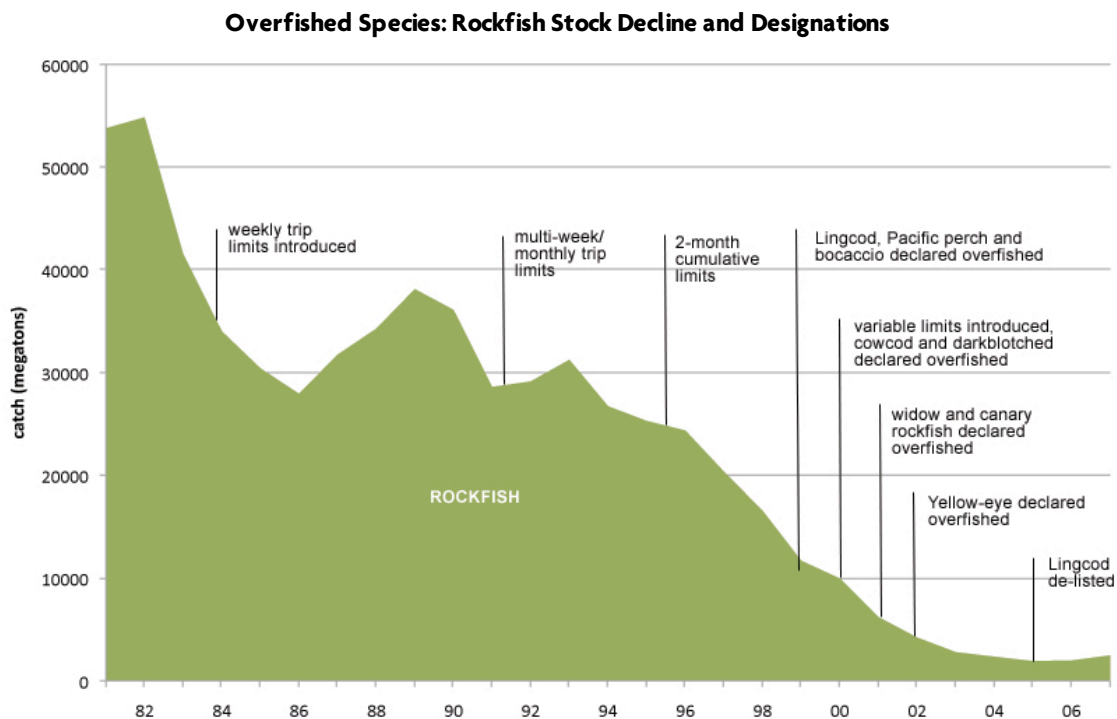
Another alternative would be for the Council to provide fishermen with the opportunity to lease a portion of their overfished species at prorated lease rates and then to auction off the rest each season. The auctions could be used to determine the price of the fixed rates for the coming fishing season. Furthermore, the Council could require that fishermen relinquish earnings on overfished species, thereby completely removing any economic incentive to catch these weak stocks. Revenue from the lease fees and relinquished earnings could be distributed equitably back to fishermen, provided as royalties to the public or used for conservation initiatives. The Groundfish Quota Exchange would be tasked with leasing and/or auctioning overfished quota. This would be similar to the "cap and dividend" system currently being discussed by Congress for the carbon market.

## Analysis

The Council states that by creating individual accountability and market incentives fishermen will reduce their bycatch of overfished species. Technically, this is correct. “Since overfished species are marketable [under the IFQ proposal], they could be retained, reducing bycatch,” states the Council’s Draft Environmental Impact Statement.<sup>50</sup> However, because overfished species are so scarce, “harvest limits will, for the most part, be fully utilized.”<sup>51</sup> In other words, the catch of overfished species will remain the same, providing no conservation benefits. The only change is that they cease to be bycatch and become marketable.

Overfished species, including bocaccio, Pacific Ocean perch, darkblotched rockfish, widow rockfish, canary rockfish, cowcod, and yelloweye rockfish, will play a critical role in the IFQ fishery. These scarce quotas will constrain the catch of more abundant fish stocks. “The cost of this quota is likely to be expensive,” the Council states, “since these species restrict access to other, targeted species.”<sup>52</sup> Fishermen who unluckily land a “disaster tow” of overfished species could find themselves facing exorbitant prices for overfished species quota to cover their incidental catch.

The Council hasn’t properly considered market distortions that may occur in the leasing and sale of quota for overfished species. Control limits on accumulation, ranging from four to 17.7 percent for overfished species, may not be strict enough to prevent quota hoarding and profiteering from fishermen needing to cover “disaster tows.”



SOURCE: PPMC, Draft Environmental Impact Statement, 2009.

## **10. Prevent inter-fleet spillover**

The Council should implement policies that will prevent, or at least significantly mitigate, the negative effects of the spillover of trawl vessels into the Dungeness crab, pink shrimp and other fisheries. The Council should engage other fishing sectors and levels of government to solve this dislocation of effort, including the implementation of a policy to retire or buyback latent permits in state fisheries.

### **Analysis**

The Council's IFQ proposal will likely downsize the active non-whiting trawl fleet by 40 to 60 vessels. That represents a significant amount of stranded capital, and owners will likely try to sell these excess vessels to fishermen in other fisheries or re-activate the vessels by purchasing permits in other federal or state fisheries. There is risk that former groundfish trawlers may spillover into the pink shrimp and Dungeness crab fisheries in Oregon, Washington and California because of the large numbers of latent permits in these fisheries. Fishermen in these fisheries have already expressed concern about the economic and ecological effects of this spillover of fishing effort.

As part of the 2003 buyback of groundfish trawl permits, the Council specifically designed the buyback "to minimize spillover effects in the Coastal Dungeness crab and pink shrimp fisheries."<sup>53</sup> Realizing that many trawlers were also permitted for state crab and shrimp fisheries, the Council permanently retired all licenses on vessels, and permanently excluded the vessels from participating in other fisheries. This measure effectively prevented any spillover. In the end, the buyback retired 91 vessels, including 91 trawl and 121 crab and shrimp permits.<sup>54</sup>

In the current trawl IFQ proposal, the Council has not included any safeguards to prevent spillover into the crab and shrimp fisheries through the purchase of latent permits. Indeed, the Council dismisses the issue. "Since the limited entry systems for these other fisheries are state managed," writes the Council, "it was thought best that the latent permit issue be addressed outside the Council process."<sup>55</sup> This position contradicts the Council's earlier position regarding the buyback. Furthermore, the Council states that its proposal may cause spillover,<sup>56</sup> but has sidestepped any responsibility for mitigating this negative impact on the conservation or economics of other fisheries.

## **SETTING A PRECEDENT**

When creating a catch share program, design matters. In order to avoid expensive corrections to problems illuminated by hindsight, it is critical that economic, social and ecological objectives be considered in full and addressed from the beginning. The Pacific Fishery Management Council's IFQ proposal fails to fully address these objectives.

Catch shares are one instrument within the suite of tools available to fisheries managers, and they are employed in fisheries worldwide as a means of promoting economic efficiency. However, the Magnuson-Stevens Act also requires inclusion of social and ecological considerations. In order to adequately meet economic, social and ecological sustainability requirements, the Council's proposal must be reconsidered.

At present, the Council needs to take a step back and address several shortcomings in the program's design. These fixes would improve market efficiency, strengthen conservation and ensure fair catch shares for the men and women, and communities that depend on the commercial groundfish fishery for their livelihood. The Council will be setting a precedent for fisheries of the future, and in so doing shouldn't repeat the mistakes of the past.



## ENDNOTES

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- <sup>1</sup> Pacific Groundfish FMP Amendment 20 Draft Environment Impact Statement, Executive Summary, p. v.
- <sup>2</sup> National Research Council. *Sharing the Fish: Toward a National Policy on Individual Fishing Quotas*. Washington, D.C.: National Academy Press, 1999, p. 198.
- <sup>3</sup> Initial allocations provide recipients with collateral to obtain loans to purchase more quota, “resulting in significant shifts in the power of quota holders versus others in the fishery and changes in the composition of stakeholders involved in managing the fishery.” See National Research Council. *Sharing the Fish: Toward a National Policy on Individual Fishing Quotas*. Washington, D.C.: National Academy of Sciences, 1999, pp. 201–202.
- <sup>4</sup> The ratio of the quota market value to annual landed value varies from fishery to fishery, and from year to year. Alaskan halibut ratios have fluctuated from three to eight. In B.C., ratios in groundfish fisheries range from six to nine. The 2008 landed value of non-whiting groundfish was \$31.5 million. A ratio of eight would put quota market values above \$250 million. See ex-vessel landed values in the Council’s Draft Environmental Impact Statement (DEIS), p. 112.
- <sup>5</sup> NOAA. Catch Share Draft Policy, p. 5.
- <sup>6</sup> See Pinkerton, E. and D. N. Edwards. 2009. “The elephant in the room: The hidden costs of leasing individual transferable fishing quotas.” *Marine Policy* 33, pp. 707–713; Knapp, Gunnar. *Economic Impacts of BSAI Crab Rationalization on Kodiak Fishing Employment and Earnings and Kodiak Businesses: A Preliminary Analysis*. Anchorage: University of Alaska, June 2006; and Ecotrust Canada. *A Cautionary Tale about ITQ Fisheries*. 2009, <http://www.ecotrust.ca/fisheries/cautionarytale>
- <sup>7</sup> Ecotrust, the Pew Charitable Trust and Environmental Defense have all produced reports and manuals on good design for catch share programs, although opinions do differ on various elements. See Ecotrust. *Market Design for Limited Access Privileges Programs in U.S. Fisheries*. Proceedings of a workshop, Oct 3–4, 2007; Environmental Defense. *Catch Share Design Manual*, <http://www.edf.org/catchshares>; and Pew Charitable Trust. *Design Matters: Making Catch Shares Work*. Nov. 2009: [http://www.pewtrusts.org/our\\_work\\_report\\_detail.aspx?id=55872](http://www.pewtrusts.org/our_work_report_detail.aspx?id=55872).
- <sup>8</sup> The 170 vessels include whiting and non-whiting trawlers, but exclude 10 whiting catcher-processors. DEIS, p. 551.
- <sup>9</sup> DEIS, p. iv. Also, a National Research Council study aptly captures the economic efficiency logic of IFQs: “Individual Fishing Quotas are not a conservation tool, they are mainly an economic tool.” National Research Council. *Sharing the Fish: Toward a National Policy on Individual Fishing Quotas*. Washington, D.C.: National Academy Press, 1999, p. 3
- <sup>10</sup> Concentration of IFQs in the hands of a few large fishing companies has sparked a great deal of debate, with concerns including monopoly power development and increased social inequity. Sumaila, U.R. and Watson, R. In *Ecosystem-Based Management for Marine Capture Fisheries: A Policy Direction* (eds. Ward, T., Tarte, D., Hegerl, E. and Short, K.). World Wildlife Fund, 2002, pp. 41–43.
- <sup>11</sup> DEIS, p. 279.
- <sup>12</sup> Redstone Strategy Group and Environmental Defense. *Assessing the Potential for LAPPS in U.S. Fisheries*. March 26, 2007, p. 3.
- <sup>13</sup> The 2008 value of the 142 vessels with trawl permits was \$45 million, although only about 74 vessels actively fish each year. Nelson, Stuart. *An Analysis of Commercial Fishing Licence, Quota and Vessel Values as at March 31, 2008: West Coast Fishing Fleet*. Vancouver: Department of Fisheries and Oceans, 2008, pp. 57–58.
- <sup>14</sup> Pinkerton and Edwards, 2009.
- <sup>15</sup> The one exception is a rule in the Magnuson-Stevens Act that prohibits “any person other than a United States citizen, a corporation, partnership, or other entity established under the laws of the United States or any State, or a permanent resident alien” from owning quota shares. MSA, Section 303A.
- <sup>16</sup> Knapp, Gunnar. *Economic Impacts of BSAI Crab Rationalization on Kodiak Fishing Employment and Earnings and Kodiak Businesses: A Preliminary Analysis*. Anchorage: University of Alaska, June 2006.
- <sup>17</sup> Nelson, Stuart. *Pacific Commercial Fishing Fleet: Financial Profiles for 2007*. Vancouver: Fisheries and Oceans Canada, April 2009.

- <sup>18</sup> Nelson, Stuart. *Analysis of Quota Leasing in the Groundfish Trawl Fishery*. Canadian Groundfish Research and Conservation Society, 2006.
- <sup>19</sup> The scenarios are based on 2007 financial assumptions. However, the author inexplicably used historically low 2008 quota lease fees (6 cents per pound) to calculate the scenarios for 2007. We have corrected this to the 2007 lease fee of 15 cents. The trawl scenario does not include hake. The scenarios are for middle tier vessels in each fishery.
- <sup>20</sup> Pinkerton and Edwards, 2009.
- <sup>21</sup> The analysis is based on figures in Nelson, Stuart. *Pacific Commercial Fishing Fleet: Financial Profiles for 2007*. Vancouver: Fisheries and Oceans Canada, April 2009.
- <sup>22</sup> Ibid., p. 63.
- <sup>23</sup> Ibid.
- <sup>24</sup> NOAA. Draft Catch Share Policy, p. 11.
- <sup>25</sup> Ledyard, John. O. *Market Design for Fishery IFQ Programs*. Pasadena: California Institute of Technology, Social Science Working Paper No. 1301, April 2, 2009, p. 16.
- <sup>26</sup> See Macinko, S., and D.W. Bromely. *Who Owns America's Fisheries?* Washington, D.C.: Island Press, 2002; and Bromley, D. "Abdicating Responsibility: The Deceits of Fisheries Policy." *Fisheries* 34(6), 2009, pp. 280-302; discussing the use of quota auctioning in some fisheries to address problems of initial allocation and equity implications.
- <sup>27</sup> DEIS, Appendix D, p. D-18
- <sup>28</sup> See DEIS Appendix A, page A-421 for a discussion of this point.
- <sup>29</sup> Ledyard. p. 16.
- <sup>30</sup> Ibid., p. 19.
- <sup>31</sup> U.S. General Accounting Office. *Individual Fishing Quotas: Methods for Community Protection and New Entry Require Periodic Evaluation*. Washington, D.C., February 2004, p. 8.
- <sup>32</sup> NOAA. Draft Catch Share Policy. January 2010, p. 6.
- <sup>33</sup> Western Alaska Community Development Association: 2008 Annual Report: Western Alaska Community Development Quota Program.
- <sup>34</sup> MSA § 303A (5A).
- <sup>35</sup> Also see recommendations on captains and crew in National Research Council. *Sharing the Fish*, p. 204.
- <sup>36</sup> DEIS, p. 135.
- <sup>37</sup> Nelson, Stuart. *Analysis of Quota Leasing in the Groundfish Trawl Fishery*. Canadian Groundfish Research and Conservation Society, 2006.
- <sup>38</sup> Reported in Coastal Community Network. *Minutes of 2005-2006 Annual General Meeting*. Prince Rupert, January 20, 2006. The Coastal Community Network has also described the issues of crew treatment and groundfish quota leasing on its website: <http://www.coastalcommunitynetwork.ca/main.cfm?cid=122&nid=7347>
- <sup>39</sup> Nelson, Stuart. *Pacific Commercial Fishing Fleet: Financial Profiles for 2007*. Vancouver: Fisheries and Oceans Canada, April 2009, p. 63.
- <sup>40</sup> Knapp, Gunnar. *Economic Impacts of BSAI Crab Rationalization on Kodiak Fishing Employment and Earnings and Kodiak Businesses: A Preliminary Analysis*. Anchorage: University of Alaska, June 2006, p. 41.
- <sup>41</sup> The scenarios are based on 2007 financial assumptions. However, Nelson used historically low 2008 quota lease fees (6 cents per pound) for the 2007 groundfish trawl scenarios. We have corrected this to the 2007 lease fee of 15 cents. The trawl scenario does not include hake. The scenarios are for middle tier vessels in each fishery.
- <sup>42</sup> Nelson, Stuart. *Analysis of Quota Leasing in the Groundfish Trawl Fishery*. Canadian Groundfish Research and Conservation Society, 2006.
- <sup>43</sup> GAO, p. 11.

<sup>44</sup> Nelson, Stuart. *Pacific Commercial Fishing Fleet: Financial Profiles for 2007*. Vancouver: Fisheries and Oceans Canada, April 2009, p. 79.

<sup>45</sup> Michelin, Mark G. Development and Operational Expenses of Limited Access Privilege Program or “Catch-Share” Fisheries. Gordon and Betty Moore Foundation, September 2007, p. 29.

<sup>46</sup> FMPs and amendments must be consistent with the national standards. § 1853 (a)(1)(C); § 1854 (a)(1)(A).

<sup>47</sup> See Morgan, Lance E. and Ratana Chuenpagdee. *Shifting Gears: Addressing the Collateral Impacts of Fishing Methods in U.S. Waters*. Pew Science Series, 2003; Proceedings of the Pew Oceans Commission, *Ecological Effects of Fishing*. 2003, pp. 26-29; Peter J. Auster, *The Effects of Fishing on Fish Habitat*, American Fisheries Society Symposium, 1999; National Research Council. *Effects of Trawling and Dredging on Seafloor Habitat*. 2002.

<sup>48</sup> DEIS, p. 52.

<sup>49</sup> DEIS, p. 574.

<sup>50</sup> DEIS, p. 580.

<sup>51</sup> DEIS, p. 590.

<sup>52</sup> DEIS, p. 586.

<sup>53</sup> National Marine Fisheries Service. Environmental Assessment and Regulatory Impact Review for a Final Notice of a Fishing Capacity Reduction Program in the Pacific Coast Groundfish Fishery. July 2003, p. 5.

<sup>54</sup> <http://www.pcouncil.org/groundfish/gfbuy.html>

<sup>55</sup> DEIS, Appendix A, p. 471.

<sup>56</sup> According to the Council’s DEIS, Appendix A, p. 471, “A rationalized trawl fishery may have an effect on other West Coast fisheries through the transfer of effort and capital into other fisheries (spillover).

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*The responsibility for any errors or omissions resides with Ecotrust.*

*Support provided by The Pew Environment Group*



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Testimony of Mr. Steve Bodnar, Coos Bay Trawlers Association

We ask the Council to not deem this package of program components rule regulations and to make the necessary steps to have the program implemented on January 1, 2012. There are too many trailing amendments needed to say that this program is ready for implementation. The deeming working group is still scheduled to meet to continue the deeming process and we don't see that the time period following that meeting is long enough to meet the public comment period. If the only way to delay the implementation of the program to 2012 is to not approve today's deeming, then we must insist that you don't approve the deeming today.

It seems that it may be impossible to implement this program by January 1 following the short "cooling off" period which concludes on December 28. We believe that the entire fleet as well as management staff would benefit from a longer "cooling off" period during which time a less hectic pace could be used to out-reach with the fleet, to finalize contracts with processing plants, to establish good observers agreements, to complete first receiver permits with the needed plant preparations, to clarify the first receiver regulations which complicates selling fish in the round, to determine quota share conversions and issuance, to clarify halibut by-catch issues and to finish the many other tasks that need to be completed before the program can function properly.

The reason we feel this way is because most non-whiting trawl fishermen feel unprepared and uninformed about this program. What they have failed to comprehend about this program, even if caused by their own lack of participation in the management process, have most of the sector worried about their future ability to continue to earn a living in the trawl sector. We understand the whiting sector wants to lock this program in place as quickly as possible and to get it moving, but the rest of the trawlers are hesitant because of their lack of understanding on how they will be affected by this program. Furthermore, the non-whiting sector has no other IQ fishery to rely on, no other region to run to, to capture more revenue. All our earnings are made right here on the lower west coast and we have many species to consider beside just whiting and the related by-catch. We are trying to figure out how we can access our entire quota which is not as easy to do when we don't have access to the RCA like the whiting fleet. We have not received enough by-catch species to accommodate our target species and it is not just one or two target species involved but many of our quota species fall into a restrictive pattern. We need time to be able to effectively coordinate our nearshore catches with those who fish shoreward of the RCA and our deep water catches with those who fish deep. It isn't a simple matter of just trading quota. If you are operating in a pooling environment to make the best use of the overfished species, time is needed to establish and massage those relationships with like minded fishermen to make those arrangements work.

If the whiting sector exceeds their quota or caps, they have other choices in Alaska they can utilize; if the non-whiting sector exceeds their quota or caps and cannot purchase what they need they are done for

the year. That is a stark contrast to the whiting fleet. We fear the program because most of us have received quota about 50% of what we are currently landing. We fear the program because our longest lived participants in this fishery, the backbones of our industry are going to be forced to downsize. We fear the program because the cost will be prohibitive. We fear this program because whoever is left after this program is functioning and the fleet is reduced to the level the program analysis says it will be will have the "buy-back" program debt on their shoulders, way too much burden for these sized vessels. What harm would be done by not implementing the program on January 1, 2011 to allow us to work out our concerns so our portion of the program can be successful, too? We are asking for an increased "cooling off" period to allow the non-whiting sector to get organized. The cost recovery to our sector, at this point, seems unsurmountable.

**SEADAWN FISHERIES, INC.**  
**P. O. Box 352**  
**Newport, Oregon 97365**

June 10, 2010

Chairman David Ortmann  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, Oregon 97220

RE: Agenda Item B.6 - Regulatory Deeming for Fishery Management Plan Amendment  
20 (Trawl Rationalization)

Dear Chairman Ortmann and Council Members:

I have been personally involved in West Coast fisheries for more than 45 years. My two brothers and I, along with our partners, currently own 4 trawlers all of which we have been operating for more than 20 years and have consistent catch history in groundfish during the qualifying years for the Trawl Rationalization Program.

I wish to confirm our solid support for the Trawl Rationalization Program which this Council and NMFS has so diligently developed. We support this Deeming process and support this Council and the NMFS efforts to continue to move the Trawl Rationalization forward without delay.

I am the managing owner of one of our vessels, F/V SEADAWN, which just completed its participation in the unrationalized 2010 Mothership Whiting fishery. The waste of bycatch and in the value of the Whiting resource itself is simply unacceptable. In the Olympic fishery we are forced to fish when the season opens regardless of the condition of the Whiting and regardless of the bycatch risk. This year we were barely able to keep our bycatch within the limits imposed on us which continually poses an unacceptable risk to our directed fishery. Also, when operating in the Olympic mode we were forced to fish even though the majority of the Whiting available was extremely small resulting in significantly reduced value. The Trawl Rationalization Program will allow participants to schedule their participation in the groundfish fishery at a time when bycatch is low and when the Whiting is of the highest value. The resource and the Industry simply cannot afford another year of an Olympic fishery.

I understand in discussions with others that there is a lot of concern and fear among groundfish fishermen about the impacts of the Trawl Rationalization Program. I can relate to that concern as one who has been through the AFA Pollock Rationalization Program in Alaska. During the development of AFA, vessel owners (including myself) were very fearful of the unknown, but once this program was implemented and the benefits of a rationalized fishery became apparent a



clear consensus of the participants are supportive. This support applies to the rationalized Crab fishery and the Halibut/Black Cod fishery in Alaska also.

It is unfortunate that at this particular point in time and at the eleventh hour there are those who are still trying to fuel the fire of the apprehension among fishermen who have not participated previously in a rationalization programs. The reasons for the objections being put forward and the requests for delay in the form letters the processors are having fishermen sign has nothing to do with the rhetoric contained therein. The reason the processors are asking for delay with the ultimate goal of killing rationalization is all about loss of power. Processors, in general, are upset because they didn't get catch shares of traditional groundfish. Then there is Pacific and Frank Dulcich that want to continue to extend their monopolization of West Coast Groundfish so as to control not just the processing but as many vessels as they can acquire as well. Pacific and Frank Dulcich don't like the ownership caps in this rationalization plan because it is not consistent with their intent to monopolize this Industry. There is also the concern among processors that they may actually have to pay a fair price to fishermen as a result of rationalization. These processors are feeding misinformation to fishermen in an effort to get fishermen to support delaying rationalization at this late date with the intent of killing it once they get a delay.

This Council and NMFS are at a threshold point now to either allow a few greedy processors to successfully orchestrate an eleventh hour delay with a long term plan to kill rationalization or stay the course and move the plan forward. We believe the time for debate was over once the Council approved this amendment following a long, arduous and fully transparent process involving the public, fishermen and processors. To now allow this unadvertised effort to delay this important plan would be tragic and a disservice to the Council process that has involved countless participants, thousands of hours of meetings and days/weeks of Council time. This effort to delay this important program is procedurally out of order and must be rejected. Now is the time not to look back but to look forward and implement this plan for the conservation of the resource as well as the long term economic well being of the Industry.

In conclusion, we appreciate the efforts of this Council and NMFS on spending the countless hours in developing this very complex Trawl Rationalization Program. We urge you to continue moving the program forward so it may be implemented as scheduled in January 2011 so this valuable West Coast resource can be properly conserved and stabilized.

Sincerely,

Fred A. Yeck

FINAL ADOPTION OF HARVEST SPECIFICATIONS, REBUILDING PLAN REVISIONS,  
AND MANAGEMENT MEASURES FOR 2011-2012 FISHERIES

This is the final step in the process to adopt final harvest specifications, rebuilding plan parameters, and management measures for 2011-2012 groundfish fisheries for formal recommendation to the U.S. Secretary of Commerce. Preliminary decisions on these matters were made under Agenda Item B.3. The final motions should be available in writing prior to the Council's vote.

**Council Action:**

- 1. Adopt Final Groundfish Harvest Specifications for 2011-2012 Fisheries.**
- 2. Adopt Final Rebuilding Plan Revisions for Overfished Groundfish Species.**
- 3. Adopt Final 2011-2012 Groundfish Fishery Management Measures.**

Reference Materials:

None.

Agenda Order:

- a. Agenda Item Overview **Kelly Ames and John DeVore**
- b. Reports and Comments of Management Entities and Advisory Bodies
- c. Public Comment
- d. **Council Action:** Adopt Final Overfishing Limits, Acceptable Biological Catches, Annual Catch Limits, Rebuilding Plan Revisions, and Management Measures for 2011-2012 Fisheries

PFMC  
05/26/10

Table 1. Specified 2010 ABCs and OYs (mt) and preliminary preferred 2011 and 2012 OFLs , ABCs, ACLs, and ACTs (mt)  
(overfished stocks in CAPS; stocks with new assessments in bold).

Stock	No Action Alternatives		Preliminary Preferred Alternatives							
	2010 ABC	2010 OY	2011 OFL	2012 OFL	2011 ABC	2012 ABC	2011 ACL	2012 ACL	2011 ACT	2012 ACT
<b>OVERFISHED STOCKS</b>										
<b>BOCACCIO S. of 40°10' N latitude</b>	793	288	737	732	704	700	263	274		
<b>CANARY</b>	940	105	614	622	586	594	102	107		
<b>COWCOD S. of 40°10' N latitude</b>	14	4	13	13	10	10	3	3		
<b>DARKBLOTCHED</b>	440	291	508	497	485	475	298	296		
<b>PACIFIC OCEAN PERCH</b>	1,173	200	1,026	1,007	981	962	180	183	150	150
<b>WIDOW</b>	6,937	509	5,097	4,923	4,872	4,705	600	600		
<b>YELLOWEYE</b>	32	17	48	48	46	46	20	20	17	17
<b>PETRALE SOLE</b>	2,751	1,200	1,021	1,279	976	1,222	976	1,160		
<b>NON-OVERFISHED STOCKS</b>										
<b>Lingcod - coastwide</b>	4,829	4,829	NA	NA	NA	NA	NA	NA		
<b>Lingcod N. of 42° N latitude (OR &amp; WA)</b>	NA	NA	2,438	2,251	2,330	2,151	2,330	2,151		
<b>Lingcod S. of 42° N latitude (CA)</b>	NA	NA	2,523	2,597	2,102	2,164	2,102	2,164		
Pacific Cod	3,200	1,600	3,200	3,200	2,222	2,222	1,600	1,600		
Sablefish (coastwide)	9,217	NA	8,808	8,623	8,418	8,242	NA	NA		
Sablefish N. of 36° N latitude	NA	6,471	NA	NA	NA	NA	5,515	5,347		
Sablefish S. of 36° N latitude	NA	1,258	NA	NA	NA	NA	1,298	1,258		
Shortbelly	6,950	6,950	6,950	6,950	5,789	5,789	50	50		
Chilipepper	2,576	2,447	2,229	2,013	2,130	1,924	2,130	1,924		
<b>Splitnose S. of 40°10' N latitude</b>	615	461	1,529	1,610	1,461	1,538	1,461	1,538		
Yellowtail N. of 40°10' N latitude	4,562	4,562	4,566	4,573	4,364	4,371	4,364	4,371		
Shortspine Thornyhead (coastwide)	2,411	NA	2,384	2,358	2,279	2,254	NA	NA		
Shortspine Thornyhead - N. of 34°27' N latitude	NA	1,591	NA	NA	NA	NA	1,573	1,556		

Stock	No Action Alternatives		Preliminary Preferred Alternatives							
	2010 ABC	2010 OY	2011 OFL	2012 OFL	2011 ABC	2012 ABC	2011 ACL	2012 ACL	2011 ACT	2012 ACT
Shortspine Thornyhead - S. of 34°27' N latitude	NA	410	NA	NA	NA	NA	405	401		
Longspine Thornyhead (coastwide)	3,671	NA	3,577	3,483	2,981	2,902	NA	NA		
Longspine Thornyhead - N. of 34°27' N latitude	NA	2,175	NA	NA	NA	NA	2,119	2,064		
Longspine Thornyhead - S. of 34°27' N latitude	NA	385	NA	NA	NA	NA	376	366		
Black Rockfish (WA)	464	464	445	435	426	415	426	415		
Black Rockfish (OR-CA)	1,317	1,000	1,217	1,169	1,163	1,117	1,000	1,000		
California scorpionfish	155	155	141	132	135	126	135	126		
<b>Cabazon (CA)</b>	111	79	187	176	179	168	179	168		
<b>Cabazon (OR)</b>	NA	NA	52	50	50	48	50	48		
Dover Sole	28,582	16,500	44,400	44,826	42,436	42,843	25,000	25,000		
English Sole	9,745	9,745	20,675	10,620	19,761	10,150	19,761	10,150		
Arrowtooth Flounder	10,112	10,112	18,211	14,460	15,174	12,049	15,174	12,049		
Starry Flounder	1,578	1,077	1,802	1,813	1,502	1,511	1,352	1,360		
Longnose skate	3,269	1,349	3,128	3,006	2,990	2,873	1,349	1,349		
<b>STOCK COMPLEXES</b>										
Minor Rockfish North	3,678	2,283	3,611	3,680	3,214	3,214	2,227	2,227		
Minor Nearshore Rockfish North	NA	155	116	116	99	99	99	99		
Minor Shelf Rockfish North	NA	968	2,032	2,056	1,791	1791	968	968		
Minor Slope Rockfish North	NA	1,160	1,462	1,507	1,324	1324	1,160	1,160		
Minor Rockfish South	3,382	1,990	4,302	4,291	3,722	3,722	2,341	2,341		
Minor Nearshore Rockfish South	NA	650	1,156	1,145	1,001	1001	1,001	1001		
Minor Shelf Rockfish South	NA	714	2,238	2,243	1,885	1885	714	714		
Minor Slope Rockfish South	NA	626	907	903	836	836	626	626		
Other Flatfish	6,731	4,884	10,146	10,146	7,044	7,044	4,884	4,884		
Other Fish	11,200	5,600	11,150	11,150	7,742	7,742	5,575	5,575		

PRELIMINARY ESTIMATES OF RECREATIONAL ANGLER TRIPS OF THE 2011-2012 GROUND FISH HARVEST SPECIFICATIONS  
ALTERNATIVES

Estimated Recreational Angler Trips

ated Bottomfish angler_trips only																		
	2009			No Action			Alt 1			Alt 2			PPA			FPA		
District	Charter	Private	Total	Charter	Private	Total	Charter	Private	Total	Charter	Private	Total	Charter	Private	Total	Charter	Private	Total
ington																		
La Push-Neah Bay	659	3,492	4,152	659	3,492	4,151	659	3,492	4,151	659	3,492	4,151	659	3,492	4,151	659	3,492	4,151
Westport	10,882	1,637	12,519	10,882	1,637	12,519	10,882	1,637	12,519	10,882	1,637	12,519	10,882	1,637	12,519	10,882	1,637	12,519
Ilwaco-Chinook	341	630	970	341	630	971	341	630	971	341	630	971	341	630	971	341	630	971
ington Total	11,882	5,759	17,641	11,882	5,759	17,641	11,882	5,759	17,641	11,882	5,759	17,641	11,882	5,759	17,641	11,882	5,759	17,641
on																		
Astoria	18	209	227															
Tillamook	3,383	4,355	7,738			8,788			8,788			8,788			7,361			7,361
Newport	20,337	6,774	27,111			27,510			27,510			27,510			27,173			27,173
Coos Bay	3,312	6,573	9,885			11,624			11,624			11,624			10,421			10,421
Brookings	4,835	22,063	26,898			21,711			21,711			21,711			20,411			20,411
n Total	31,885	39,974	71,859			69,633			69,633			69,633			65,366			65,366
ornia																		
North Coast: Humboldt and Del Norte	4,603	28,339	32,942	2,718	16,534	19,252	3,416	18,440	21,856	2,718	16,534	19,252	2,718	16,534	19,252	3,416	18,440	21,856
North-Central Coast: Sonoma and Mendocino	443	14,704	15,148	4,849	5,881	10,730	4,849	5,881	10,730	4,475	4,303	8,778	2,526	1,638	4,163	4,475	4,303	8,778
North-Central Coast: San Mateo through Marin	21,573	27,069	48,642	25,311	23,841	49,152	29,542	30,758	60,300	24,060	22,745	46,806	24,060	22,745	46,806	43,841	32,113	75,954
South-Central Coast: San Luis Obispo through Santa Cruz	29,963	38,356	68,318	30,413	34,629	65,042	33,922	37,864	71,785	33,922	37,864	71,785	29,243	33,550	62,794	33,922	37,864	71,786
South Coast: Ventura and Santa Barbara	27,678	14,241	41,919															
South Coast: San Diego through Los Angeles	163,907	195,818	359,725	208,845	168,730	377,576	208,845	168,730	377,576	208,845	168,730	377,576	126,319	109,375	235,694	168,730	208,845	377,576
ornia Total																		
ington - Oregon - California Total	248,167	318,526	566,693	272,137	249,615	521,751	280,575	261,673	542,248	274,020	250,177	524,197	184,866	183,843	368,709	254,385	301,566	555,951

## GROUNDFISH MANAGEMENT TEAM REPORT ON MANAGEMENT MEASURES – PART 2

**Table 1.** Tentatively adopted 2011-2012 Estimates of research, tribal, and incidental open access. Set asides for EFPs.

<b>Category</b>	<b>Bocaccio South 40'10</b>	<b>Canary</b>	<b>Cowcod South 40'10</b>	<b>Dark- blotched</b>	<b>POP</b>	<b>Widow</b>	<b>Yelloweye</b>	<b>Petrale</b>
Tribal Whiting Trawl		4.3		0.1	7.2	5	0	
Tribal Mid-water Trawl		3.6			0	40	0	
Tribal Bottom Trawl		0.8			3.7	0	0	45.4
Tribal Troll		0.5			0		0	
Tribal Fixed Gear		0.3			0	0	2.3	
Open Access Incidental	0.7	2	0	15	0.1	3.3	0.2	1
Research	1.7	7.2	0.1	2.1	1.8	1.6	3.3	17
EFP	11	1.3	0.2	1.5	0.1	11	0.4	2
<b>Subtotal</b>	13.4	20	0.3	18.7	12.9	60.9	6.2	65.4

**Table 2.** June 2010 Scorecard after inseason action taken at this meeting.

**Projected mortality impacts (mt) of overfished groundfish species for 2010 updated based on June inseason action.**

Fishery	Bocaccio b/	Canary	Cowcod	Dkbl	POP	Widow	Yelloweye
Limited Entry Trawl - Non-whiting	8.0	12.7	0.3	191.4	93.8	15.5	0.3
Limited Entry Trawl - Whiting							
At-sea whiting motherships a/		3.3		6.0	0.5	67.0	0.0
At-sea whiting cat-proc a/		4.8		8.5	0.5	95.0	0.0
Shoreside whiting a/		5.9		10.5	4.7	117.0	0.0
Tribal whiting		4.3		0.0	7.2	5.0	0.0
Tribal							
Midwater Trawl		3.6		0.0	0.0	40.0	0.0
Bottom Trawl		0.8		0.0	3.7	0.0	0.0
Troll		0.5		0.0	0.0		0.0
Fixed gear		0.3		0.0	0.0	0.0	2.3
Fixed Gear Sablefish	0.0	2.5	0.0	4.5	0.4	0.0	0.9
Fixed Gear Nearshore	0.3	3.6	0.0	0.0	0.0	0.3	1.1
Fixed Gear Other	5.0	0.0	0.0	9.0	0.0	0.7	0.0
Open Access: Incidental Groundfish	0.8	1.7	0.0	15.0	0.0	3.3	0.3
Recreational Groundfish e/							
WA		20.9					4.9
OR						1.0	
CA	67.3	22.9	0.3			6.2	2.7
EFPs	11.0	1.3	0.2	1.5	0.1	11.0	0.2
Research: Includes NMFS trawl shelf-slope surveys, the IPHC halibut survey, and expected impacts from SRPs and LOAs.							
	2.0	4.5	0.2	2.0	2.0	5.7	1.3
TOTAL	94.4	93.5	1.0	248.4	112.9	367.7	14.0
2010 OY f/	288	105	4.0	330	200	509	14
Difference	193.6	11.5	3.0	81.6	87.1	141.3	0.0
Percent of OY	32.8%	89.1%	25.0%	75.3%	56.5%	72.2%	100.0%
Key		= either not applicable; trace amount (<0.01 mt); or not reported in available data sources.					
a/ Non-tribal whiting values for canary, darkblotched, and widow reflect bycatch limits for the non-tribal whiting sectors. All other species' impacts are projected from the GMT's whiting impact projection model. The Council may elect to change these bycatch limits when setting final whiting management measures in March 2010 or under any inseason action at any of their future meetings.							
b/ South of 40°10' N. lat.							
e/ Values in scorecard represent projected impacts for all species except canary and yelloweye rockfish, which are the prescribed harvest guidelines.							
f/ 2009 and 2010 OYs are the same except for darkblotched (291 mt in 2010), POP (200 mt in 2010), and widow (509 mt in 2010).							

**Estimated Groundfish ex-vessel revenue by Groundfish Sector under the Council's Final Preferred Alternative (\$million)**

SECTOR_NAME	No Action	CFPA (2011)	CFPA (2012)
Shoreside whiting trawl	7.87	11.76	11.76
Non-whiting trawl	29.30	29.08	29.07
Limited entry fixed gear	15.30	13.71	13.33
Open access fixed gear	8.28	7.98	7.80
Incidental open access	0.03	0.03	0.03
Tribal groundfish	5.91	5.38	5.29
<b>Total</b>	<b>66.70</b>	<b>67.94</b>	<b>67.29</b>

**Change from No Action (\$million)**

SECTOR_NAME	No Action	CFPA (2011)	CFPA (2012)
Shoreside whiting trawl	7.87	3.89	3.89
Non-whiting trawl	29.30	-0.21	-0.22
Limited entry fixed gear	15.30	-1.59	-1.97
Open access fixed gear	8.28	-0.31	-0.48
Incidental open access	0.03	0.00	0.00
Tribal groundfish	5.91	-0.53	-0.62
<b>Total</b>	<b>66.70</b>	<b>1.25</b>	<b>0.59</b>

**Change from No Action (%)**

SECTOR_NAME	No Action	CFPA (2011)	CFPA (2012)
Shoreside whiting trawl	7.87	49.39%	49.36%
Non-whiting trawl	29.30	-0.73%	-0.77%
Limited entry fixed gear	15.30	-10.42%	-12.89%
Open access fixed gear	8.28	-3.72%	-5.78%
Incidental open access	0.03	0.00%	0.00%
Tribal groundfish	5.91	-8.90%	-10.46%
<b>Total</b>	<b>66.70</b>	<b>1.87%</b>	<b>0.89%</b>



**Estimated Groundfish ex-vessel revenue by Port Area under the Council's Final Preferred Alternative (\$million)**

IO_AREA	No Action	CFPA (2011)	CFPA (2012)
Northern Puget Sound	2.64	2.45	2.41
North Washington Coast	4.47	4.03	3.95
South and Central Washington Coast	5.33	6.10	6.06
Unidentified Washington	1.44	1.23	1.19
Astoria	11.73	13.08	13.07
Tillamook	0.19	0.14	0.15
Newport	10.21	10.83	10.69
Coos Bay	6.42	6.42	6.37
Brookings	4.75	4.34	4.28
Crescent City	2.41	2.42	2.40
Eureka	4.46	4.40	4.37
Fort Bragg	3.65	3.57	3.54
Bodega Bay	0.26	0.23	0.23
San Francisco	1.64	1.54	1.55
Monterey	1.23	1.17	1.17
Morro Bay	3.40	3.46	3.37
Santa Barbara	0.79	0.89	0.88
Los Angeles	0.99	0.97	0.96
San Diego	0.69	0.68	0.68
<b>Total</b>	<b>66.70</b>	<b>67.94</b>	<b>67.29</b>

**Change from No Action (\$million)**

IO_AREA	No Action	CFPA (2011)	CFPA (2012)
Northern Puget Sound	2.64	-0.19	-0.23
North Washington Coast	4.47	-0.44	-0.52
South and Central Washington Coast	5.33	0.77	0.73
Unidentified Washington	1.44	-0.21	-0.25
Astoria	11.73	1.35	1.34
Tillamook	0.19	-0.04	-0.04
Newport	10.21	0.61	0.48
Coos Bay	6.42	0.00	-0.05
Brookings	4.75	-0.41	-0.47
Crescent City	2.41	0.01	-0.01
Eureka	4.46	-0.06	-0.09
Fort Bragg	3.65	-0.08	-0.11
Bodega Bay	0.26	-0.03	-0.03
San Francisco	1.64	-0.10	-0.09
Monterey	1.23	-0.06	-0.07
Morro Bay	3.40	0.06	-0.04
Santa Barbara	0.79	0.10	0.09
Los Angeles	0.99	-0.02	-0.03
San Diego	0.69	-0.01	-0.01
<b>Total</b>	<b>66.70</b>	<b>1.25</b>	<b>0.59</b>

**Change from No Action (%)**

IO_AREA	No Action	CFPA (2011)	CFPA (2012)
Northern Puget Sound	2.64	-7.27%	-8.72%
North Washington Coast	4.47	-9.77%	-11.57%
South and Central Washington Coast	5.33	14.39%	13.75%
Unidentified Washington	1.44	-14.72%	-17.30%
Astoria	11.73	11.49%	11.41%
Tillamook	0.19	-23.61%	-22.88%
Newport	10.21	6.02%	4.69%
Coos Bay	6.42	0.01%	-0.84%
Brookings	4.75	-8.63%	-9.91%
Crescent City	2.41	0.29%	-0.59%
Eureka	4.46	-1.41%	-2.09%
Fort Bragg	3.65	-2.21%	-3.07%
Bodega Bay	0.26	-11.15%	-10.49%
San Francisco	1.64	-6.12%	-5.47%
Monterey	1.23	-4.88%	-5.34%
Morro Bay	3.40	1.84%	-1.09%
Santa Barbara	0.79	13.00%	11.73%
Los Angeles	0.99	-2.07%	-3.42%
San Diego	0.69	-1.14%	-1.93%
Total	66.70	1.87%	0.89%

**Estimated Groundfish ex-vessel revenue by Port Area and Groundfish Sector under the Council's Final Preferred Alternative (\$ million)**

IO_AREA	SECTOR_NAME	No Action	CFPA (2011)	CFPA (2012)
Northern Puget Sound	Non-whiting trawl	0.96	0.98	0.98
	Limited entry fixed gear	1.68	1.48	1.43
North Washington Coast	Non-whiting trawl	0.03	0.03	0.03
	Limited entry fixed gear	0.93	0.82	0.79
	Open access fixed gear	0.08	0.07	0.07
	Tribal groundfish	3.42	3.11	3.05
South and Central Washington Coast	Shoreside whiting trawl	1.96	2.93	2.93
	Non-whiting trawl	0.83	0.80	0.81
	Limited entry fixed gear	1.26	1.11	1.07
	Open access fixed gear	0.24	0.21	0.20
	Incidental open access	0.00	0.00	0.00
	Tribal groundfish	1.05	1.05	1.05
Unidentified Washington	Tribal groundfish	1.44	1.23	1.19
Astoria	Shoreside whiting trawl	2.96	4.40	4.40
	Non-whiting trawl	7.74	7.78	7.80
	Limited entry fixed gear	0.81	0.71	0.69
	Open access fixed gear	0.22	0.19	0.18
Tillamook	Non-whiting trawl	0.03	0.03	0.03
	Open access fixed gear	0.16	0.12	0.12
Newport	Shoreside whiting trawl	2.28	3.42	3.42
	Non-whiting trawl	4.57	4.49	4.44
	Limited entry fixed gear	3.05	2.68	2.60
	Open access fixed gear	0.31	0.25	0.24
Coos Bay	Shoreside whiting trawl	0.39	0.58	0.58
	Non-whiting trawl	4.53	4.53	4.52
	Limited entry fixed gear	1.10	0.96	0.93
	Open access fixed gear	0.41	0.35	0.34
Brookings	Non-whiting trawl	1.82	1.83	1.81
	Limited entry fixed gear	1.44	1.28	1.24
	Open access fixed gear	1.49	1.23	1.22
Crescent City	Shoreside whiting trawl	0.24	0.36	0.36
	Non-whiting trawl	1.27	1.28	1.27
	Limited entry fixed gear	0.53	0.47	0.46
	Open access fixed gear	0.38	0.31	0.31
Eureka	Shoreside whiting trawl	0.05	0.07	0.07

	Non-whiting trawl	3.67	3.68	3.67
	Limited entry fixed gear	0.42	0.36	0.35
	Open access fixed gear	0.32	0.28	0.27
Fort Bragg	Non-whiting trawl	2.19	2.15	2.16
	Limited entry fixed gear	0.86	0.75	0.73
	Open access fixed gear	0.61	0.66	0.65
Bodega Bay	Non-whiting trawl	0.08	0.06	0.07
	Limited entry fixed gear	0.06	0.05	0.05
	Open access fixed gear	0.12	0.11	0.11
San Francisco	Non-whiting trawl	1.01	0.96	0.99
	Limited entry fixed gear	0.30	0.26	0.25
	Open access fixed gear	0.32	0.30	0.30
	Incidental open access	0.01	0.01	0.01
Monterey	Non-whiting trawl	0.40	0.34	0.35
	Limited entry fixed gear	0.37	0.33	0.32
	Open access fixed gear	0.47	0.50	0.49
Morro Bay	Non-whiting trawl	0.17	0.14	0.15
	Limited entry fixed gear	0.71	0.67	0.64
	Open access fixed gear	2.51	2.64	2.57
	Incidental open access	0.01	0.01	0.01
Santa Barbara	Limited entry fixed gear	0.28	0.28	0.28
	Open access fixed gear	0.49	0.59	0.59
	Incidental open access	0.01	0.01	0.01
Los Angeles	Limited entry fixed gear	0.88	0.86	0.85
	Open access fixed gear	0.11	0.10	0.10
	Incidental open access	0.01	0.01	0.01
San Diego	Limited entry fixed gear	0.63	0.63	0.62
	Open access fixed gear	0.06	0.06	0.06
Coastwide Total		66.70	67.94	67.29

Cowcod South of 40°10 N. latitude for 2011-2012 (3 mt)

Sector	GMT RPT Impacts	GMT RPT Share	Proposal
Limited Entry Non-Whiting Trawl	0.3	2.5	
Non-nearshore*			
LE FG			
OA DTL			
Nearshore Fixed Gear			
Washington Recreational			
Oregon Recreational			
California Recreational	0.2	0.2	
Limited Entry Whiting Trawl			
Catcher Processor			
Trawl Mothership			
Trawl Shoreside			
<b>Total Impacts</b>	<b>0.47</b>	<b>2.7</b>	<b>0</b>
<b>Balance</b>	<b>2.23</b>	<b>0</b>	<b>2.7</b>

Cowcod South of 40°10 N. latitude

	MT
ACL	3
"Off the top"	0.3
Amount less "off the top"	2.7

**Yelloweye (ACT = 17 mt, ACL = 20 mt) For 2011-2012**

Sector	GT RPT impacts	GMT RPT Share	Proposal
Limited Entry Non-Whiting Trawl	0.2	0.6	
Non-nearshore*		1.3	
LE FG	0.8		
OA DTL	0.1		
Nearshore Fixed Gear	0.7	0.7	
Washington Recreational	2.5	2.6	
Oregon Recreational	2.1	2.4	
California Recreational	2.5	2.6	
Limited Entry Whiting Trawl			
Catcher Processor	NA	NA	
Trawl Mothership	NA	NA	
Trawl Shoreside	NA	NA	
<b>Total Impacts</b>	<b>8.9</b>	<b>10.2</b>	
<b>Balance</b>	<b>1.9</b>	<b>0.6</b>	<b>10.8</b>

Yelloweye Rockfish

	MT
ACL	20
ACT	17
"Off the top"	6.2
Amount less "off the top"	10.8

### Canary for 2011 (ACL = 102 mt)

Sector	GMT RPT impacts	GMT RPT Share	Proposal
Limited Entry Non-Whiting Trawl	10.6	19.3	
Non-nearshore*		2.3	
LE FG	1.9		
OA DTL	0.3		
Nearshore Fixed Gear	2.1	3.3	
Washington Recreational	0.5	4.4	
Oregon Recreational	2.4	14.5	
California Recreational	9.3	22.9	
Limited Entry Whiting Trawl			
Catcher Processor	0.8	4.8	
Trawl Mothership	1.2	3.4	
Trawl Shoreside	3.7	5.9	
<b>Total Impacts</b>	<b>32.8</b>	<b>80.8</b>	
<b>Balance</b>	<b>49.2</b>	<b>1.2</b>	<b>82</b>

### Canary Rockfish

	MT
ACL	102
"Off the top"	20
Amount less "off the top"	82

### Canary rockfish for 2012 (ACL = 107 mt)

Sector	GMT RPT impacts	GMT RPT Share	Proposal
Limited Entry Non-Whiting Trawl	10.8	19.3	
Non-nearshore*		2.3	
LE FG	1.8		
OA DTL	0.3		
Nearshore Fixed Gear	2.2	3.3	
Washington Recreational	0.5	4.4	
Oregon Recreational	2.4	14.5	
California Recreational	9.3	24.2	
Limited Entry Whiting Trawl			
Catcher Processor	0.8	5	
Trawl Mothership	1.2	3.6	
Trawl Shoreside	3.7	6.2	
<b>Total Impacts</b>	<b>33</b>	<b>82.8</b>	
<b>Balance</b>	<b>54</b>	<b>4.2</b>	<b>87</b>

### Canary Rockfish

	MT
ACL	107
"Off the top"	20
Amount less "off the top"	87

Bocaccio South of 40°10 N. latitude for 2011 (263 mt)

Sector	GMT RPT impacts	GMT RPT Share	Proposal
Limited Entry Non-Whiting Trawl	7.2	29.6	
Non-nearshore*	0.0	57.9	
LE FG			
OA DTL			
Nearshore Fixed Gear	0.3	0.3	
Washington Recreational			
Oregon Recreational			
California Recreational	55.4	161.8	
Limited Entry Whiting Trawl			
Catcher Processor			
Trawl Mothership			
Trawl Shoreside			
<b>Total Impacts</b>	<b>62.9</b>	<b>249.6</b>	<b>0</b>
<b>Balance</b>	<b>186.7</b>	<b>0</b>	<b>249.6</b>

Bocaccio South of 40°10 N. latitude

	MT
ACL	263
"Off the top"	13.4
Amount less "off the top"	249.6

Bocaccio South of 40°10 N. latitude for 2012 (274 mt)

Sector	GMT RPT impacts	GMT RPT Share	Proposal
Limited Entry Non-Whiting Trawl	7.4	30.9	
Non-nearshore*	0.0	60.4	
LE FG			
OA DTL			
Nearshore Fixed Gear	0.3	0.3	
Washington Recreational			
Oregon Recreational			
California Recreational	55.4	168.9	
Limited Entry Whiting Trawl			
Catcher Processor			
Trawl Mothership			
Trawl Shoreside			
<b>Total Impacts</b>	<b>63.1</b>	<b>260.5</b>	<b>0</b>
<b>Balance</b>	<b>197.5</b>	<b>0.1</b>	<b>260.6</b>

Bocaccio South of 40°10 N. latitude

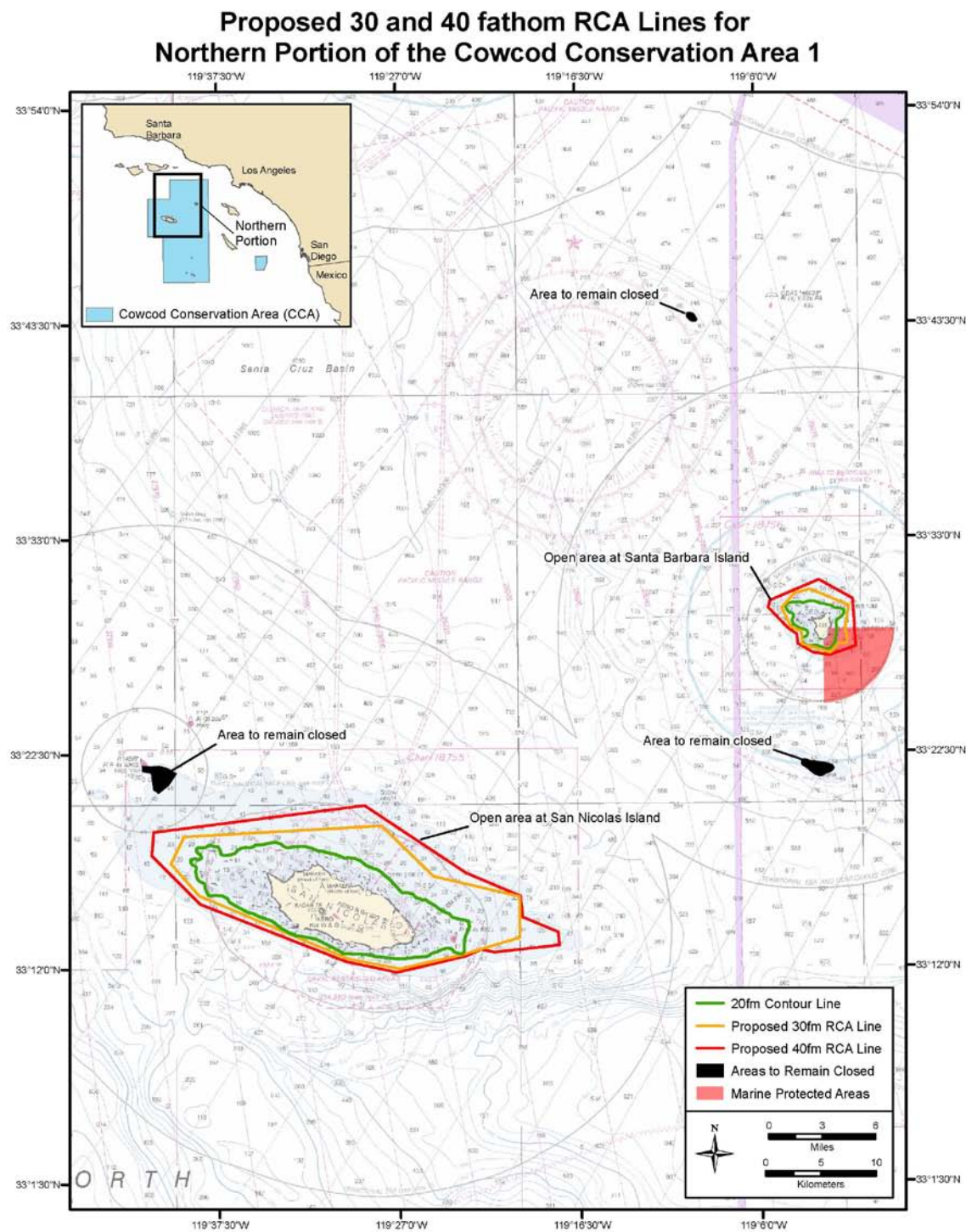
	MT
ACL	274
"Off the top"	13.4
Amount less "off the top"	260.6



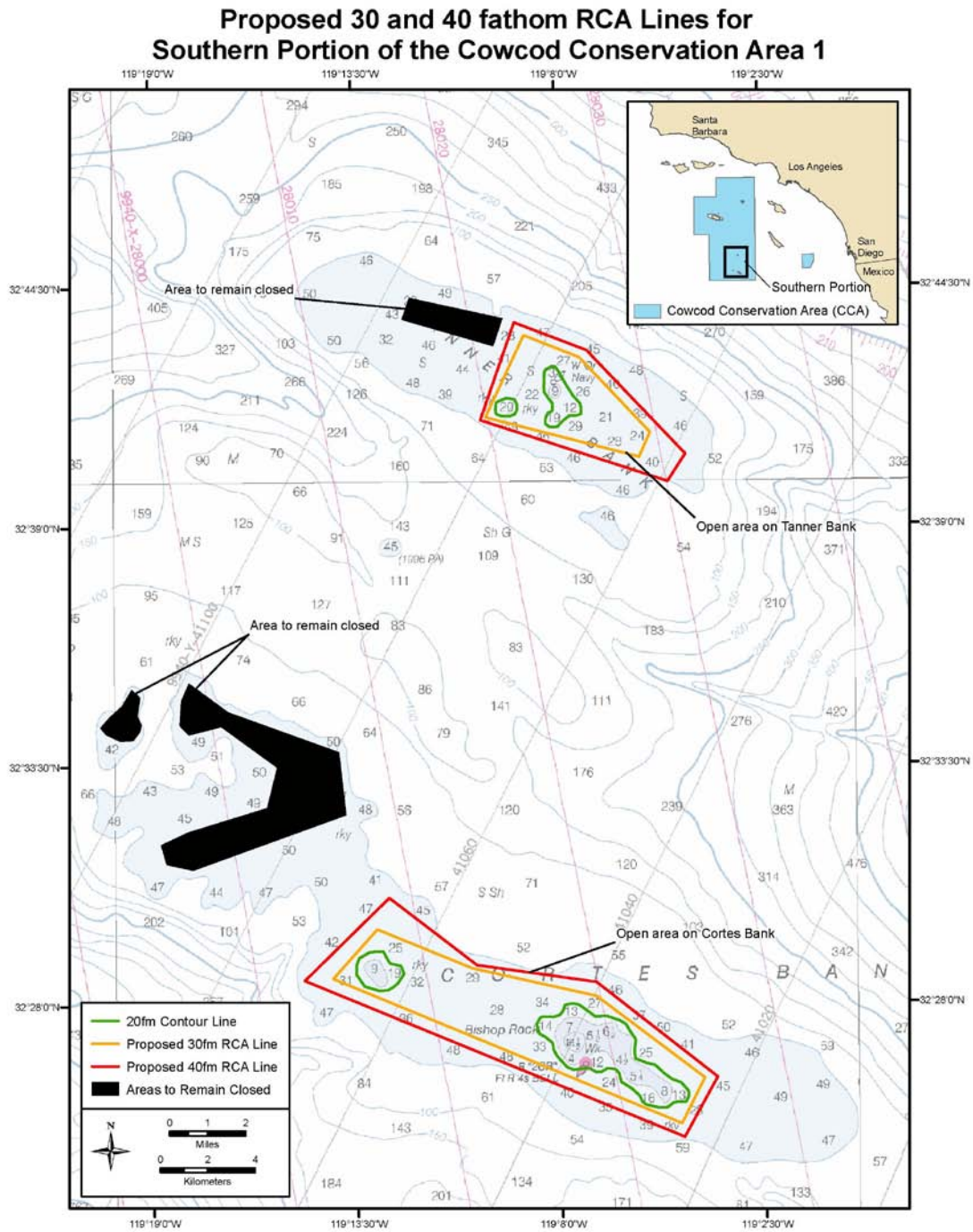
**Revised Charts and Tables for the Analysis of the Proposed 30 and 40 fm Recreational  
Depth Restrictions within the Cowcod Conservation Area**

**Introduction:** California enforcement consultants have identified minor waypoint changes that would smooth the shape of the RCA lines delineating the 30 fm and 40 fm depth contours around San Nicolas Island and Tanner Bank previously provided in Chapter 4 of the draft EIS (Agenda Item B.3.a, Attachment 1, page 77). A single waypoint change at the east end of Tanner Bank for both the 30 fm and 40 fm depth contours was implemented. In addition, waypoint changes have been made to the 30 and 40 fm depth restrictions around San Nicolas Island. These changes will make it easier for anglers to comply with, and for wardens to enforce, the depth restrictions. The revised figures, tables and waypoint changes provided below reflect the changes and are numbered to correspond to the existing tables in the full analysis.

No new areas have been added as a result of the change and the increase in the area open to fishing relative to the current depth restrictions provided in Table 4 have not changed appreciably compared to the original proposal. The areas identified in black in Figures 3 through 6 will remain closed to fishing as in the original proposal.



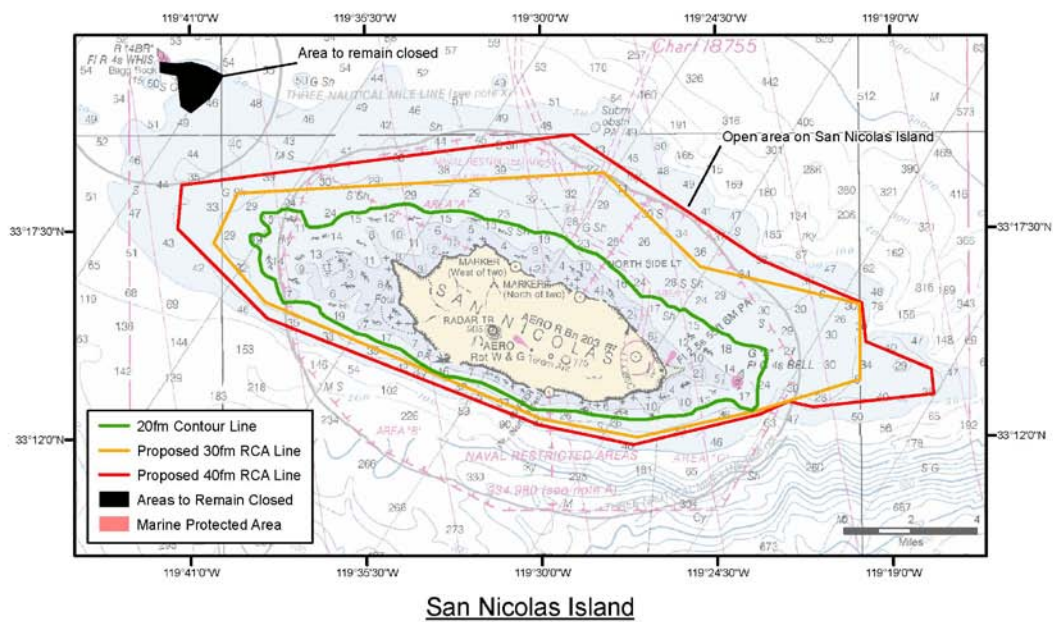
**Figure 3.** Overview chart of proposed 30 and 40 fathom RCA lines for the northern portion of the western CCA.



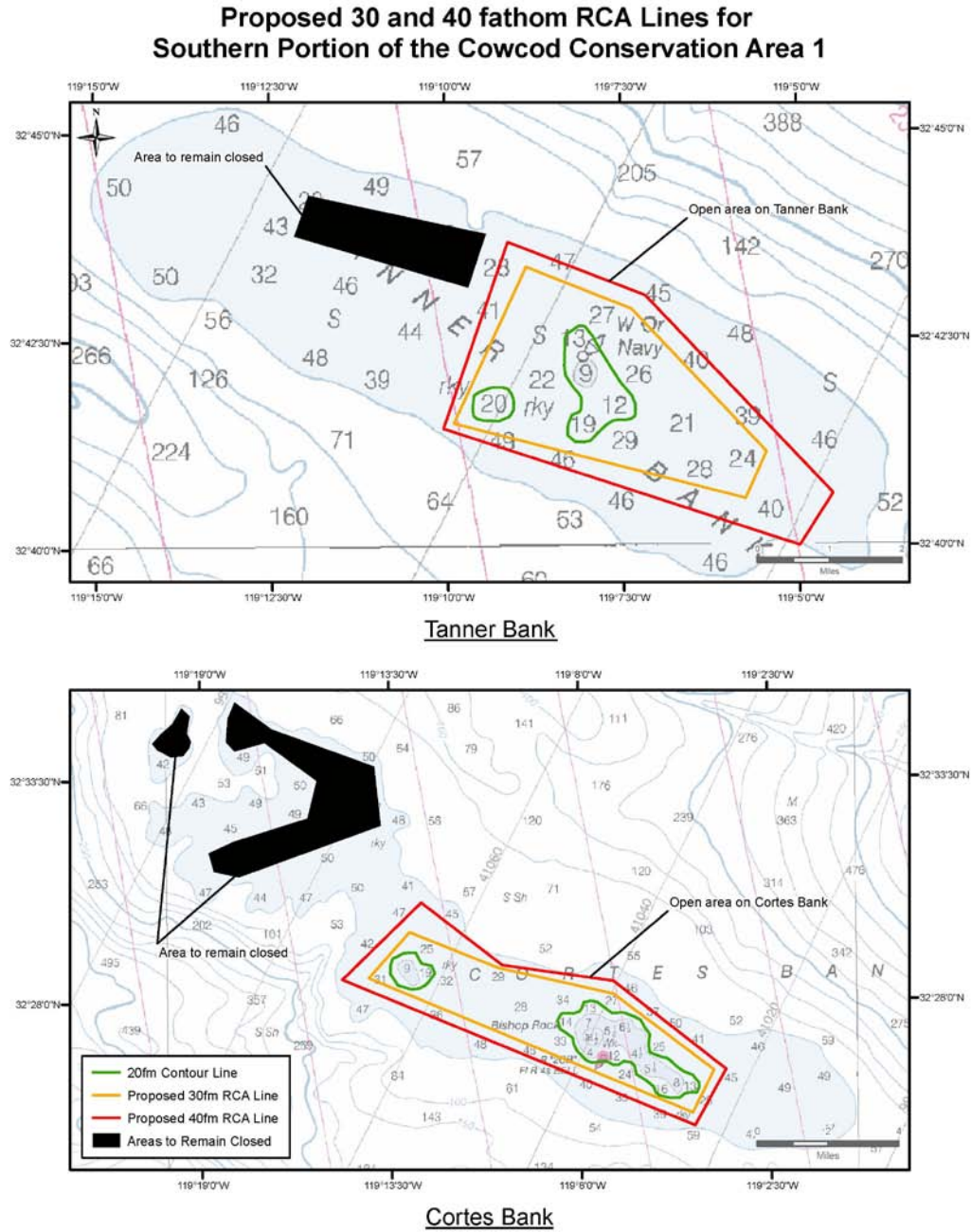
**Figure 4:** Overview chart of proposed 30 and 40 fathom RCA lines for the southern portion of the western CCA.



**Proposed 30 and 40 fathom RCA Lines for  
Northern Portion of the Cowcod Conservation Area 1**



**Figure 5.** Detailed charts of the proposed 30 and 40 fathom RCA lines for the northern portion of the western CCA.



**Figure 6.** Detailed charts of the proposed 30 and 40 fathom RCA lines for the southern portion of the western CCA.

**Table 4.** Estimated increase in area open to fishing under the proposed increase in depth restrictions to 30 or 40 fm from status quo 20 fm depth restriction.

	<b>Status Quo 20 fm Depth Restriction</b>	<b>Option 1</b>			<b>Option 2</b>		
		<b>30 fm Depth Restriction</b>			<b>40 fm Depth Restriction</b>		
<b>Open Area within CCA</b>	<b>Area Under 20 fm (sq. miles)</b>	<b>Area Increase 20 to 30 fm (sq. miles)</b>	<b>Total Area to 30 fm (sq. miles)</b>	<b>Percent Increase sq. miles 20 to 30 fm</b>	<b>Area Increase 20 to 40 fm (sq. miles)</b>	<b>Total Area to 40 fm (sq. miles)</b>	<b>Percent Increase sq. miles 20 to 40 fm</b>
<b>Santa Barbara Island</b>	4.6	3.4	8	74%	8.3	12.9	180%
<b>San Nicolas Island</b>	36.5	39.6	76.1	108%	66.2	102.7	181%
<b>Cortes Bank</b>	5.5	12.1	17.6	220%	19.9	25.4	362%
<b>Tanner Bank</b>	1.1	6.1	7.2	553%	10.0	11.1	907%
<b>CCA Total</b>	47.7	61.2	108.9	128%	104.4	152.1	219%

**Appendix**

**Appendix 1.** The following tables include the latitude and longitude points delineating for the proposed 30 and 40 fathom RCA lines in the CCA.

San Nicolas Proposed 30fm RCA Points

Fathom Line	Proposed Coordinates						Action
	Point	Lat			Long		
		Deg	Min	Dir	Deg	Min	
30-fm	1	119	28.00	W	33	19.00	add
30-fm	2	119	39.5	W	33	18.50	add
30-fm	3	119	40.26	W	33	17.18	add
30-fm	4	119	38.65	W	33	15.61	add
30-fm	5	119	30.00	W	33	12.50	add
30-fm	6	119	27.00	W	33	12.00	add
30-fm	7	119	23.30	W	33	12.68	add
30-fm	8	119	20.00	W	33	13.50	add
30-fm	9	119	20.00	W	33	15.50	add
30-fm	10	119	25.00	W	33	16.50	add
30-fm	11	119	28.00	W	33	19.00	add

San Nicolas Proposed 40fm RCA Points

San Nicolas Proposed Terminal Points

Fathom Line	Proposed Coordinates						Action
	Point	Lat			Long		
		Deg	Min	Dir	Deg	Min	
40-fm	1	119	29.00	W	33	20.00	add
40-fm	2	119	41.27	W	33	18.72	add
40-fm	3	119	41.38	W	33	17.56	add
40-fm	4	119	38.59	W	33	15.19	add
40-fm	5	119	30.11	W	33	12.35	add
40-fm	7	119	27.13	W	33	11.81	add
40-fm	8	119	23.15	W	33	12.60	add
40-fm	9	119	22.26	W	33	12.93	add
40-fm	10	119	21.48	W	33	12.78	add
40-fm	11	119	17.70	W	33	13.11	add
40-fm	12	119	17.77	W	33	13.77	add
40-fm	13	119	19.82	W	33	14.50	add
40-fm	14	119	19.94	W	33	15.52	add
40-fm	15	119	23.12	W	33	16.67	add
40-fm	16	119	29.00	W	33	20.00	add

Tanner Bank 30fm RCA Points

Fathom Line	Proposed Coordinates						Action
	Point	Lat			Long		
		Deg	Min	Dir	Deg	Min	
30-fm	1	119	8.86	W	32	43.37	add
30-fm	2	119	7.36	W	32	42.86	add
30-fm	3	119	5.46	W	32	41.13	add
30-fm	4	119	5.76	W	32	40.57	add
30-fm	5	119	9.90	W	32	41.49	add
30-fm	6	119	8.86	W	32	43.37	add

Tanner Bank 40fm RCA Points

Fathom Line	Proposed Coordinates						Action
	Point	Lat			Long		
		Deg	Min	Dir	Deg	Min	
40-fm	1	119	9.11	W	32	43.67	add
40-fm	2	119	7.17	W	32	43.02	add
40-fm	3	119	4.52	W	32	40.62	add
40-fm	4	119	5.00	W	32	40.00	add
40-fm	5	119	10.05	W	32	41.43	add
40-fm	6	119	9.11	W	32	43.67	add

ENFORCEMENT CONSULTANTS REPORT ON FINAL ADOPTION OF HARVEST  
SPECIFICATIONS, REBUILDING PLAN REVISIONS, AND MANAGEMENT MEASURES  
FOR 2011-2012 FISHERIES

**Review of RCA lines**

The Enforcement Consultants reviewed Agenda Item B.3.a, B.3.b Supplemental Oregon Department of Fish and Wildlife Report 2, and the corrected waypoints for the Proposed 30 and 40 fm Recreational Depth Restrictions within the Cowcod Conservation Area as outlined in Supplemental CDFG Report B.7.b.

The Oregon Rockfish Conservation Area lines and the revisions from California Department of Fish and Game are consistent with the current enforcement criteria for closure development and are acceptable to the Enforcement Consultants.

**Review of product leaving the EEZ**

In response to Mr. Phil Andersons request the Enforcement Consultants prepared the following suggestions for regulatory language related to reporting the transport of groundfish taken in the Exclusive Economic Zone (EEZ).

*U.S. Vessel Activity Report (VAR).*

(1) *Fish or fish product onboard.* The operator of a catcher vessel, a catcher/processor, or a mothership engaged in fishing for groundfish and possessing fish or fish products managed by the Council must complete and submit a VAR by facsimile or electronic file to Office of Law Enforcement, Seattle, WA (Fax # 206-526-6528) before the vessel crosses the seaward boundary of the EEZ off the West Coast or crosses the international boundaries between Washington and Canada or California and Mexico.

(2) *Revised VAR.* If groundfish or fish products are landed at a port other than the one specified on the VAR, the operator must submit a revised VAR showing the actual port of landing before any fish are offloaded.

(3) *Exemption:* A VAR is not required if a vessel is carrying groundfish or fish product that has been landed or reported in compliance with federal or state requirements in Washington, Oregon or California or with applicable U.S. treaties.

(4) *Information required.*

(i) Whether original or revised VAR.

(ii) Name and Limited Entry permit number of vessel or state permit number.

(iii) Type of vessel (whether catcher vessel, catcher/processor, or mothership).

(iv) Name, daytime telephone number (including area code), and facsimile number and COMSAT number (if available) of representative.

(v) *Depart report.* “Depart” means leaving the EEZ or territorial sea off West Coast States. If the vessel is crossing the seaward boundary of the



EEZ and moving out of the EEZ or crossing the international boundary between Washington and Canada or California and Mexico into foreign waters, indicate a “depart” report and enter:

(A) The intended port of landing and country if outside the United States;

(B) Estimated date and time (hour and minute, local time) the vessel will cross the boundary; and

(C) The estimated position coordinates in latitude and longitude where the vessel will cross.

(vi) *Cancel report*. Each operator wanting to cancel a previous report may do so by sending a revised report, and inserting the word “CANCEL” in front of the previous report’s vessel name, date, and time. The message must be transmitted and delivered prior to the date and time of the event in the original message.

(vii) *Groundfish or fish products*. For all groundfish or fish products on board the vessel, enter:

(A) Harvest zone code;(as described in Table X to Part 660)

(B) Species;

(C) Product codes (if applicable); and

(D) Estimated fish product weight in lbs or mt

Prohibition(s)

Fail to submit a VAR as required in paragraph (X)

Table XX to Part 660

<i>Harvest zone</i>	<i>Description</i>
A1	U.S. EEZ off Washington
A2	U.S. EEZ off Oregon
A3	U.S. EEZ off California
W	State waters of Washington
O	State waters of Oregon
C	State waters of California

GROUND FISH ADVISORY SUBPANEL REPORT ON HARVEST SPECIFICATIONS,  
REBUILDING PLAN REVISIONS, AND  
MANAGEMENT MEASURES FOR 2011-2012 FISHERIES

Annual catch limits (ACLs) for overfished species are the primary driver limiting target commercial and recreational catch along the coast. The Groundfish Advisory Subpanel (GAP) wishes to reiterate that even seemingly small reductions in ACLs can have catastrophic impacts on fishermen and communities. Provided below are highlights of the problems and economic impacts caused in each sector due to low ACLs.

One issue the GAP wishes to highlight in particular is the cowcod ACL. The GAP is concerned that the recent Ninth Circuit court ruling on cowcod specifications was a misinterpretation of the assessment results that influenced the decision to adopt a 4 mt optimum yield (OY) in 2010. This is of particular concern since the GAP believes the preliminary preferred decision to specify a 3-mt ACL for cowcod may threaten fishery stability and harm fishing communities in California.

### **Trawl**

We would like to point out that what is “bycatch” today will become “accountable catch” after implementation of the trawl individual quota (IQ) program. There have been numerous comments about the limited availability of overfished species and resultant impacts to harvest of target species. In addition, we understand that all fishing mortality will come out of the annual catch target (ACT), therefore setting the yelloweye ACT 3 tons below the ACL will continue to constrain the fleet without providing us any additional flexibility.

In regards to the petrale ACL, the GAP would recommend a set aside to accommodate any current incidental non-trawl catch and whatever is needed for research and exempted fishing permits (EFPs). The GAP feels the 5% to the non-trawl sectors may be more than what those sectors need to prosecute their fisheries. The GAP recommends that the maximum amount possible of petrale sole be allocated to the shoreside trawl sectors until petrale is rebuilt. The importance of every pound of petrale in the trawl fishery both to fishermen, processors and communities can't be stressed enough.

The GAP recommends raising the shortbelly ACL to 200 mt. While it is unlikely that ACL would ever be attained, it would be unfortunate if shortbelly, a healthy non-target stock, ended up constraining access to targets. Specifically, once the widow rockfish fishery is rebuilt, a minimal amount of shortbelly will be needed and the GAP feels that 50 mt represents an artificial and needlessly low ceiling with little benefit given the high overfishing limit for shortbelly.

### **Limited Entry Fixed Entry**

The conservative Rockfish Conservation Area (RCA) restrictions, on the commercial fixed gear fleet, that have been put into place to protect yelloweye rockfish off the coast of Washington have had significant economic and employment affects. The RCA restrictions that push the fleet further off the coast are resulting in the following:

1. More intense fishing pressure on increasingly less productive fishing grounds. The fleet is having more gear conflicts with fixed gear as well as trawl operations as fishable ground is restricted.
2. The deeper areas assigned to the fixed gear fleets can produce reasonable catch rates, but when the entire fleet is put in more limited areas, catch rates will go down and more gear is run (more hooks hauled, and more pots lifted and set). This can result in increased catch of rebuilding species.
3. The RCA restriction on fixed gear has had a direct impact in losing a major fish buyer in northern Puget Sound, Arrowack Seafoods. This has resulted in the loss of a major dogfish and sablefish market along with the loss of 70 permanent shore based jobs for the community of Bellingham, WA and the loss of local fishing opportunities.

### **Nearshore Commercial**

The GAP met with the Groundfish Management Team to understand the impacts by sector and to explore ways to accommodate the nearshore commercial fisheries that are constrained by yelloweye. The GAP recommends that an additional 0.2 mt of yelloweye be allocated to the nearshore fisheries for a total of 0.9 mt to restore status quo fishing opportunities coastwide (Table 1).

In the nearshore commercial fishery north we have seen our supply chain infrastructure crumble as buyers release drivers and trucks are downsized. Overall, buying is reduced and good fishing days are lost. The trucks that now serve us are smaller causing buyers to put fishermen on limits. The more fishermen who fish, the smaller the limits, which further reduces the money that can be made each day. Struggling buyers drive their own trucks and bounce more checks. Stores with live tanks that stand empty consider replacing them with other products. Weak markets tend to disappear.

### **Oregon Recreational**

The Oregon Recreational Fishery has suffered dramatic economic losses due to yelloweye restrictions. For example, the Port of Winchester Bay no longer has any groundfish fishing which resulted in the closure and loss of several fishing related businesses. The economic ripple effects of those lost boats and businesses on the surrounding community is substantial. Up and down the Oregon Coast we have seen a dramatic reduction in the number of charter vessels operating. Many are just hanging on. All of these losses equate to further economic hardship to the community and additional deterioration of fishing infrastructure.

### **Northern California Recreational Impacts**

Since the year 2000, the impacts to the recreational fishery in the North Coast region have been dramatic. Particularly, the formation of RCA's in 2002 with the 20-fathom restrictions, has severely constrained groundfish fishing. The season lengths in the north have been reduced from a full year down to four months, a 66% loss of time on the water. Below Cape Mendocino the season is only three months or a 75% cutback in fishing time.

With the further constraints of weather most boats are not on the water more than 20 days a season due to northerlies and bar conditions. Even the Commercial Charter boats only average about 60 days in a season.

The yelloweye bycatch concern with the levels set at 17 mt or lower have had severe economic effects on the north coast. The 2007 season shutdown parked the 14,129 recreational boats on the north coast. That two months period potentially lost more than \$21,000,000 for the north coast region during that year. Over the 2007 and 2008 year a 42% loss of revenue was lost in our region by marine businesses. Further season restrictions below 20 mt effectively will push the fishing community over the edge where the last few tackle stores, marine mechanics and marine business may call it quits and fold up. That is already starting to happen at the current levels and restrictions.

The Charter boat vessels are a specific illustration of these trends. Formerly five charter vessels could accommodate 150 anglers per day from Eureka, now the number has dropped to three six-packs vessels that average 12 anglers per day. At \$130.00 day per angler, that is a revenue drop of \$17,940 per day or \$1,076,000 per year for charter vessels revenue only. This trend is common across all our ports, restaurants, camp grounds, motels and related businesses. This trend cannot continue for our small coastal communities and maintain a viable fishery.

### **Coastal Communities**

As noted in previous GAP statements, due to the cumulative effect of constraining ACL's for rebuilding stocks, Neah Bay's trawl fleet has been completely eliminated. Likewise, Westport's traditional groundfish trawl fleet, once active in significant numbers, is decimated. Only two vessels remain active of which the total catch is trucked away from Westport for processing.

Much has been made about the need to justify even the smallest increases in OYs of depleted species. It's expected that recent and current levels of exploitation are somehow adequate simply because some fishermen have survived the constraints placed on target species by rebuilding stocks. Those who have survived are merely hanging on, in wait of the last straw.

As is apparent in Neah Bay and Westport, Washington, much of the traditional groundfish fleet has not survived.

All species currently under rebuilding plans are in fact rebuilding – some at a much faster pace than anticipated. As stocks are rebuilding at accelerated rates, the incidence of interactions with these stocks also increases, requiring higher ACLs for the fleet to avoid illegal take.

Closed areas, gear restrictions, bag limits, seasonal closures, trip limits, lower ACLs and other management measures for individual species under a rebuilding plan have created a cumulative effect that has depressed the economic potential of the recreational and commercial fleets with resulting ripple effects of coastal communities from Bellingham, Washington to San Diego, California.

## **SPECIFIC MANAGEMENT MEASURES**

### **California Recreational**

The GAP recommends adopting all of California's proposed management measures for 2011-2012 found in Supplemental CDFG Report 2, B.3.b, page 3. In particular the GAP supports combining the Monterey South-Central and Morro Bay South-Central management areas, but wants ensure that the line between the two is maintained for future use if needed. On lingcod, dropping the size limit will reduce impacts on overfished species as fishermen will be off the water sooner. Likewise, upping the cabezon bag limit to 3 will have the same effect. We also

support the California recreational season structure as crafted according to the GMT's tentatively adopted ACLs. We recognize that this has onerous impacts on the Fort Bragg/Shelter Cove area, but looking at different model runs it appears that there is no good solution out of that box. An additional 17% loss of fishing opportunity at the end of July will be at the peak of the recreational season, which will result in significant negative economic impacts to the North Central North area. On the positive side, we appreciate the expansion of time on the water for other areas of the state that will provide economic benefit with reduced impact on overfished species.

### **Southern California Recreational**

The GAP supports the CA management measures for the increase in the recreational depth restriction in the CCA from 20 to 30 fathoms. We feel that the increase in the depth will have negligible impacts on cowcod. The best available science says that the common range of cowcod starts at about 50 fathoms. "Submersible surveys at the northern end of the southern California bight indicate that juvenile cowcod were most common from 49 fm to 82 fm and adults were most common at depths of 66 fm to 115 fm." (Butler et al 1999) CPFV MRFSS data from 1999 to 2001 shows 1 cowcod caught between 20 and 40 fathoms and the CRFS data from 2004 to 2009 also shows 1 cowcod caught between 20 and 40 fathoms. Based on the above mentioned data, moving the line from 20 to 30 fathoms would have effectively zero impacts on cowcod as it still leaves us with a nearly 20 fathom buffer between the line and the common range of cowcod. Moving the line will help offset some of the effort shift caused by an increasing MPA network under the MLPA. In addition, the GAP supports the CDFG management measures to modify the list of groundfish species allowed to be taken recreationally in the CCA to include shelf rockfish. We feel that it will minimize bycatch on the shelf complex and help us achieve our target limit sooner.

### **Conception Area Sablefish**

The GAP recommends the following trip limits:

- Limited entry – no daily limit and 2,000 pounds per week with no bi-monthly limit
- Open access – 400 pounds per day or 1 weekly landing of up to 1,500 pounds not to exceed 6,000 pounds in 2 months

### **Conception Area Nearshore**

- 2010 Status quo RCA – 60 fathoms
- 2010 status quo trip limits for both LE and OA
- California scorpionfish: 1,200 pounds per 2 months for both LE and OA

In conclusion, the GAP notes that there are significant effects of the proposed management measures to the different sectors of the groundfish fishery that vary by fishing community. Members of the GAP intend to provide more specificity in their public testimony.

Table 1. GAP recommendations for catch shares of overfished species in 2011 and 2012 nearshore commercial fisheries.

<b>Management Measures 2011 and 2012</b>	
<b>55/45 Yelloweye Catch Sharing</b>	
2006-2008 avg landings; 20 fm between 42 and 40 10' only, status quo north and south	
<b>OREGON</b>	
NORTH OF 42 N. LAT.	
BLACK ROCKFISH	74
BLUE ROCKFISH	7
CABEZON	14
KELP GREENLING	14
LING COD	28
OTHER MINOR NEARSHORE ROCKFISH	10
<b>CALIFORNIA</b>	
42 TO 40 10' N. LAT.	
BLACK ROCKFISH	130
BLUE ROCKFISH	7
CABEZON	7
KELP GREENLING	0
LING COD	15
OTHER MINOR NEARSHORE ROCKFISH	6
SOUTH OF 40 10' N. LAT.	
BLACK ROCKFISH	3
BLUE ROCKFISH	7
CABEZON	63
DEEPER NEARSHORE ROCKFISH	29
KELP GREENLING	1
LING COD	21
SHALLOW NEARSHORE ROCKFISH	51
<b>OVERFISHED SPECIES</b>	
BOCACCIO	<b>0.3</b>
CANARY ROCKFISH	<b>2.9</b>
WIDOW ROCKFISH	<b>0.3</b>
YELLOWEYE ROCKFISH	<b>0.9</b>

## GROUND FISH MANAGEMENT TEAM STATEMENT ON 2011-2012 HARVEST SPECIFICATIONS AND MANAGEMENT MEASURES

This statement covers 1) considerations on the Council's preliminary preferred decision on non-overfished species ACL and overfished species ACLs 2) management measures necessary to keep harvest within the preliminarily adopted limits and 2) trawl rationalization issues related to the 2011-2012 harvest specifications and management measures.

### **Harvest Specifications**

#### Reductions from the ACL – Order of Operations

The term “set-asides” has been used to refer to the amounts of fish deducted “off the top” from the ACL (previously termed OY) and, for the whiting fishery, off the trawl sector. There has been some question about the flexibility that set-asides do or don't provide and whether they should be specified in regulation.

#### **“Off the top” amounts**

For the amounts of fish deducted “off the top” from the ACL, the regulations in the initial issuance proposed rule (75 FR 32994, 6/10/2010) based on amendment 21, state,

*(b) Fishery harvest guidelines and reductions made prior to fishery allocations. Beginning with the 2011-2012 biennial specifications process and prior to the setting of fishery allocations, the OY is reduced by the Pacific Coast treaty Indian tribal harvest (allocations, set-asides, and estimated harvest under regulations at § 660.50); projected scientific research catch of all groundfish species, estimates of fishing mortality in non-groundfish fisheries and, as necessary, set-asides for EFPs. The remaining amount after these deductions is the fishery harvest guideline or quota. (note: recreational estimates are not deducted here).*

Guidance from NMFS is that the research and incidental open access amounts are "estimates." The tribal amounts are a mix of allocations, set-asides, and estimated harvest under regulations at 660.50. The EFP numbers are "set-asides" (see 660.55(k)).

*(k) Exempted fishing permit set-asides. Annual set-asides for EFPs described at § 660.60(f), will be deducted from the OY. Set-aside amounts will be adjusted through the biennial harvest specifications and management measures process.*

The sum of these amounts (tribal, research, incidental open access, EFP) should be specified in regulation through the biennial specifications and management measures process so that it is clear how the fishery harvest guideline has been determined. Similarly, in cases where a commercial harvest guideline is specified, the recreational estimates should be documented so that it is clear how the commercial harvest guideline has been determined. However, these amounts that are deducted from the ACL to come up with the fishery harvest guideline are

somewhat flexible as long as the summed amount that is deducted from the ACL is not exceeded. For example, if research catch is higher than originally estimated, but incidental open access amounts are lower than expected and the sum of all amounts deducted from the ACL is not exceeded, no action needs to be taken.

The amount of fish deducted from the ACL to determine the fishery harvest guideline is not available to be allocated to other sectors (trawl or non-trawl). However, if either of those sectors (trawl or non-trawl) exceeds their allocation, or conversely, the amount of fish that comes “off the top” is exceeded, no sector is held harmless from that overage as stated in the Am 21 DEIS.

**From Am 21 DEIS (p. 191)**

**6.3 Goals and Objectives of the Groundfish Strategic Plan**

The Council adopted the Groundfish Strategic Plan, “Transition to Sustainability”, in the fall of 2000. The following are the general allocation goal and principles included in the strategic plan, which were also used as criteria for deciding intersector allocation alternatives, conducting analysis of those alternatives, and in deciding the final preferred alternative.

*Strategic Plan Goal for Allocation*

To distribute the harvestable surplus among competing interests in a way that resolves allocation issues on a long-term basis.

*General Allocation Principles*

1. All fishing sectors and gear types will contribute to achieving conservation goals (no sector will be held harmless). The fair and equitable standard will be applied to all allocation decisions but is not interpreted to mean exactly proportional impacts or benefits.

If either the trawl or non-trawl exceeds their allocation or an estimate or set-aside amount is exceeded, there is no harm as long as the ACL for that species is not exceeded.

**Whiting set-asides**

For the amounts deducted from the trawl allocation for the at-sea whiting fishery, they are “fishery set-asides,” and show up in the new Tables 1d and 2d in the initial issuance proposed rule. The at-sea whiting fishery set-asides are NOT available to any other fishery during the year (see 660.55(j)).

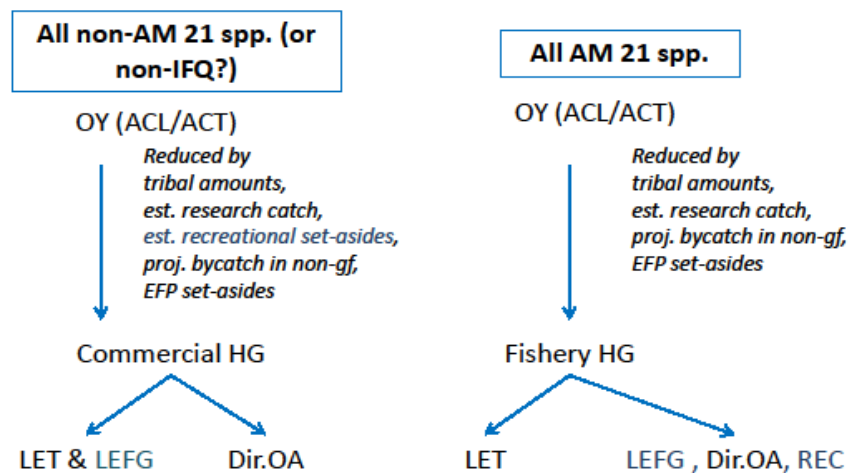
*(j) Fishery set-asides. Annual set-asides are not formal allocations but they are amounts which are not available to the other fisheries during the fishing year. For the catcher/processor and mothership sectors of the at-sea Pacific whiting fishery, set-asides will be deducted from the limited entry trawl fishery allocation. Set-aside amounts will be specified in Tables 1a through 2d of this subpart and may be adjusted through the biennial harvest specifications and management measures process.*

The methodology for apportioning and allocating catch from the specified harvest level is shown in Figure 1. Likewise Table 1 and Table 2 lays out the reductions off the top and the resulting



allocations for Amendment 21 species. The GMT notes that the Amendment 21 whiting allocations for widow, darkblotched, and POP are further divided pro-rata based on the sectors whiting allocations (i.e., 42% shoreside, 34% catcher-processor, 24% mothership). The two year 2011-2012 allocations of canary are also allocated on a two year basis pro-rata to the sector's allocation of whiting. Table 3 shows reductions and allocations for those species that are allocated every biennial management cycle. Table 4 shows the sablefish allocations, compared to the 2009-2010 cycle, based on the tentatively adopted ACL.

## Am 6 v. Am 21 allocation structure



**Figure 1.** Comparison of distribution protocols for species allocated under Amendment 21 and all others.

**Table 1. Reductions to harvest levels and resultant allocations under Amendment 21 for 2011.**

Species/Species Group/Area	2011 PPA ACL/a	Tribal	EFP	Research	Incidental OA	Fishery HG	Trawl A21%	Non- trawl A21%	Trawl A21 mt	Non- Whiting A21 mt	Whiting A21 mt	Non- trawl A21 mt
Lingcod N. of 42° N latitude (OR & WA)	2,330	250	0	5	16	2,059	45%	55%	927	924	3	1,132
Lingcod S. of 42° N latitude (CA)	2,102	0	0	0	7	2,095	45%	55%	943	940	3	1,152
Pacific Cod	1,600	400	0	0	0	1,200	95%	5%	1,140	1,139	1	60
Sablefish S of 36° N. lat.	1,298	0	26	2	6	1,264	42%	58%	531	531	0	733
Dover sole	25,000	1497	0	38	55	23,410	95%	5%	22,240	22,240	0	1,171
English sole	19,761	91	0	5	4	19,661	95%	5%	18,678	18,659	19	983
<b>PETRALE SOLE</b>	976	45.4	2	17	1	911	95%	5%	865	865	0	46
Arrowtooth flounder	15,174	2041	0	7	30	13,096	95%	5%	12,441	12,441	0	655
Starry Flounder	1,352	2	0	0	5	1,345	50%	50%	673	673	0	673
Other flatfish	4,884	60	0	13	125	4,686	90%	10%	4,217	4,213	4	469
<b>PACIFIC OCEAN PERCH</b>	150	10.9	0.10	2	0	137	95%	5%	130	100	30	7
<b>WIDOW</b>	600	45	11	2	3	539	91%	9%	491	235	255	49
Chilipepper (coastwide)	2,130	1		9	5	2,115	75%	25%	1,586	1,586	0	529
Splitnose S. of 40°10' N lat.	1,461	0	0	7	0	1,454	95%	5%	1,381	1,381	0	73
Yellowtail N. of 40°10' N lat.	4,364	490	2	4	3	3,865	88%	12%	3,401	3,101	300	464
Shortspine thornyhead N. of 34 27' N. lat.	1,573	38	0	5	2	1,528	95%	5%	1,452	1,450	1	76
Shortspine Thornyhead S. of 34 27' N. lat.	405	0	0	1	41	363	50 mt	The Rest	50	50	0	313
Longspine thornyhead N. of 34 27' N. lat.	2,119	30	0	13	1	2,075	95%	5%	1,971	1,971	0	104
<b>DARKBLOTCHED</b>	298	0.1	2	2	15	279	95%	5%	265	240	25	14
Minor Slope Rockfish North 40°10' N lat.	1,160	36	2	11	19	1,092	81%	19%	885	872	12	207
Minor Slope Rockfish South 40°10' N lat.	626	0	2	8	17	599	63%	37%	377	377	0	222

a/ ACT for POP

**Table 2. Reductions to harvest levels and resultant allocations under Amendment 21 for 2012.**

Species/Species Group/Area	2012 PPA ACL/a	Tribal	EFP	Research	Incidental OA	Fishery HG	Trawl A21%	Non-trawl A21%	Trawl A21 mt	Non- Whiting A21 mt	Whiting A21 mt	Nontrawl A21 mt
Lingcod N. of 42° N latitude (OR & WA)	2,151	250	0	5	16	1,880	45%	55%	846	843	3	1,034
Lingcod S. of 42° N latitude (CA)	2,164	0	0	0	7	2,157	45%	55%	971	968	3	1,186
Pacific Cod	1,600	400	0	0	0	1,200	95%	5%	1,140	1,139	1	60
Sablefish S of 36° N. lat.	1,258	0	26	2	6	1,224	42%	58%	514	514	0	710
Dover sole	25,000	1497	0	38	55	23,410	95%	5%	22,240	22,240	0	1,171
English sole	10,150	91	0	5	4	10,050	95%	5%	9,548	9,538	10	503
<b>PETRALE SOLE</b>	1,160	45.4	2	17	1	1,095	95%	5%	1,040	1,040	0	55
Arrowtooth flounder	12,049	2041	0	7	30	9,971	95%	5%	9,472	9,472	0	499
Starry Flounder	1,360	2	0	0	5	1,353	50%	50%	677	677	0	677
Other flatfish	4,884	60	0	13	125	4,686	90%	10%	4,217	4,213	4	469
<b>PACIFIC OCEAN PERCH</b>	150	10.9	0.10	2	0	137	95%	5%	130	100	30	7
<b>WIDOW</b>	600	45	11	2	3	539	91%	9%	491	235	255	49
Chilipepper (coastwide)	1,924	1		9	5	1,909	75%	25%	1,432	1,432	0	477
Splitnose S. of 40°10' N lat.	1,538		0	7	0	1,531	95%	5%	1,454	1,454	0	77
Yellowtail N. of 40°10' N lat.	4,371	490	2	4	3	3,872	88%	12%	3,407	3,107	300	465
Shortspine thornyhead N. of 34 27' N. lat.	1,556	38	0	5	2	1,511	95%	5%	1,435	1,434	1	76
Shortspine Thornyhead S. of 34 27' N. lat.	401		0	1	41	359	50 mt	The Rest	50	50	0	309
Longspine thornyhead N. of 34 27' N. lat.	2,064	30	0	13	1	2,020	95%	5%	1,919	1,919	0	101
<b>DARKBLOTCHED</b>	296	0.1	2	2	15	277	95%	5%	263	238	25	14
Minor Slope Rockfish North 40°10' N lat.	1,160	36	2	11	19	1,092	81%	19%	885	872	12	207
Minor Slope Rockfish South 40°10' N lat.	626	0	2	8	17	599	63%	37%	377	377	0	222

a/ ACT for POP

**Table 3. Reductions and allocations for species with two-year allocations for both 2011-2012 necessary for TIQ initial allocation.**

Species/Species Group/Area	2011/2012 PPA ACL	Tribal	EFP	Research	Incidental OA	Fishery HG	Trawl SPEX %	Non- trawl SPEX %	Trawl SPEX mt	Within Trawl (%) Whiting Non- whiting	Within Trawl (MT) Whiting Non- whiting	Nontrawl SPEX mt
Longnose Skate	1,349	56		8	65	1,220	95%	5%	1,159	5% 95%	58 1101	61
Minor Shelf N. of 40 10' N. lat.	968	9	4	4	26	925	60.2%	39.8%	557	17.4% 82.6%	97 460	368
Minor Shelf S. of 40 10' N. lat.	714	0	2	2	9	701	12.2%	87.8%	86	N/A N/A	N/A N/A	615

**Table 4.** 2011-2012 Sablefish allocations compared to the 2009-2010 allocations.

Year	Sablefish OY N of 36° N lat	Tribal Share*	Research, Rec., EFP, and Inc. OA Set-Aside	Non- Tribal Comm. Share	LE Share	LE FG				OA Share
						LE Trawl Share	LE FG Share	LE FG Primary	LE FG DTL	
2009	7,052	705	200	6,147	5,569	3,230	2,339	1,988	351	578
2010	6,471	647	200	5,624	5,095	2,955	2,140	1,819	321	529
2011	5,515	552	39.3	4,924	4,461	2,588	1,874	1,593	281	463
2012	5,347	535	39.3	4,773	4,324	2,508	1,816	1,544	272	449

### POP and Yelloweye ACTs for Rebuilding

The GMT finds the Council's use of ACTs for yelloweye and POP to be appropriate applications of the ACT concept. Before the Council action, we had planned on pointing out how the Council's existing approach to the rebuilding OYs has been based on a similar rationale as the ACT approach in the NS1 guidelines where management measures are set in manner that targets a lower amount than the OY or is designed to reduce the risk of catch variability leads to overages.

We do want to make the Council aware that we did see the POP catch reach 157 mt in 2007 when the OY was 150 mt in case that affects the Council's rationale for setting the specific ACT amount. The overage occurred because of late season whiting activity that year, which was unusual. This event was unexpected yet underscored the fact that POP does have the potential to affect the whiting sectors. In general, more POP would provide whiting vessels more leeway to operate deeper to avoid canary.

**The GMT recommends evaluating the 157 mt catch of POP if the intent was to set the ACT at the highest catch seen in recent years.**

### Comparing Stock Status in Light of the Cowcod 2005 Stock Assessment Error

In our statement on rebuilding in Agenda Item B.3, we discussed how perceptions of a stock's status and biology and how they can change from cycle to cycle can turn more on uncertainty than on a real change in stock status. Sometimes the change can simply result from a mistake in the model.

This is exactly what occurred with cowcod. The change in our perception of the stock resulted from the 2007 assessment simply correcting an error from the 2005 assessment, which Council staff can explain if the Council wishes more detail.<sup>1</sup> We did not highlight this fact in our Agenda B.3 statement and do not know if the Council was aware of this situation when it tentatively adopted the cowcod ACL. It does not seem that the court was made aware of this error. Comparing current rebuilding results with a past mis-specified model does not seem appropriate.<sup>2</sup> If the error had been detected at the time, the rebuilding outlook would have been much different. If we are going to compare perceptions of stock status across time, then the original rebuilding plan would seem a more appropriate benchmark. Compared to the  $T_{\text{TARGET}}$  from that plan, the Council's 2009  $T_{\text{TARGET}}$  was set 18 years earlier.

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<sup>1</sup> As characterized by the SSC in their September 2008, "(g)ear selectivity, which had been mis-specified in the 2005 assessment, was corrected and revised."

<sup>2</sup> The 2007 assessment result indicated that cowcod could not be rebuilt by the target year specified under Amendment 16-4 (year 2039). Prior to the 2005 assessment, the Council had established a target rebuilding year of 2090 for cowcod rebuilding and specified a 4 mt OY as part of the original rebuilding plan. The Council's specification of 4 mt for 2009 and 2010 using the 2007 assessment also changed the target year to rebuild the cowcod stock to 2072, 18 years earlier than the original rebuilding plan. The Council's use of the best available science in the last management cycle did not change the OY, but rather the target year, which again, can be seen as inappropriately set under Amendment 16-4 based on the results of the incorrectly specified 2005 assessment model.

This is perhaps an extreme example of the potential pitfalls of focusing on what scientists call “noise” in our understanding of status and biology. Movements from rebuilding reference points should be answered to based on the needs of the fishing communities factor and an explanation of how different the delay is on the three dimensions that define stock status and biology. It may be that the “delay” is insignificant or that the needs of fishing communities is so compelling that the delay is justifiable.

This is also a good example to highlight how, in some sense, the needs of fishing community have to be looked at in isolation from changes in stock status and biology. We do not go into a full discussion of how changes in our perception of status and biology might influence the Council’s perception of the needs of fishing communities yet observe only that the perception may not change much even in the light of large differences in our perception of status and biology. What remains most important to the Council’s consideration of the needs of the fishing community factor is how one catch amount differs from another in the way it does or does not address the needs of fishing communities. We offer the observation that the contrast between 3 mt and 4 mt of cowcod has not changed since Amendment 16-4 or the 2009-10 cycle. The gist of the difference between 3 mt and 4 mt of cowcod involves another somewhat nuanced rationale based on the management uncertainty related to the “rare event” characteristics of cowcod. The variability and low encounter rates with cowcod mean that catch can swing considerably from year to year even when management measures are constant. In the past, the Council has chosen 4 mt not because it allowed more significant fishing opportunity than 3 mt, yet more because the Council was more confident that catch would not exceed 4 mt given the same or similar amount of fishing opportunity. Recent catch bears this out with estimated annual catch ranging from 0.5 mt to 3.5 mt (Table 5). An ACL/ACT approach like that tentatively adopted for yelloweye and POP would seem consistent with this level of management uncertainty.

**The GMT recommends the Council consider whether the 2005 stock assessment error changes its rationale for tentatively adopting a cowcod ACL of 3 mt.**

Table 5. Recent catches of cowcod taken directly from Table 3 of the rebuilding analysis.<sup>3</sup> While not reported in this table, the 2008 total mortality estimate is less than 1.0 mt (reported as 1 mt in the Total Mortality Report and 13% of the 4 mt OY, which the GMT would report as 0.5 mt).

Year	Commercial (CalCOM)	Recreational (RecFIN)	Total Mortality Report	ABC	OY
2002	0.10	0.58	3.51	24	4.8
2003	0.05	--	0.32	24	4.8
2004	0.03	0.45	2.18	24	4.8
2005	0.04	0.15	1.27	24	4.2
2006	--	0.07	1.18	24	4.2
2007	0.40	0.20	3.20	36	4
2008	--	0.19	--	36	4

<sup>3</sup> PFMC November 2009 Briefing Book, Agenda Item G.2.a, Attachment 3 Draft Cowcod Rebuilding Analysis.

### Corrected Expected Rate of Increase Numbers

In Agenda Item B.3, we suggested looking at the expected rate of increase to contrast the rebuilding alternatives in manner that takes into account the different biology of the stocks. We still endorse the concept yet performed the calculation incorrectly in Agenda Item B.3.<sup>4</sup> Mr. Anderson was given these corrected numbers when he spoke to his motion during Council action on that agenda item (Table 6).

Table 6. Corrected Expected Rate of Increase Calculations for the Council's Rebuilding Scenarios. We did not look at widow given that it is projected to be on the cusp of rebuilding.

Expected rate of increase	Canary	Yelloweye	Darkblotched	POP	Cowcod	Petrale	Bocaccio
F=0	3.4%	1.7%	3.8%	3.8%	4.0%	40.7%	4.0%
Alt 1	3.1%	1.2%	2.8%	3.8%	4.0%	40.7%	4.0%
Alt 2	2.9%	1.0%	1.9%	3.8%	3.7%	25.6%	3.6%
Alt 3	2.8%	0.9%	1.3%	3.4%	3.5%	21.6%	3.0%
As a % of the rate at F=0 of increase	Canary	Yelloweye	Darkblotched	POP	Cowcod	Petrale	Bocaccio
Alt 1	93%	67%	75%	100%	100%	100%	100%
Alt 2	87%	58%	50%	100%	93%	63%	90%
Alt 3	82%	50%	35%	90%	88%	53%	75%

### Long-term Yield from the Yelloweye Rebuilding Analysis

In Agenda Item B.3 we made reference to a recent look at the yelloweye rebuilding scenarios similar to the analysis of petrale sole and made general statements about how the Council's rebuilding analysis were more likely to sacrifice long-term economic return for faster rebuilding than the other way around. Table 7 summarizes this analysis. Catch streams were constructed for each scenario from the median catch estimates from the rebuilding analysis (i.e., the predicted ACL). We changed the catch for each scenario to the estimated catch at  $B_{MSY}$  of 56.4 mt the year after the stock hit  $T_{TARGET}$ . Overall yield is the basic estimate of long-term economic return from the stock. The no fishing strategy would produce 1.1 percent more yield than Alternative 2 by the year 2080 yet the cost of that extra yield is three and a half decades of management restrictions meant to eliminate yelloweye bycatch to zero. Alternative 1 produces 0.7 percent more yield by 2080, yet, again, that small amount of yield so far into the future is inconsequential compared to the costs of fishing at that lower SPR harvest rate. Lastly, we noted that keeping that stock near current biomass levels by fishing at the SPR harvest rate of 0.50 ( $F_{MSY}$ ) still produces 50 percent more expected yield by 2100 than the Council's tentatively adopted alternative.

<sup>4</sup> In short, we forgot about compounding. The GMT thanks Dr. James Hastie for finding our error. The correct formula for calculating the expected annual rate of increase:

$$r = (B_{MSY} \text{ target} / \text{Current Biomass})^{1/n} - 1$$
  
where  $n$  is the number of years to  $T_{target}$ .

**Table 7.** Projected cumulative allowable catch (mt) of yelloweye rockfish by decade through 2100 for the Council's three rebuilding alternatives and the F=0, 40-10, and F<sub>MSY</sub> harvest rate scenarios (top panel); and that same cumulative catch expressed as a percentage difference from Alt 2 (bottom panel), the alternative tentatively adopted under Agenda Item B.3.PPA.<sup>5</sup>

Year	F=0	Alt 1	Alt 2	Alt 3	40-10	FMSY
2020	0	139	186	209	361	481
2030	0	297	394	440	757	959
2040	0	475	625	696	1,177	1,444
2050	169	674	880	976	1,621	1,933
2060	733	891	1,155	1,277	2,083	2,423
2070	1,297	1,289	1,452	1,599	2,563	2,916
2080	1,861	1,853	1,840	1,942	3,055	3,410
2090	2,425	2,417	2,404	2,423	3,559	3,906
2100	2,989	2,981	2,968	2,987	4,071	4,402

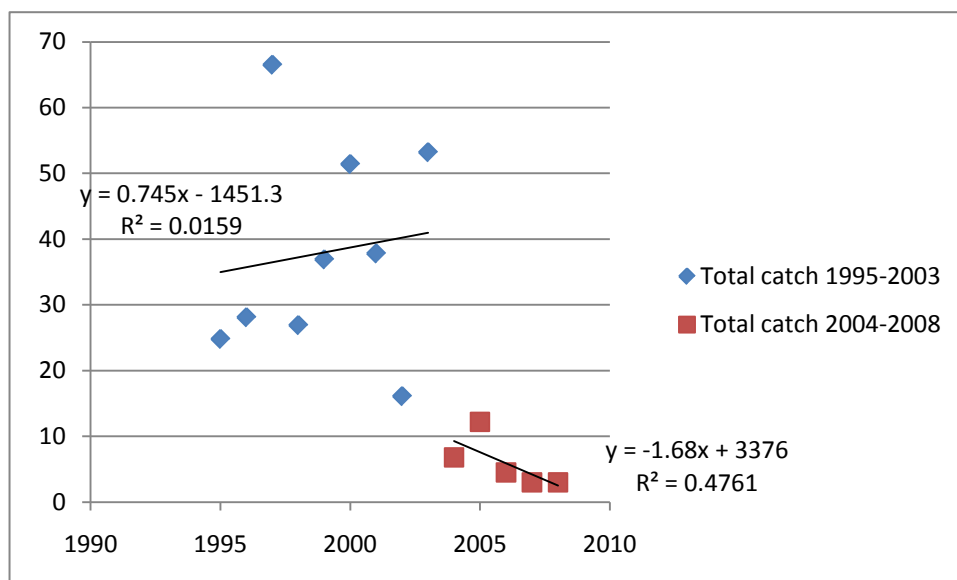
Year	F=0	Alt 1	Alt 2	Alt 3	40-10	FMSY
2020	0.0%	74.6%	--	112.3%	194.6%	258.8%
2030	0.0%	75.4%	--	111.8%	192.1%	243.5%
2040	0.0%	76.0%	--	111.4%	188.3%	230.9%
2050	19.2%	76.6%	--	110.9%	184.2%	219.7%
2060	63.5%	77.1%	--	110.5%	180.4%	209.8%
2070	89.4%	88.8%	--	110.2%	176.6%	200.9%
2080	101.1%	100.7%	--	105.5%	166.0%	185.3%
2090	100.9%	100.5%	--	100.8%	148.0%	162.5%
2100	100.7%	100.4%	--	100.6%	137.1%	148.3%

#### Recent Catch Histories of Petrale Sole Compared the Intersector Allocation

The GMT considered Council guidance to suspend the allocations under Amendment 21 while petrale is rebuilding. The GMT examined total non-trawl catch from the Amendment 21 DEIS and noted a marked decrease in catch in the non-trawl sectors beginning in 2004 (Figure 2). Whether this is the result of management constraints, such as RCA configurations, or improved total mortality accounting through the West Coast Groundfish Observer Program is unclear; however, the general reduction appears to have held for the last several years. As such, similar to the approach suggested by the GMT for other species' "off the top" estimates, the Council may want to establish an allocation such that it accommodates what may be expected in non-trawl sectors without needing to change the trawl allocation inseason or exceeding the ACL. As shown in Figure 2, the highest catch in recent years is 12.2 mt.

<sup>5</sup> The rebuilding analysis can be found at PFMC November 2009 Briefing Book, Agenda Item G.2.a, Attachment 7 Rebuilding Analysis for Yelloweye Rockfish Based on the 2009 Stock Assessment. The median catch projections are truncated in that document. The author provided the team with the raw output, which includes the median catch streams by year through the year 2506.





**Figure 2. Non-trawl catch of petrale sole 1995-2008.**

### Blue Rockfish Harvest Guideline

In 2009-2010 blue rockfish was managed with a harvest guideline (HG) for California to prevent overfishing of a stock in the precautionary zone. The Council has adopted a default harvest policy for reducing catch below the ABC for species below  $B_{MSY}$  under Amendment 23 (the 40-10 rule). Table 8 shows the OFL, ABC, and 40-10 adjusted values for both the assessed and unassessed portion of the stock both north and south of 40° 10' N latitude within California. **The GMT recommends that the Council specify an HG for California of 241 mt in 2011 and 239 mt in 2012.**

**Table 8.** Harvest specification calculations for both the assessed and unassessed areas within California by year.

Species	OFL		ABC=ACL		ABC+40-10 adjustment =ACL/HG	
	2011	2012	2011	2012	2011	2012
Minor Nearshore Rockfish						
North	116	116	99	99	97	96
South	1156	1145	1001	990	983	971
California Blue rockfish						
North (assessed)	28	27	25	25	23	22
South (assessed)	191	190	175	173	156	154
Total assessed	219	217	200	198	179	177
S of 34°27' N lat.	74	74	62	62	62	62
TOTAL	293	291	262	260	241	239

## Management Measures under the Council's Preliminary Preferred Decision

The GMT analyzed the management measures necessary to keep total catch under the Council's preliminary preferred decision for overfished species Table 9. As in past management cycles, it is anticipated that overfished species will constrain access to target species. Table 10 provides a more detailed look at how the Council's preliminary preferred decision for the 2 year allocations of canary, cowcod, bocaccio, and yelloweye. The GMT did not have sufficient time to provide insight by fishery on how the balance of the 1.3 mt of yelloweye might best be utilized by each sector. I.e., how much additional target species could be accessed by sector given additional yelloweye.

The GMT notes that the trawl and non-trawl (includes recreational and commercial fixed gears) is the biggest decision relative to final action today since the trawl allocation will be transformed into quota shares and eventually quota pounds. The Council's decision on the within non-trawl (between or among fixed gear commercial and recreational) is more fluid and can be changed through routine inseason actions. I.e., the final action here is to determine a reasonable set of management measures that constrain catches to within the amounts reserved for those fisheries. However, should those fisheries require more as a result of new information (e.g., bycatch rates or updated landings data), the two year allocations between the non-trawl sector can be adjusted.

Table 9. June 2010 Preliminary Preferred Decision for Overfished Species.

Stock	Alternative 4 - June 2010 PPA			
	2011 ACL	2012 ACL	2011 ACT	2012 ACT
<b>BOCACCIO S. of 40°10' N latitude</b>	263	274		
<b>CANARY</b>	102	107		
<b>COWCOD S. of 40°10' N latitude</b>	3	3		
<i>COWCOD (Conception)</i>				
<i>COWCOD (Monterey)</i>				
<b>DARKBLOTCHED</b>	298	296		
<b>PACIFIC OCEAN PERCH</b>	180	183	150	150
<b>WIDOW</b>	600	600		
<b>YELLOWEYE</b>	20	20	17	17
<b>PETRALE SOLE</b>	976	1,160		

**Table 10.** Projected impacts, harvest guideline, percentage of harvest guideline represented by projected impacts and residual yield between the projected impacts and the harvest guideline for each sector under the preliminary preferred overfished species ACL alternative.

Sector	Yelloweye (ACT = 17 mt, ACL = 20 mt)				Canary (ACL = 102 mt)				Bocaccio (ACL = 263 mt)				Cowcod (ACL = 3 mt)			
	Impacts	HG	% HG	Residual	Impacts	HG	% HG	Residual	Impacts	HG	% HG	Residual	Impacts	HG	% HG	Residual
Limited Entry Non-Whiting Trawl	0.2	0.6	33%	0.4	10.6	19.3	55%	8.7	7.2	19.3	37%	12.1	0.3	1.4	21%	1.1
Non-nearshore*	0.9				2.2				0.0	12.3	0%	12.3	NA	NA	NA	NA
LEFG	0.8	1.3	69%	0.4	1.9	2.3	96%	0.1								
OA DTL	0.1				0.3											
Nearshore Fixed Gear	0.7	0.7	100%	0.0	2.1	3.3	64%	1.2	0.3				NA	NA	NA	NA
Washington Recreational	2.5	2.6	96%	0.1	0.5	4.4	11%	3.9	NA	NA	NA	NA	NA	NA	NA	NA
Oregon Recreational	2.1	2.4	88%	0.3	2.4	14.5	17%	12.1	NA	NA	NA	NA	NA	NA	NA	NA
California Recreational	2.5	2.6	96%	0.1	9.3	17.7	53%	8.4	55.4	65.8	84%	10.4	0.17	1.4	12%	1.23
Limited Entry Whiting Trawl																
Catcher Processor	NA	NA	NA	NA	0.8	4.6	17.4%	3.8	NA	NA	NA	NA	NA	NA	NA	NA
Trawl Mothership	NA	NA	NA	NA	1.2	3.2	37.5%	2.0	NA	NA	NA	NA	NA	NA	NA	NA
Trawl Shoreside	NA	NA	NA	NA	3.7	5.7	64.9%	2.0	NA	NA	NA	NA	NA	NA	NA	NA
Total Residual				1.3				42.2				34.8				2.33

Sector	Yelloweye (ACT = 17 mt, ACL = 20 mt)				Canary (ACL = 107 mt)				Bocaccio (ACL = 274 mt)				Cowcod (ACL = 3 mt)			
	Impacts	HG	% HG	Residual	Impacts	HG	% HG	Residual	Impacts	HG	% HG	Residual	Impacts	HG	% HG	Residual
Limited Entry Non-Whiting Trawl	0.3	0.6	50%	0.3	10.8	19.3	56%	8.5	7.4	19.3	38%	11.9	0.3	1.4	21%	1.1
Non-nearshore*	0.8				2.1				0.0	12.3	0%	12.3	NA	NA	NA	NA
LEFG	0.7	1.3	62%	0.5	1.8	2.3	91%	0.2								
OA DTL	0.1				0.3											
Nearshore Fixed Gear	0.7	0.7	100%	0.0	2.2	3.3	67%	1.1	0.3				NA	NA	NA	NA
Washington Recreational	2.5	2.6	96%	0.1	0.5	4.4	11%	3.9	NA	NA	NA	NA	NA	NA	NA	NA
Oregon Recreational	2.1	2.4	88%	0.3	2.4	14.5	17%	12.1	NA	NA	NA	NA	NA	NA	NA	NA
California Recreational	2.5	2.6	96%	0.1	9.3	17.7	53%	8.4	55.4	65.8	84%	10.4	0.17	1.4	12%	1.23
Limited Entry Whiting Trawl																
Catcher Processor	NA	NA	NA	NA	0.8	4.9	16.3%	4.1	NA	NA	NA	NA	NA	NA	NA	NA
Trawl Mothership	NA	NA	NA	NA	1.2	3.4	35.3%	2.2	NA	NA	NA	NA	NA	NA	NA	NA
Trawl Shoreside	NA	NA	NA	NA	3.7	6.0	61.7%	2.3	NA	NA	NA	NA	NA	NA	NA	NA
Total Residual				1.3				42.8				34.6				2.33

## COMMERCIAL

### Non-nearshore fixed gear model

Bycatch projections for the open access and limited entry fixed gear sectors are given in Table 11. The projections for these scenarios contained errors when we presented them in Agenda Item B.3. Further, we note that the open access DTL yelloweye impacts were presented alongside the open access nearshore fishery. Since the limited entry fixed gear and the open access DTL impacts are estimated from the same model, the GMT's scorecard will represent those impacts together. This is similar to how we have treated canary rockfish impacts between these two sectors. I.e., canary impacts in the limited entry fixed gear and the open access DTL impacts are shown in the row labeled "non-nearshore" while the nearshore impacts are listed in the row labeled "nearshore". **The GMT believes that it is logically consistent to keep impacts from the same model and fishery together when representing impacts in the scorecard.**

Yelloweye rockfish is the key constraining stock for the non-nearshore fixed gear sectors. The Council's tentatively adopted yelloweye ACT would leave a combined surplus of 0.4 mt in 2011 and 0.5 mt in 2012. The Council may wish to direct to another fishery or keep as a residual in the scorecard to reduce the risk that actual catch exceeds the projections from this and other models (i.e., account for management uncertainty).

We can only speak qualitatively to the management uncertainty arising from this model. The numbers in Table 11 best estimates of bycatch for this fishery, yet of course, bycatch rates may always change. Yelloweye bycatch rates in these fixed gear sectors have remained relatively stable over recent years, with the lowering of the bycatch projections resulting from the decreasing sablefish ACLs. The GMT projections from this model have been conservative in recent years, in part because of the assumption that the fixed gear sablefish allocations are fully harvested.<sup>6</sup> This assumption may be less conservative in 2011-12 because of the lower sablefish ACLs and the fact that the inseason changes to the DTL trip limits the Council has made over this cycle have increased the likelihood that a higher portion of the allocations for those sectors will be taken. Of course, we monitor sablefish landings inseason and will recommend that the Council take inseason action if necessary to keep the sablefish allocations from being exceeded. The Council has not contemplated liberalizing the RCA boundaries to something shallower than 100 fm since 2002. Bycatch of yelloweye and other rockfish would certainly increase inside 100 fm, yet we cannot model by how much. In other words, we cannot analyze how additional yelloweye could benefit these sectors and we won't get any new data unless the areas are reopened to fishing. We only note this because these sectors may seem better off compared to the status quo in terms of RCA configurations. Yet the 100 fm line certainly closes large areas of the shelf to fishing and has resulted in adverse economic impacts (e.g., increased travel distance, limited seasonal access to dogfish, etc.). Unlike with other models, we cannot contrast what the incremental benefit additional yelloweye would have for this fishery.

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<sup>6</sup> In contrast to models that apply bycatch rates to actual landings throughout the year, this model applies the bycatch rates to the full sablefish allocation.

Lastly a note on how we model bycatch in these fisheries and our preference for reporting these sectors together in the scorecard as the non-nearshore fixed gear sectors. Changes to the way we classify sectors in the scorecard can cause confusion if not documented. For example, as the Council is aware, this change caused some confusion among the team in our interpretation of the Council direction for analyzing the nearshore model.<sup>7</sup> Although we report bycatch projections separately for the two sectors, the sectors are effectively combined for bycatch projection purposes. Each sector's portion of the bycatch is simply pro rata (in proportion to) to their respective sablefish allocations. We model bycatch for the two sectors combined because the Council manages the two with the same RCA boundaries, the primary management measure for controlling bycatch in these fisheries. To treat the sectors separately, the Council would set separate seaward boundaries (e.g., allow one to fish according to the 100 fm and the other to fish seaward of the 125 fm). If the Council ever chose to do so, we could certainly break out the sectors in the scorecard. The Council has not done so before primarily because of enforceability concerns. We have not analyzed differential RCAs for open access and limited entry and do not see any need for the Council to consider doing so at this time. Further, we believe that Enforcement would have concerns over such a proposal.

**Table 11.** Bycatch projections for the non-nearshore fixed gear sectors under the Council's tentatively adopted ACLs and ACTs. These tables correct the equivalent tables given in Agenda Item B.3., Supplemental GMT Report 4.

Option 1: With status quo RCA boundaries: Columbia-Eureka to Cascade Head at 125 fm

	2011				2012		
	LE	OA	Total		LE	OA	Total
Bocaccio	0.0	0.0	0.0		0.0	0.0	0.0
Canary rockfish	2.1	0.3	2.4		1.8	0.3	2.2
Darkblotched rockfish	3.8	0.8	4.6		3.5	0.8	4.3
Pacific ocean perch	0.3	0.1	0.4		0.3	0.1	0.3
Widow rockfish	0.0	0.0	0.1		0.1	0.0	0.1
Yelloweye rockfish	0.7	0.1	0.8		0.6	0.1	0.7

Option 2: With RCA boundaries N. of 40° 10' N. latitude at 100 fm

	2011				2012		
	LE	OA	Total		LE	OA	Total
Bocaccio	0.0	0.0	0.0		0.0	0.0	0.0
Canary rockfish	1.9	0.3	2.2		1.8	0.3	2.1
Darkblotched rockfish	3.5	0.8	4.3		3.4	0.8	4.2
Pacific ocean perch	0.3	0.1	0.4		0.3	0.1	0.4
Widow rockfish	0.1	0.0	0.1		0.1	0.0	0.1
Yelloweye rockfish	0.8	0.1	0.9		0.7	0.1	0.8

<sup>7</sup> The confusion relates to the way we used to report the open access DTL bycatch together with the nearshore fisheries as "OA Directed."

### Limited Entry Sablefish DTL North of 36° N. Latitude

The GMT discussed adjustments to the cumulative landing limits for Limited Entry Fixed Gear Daily Trip Limit (LEFG-DTL) sablefish. The purpose of these adjustments are (a) to ensure that the season will continue throughout the year and (b) ensure that the fishery reaches or comes close to reaching their allocation of sablefish. A new model developed by the GMT to project landings based on trip limits was described under Agenda Item B.5.b, Supplemental GMT Report 2, June 2010.

The adjustments described herein accommodate the lower ACLs under the Council preferred alternative (2011 - 5,515 mt; 2012 – 5,347 mt). Allocations for LEFG-DTL sablefish are 281 mt and 272 mt for 2011 and 2012, representing reductions of approximately 40 mt relative to 2010. Representatives from the LEFG-DTL sablefish fishery requested lower landing limits during the first and sixth periods when weather is typically poorest.

**The GMT recommends the following bi-monthly cumulative limit for the LEFG-DTL sablefish beginning January 1, 2011:**

**Period 1 = 6,500 lb per two months**

**Period 2 = 7,500 lb per two months**

**Period 3 = 7,500 lb per two months**

**Period 4 = 7,500 lb per two months**

**Period 5 = 7,500 lb per two months**

**Period 6 = 6,000 lb per two months**

**The GMT recommends no daily limit for the proposed trip limit structure. Should the Council wish to implement a daily limit, limits could be implemented through routine inseason action since it is analyzed in the SPEX. Further, the Council could implement weekly limits, should it be necessary, since it was also analyzed in the SPEX.**

### Sablefish in the Conception Area (south of 36° N lat)

Under Agenda Item B.3.b, Supplemental GMT Report 4, the GMT requested Council guidance on whether or not they wanted the limited entry sector to have greater access than open access (i.e., differential trip limits). The Council provided the following guidance: (1) similar trip limits in both sectors, (2) preference to limited entry taking into account historical and current sector activities, and (3) analyze elimination of the daily trip limit in the limited entry sector. The following trip limit modeling was made assuming the Council's tentatively adopted ACL resulting in 753 mt non-trawl sablefish for 2011 and 730 mt for 2012.

#### *Similar trip limits for limited entry and open access*

Due to the limited available time, the GMT was unable to do any in-depth modeling using actual vessel histories to inform what an equal trip limit would be. We did some preliminary modeling making the following assumptions: the number of limited entry and open access participants (43 and 71) in 2009 is the same as 2010 and that everyone maximized fishing opportunities. The

GMT realizes that these are major assumptions and could be refined in future models. As such, if the Council chose to set equal trip limits for both sectors then a ~280 lb/week would keep these fisheries within their non-trawl allocation in 2011 and 2012. If the Council adopted equal trip limits as their preferred trip limit structure then the GMT would work to refine these trip limits and have it published for the proposed rule.

*Preference for limited entry*

The GMT analyzed catches of limited entry and open access from the years 2000-2009 (Table 12) to help inform historical levels of participation favoring the limited entry sector. The GMT used the proportions of harvest relative to 2000-2005 with limited entry getting 80% and open access, 20% since these years were more favorable to the limited entry sector.

**Table 12. Limited entry and open access sablefish landings in the Conception Area from 2000-2009.**

Fleet	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Avg '00-'09	Avg '00-'05
Limited entry	71.54	99.18	111.68	109.11	76.98	72.74	62.87	69.62	107.35	307.59	1,088.67	541.24
Open access	14.11	13.79	28.92	31.95	26.17	16.94	116.79	115.78	93.89	437.60	895.94	131.88
Fleet total	85.66	112.97	140.60	141.06	103.15	89.68	179.66	185.39	201.24	745.20	1,984.61	673.12

LE%	83.5%	87.8%	79.4%	77.3%	74.6%	81.1%	35.0%	37.6%	53.3%	41.3%	54.9%	80.4%
OA%	16.5%	12.2%	20.6%	22.7%	25.4%	18.9%	65.0%	62.4%	46.7%	58.7%	45.1%	19.6%



If the Council chose to structure trip limits using this scenario, the limited entry fixed gear trip limit would be at least 5,000 lb/week, with no daily limit. The GMT was unable to model trip limits for the open access sector due to the available time and the more complex trip limit structure (daily, weekly, and bi-monthly limit). Since the sablefish available to the open access sector under this option would be far less than landings in 2009, trip limits would have to be greatly reduced. If the Council adopted a trip limit structure giving preference to the limited entry sector, then the GMT would work to refine trip limits for the limited entry and open access fisheries and have it published for the proposed rule

#### Open Access Nearshore Model

In Agenda Item B.3.a Attachment 1 there are some errors in the model descriptions. For clarification, the model inputs are

- No action: uses projected 2010 landings that were estimated at the September 2009 Council meeting as well as the 2008 West Coast Groundfish Observer Program bycatch rates that were updated in March 2010.
- Alternative 1: uses **reduced** average landings from 2007-2009 for Oregon and 2006-2008 for California along with the 2008 bycatch data.
- Alternatives 2 and 3: based on reductions from Alternative 1 for the average landings from 2007-2009 for Oregon and 2006-2008 for California along with the 2008 bycatch data.

The no action alternative (as defined above) provided in Table 5 represents 2009 landings. The starting point provided in Table 13 represents the 2007-2009 average landings for Oregon and 2006-2008 for California of nearshore species with the depth restrictions. All alternatives (i.e., percent reductions) in the EIS were compared to this column (= “Starting Point”, which was not presented in the draft EIS). A column is included between them that we provide as another point of comparison is similar to the starting point for expected landings (2007-2009 or 2006-2008 average landings), but illustrate estimated impacts to overfished species when moving the RCA to 30 fm north of 40° 10’ N latitude.

Under, the tentatively adopted yelloweye ACT the nearshore fishery will be severely constrained. The 20 fm depth restrictions implemented in 2009 between 40° 10’ N latitude and 43° N latitude will have to remain in effect to reduce yelloweye impacts. Under this harvest level neither Oregon nor California will be able to maintain a status quo (2009) fishery.

Impacts are shown for two catch-sharing proportions between the states of Oregon and California – 50% OR:50% CA sharing plan and a 55% OR:45% CA catch sharing plan. The GMT analyzed two potential yelloweye catch sharing options, 50:50 and 55:45. The rationale for these two options is described in Appendix C, Description of Catch Projection Models (Agenda Item B.3.a, Supplemental Attachment 6). Simply, the GMT looked at a simple equal sharing option (50:50) and one informed by the yelloweye stock assessment (55:45).

Oregon is constrained by yelloweye under both alternatives. Annual landings would need to be reduced by 48% to 63% (94–104 mt) from the “Starting Point” of 210 mt to accommodate cuts under either of the new catch sharing plans. Yelloweye rockfish impacts for Oregon under a 17 mt yelloweye ACT are 0.36 and 0.4 mt. Hence, the Oregon nearshore fishery requires an

additional 0.4 to 0.5 mt to return to “normal” landing levels for depths < 20 fm (i.e., no action alternative or starting point). Table 14 shows nearshore landings by year for each modeled area.

In addition to being constrained by yelloweye, California will also be constrained by canary due to the presence of two high bycatch areas (one north of 40°10' and the other south of 40°10'). Under the 17 mt yelloweye ACT, the California nearshore fishery will not reach its yelloweye target because it will first be constrained by canary. As a result, minor reductions to landed catch must occur for some species to stay within allowable targets. California will be able to maximize cabezon landings under this alternative because the majority of the cabezon catch is taken in shallow depths where bycatch rates are low. If this fishery had access to additional canary, it could maximize its yelloweye target resulting in less reductions to landed catch.

With an additional 0.2 mt of yelloweye, the reductions to landed catch would be less severe for Oregon. With an additional 0.4 mt of yelloweye, this fishery could increase landings and attain average levels seen between 2007-2009 for Oregon and 2006-2008 for California.

**Table 13 Nearshore model results by area for the tentatively adopted ACT compared to reference points.**

	No Action	Comparison Point	Starting Point	Tentatively Adopted ACT	
	Sept 2009 final landings	30 fm in most areas	20 fm in some areas	17 mt	17 mt
Yelloweye Catch Sharing				50:50 catch sharing	55:45 catch sharing
Nearshore yelloweye		Provided only for	**Alternatives were	0.7 mt	
State targets (OR:CA)		Comparison - Not	Relative to this	0.37	0.4/0.3
		Requested	Standard **		
OR	Sept 2009 Landings; 20 fm depth between 42° and 43° only, 30 fm north of 43	2007-2009 Avg Landings; <b>30 fm statewide</b>	2007-2009 Avg Landings; 20 fm depth between 42° and 43° only, 30 fm north of 43°	2007-2009 Avg Landings; 20 fm between 42° and 43°, 30 fm north of 43°, Reductions of 53% (black rf & greenling), 63% others	20 fm, Reductions of 48% (black rf & greenling), 58% others
CA	Sept 2009 Landings; 20 fm between 42° and 40°10' only, SQ south of 40°10'	2006-2008 Avg landings; <b>30 fm depth; 60 fm south of 34°27'</b>	2006-2008 Avg landings; 20 fm between 42° and 40°10' only, SQ south of 40°10'	2006 - 2008 Avg Landings; 20 fm depth; 60 fm south of 34°27', catch reduction for some species, maximum cabezon	20 fm between 42° and 40°10' only, increased blacks in north, Statewide - maximum cabezon
<b>OREGON</b>					
<b>NORTH of 42° N. lat.</b>					
Black rockfish	139	110	110	52	57
Blue rockfish	3	3	3	1	1
Cabezon	17	17	17	9	11
Kelp greenling	20	20	20	9	10
Lingcod	50	50	50	19	21
Other minor nearshore rockfish	8	10	10	4	4
<b>CALIFORNIA</b>					
<b>42° to 40°10' N. lat.</b>					
Black rockfish	120	73	73	73	90
Blue rockfish	19	13	13	8	10
Cabezon	2	3	3	6	7
Kelp greenling	0	0	0	0	0
Lingcod	12	15	15	15	15
Other minor nearshore rockfish	10	10	10	6	8
<b>SOUTH of 40°10' N. lat.</b>					
Black rockfish	4	3	3	2	3
Blue rockfish	5	7	7	5	7
Cabezon	20	23	23	63	63
Deeper nearshore rockfish	37	29	29	20	29
Kelp greenling	1	1	1	1	1
Lingcod	18	21	21	21	21
Shallow nearshore rockfish	60	51	51	36	51
<b>Overfished Species</b>					
<b>Canary rockfish</b>					
OR	0.9	0.9	0.8	0.3	0.38
CA - 42 to 40°10'	1.0	1.0	0.7	0.7	0.79
CA - south of 40°10'	1.5	1.3	1.3	1.1	1.38
<b>Yelloweye rockfish</b>					
OR	0.9	1.0	0.8	0.36	0.4
CA - 42 to 40°10'	0.3	0.9	0.2	0.27	0.2
CA - south of 40°10'	0.1	0.1	0.1	0.08	0.1

**\*\*Table 13 correction: Under No Action: the description “Sept 2009 final landings” is incorrect: uses projected 2010 landings that were estimated at the September 2009 Council meeting as well as the 2008 West Coast Groundfish Observer Program bycatch rates that were updated in March 2010.**

**Table 14. Past years' nearshore landings by species and year for each modeled area.**

		Year and MT landed			
		2006	2007	2008	2009
<b>OREGON</b>	Species				
	Black rockfish	92.9	101.1	98.3	130.5
	Blue rockfish	4.7	4.2	2.7	2.8
	Minor nearshore rockfishes	8.1	8.4	10.7	11.3
	Cabazon	22.0	21.9	24.7	29.8
	Kelp greenling	14.5	18.3	21.9	20.6
	Lingcod	43.6	49.4	57.3	44.2
<b>CALIFORNIA - 40°10' to 42° N lat</b>					
	Black rockfish	58.2	79.5	80.9	89.1
	Blue rockfish	10.4	6.9	21.8	2.5
	Other minor nearshore rockfish	7.4	11.3	10.3	2.3
	Cabazon	2.6	3.0	2.4	1.8
	Kelp greenling	0.2	0.3	0.3	0.3
	Lingcod	12.1	15.5	17.0	8.1
<b>CALIFORNIA - 40°10' to 42° N lat</b>					
	Black rockfish	3.4	4.0	2.2	4.0
	Blue rockfish	8.6	6.5	5.4	2.6
	Shallow nearshore rockfishes	46.6	52.3	55.0	47.3
	Deeper nearshore rockfishes	28.1	28.7	29.3	27.4
	Cabazon	25.6	22.4	20.8	15.5
	Kelp greenling	1.4	1.2	1.1	1.1
	Lingcod	24.0	20.9	19.2	15.7

#### Limited Entry Trawl Non-whiting

Limited entry trawl total fishing mortality was projected using the Trawl Bycatch Model (Hastie, 2003) in 2011 and 2012 for major target and rebuilding species, using landings data from Periods 1 and 2 of 2010 reported to PacFIN as of May 19th, 2010. Weighted average bycatch estimates used were calculated for years 2006 through 2009, from observer and fish ticket data. Bycatch and shifts in fishing effort by depth, area and period influence results of accompanying species trip limits and RCA boundaries.

Petrale sole will be managed as an overfished stock under a rebuilding plan in 2011 and 2012. Thus, the Council is managing to a 976 mt ACL in 2011 and 1160 mt ACL in 2012. The petrale sole ACL is constraining in the non-whiting LE trawl fishery, and proposed trip limits were reduced to 4900 lbs per bimonthly period to limit projected total fishing mortality within the model target. The seaward RCA line was also set at 200 fathoms in periods 1, 2, 5, and 6; and at the split 150/200 fathom line in the area north of 40°10' for this purpose. In the south, the RCA was set between 100 and 200 fathoms in periods 1 and 2 and between 100 and 150 fathoms in periods 2 through 5.

A Dover sole ACL of 25,000 mt was adopted by the Council for 2011 and 2012, which allows a significantly higher utilization than in 2010. The proposed bimonthly trip limit for long footrope gear was raised from 110,000 lbs in 2010, but was capped at 150,000 lbs to allow increased stock utilization without a major market disturbance. Sablefish ACLs allowed more liberal trip limits in 2011 than 2012.

Trip limits and RCA structures under the tentatively adopted ACLs and ACTs, can be found in Table 15 and Table 16. The associated overfished and non-overfished species impacts are in Table 17 and Table 18. **All model runs assume that the area north of Cape Alava remains closed. However, the team has analyzed a model run with north of Cape Alava being open such that, should new trawl canary and yelloweye bycatch rates be lower, the Council could open that area through a routine inseason adjustment.** The GMT notes that there may be concerns with the 6,000 lbs/2 month limits for slope rockfish based on feedback from the GAP and the need to reduce the limit from that amount inseason this year. However, lower limits are in the range analyzed and can be included in the package submitted for the proposed rule. If the Council wishes to start the year with lower slope rock trip limits the

**Table 15. Proposed non-whiting limited entry trawl target species' trip limits and RCA boundaries for 2011.**

2-month period	RCA lines (fm)		2-month cumulative-poundage limits							
	shallow	Deep	sable-fish	long-spine	short-spine	Dover sole	petrale sole	arrow-tooth	other flatfish	slope rockfish
<b>N. of 40°10' N lat.</b>										
Large/small footrope limits										
1	75	200	15,500	20,000	17,000	150,000	4,900	150,000	110,000	6,000
2	75	200	15,500	20,000	17,000	150,000	4,900	150,000	110,000	6,000
3	75	150/200	15,500	20,000	17,000	150,000	4,900	150,000	110,000	6,000
4	75	150/200	15,500	20,000	17,000	150,000	4,900	150,000	110,000	6,000
5	75	200	15,500	20,000	17,000	150,000	4,900	150,000	110,000	6,000
6	75	200	15,500	20,000	17,000	150,000	4,900	150,000	110,000	6,000
Selective gear limits										
1	75	200	8,000	5,000	5,000	65,000	4,900	90,000	60,000	
2	75	200	8,000	5,000	5,000	65,000	4,900	90,000	60,000	
3	75	150/200	8,000	5,000	5,000	65,000	4,900	90,000	60,000	
4	75	150/200	8,000	5,000	5,000	65,000	4,900	90,000	60,000	
5	75	200	8,000	5,000	5,000	65,000	4,900	90,000	60,000	
6	75	200	8,000	5,000	5,000	65,000	4,900	90,000	60,000	
<b>38° - 40°10' N lat.</b>										
1	100	200	15,500	20,000	17,000	150,000	4,900	10,000	110,000	15,000
2	100	150	15,500	20,000	17,000	150,000	4,900	10,000	110,000	15,000
3	100	150	15,500	20,000	17,000	150,000	4,900	10,000	110,000	15,000
4	100	150	15,500	20,000	17,000	150,000	4,900	10,000	110,000	15,000
5	100	150	15,500	20,000	17,000	150,000	4,900	10,000	110,000	15,000
6	100	200	15,500	20,000	17,000	150,000	4,900	10,000	110,000	15,000
<b>S. of 38° N lat.</b>										
1	100	200	15,500	20,000	17,000	150,000	4,900	10,000	110,000	55,000
2	100	150	15,500	20,000	17,000	150,000	4,900	10,000	110,000	55,000
3	100	150	15,500	20,000	17,000	150,000	4,900	10,000	110,000	55,000
4	100	150	15,500	20,000	17,000	150,000	4,900	10,000	110,000	55,000
5	100	150	15,500	20,000	17,000	150,000	4,900	10,000	110,000	55,000
6	100	200	15,500	20,000	17,000	150,000	4,900	10,000	110,000	55,000

**Table 16** Proposed non-whiting limited entry trawl target species' trip limits and RCA boundaries for 2012.

2-month period	RCA lines (fm)		2-month cumulative-poundage limits							
	shallow	Deep	sable-fish	long-spine	short-spine	Dover sole	petrale sole	arrow-tooth	other flatfish	slope rockfish
<b>N. of 40°10' N lat.</b>										
Large/small footrope limits										
1	75	200	14,500	20,000	17,000	150,000	6,500	150,000	110,000	6,000
2	75	200	14,500	20,000	17,000	150,000	6,500	150,000	110,000	6,000
3	75	150/200	14,500	20,000	17,000	150,000	6,500	150,000	110,000	6,000
4	75	150/200	14,500	20,000	17,000	150,000	6,500	150,000	110,000	6,000
5	75	200	14,500	20,000	17,000	150,000	6,500	150,000	110,000	6,000
6	75	200	14,500	20,000	17,000	150,000	6,500	150,000	110,000	6,000
Selective gear limits										
1	75	200	8,000	5,000	5,000	65,000	6,500	90,000	60,000	
2	75	200	8,000	5,000	5,000	65,000	6,500	90,000	60,000	
3	75	150/200	8,000	5,000	5,000	65,000	6,500	90,000	60,000	
4	75	150/200	8,000	5,000	5,000	65,000	6,500	90,000	60,000	
5	75	200	8,000	5,000	5,000	65,000	6,500	90,000	60,000	
6	75	200	8,000	5,000	5,000	65,000	6,500	90,000	60,000	
<b>38° - 40°10' N lat.</b>										
1	100	200	14,500	20,000	17,000	150,000	6,500	10,000	110,000	15,000
2	100	150	14,500	20,000	17,000	150,000	6,500	10,000	110,000	15,000
3	100	150	14,500	20,000	17,000	150,000	6,500	10,000	110,000	15,000
4	100	150	14,500	20,000	17,000	150,000	6,500	10,000	110,000	15,000
5	100	150	14,500	20,000	17,000	150,000	6,500	10,000	110,000	15,000
6	100	200	14,500	20,000	17,000	150,000	6,500	10,000	110,000	15,000
<b>S. of 38° N lat.</b>										
1	100	200	14,500	20,000	17,000	150,000	6,500	10,000	110,000	55,000
2	100	150	14,500	20,000	17,000	150,000	6,500	10,000	110,000	55,000
3	100	150	14,500	20,000	17,000	150,000	6,500	10,000	110,000	55,000
4	100	150	14,500	20,000	17,000	150,000	6,500	10,000	110,000	55,000
5	100	150	14,500	20,000	17,000	150,000	6,500	10,000	110,000	55,000
6	100	200	14,500	20,000	17,000	150,000	6,500	10,000	110,000	55,000

**Table 17.** Projected impacts of the proposed non-whiting trawl limits for 2011.

Species	Projected Total Catch (mt)					
	North of	South of	Projected	Harvest	Proj. -	
	40°10'	40°10'	Total	Guideline (mt)	HG (mt)	Proj. % of HG
Sablefish	2,239	337	2,575	2,588	-13	99.5%
Longspine	1,091	250	1,341	1,971	-631	68.0%
Shortspine	1,246	141	1,387	1,450	-63	95.7%
Dover sole	15,905	1,805	17,710	22,240	-4,529	79.6%
Arrowtooth	5,509	15	5,524	12,441	-6,918	44.4%
Petrable sole	693	158	851	865	-14	98.4%
English sole	382	76	458	18,659	-18,201	2.5%
Other flatfish	684	186	870	4,213	-3,343	20.6%
Canary	9.2	1.4	10.6	20.5	-9.9	51.7%
POP	90.2	0.2	90.4	100.3	-9.9	90.1%
Darkblotched	151.4	19.2	170.6	240.3	-69.7	71.0%
Widow	6.0	8.8	14.9	235.5	-220.6	6.3%
Bocaccio	1.7	5.5	7.2	29.6	-22.4	24.2%
Yelloweye	0.2	0.0	0.2	0.6	-0.4	41.4%
Cowcod	0.0	0.3	0.3	1.4	-1.1	21.7%

**Table 18** Projected impacts of the proposed non-whiting trawl limits for 2012.

Species	Projected Total Catch (mt)			Harvest Guideline (mt)	Proj. - HG (mt)	Proj. % of HG
	North of 40°10'	South of 40°10'	Projected Total			
Sablefish	2,161	325	2,485	2,508	-23	99.1%
Longspine	1,091	250	1,341	1,919	-578	69.9%
Shortspine	1,246	141	1,387	1,434	-47	96.7%
Dover sole	15,905	1,805	17,710	22,240	-4,529	79.6%
Arrowtooth	5,509	15	5,524	9,472	-3,949	58.3%
Petrable sole	833	194	1,027	1,040	-13	98.8%
English sole	382	76	458	9,538	-9,080	4.8%
Other flatfish	684	186	870	4,213	-3,344	20.6%
Canary	9.3	1.5	10.8	21.8	-11.0	49.5%
POP	90.2	0.2	90.4	100.3	-10.0	90.1%
Darkblotched	151.5	19.3	170.7	238.4	-67.7	71.6%
Widow	6.0	8.8	14.9	235.5	-220.6	6.3%
Bocaccio	1.7	5.7	7.4	30.9	-23.5	24.0%
Yelloweye	0.2	0.0	0.3	0.6	-0.3	41.8%



<b>Cowcod</b>	0.0	0.3	0.3	1.4	-1.1	22.3%
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### Proposed Trawl RCA Adjustments off Oregon

The GMT briefly reviewed three trawl RCA modifications proposed by Oregon Department of Fish and Wildlife. Two of these modifications deal with RCAs for fixed gear (100 and 125 fm) at the southwest corner of Heceta Bank (pages 65-68 in Agenda Item B.3.a, Attachment 1, June 2010). The third modification adjusts the 200-fm petrale RCA near Heceta Bank (Agenda Item B.3.b, Supplemental ODFW Report 2, June 2010). The team notes that these represent minor adjustments of coordinates that are already in place and were recommended by members of the commercial fishing industry.

The 100 and 125 fm lines at the southwest corner of Heceta Bank were moved seaward to better follow the bathymetry that they represent; the unmodified lines were, in many cases, extremely shallow. The industry has reported this to be an area of high yelloweye rockfish bycatch. While the impacts to yelloweye rockfish are not quantifiable, it is assumed that the modification will reduce yelloweye rockfish impacts.

The 200-fm petrale trawl RCA near Heceta Bank was moved shoreward following the recommendation of members of the fishing industry. This 200-fm line exceeded 400 fm in some areas. Hence, this modification provided more opportunity for trawlers targeting DTS. The impacts to petrale sole are not quantifiable, however, the GMT assumes that this modification did not increase petrale sole impacts appreciably because the modifications involved adding points associated with the 250-fm petrale sole RCA (i.e., these points were shoreward of the 200-fm petrale sole line). **The GMT recommends that the Council adopt all trawl RCA modifications proposed by ODFW under both a rationalized fishery structure or a trawl trip limit management structure.**

### RECREATIONAL

#### California

Season and depth restriction diagrams (Figure 3) as well as corresponding impacts on overfished species (Table 19) under the tentatively adopted ACLs and ACTs are provided below.

The 2.6 mt HG under the 17 mt ACT will require the season to be reduced by a half month by closing the first two weeks in August. This management area is already constrained under the status quo season, with only a three month fishing season at 20 fms. The season opening date in the Northern and North-Central North of Point Arena would be the second Saturday in May, which is May 14<sup>th</sup> in 2011 and May 13<sup>th</sup> in 2012. This is expected to result in an increase in business the opening on a weekend benefiting local communities.

The canary rockfish harvest guideline of 22.9 mt under the tentatively adopted ACL will provide a buffer between the projected impacts and variability in the estimated catch of canary rockfish. Though the canary rockfish projected impacts of 9.4 mt is far below the 22.9 mt HG, the annual catches of canary rockfish in the recreational fishery are variable. Maintaining at least a 5 mt

buffer between the projected impacts and this residual buffer between projected and the HG should help prevent the need for inseason action to close the fishery before the proscribed date.

While modifying the depth restriction in the Cowcod Conservation Area (CCA) from 20 to 30 fm is not expected to result in an appreciable increase in the catch of cowcod, the 2008 Total Mortality Rate catch sharing would provide a significant buffer between the projected impact of 0.17 mt and the 1.4 mt Harvest Guideline under the tentatively adopted ACL. The 168.3 mt bocaccio OY would accommodate any potential increase in bocaccio impacts in the recreational fishery from allowing retention of shelf and slope rockfish and a 30 fm or 40 fm depth restriction in the CCA.

The reduced catches of minor nearshore rockfish south and blue rockfish in the 2008 and 2009 seasons resulted in reduced projected impacts and the increase in the minor rockfish south resulting from the new OFL determination methods, will allow a one and a half month increases in the fishing season in the South-Central Management Area and a two and a half month increase in the North-Central South of Point Arena Management Area. Under the revised ACL, these species will no longer be a constraint, allowing the season to be extended to December with a negligible increase in overfished species impacts. Though this will require a 0.1 mt reduction in the buffer between projected impacts of 2.5 mt and the harvest guideline of 2.6 mt for yelloweye rockfish, the increase in fishing opportunity compared with the no action alternative will provide much needed economic opportunity in the respective areas.

In total, the proposed season and depth restrictions represent an additional 6.5 months of fishing season statewide compared to the No Action Alternative, though the resulting seasons still only provides a 2.5 month season in the North-Central North of Point Arena Management Area.

The tentatively adopted ACLs will also accommodate the proposed changes to management measures other than the fishing season described in Agenda Item B.3.b, Supplemental CDFG Report 2.

Management Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Months
Northern	CLOSED				May 14/13* - Oct <20 fm								5.5
North-Central North of Pt. Arena	CLOSED				May 14/13* - Jul <20 fm								2.5
North-Central South of Pt. Arena	CLOSED				Jun–Dec < 30 fm								7
South-Central Monterey	CLOSED				May – Dec < 40 fm								8
South-Central Morro Bay	CLOSED				May – Dec < 40 fm								8
Southern	CLOSED		Mar – Dec < 60 fm										10

\*The season opening date in the Northern and North-Central North of Point Arena would be the second Saturday in May, which is May 14<sup>th</sup> in 2011 and May 13<sup>th</sup> in 2012.

**Figure 3. Rockfish, cabezon and greenling season structure under the tentatively adopted ACLs and ACTs.**

**Table 19. Projected impacts to overfished species in the California recreational fishery under the tentatively adopted ACLs and ACTs.**

Species	Projected Impacts (mt)	2011 HG (mt)	2012 HG (mt)	2011 Percent HG	2012 Percent HG
Yelloweye Rockfish	2.5	2.6	2.6	98%	98%
Bocaccio	55.4	161.8	168.9	34%	33%
Cowcod Option 1	0.17	0.2	0.2	85%	85%
Cowcod Option 2	0.17	1.4	1.4	12%	12%
Canary Rockfish	9.3	22.9	24.2	41%	39%
Widow Rockfish	8.7	NA	NA	NA	NA

\*Option 1 is derived from the status quo catch sharing, Option 2 reflects the alternative cowcod catch sharing option under consideration by the Council based on the 2008 Total Mortality Report .

## Oregon

The preferred season structure (Table 12) for the 2011 and 2012 Oregon recreational fishery under the Council proposed ACLs and ACTs for overfished and non-overfished species, including the 17 mt yelloweye ACT, produces a season that is open offshore year round, except from April 1 to September 30 when fishing is only allowed shoreward of 40 fathoms (fm). Cabezon will be part of the marine bag limit year round, except from April 1 to September 30 when cabezon has a sub-bag limit of one fish. This should reduce cabezon impacts while still allowing for opportunities to retain cabezon year round. Estimated impacts for yelloweye rockfish and canary rockfish associated with this preferred alternative are 2.1 mt for yelloweye rockfish and 2.4 mt for canary rockfish.

**Table 12. Preferred season structure and bag limits for the Oregon recreational fishery**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Projected Yelloweye Impacts (mt)	Projected Canary Impacts (mt)
Bottomfish Season	Open all depths			Open < 40 fm						Open all depths			2.1	2.4
Marine Bag Limit <sup>1</sup>	Ten (10)			1 Fish Cabezon Sub-Bag <sup>2</sup>						Ten (10)				
Lingcod Bag Limit	Three (3)													
Flatfish Bag Limit <sup>3</sup>	Twenty Five (25)													

<sup>1</sup> Marine bag limit includes all species other than lingcod, salmon, steelhead, Pacific halibut, flatfish, surfperch, sturgeon, striped bass, pelagic tuna and mackerel species, and bait fish such as herring, anchovy, sardine, and smelt

<sup>2</sup> From April 1 through September 30, the marine bag limit is Ten (10) fish per day, of which no more than one (1) may be cabezon.

<sup>3</sup> Flounders, soles, sanddabs, turbot and halibuts except Pacific halibut

## Washington

Washington recreational fisheries will be constrained primarily by yelloweye rockfish under the Council's tentatively adopted ACLs and ACTs. Details of the management measures necessary to achieve the 17 mt ACT for yelloweye are the same as those shown Agenda Item B.3.a, Attachment 1, Section 4.1.1.3.

### Recreational Harvest Guideline Sharing Between Washington and Oregon

The Council gave the GMT direction that WDFW and ODFW would move to state specific harvest guidelines (HGs) for yelloweye and canary rockfish. Historically, WDFW and ODFW managed the WA/OR Recreational yelloweye and canary rockfish HGs via an informal sharing agreement (Table 20 and Table 21). To capture our understanding of the Council's guidance for

the record, the GMT understand that the proposed state-specific HGs are not anticipated to change the way either WDFW or ODFW manages its recreational fishery. Management measures are targeted to the same portion of the yelloweye and canary rockfish HGs that we have been analyzing (i.e., the overall projected impacts for yelloweye or canary rockfish remain the same). The ramp-down in yelloweye OY put the states in unknown territory because of the unknown effect of new management measures and variability in yelloweye catch rates. The shared HG between WDFW and ODFW was meant to provide flexibility to the two states during this adjustment period. In the event of unexpected yelloweye or canary rockfish harvest in one of the states, inseason action would be a possibility via coordination between WDFW and ODFW, rather than having to go through the Council meeting process, as long as the total WA/OR HG was not exceeded. Through that ramp-down period, the two states have demonstrated timely and proactive management to prevent exceeding their portions of the shared canary and yelloweye HGs.

**Table 20. Historical Yelloweye Sharing of the WA and OR Harvest Guideline by State**

Year	WA		OR		Total HG
	MT	%	MT	%	
<b>2010</b>	2.7	52.9%	2.4	47.1%	5.1
<b>2009</b>	2.7	52.9%	2.4	47.1%	5.1
<b>2008</b>	3.5	51.5%	3.3	48.5%	6.8
<b>2007</b>	3.5	51.5%	3.3	48.5%	6.8
<b>2006</b>	3.5	52.2%	3.2	47.8%	6.7
<b>2005</b>	3.5	46.7%	4.0	53.3%	7.5

**Table 21. Historical Canary Sharing of the WA and OR Harvest Guideline by State**

Year	WA		OR		Total HG
	MT	%	MT	%	
<b>2010</b>	4.9	23.4%	16.0	76.6%	20.9
<b>2009</b>	4.9	23.4%	16.0	76.6%	20.9
<b>2008</b>	1.7	20.5%	6.6	79.5%	8.3
<b>2007</b>	1.7	20.5%	6.6	79.5%	8.3
<b>2006</b>	1.7	20.0%	6.8	80.0%	8.5
<b>2005</b>	1.7	20.0%	6.8	80.0%	8.5

## **Trawl Rationalization and the 2011-2012 Harvest Specifications and Management Measures**

### Considerations for a Rationalized Shoreside Whiting Trawl Fishery

The GMT notes that shoreside whiting will receive a one-time overfished species allocation for the initial allocation. Thereafter, this sector will join the rationalized non-whiting trawl fishery and be allowed to trade/purchase shares of overfished and non-overfished species with others in

this rationalized fishery. As such, when reviewing the alternatives relative to the Pacific whiting shoreside sector (e.g., Table 4-19, page 24, Agenda Item B.3.a, Attachment 1, June 2010), consider that if overfished species initial allocations are constraining, they can be purchased from other shoreside quota pound holders.

*IFQ Incidental Trip Limits (ITLs, pronounced like Skittles)*

Under Amendment 20: Trawl Rationalization, the Council opted to manage the following species within the shoreside sector (whiting and non-whiting) with trip limits, instead of individual fishing quotas: minor nearshore rockfish north and south, black rockfish, cabezon (46°16' N. to 42° N. lat.<sup>8</sup> and south of 42° N. lat.), California scorpionfish, spiny dogfish, longspine thornyhead south of 34°27' N. lat., shortbelly rockfish, other fish category (for the purposes of trip limits which includes longnose skate, big skate, California skate, California scorpionfish, leopard shark, soupfin shark, finescale codling, Pacific rattail (grenadier), ratfish, kelp greenling, shortbelly, cabezon in WA). The purpose of allowing trip limits for these species is to allow incidental catch to be landed and for the fishermen to be paid for those landings. Not having a trip limit would not prevent the fish from being caught. Rather, these species are caught incidentally regardless of whether there is a trip limit in place for them or not. When there is no trip limit, the fish must be discarded ("regulatory discard") or forfeited to the state at the time of landing.

To explore trip limits that would strike this balance, the GMT examined monthly landings in the limited entry non-whiting and whiting trawl fishery from 2008 and 2009 and compared those to existing trip limits. Under Amendment 20, vessels with limited entry trawl permits have the ability to also use fixed gear (i.e., gear switching). **The trip limit recommendations provide for incidental landing allowances and are implemented when vessels are using trawl or fixed gears to harvest the IFQ species with a limited entry trawl permit. These incidental trip limits should be included as management measures under a rationalized fishery structure in the Council's final preferred alternative.**

*Minor nearshore rockfish and black rockfish north and south of 40°10' N. latitude*

For minor nearshore rockfish and black rockfish, no limited entry trawl vessel achieved the existing cumulative limits specified in regulation (300 lbs/month). The highest monthly landings were between 150-200 pounds; the majority of the landings were less than 50 pounds. In a rationalized trawl fishery, the GMT does not anticipate increases to minor nearshore rockfish and black rockfish landings, given existing state regulations. Generally speaking, state regulations are as follows:

- WA: commercial fishing with either trawl or fixed gear (including pots) in nearshore waters (0-3 miles) is prohibited.
- OR: Vessels must hold a state fixed gear nearshore permit to land targeted amounts of nearshore rockfish. Incidental amounts of nearshore rockfish are allowed by trawlers and

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<sup>8</sup> The GMT notes that in 2010 the other fish category includes cabezon coastwide, while in 2011-2012 cabezon will be managed separately north of 42° N latitude but with the other fish category in the south. As such, the GMT provides for the first time a cabezon trip limit for the limited entry trawl shoreside sector.

by fixed gear vessels without nearshore permits, however 2010 state trip limits for these species are more restrictive than the 2010 federal trip limits.

- CA: Vessels must hold a state fixed gear nearshore permit to land any nearshore rockfish.

Further, the trawl sector will receive a relatively small yelloweye rockfish allocation and the yelloweye rockfish bycatch rates are the highest in the nearshore. As such, it appears the risk of targeting nearshore rockfish is too high and it is unlikely such events will occur. That is, with individual accountability and the anticipated high cost of yelloweye rockfish quota pounds it seems unlikely that targeting nearshore rockfish would occur. As such, **the GMT recommends that the minor nearshore rockfish and black rockfish incidental landing limits for vessels using trawl or fixed gears to harvest IFQ species with a limited entry trawl permit north and south of 40°10 be specified at 300 lbs/month for periods 1-6, which would accommodate the landings seen in the last two years.**

*Cabazon (46°16 N. to 42° N. lat<sup>9</sup> and south of 42° N. lat.)*

The GMT reviewed recent landings of cabazon by the limited entry trawl fleet and notes that landings were infrequent and the majority was below 20 pounds. **The GMT would recommend that that the cabazon incidental landing limits for vessels using trawl or fixed gears to harvest IFQ species with a limited entry trawl permit be specified at 50 lbs/month for periods 1-6, which would accommodate the landings seen in the last two years.**

### *Spiny Dogfish*

Trip limits for spiny dogfish were implemented on March 1, 2006 and have generally stayed at the same levels since that time. The limits currently specified in regulation are 200,000 lbs/2 months Jan-Apr; 150,000 lbs/2 months May-Jun; 100,000 lbs/2 months Jul-Dec. In recent years, no limited entry trawl vessels attained or came close to reaching the spiny dogfish cumulative limits specified in Federal regulation.

Under a rationalized fishery, an IQ holder could target spiny dogfish with either trawl gear or fixed gear. The GMT has no data to inform potential bycatch interactions while targeting spiny dogfish with trawl gear. With fixed gear, we would anticipate that yelloweye rockfish would constrain access to spiny dogfish. Feedback from industry indicates that the highest concentration of dogfish is near the 100 fm line, an area with a moderate bycatch rate of yelloweye. Similar to the discussion under minor nearshore rockfish, under a rationalized trawl fishery we would anticipate that the risk of yelloweye rockfish bycatch to an individual would likely outweigh the value of targeting spiny dogfish.

**The GMT recommends that the spiny dogfish incidental landing limits for vessels using trawl or fixed gears to harvest IFQ species with a limited entry trawl permit north and**

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<sup>9</sup> The GMT notes that in 2010 the other fish category includes cabazon coastwide, while in 2011-2012 cabazon will be managed separately north of 42° N latitude but with the other fish category in the south. As such, the GMT provides for the first time a cabazon trip limit for the limited entry trawl shoreside sector.

**south of 40°10 be specified at 60,000 pounds/month, which would accommodate all monthly landings seen in recent years.**

*Longspine Thornyhead south of 34°27 N. latitude*

Under Amendment 21, the Council chose not to make a trawl/non-trawl allocation for longspine thornyhead south of 34°27 N. latitude. Under Amendment 20, the Council chose to manage longspine thornyheads south of 34°27 N. latitude with trip limits, while longspine thornyhead in the north are managed with individual fishing quotas. The GMT believes this decision was a result of the limited catch history of longspine thornyhead by the trawl fishery south of 34° 27' N. latitude. From 1995-2005, the trawl fishery harvested <0.1 of the longspine thornyhead OY. Additionally, total mortality by all fleets in recent years has been well below the OY; in 2008 4% of the OY was harvested. It is our understanding that longspine thornyhead is not typically targeted; it is caught in association with shortspine thornyhead, a higher valued, more marketable species and/or Dover sole and sablefish. Under a rationalized trawl fishery, it is possible that a fishery will evolve south of 34°27 N. latitude either with trawl gear or fixed gear. Given the low exploitation of longspine thornyhead south of 34°27 N. latitude, the GMT believes that the existing trip limits could remain in place under a rationalized fishery. **The GMT recommends that south of 34°27 N. latitude, the longspine thornyhead incidental landing limits for vessels using trawl or fixed gears to harvest IFQ species with a limited entry trawl permit be specified at 24,000 lbs/2 months, which is the limit currently specified in regulation for limited entry trawl gears.**

*Remaining fish*

Currently, there are no limits imposed on the catch of species within the “other fish” complex for any of the commercial fisheries (limited entry trawl, limited entry fixed gear, or open access). Here we propose to call this category “remaining fish” since the “other fish” definition for harvest specifications includes different species than the intent of the remaining fish incidental trip limits. E.g., longnose skate was removed from the “other fish” harvest specifications category, yet for the purposes of the incidental IFQ trip limits longnose skate should be grouped with other skates. For the purposes of the incidental IFQ trip limits, other fish is to include: longnose skate, big skate, California skate, California scorpionfish, leopard shark, soupfin shark, finescale codling, Pacific rattail (grenadier), ratfish, kelp greenling, shortbelly, cabezon in WA. The GMT reviewed the 2008 and 2009 limited entry trawl landings of the species that comprise the newly proposed remaining fish incidental trip limit. Grenadier makes up the largest component of the remaining fish landings in the trawl fishery and most landings were less than 8,000 pounds with a few landings as high as 12,000 pounds. Historically, there was some buying/selling of grenadier in an attempt to develop a market, however it is our understanding that the recent year landings of grenadier represent incidental catch while targeting the DTS strategy. The remaining fish landings were less than 1,500 pounds with most monthly landings less than 1,000 pounds. Big skate and California skate also comprise the other fish category. In recent years, there has been interest in targeting and marketing skates. The GMT notes that in recent years catches have been below the Council’s preliminary preferred ACL decision for other fish.



**As such, the GMT recommends that the remaining fish incidental landing limit for vessels using trawl or fixed gears to harvest IFQ species with a limited entry trawl permit remain unlimited. Should increased landings occur, the Council could implement the trip limits analyzed during this SPEX process and implement them through routine inseason action.** Given the number of species comprising the remaining fish limit, the GMT also recommends that trip limits be further analyzed in the EIS that would provide for sublimits (e.g., higher limit for grenadier, lower limit for skates).

### **RCA Configurations for Vessels Harvesting QP with Trawl gear or Fixed Gear**

RCAs are by far the most extensive and complex closed areas used in groundfish management. First implemented in late 2002 as part of an in-season management action, RCAs extend from the Canadian border to the Mexican border of U.S. west-coast waters. The RCAs were implemented to reduce bycatch of overfished species, which may concentrate within specific depth ranges. Based on analysis of West Coast Groundfish Observer Data and vessel-logbook data, the boundaries of the RCAs were set to prohibit groundfish fishing within a range of depths where encounters with overfished species were most likely to occur. In order to make enforcement possible, in most cases the actual isobaths—lines of equal depth—are approximated by straight lines between published waypoints. The depths included in RCAs vary by season, latitude, and regulatory sector. Boundaries for limited entry trawl vessels are different than those for the limited entry fixed-gear and open access sectors.

Trawl RCA boundaries and cumulative limits are routinely adjusted inseason based upon fishery performance. Managers structure catch limit opportunities and closed areas with several objectives in mind including protecting rebuilding species while simultaneously providing for a year round fishing opportunity. While many adjustments to catch limits and trawl RCA boundaries are relatively minor, in recent years some of these adjustments have been relatively extreme and have closed fishing opportunity for wide areas of the coast mid-season. For example, in 2004 an unexpected amount of darkblotched rockfish catch occurred in the fishery leading to a large expansion of the trawl RCA and elimination of several target species opportunities, including petrale sole—one of the most important target species to bottom trawlers. In January and February of 2006, unseasonably favorable weather occurred making it easy for vessels to target petrale sole during their aggregation period. This led to a catch of petrale sole during the first 2-month cumulative trip limit period that was nearly twice the expected amount. This caused managers to eliminate petrale sole opportunities at the end of the year in an attempt at preventing overfishing of the stock in that year. In 2008, the area north of Cape Alava (48.10° N. latitude) was closed (RCA extended to the shore) in order to reduce canary rockfish impacts. In later years, this closure remained in place in order to reduce trawl impacts to yelloweye rockfish.

Nonwhiting groundfish vessels fish in depths as shallow as 10 fathoms and as deep as 600 fathoms; in recent years the largest volume of retained catch has come from deeper than 250 fathoms. In recent years, the trawl RCA north of 40°10' N latitude has varied from a boundary line approximating the 75 fm depth contour (75 fm line) to the 100 fm line shoreward and 150 to

200 fm seaward. Most often, the shoreward boundary has been specified at 75 fm in an effort to reduce canary rockfish catch. The seaward line has varied from 150 fm, 200 fm, and 250 fm. South of 40°10' N. latitude, the RCA has remained at 100 fm to 150 fm to reduce bocaccio, canary, and cowcod encounters.

Under current management of the trawl fishery (i.e., No Action), catch projections (and estimates of total catch inseason) are made using what is often described as the “trawl bycatch model.” This model uses discard estimates from the WCGOP data and logbook information to develop temporal and spatially stratified bycatch rates for overfished species. The bycatch model can be used to estimate both target species and overfished species catch based on a proposed set of management measures (2-month cumulative trip limits and RCA configurations).

Under a rationalized fishery, individuals will be held accountable for their bycatch; however there is still a risk of exceeding the trawl allocation since overfished species interactions can be unpredictable. As such, the Council may wish to maintain a core RCA structure which would continue to close the area where encounters with overfished species are considered most likely. It is our understanding that the type of gear employed determines the RCA structure. As such vessels who harvest IFQ species with trawl gear will be held to the trawl RCA while vessels with fixed gear will be held to the fixed gear RCA.

**The decision on where to set the shoreward and seaward boundaries of the trawl RCA is largely a risk call based on available data that, under a rationalized fishery, is not something that can be evaluated within the trawl model.** That is, the bycatch rates that are used in the trawl model (Agenda Item B.3.a Attachment 2, Table 4-18) inform the potential risk of allowing fishing opportunity in certain depths, however the trawl model calculus (e.g., trip limits, assumptions of effort distribution, RCA, etc.) will no longer be applicable under trawl rationalization. As such, the GMT does not have a recommendation for an RCA structure under a rationalized fishery, as we have had in the past, but rather an exploration of the risk that is inherent in the Council’s decision. **The boundaries of the non-trawl RCA will largely be determined by the fixed gear models (nearshore and non-nearshore).**

Reviewing the current trawl bycatch data by depth and season is still useful to inform a core trawl RCA structure for a rationalized trawl fishery (Figures 4-13). It is important to note that there is no way to know if the historical bycatch rates will be representative of a rationalized fishery, since rationalization has not yet occurred. However, these rates provide a starting point for considering RCA structures.

In addition to maintaining the core RCA structure, the Council has expressed the desire to use RCA adjustments inseason in order to prevent exceeding the trawl allocation for overfished species. For example, should the trawl sector attain its allocation of yelloweye rockfish, the available bycatch rate data suggests that moving the shoreward boundary to shore (i.e., close trawling shoreward of the RCA) would largely reduce further yelloweye rockfish impacts, while still allowing other species to be harvested on the seaward side of the RCA (Figure 4, Figure 5). Should the canary rockfish allocation be attained, the seaward boundary could be set at 150 fm which would prevent reduce canary rockfish impacts substantially relative to shallower depths while still allowing other species to be harvested. Similarly, should the petrale sole allocation be

attained midyear, the seaward RCA could be set at 250 fm in order to provide access to deep water stocks while preventing petrale sole impacts (Figure 8). These are only a few examples of the variety of inseason adjustments that can be made to the RCA to keep the trawl sector within their allocation, as seen in the figures.

### *Shoreward RCA Considerations*

Shoreward of the RCA and north of 40°10' N. latitude, yelloweye and canary rockfish interactions constrain access to target species. For yelloweye rockfish, the high bycatch rates occur in waters less than 100 fm (Figure 4). It appears that trawl catch of yelloweye rockfish shoreward of a 50 fm RCA would result in lowest impacts north and south, especially during the 1<sup>st</sup>, 2<sup>nd</sup>, and 6<sup>th</sup> periods. This would also limit access to target species, however, and may cause conflicts with open access and limited entry fixed gear fishermen. Yelloweye rockfish have a patchy distribution and as such using fleetwide bycatch rates over a large area (north and south of 40°10' N. latitude) as currently implemented may be overly constraining, especially under the auspices of individual accountability. That is, in a rationalized fishery, the individual has the incentive to avoid the patchy areas of known yelloweye rockfish concentrations to minimize that individual's bycatch rate and thereby maximizing their harvest of target species. We still anticipate that individuals will encounter yelloweye rockfish unexpectedly, and thus, the Council may consider setting the shoreward RCA at either 75 or 100 fm and evaluate / refine the RCA structure as each year progresses, if data exists. Note that north of Cape Alava, yelloweye bycatch rates are lowest inside of the 60 fm line; bycatch rates would increase substantially if shoreward RCAs were moved from the 60 fm line to the 75 fm line (Figure 5).

For canary rockfish north of 40° 10' N. latitude, bycatch rates increase when the shoreward RCA is specified at 100 fm relative to the 75 fm line and shallower depths (Figure 6), especially during the summer and fall months (Periods 3, 4, and 5) in the north. As such, if the Council desires to implement a 100 fm RCA boundary for the rationalized trawl fishery in the north to provide more fishing opportunities while reducing the risk of encounters with canary rockfish, it might consider doing so during Periods 1, 2, and 6 when canary-bycatch rates are lowest (Figure 6). It is important to realize, however that most spring/summer/fall bycatch rates are collapsed across periods 3–5 because of sample-size limitations, hence, the GMT does not have bycatch rate information for the individual periods in the spring/summer/fall. This problem makes it impossible to differentiate differences in bycatch rates among periods. We note that industry feedback indicates potential target species (e.g., sanddabs) could be accessed between 75 and 100 fm with low bycatch interactions (e.g., sanddabs). Note that north of Cape Alava, RCAs would need to be set at the 75 fm line to minimize canary rockfish interactions as bycatch rates increase dramatically deeper than 75 fm (Figure 7).

Canary, cowcod, and bocaccio constrain access to target species shoreward of the RCA south of 40°10' N. latitude. For canary rockfish, the bycatch rates are lower when the shoreside RCA is set at 60 fm, compared to 75 fm (Figure 6). Similar to the northern bycatch rates, there is seasonal variation in bycatch rates. However, as opposed to the north, highest canary bycatch rates were observed in the south during the winter periods (1, 2, and 6). Cowcod bycatch rates are highest shoreward of 75 fm and 100 fm lines relative to shallower RCAs (i.e., < 60 fm; Figure 9). For bocaccio rockfish, bycatch rates are typically high only near the 100 fm line during winter

months; rates are relatively low for this species at all other depths and during periods 3, 4, and 5 (Figure 10).

The southern shoreward RCA has been set at 100 fm in the past, and this action appears to have been successful in keeping bycatch of canary, cowcod, and bocaccio within acceptable limits. Hence, south of 40° 10' N, maintaining the 100 fm RCA may provide access to target species while minimizing impacts to overfished species.

RCA structures for widow rockfish are clear north of 40°10 N. latitude; seaward RCAs less than 60 fm are most protective for all seasons (Figure 11). Note that widow rockfish encounters are extremely low for all depths during periods 3, 4, and 5 relative to periods 1, 2, and 6. South of 40° 10' N latitude widow rockfish bycatch remains fairly constant when the RCA is set at 150, 180 or 200 fm. These depths also represent the highest widow rockfish bycatch rates.

#### *Seaward RCA Considerations*

Darkblotched rockfish and POP constrain access to target stocks along the northern coast of the western U.S. For darkblotched rockfish, there is a significant change in the bycatch rate at 38° N. latitude and as such, rates are stratified at 38° rather than 40°10 N. latitude. A seasonal trend in darkblotched bycatch rates is apparent when the RCA is set at either 150 fm or 180 fm; rates are highest during winter months (periods 1 and 6). Darkblotched rockfish bycatch can be significantly reduced by moving the RCA deeper than the 200 fm line, while maintaining access to the DTS complex (Figure 12).

For POP, bycatch rates are highest when the RCA is specified at the 150 fm or 180 fm line relative to deeper RCA options (Figure 13). The rates are the highest when the line is specified at 150 fm in periods 3 and 4.

#### *Petrale Sole*

Petrale sole exhibits distinct seasonal depth migrations. Hence, RCA structures for this species should be seasonal. Depth profiles of petrale sole catches () suggest that during periods 1 and 6, there is virtually no petrale catch at depths less than 125 fm, most interactions occur between 175-200 fm, and catches then drop off quickly outside of the 200 fm line. Depth distributions change during periods 2 and 5, when petrale sole are typically deeper than 125 fm, an intermediate depth for this species. Finally, petrale sole are shallowest during periods 3 and 4, when highest bycatch rates are observed shallower than 125 fm.

#### *Gear Switching and RCAs*

Amendment 20 allows quota pounds associated with a limited entry trawl permit to be harvested with either trawl gear or legal fixed gear (known as gear switching). Regulations currently specify both a trawl and non-trawl RCA. It is our understanding that the type of gear employed determines the RCA structure. As such vessels who harvest IFQ species with trawl gear will be held to the trawl RCA while vessels with fixed gear will be held to the fixed gear RCA.

The GMT notes that the preliminary preferred trawl allocation for yelloweye rockfish is very low (0.6 mt). This allocation was informed by the trawl model and is low primarily because current management measures (e.g., trawl gear restrictions and RCAs) prohibit fishing in rocky habitats where yelloweye rockfish concentrate. Yelloweye rockfish bycatch rates in the nearshore fixed gear fisheries are much greater than the trawl fishery bycatch rates, largely because fixed-gear fishermen are able to fish over bottom with structure (e.g., rocky bottom). In certain geographic areas and depth ranges, canary rockfish bycatch rates are also higher in the nearshore model than in the trawl model. This information suggests that under trawl rationalization, special consideration may be given to those who switch gears to ensure that the yelloweye trawl allocations are not exceeded.

The GMT believes that the Amendment 20 gear switching provision shoreward of the RCA may present an increased risk of exceeding the trawl sector allocation for yelloweye rockfish, and possibly canary rockfish. The GMT does not have bycatch rate data to inform the fixed gear bycatch rates between 30 fm and 75-100 fm (the available trawl RCA north of 40'10). However, given that the trawl bycatch rates and survey data show that yelloweye are prevalent in this depth range, we feel it is safe to assume that concerns discussed above using bycatch rates inside of 30 fm will likely be relevant to 100 fm.

Further, the GMT notes that the shoreward non-trawl RCA is likely to be set as follows, under the Council's preliminary preferred decision:

- Closed in WA
- 30 fm in northern Oregon and 20 fm in the remaining areas in Oregon (largely state waters)
- 20 fm in northern; 30 fm in central California (largely state waters)
- 60 fm south of 34°27 N. latitude.

The trawl sector received no allocation of nearshore species and as such will be unlikely to operate shallower than 30 fm. Further, state regulations require nearshore permits to land targeted amounts of nearshore species. In Oregon, additional gear restrictions may restrict fixed gear operations in this area. For example, pot fishing in Oregon within the 3-mile limit is currently restricted to one state nearshore permit and can be only be changed through a State-legislative vote. In reviewing the proposed non-trawl shoreward RCA structure, it appears that the most viable opportunity for shoreward activity is south of 34°27 N. latitude.

The GMT notes that for the seaward side of the RCA, the gear switching provision will be much less risky for encountering overfished species and may be most beneficial for those operating under trawl rationalization. Allowing gear switching seaward of 100 fm, the non-trawl RCA structure under the preliminary preferred decision, may allow access to valuable species such as sablefish and shortspine thornyheads.

## Potential for a Mid-water Opportunity in 2011-2012

There is an opportunity under the trawl rationalized program to allow targeting of species such as yellowtail rockfish within the RCA using midwater trawl gear during the primary whiting season. Under current trawl rationalization regulations, this opportunity may be permissible regardless of amount of whiting onboard. A cursory analysis of data reveals that the risk of a mid-water opportunity appears lower than for bottom trawl gear for some species (e.g., yelloweye); it may be equally as risky for species as canary; and appears to have a higher risk for species like widow rockfish. **The GMT believes that the under a rationalized trawl fishery structure, individual accountability, and the preliminary preferred ACLS for canary and widow rockfish and subsequent trawl allocation, this opportunity could be afforded in 2011-2012.**

## Amendment 20: Carry-over Provision

Under the Council's final preferred alternative for Amendment 20, unused QP up to 10 percent of the used and unused QP in the vessel account may be carried over for use in the next year. Similarly, in order to cover an overage (landings that exceed the amount of QP held in a vessel account) QP that may be allocated in the next year may be transferred to the current year, up to 10 percent of the used and unused QP in the vessel account during the current year. In sum, Amendment 20 provides for 10 percent of the quota pounds to be carried over (excess quota pounds) or carried under (deficit quota pounds).

The rationale for the carryover is described in the Amendment 20 FEIS and is based around increased flexibility to fishery participants. Through the SPEX process we must consider how the carry-over provision works in relationship to the 2011-12 ACLs and the trawl allocation. It is essentially a question of management uncertainty, i.e. the risk the provision poses to our ability to stay within catch limits and whether that risk is acceptably low.

To explore this risk, we looked to the worst case scenario. The largest potential overage from the carry-over alone is of course, 10 percent. Every QP holder would need to carry under their 10 percent for that situation to occur and all QP would need to be harvested. Such a scenario is of concern only for species that are "fully prescribed" in the TIQ fishery and seems like a low risk to us. Moreover, given the carry under is matched with a carry over for the next year, we would not expect the biological impact to be high.

Table 2-45 (Agenda Item B.3.a Attachment 2) outlines the non-overfished species for which the OY was attained by 80 percent or greater from 2005-2008. Of those species, Dover sole, sablefish, and short spine thornyhead are targets in the trawl fishery. The GMT anticipates that sablefish will be harvested at greater than 80 percent, especially given the lower ACL contemplated in 2011-2012 relative to recent OYs. Petrale sole is likely to be fully prescribed because of its market desirability and restrictive rebuilding ACL. Whiting is another candidate.

As for Dover sole, the preliminary preferred ACL for Dover sole is significantly greater (25,000 mt) than the OYs seen in 2005 and 2006 (7,476 mt and 7,564 mt, respectively). Even if markets expanded it seems unlikely that the trawl allocation would be exceeded or that all or a majority

of permit holders would carry forward a deficit. As such, it is not likely that there is a risk of exceeding the Dover sole trawl allocation, let alone the ACL, given the carry over provision.

The GMT anticipates that in addition to sablefish and shortspine thornyheads, all overfished species will be greater than 80 percent prescribed and thus are potential species for which a carryover may be possible.

We also considered what would happen if a stock assessment was completed in 2011, an accompanying point of concern was issued, and the ACL was reduced mid-cycle. For example, consider petrale sole actions during 2009/2010, where the stock assessment indicated cause for concern and the OY was reduced mid-year during 2009 and further reduced during 2010 (Table 22)

**Table 22.** Example of petrale sole changes in OY through point of concern

Year	OY (mt)	Trawl Allocation* (mt)	New OY (mt)	Trawl Allocation* (mt)	% change in Allocation
2009	2,433	2,393	2,433	1995	17%
2010	2,393	2,393	1,193	1178	51%

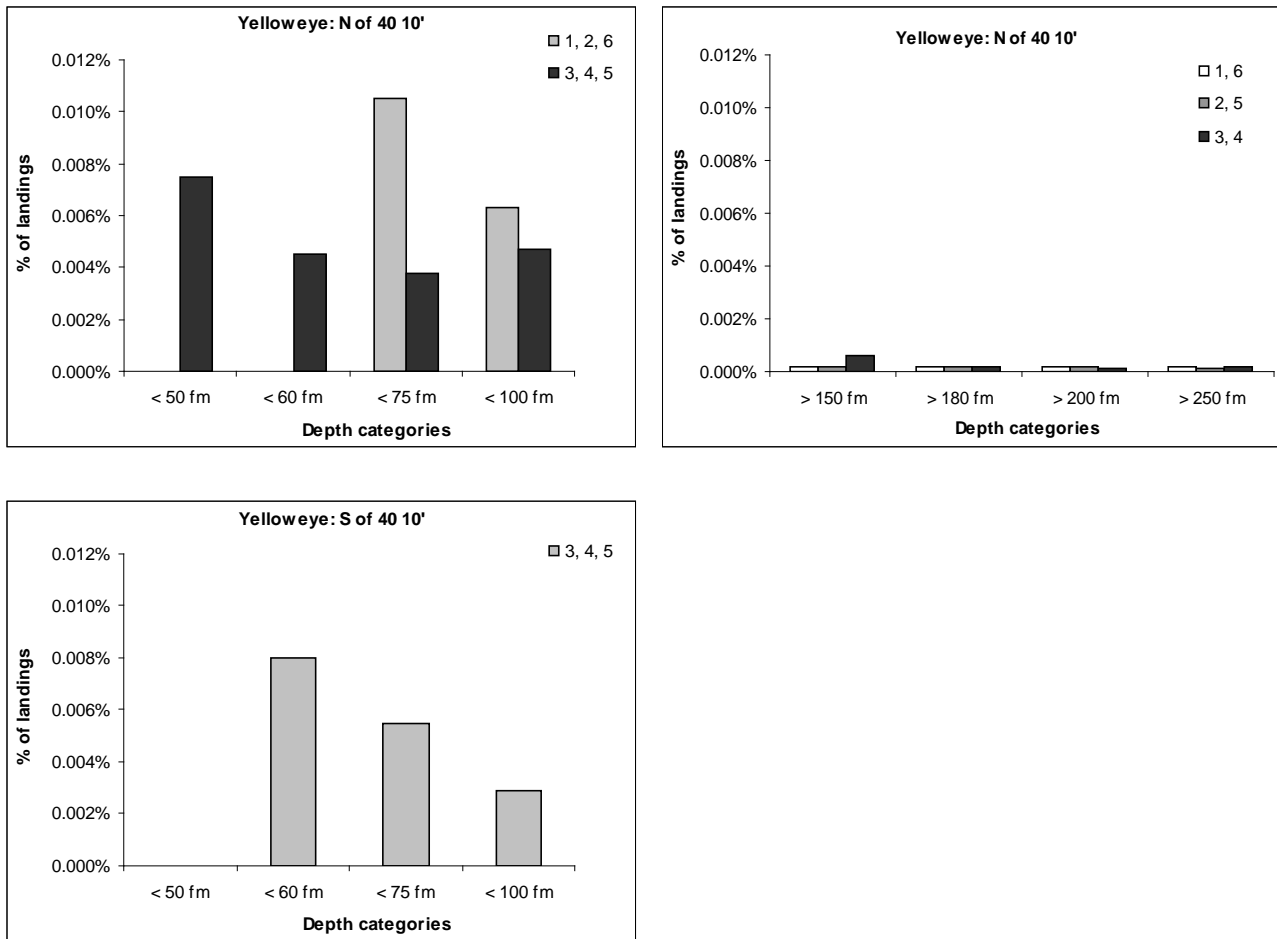
\*For analytical purposes we assumed the projected impacts were the defacto trawl allocation.

In the case of a mid-year point of concern declaration, the Council could reduce the amount of potential carry over proportionately to the reduction in the ACL. A similar proportional reduction could apply if the 2013-2014 (next SPEX process) are reduced compared to the 2012 ACL (current SPEX process).

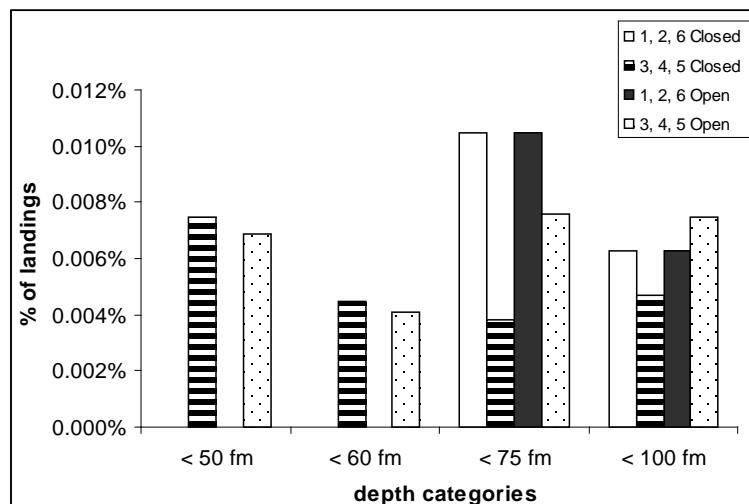
### **Impact of Petrale Sole Harvest Reductions to Halibut IBQ**

The 2011 petrale ACL reductions and arrowtooth ACL decision are tied directly to the initial allocation of individual bycatch quota (IBQ) for Pacific halibut. Halibut IBQ will be calculated using a formula based on quota share (QS) for arrowtooth flounder and petrale sole, two target species that correlate to Pacific halibut bycatch. Therefore, under the new lower petrale ACLs, those permits with relatively less arrowtooth QS will be allocated relatively less halibut IBQ. Conversely, the higher petrale ACL alternatives are more likely to result in the intended distribution of halibut IBQ under the Amendment 20 action.

**Figure 4. Bycatch rates (OFS catch / landed species catch) of yelloweye rockfish north and south of 40° 10' by calendar period and depth category; north of Cape Alava closed.**

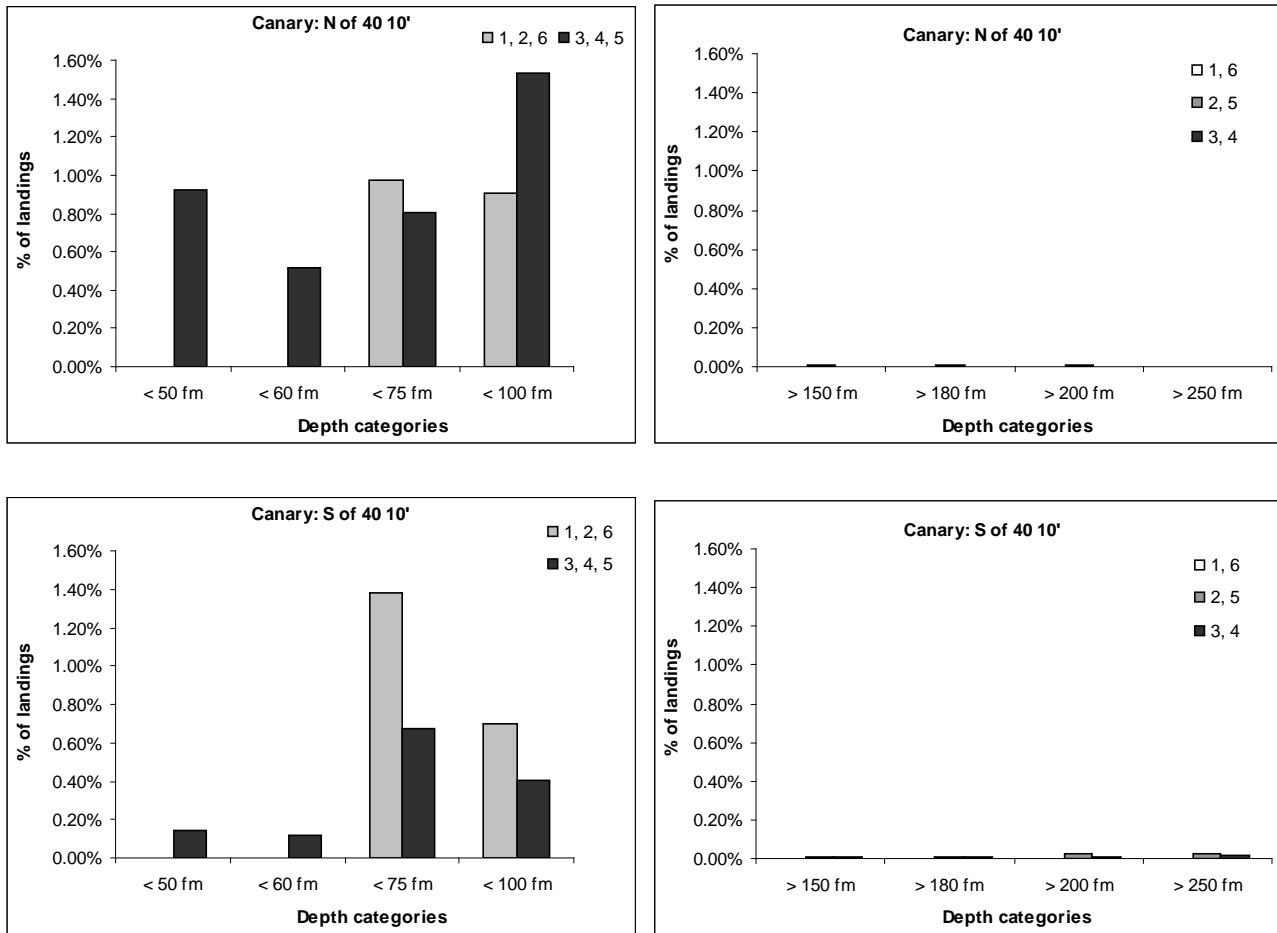


**Figure 5. Bycatch rates (OFS catch / landed species catch) of yelloweye rockfish north of 40° 10' by calendar period and depth category; north of Cape Alava open.**

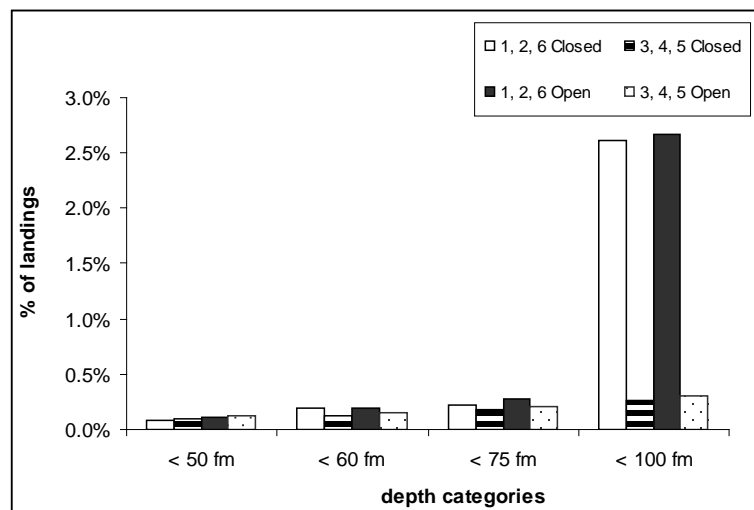




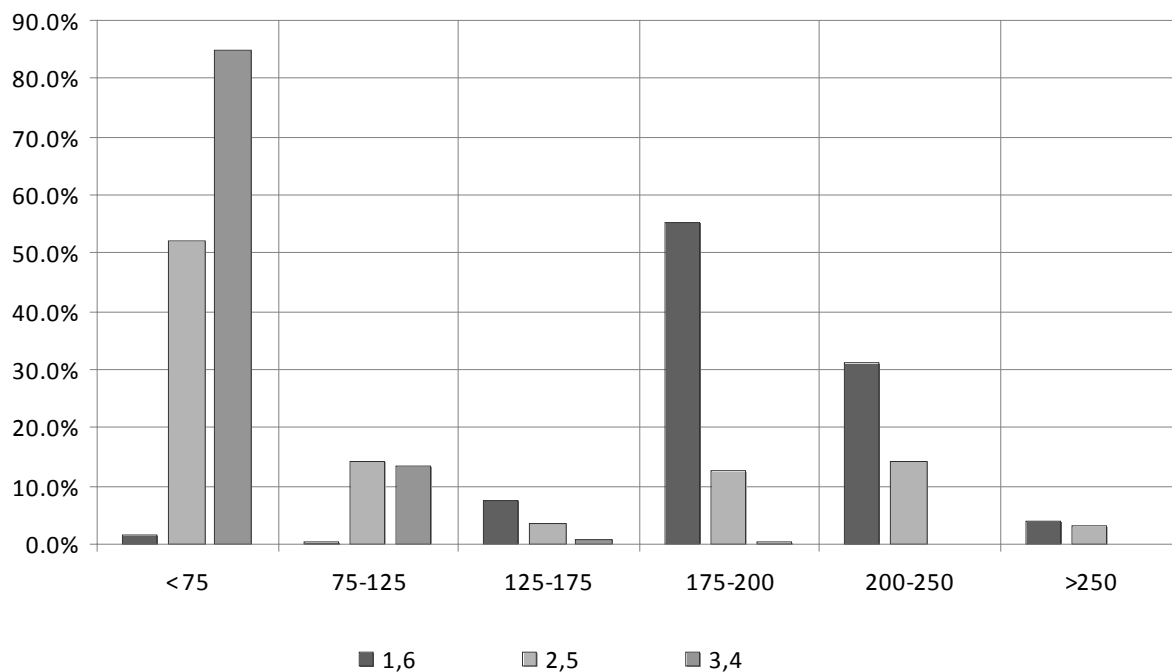
**Figure 6. Bycatch rates (OFS catch / landed species catch) of canary rockfish north and south of 40° 10' by calendar period and depth category, with area north of Cape Alava closed.**



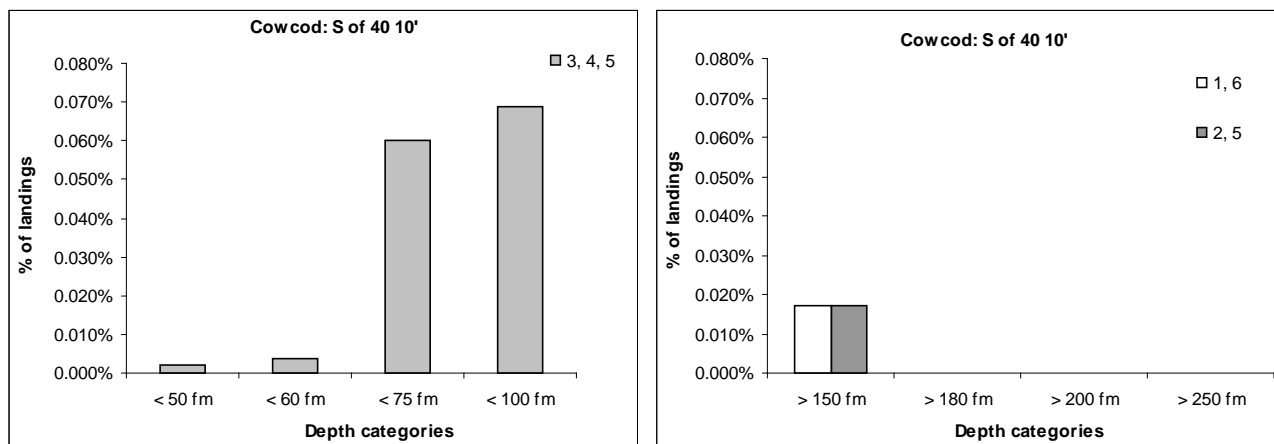
**Figure 7. Bycatch rates (OFS catch / landed species catch) of canary rockfish north of 40° 10' by calendar period and depth category, with area north of Cape Alava open.**



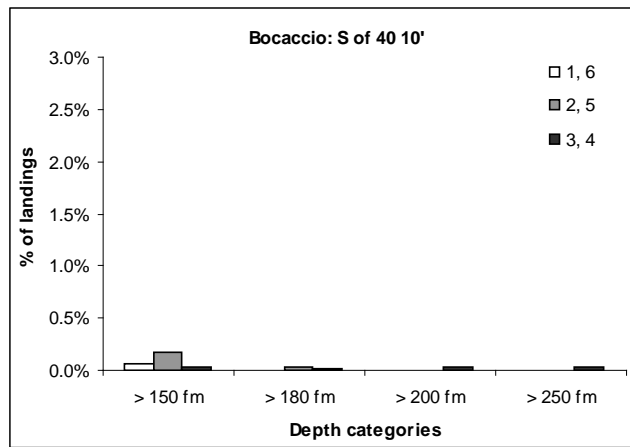
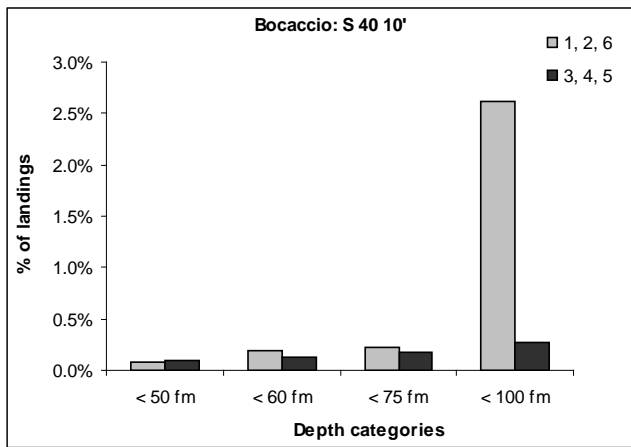
**Figure 8. Bycatch rates (OFS catch / landed species catch) of petrale sole by calendar period and depth category.**



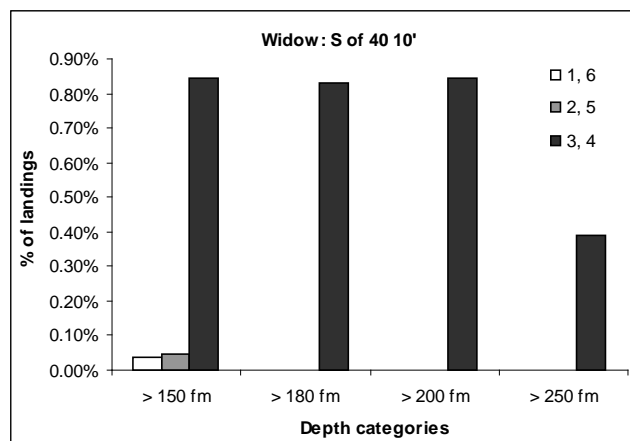
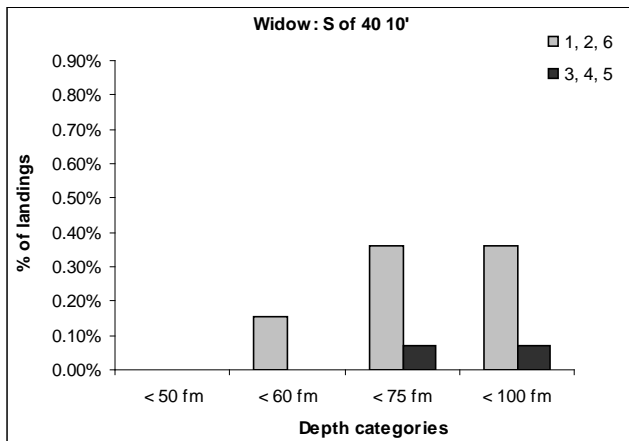
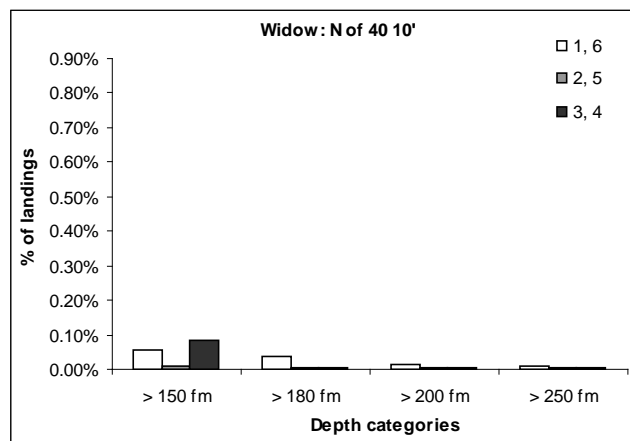
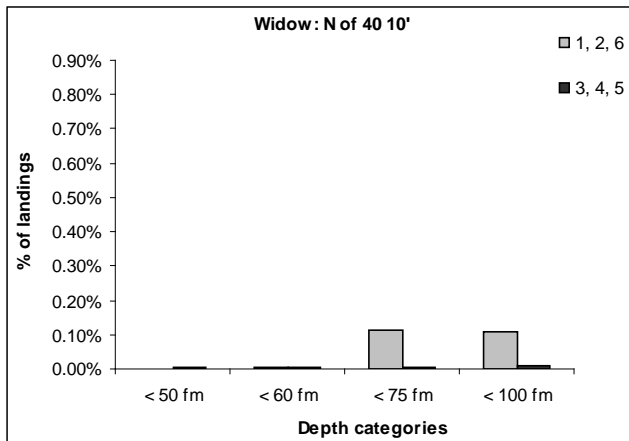
**Figure 9. Bycatch rates (OFS catch / landed species catch) of cowcod south of 40° 10' by calendar period and depth category.**



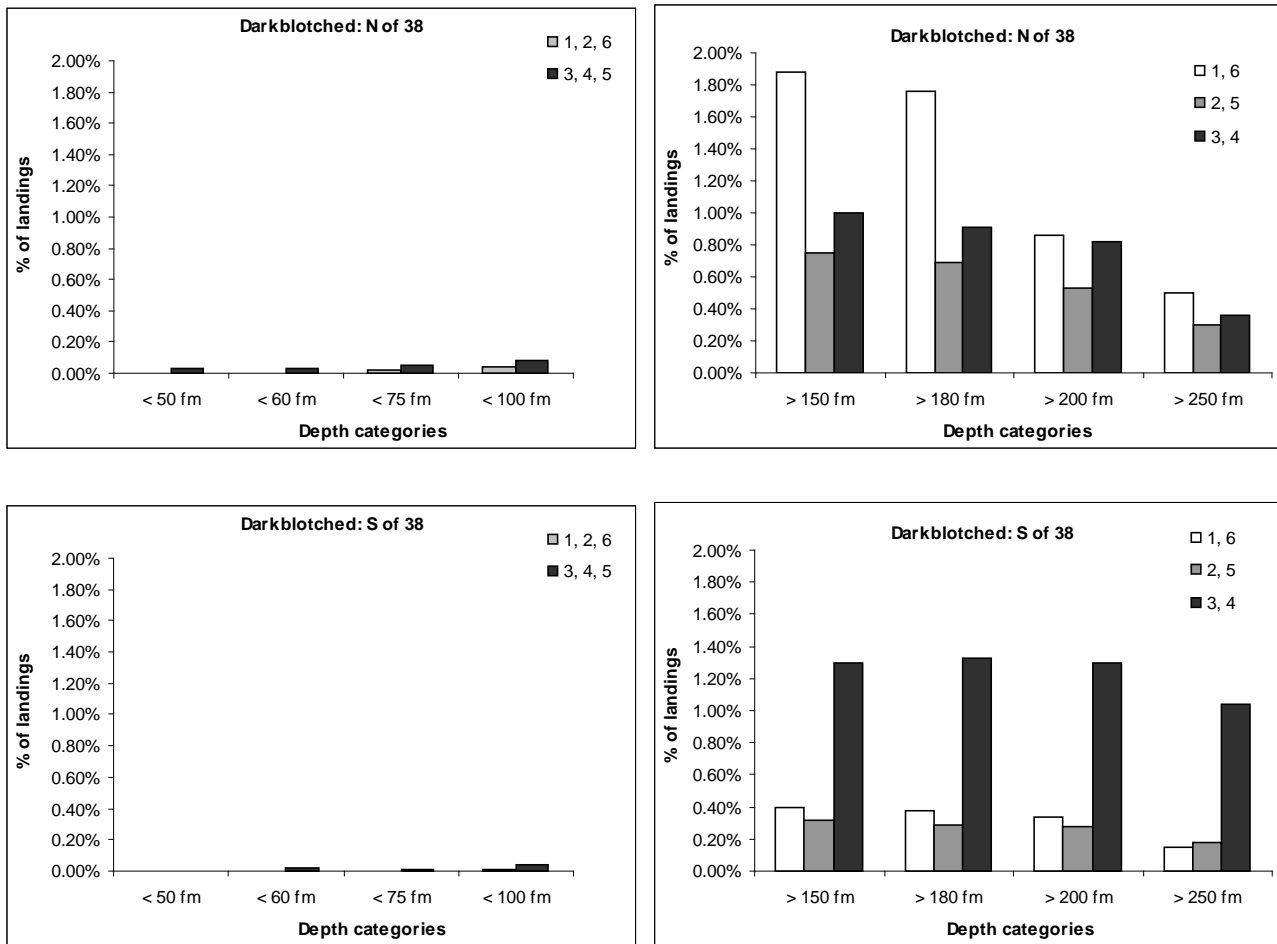
**Figure 10. Bycatch rates (OFS catch / landed species catch) of bocaccio rockfish south of 40° 10' by calendar period and depth category.**



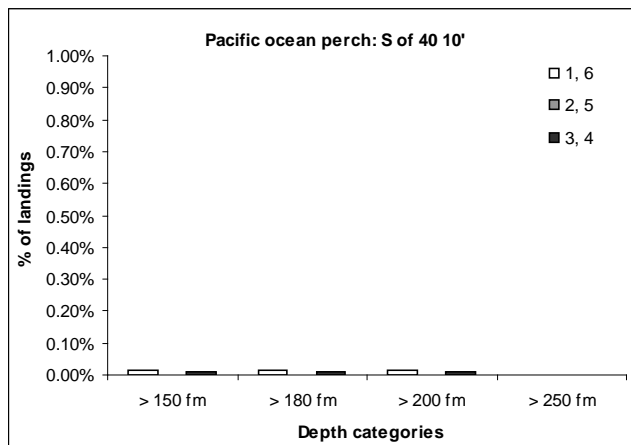
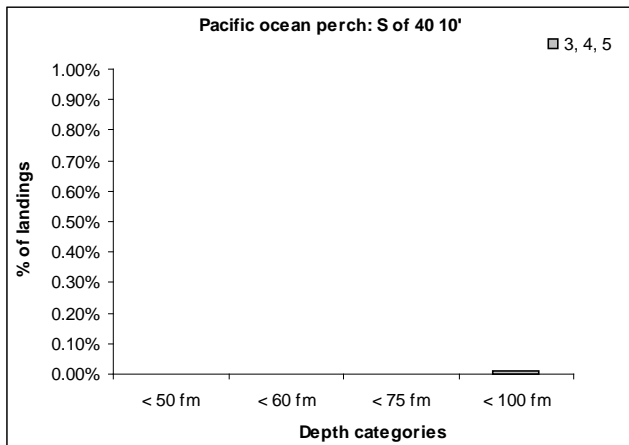
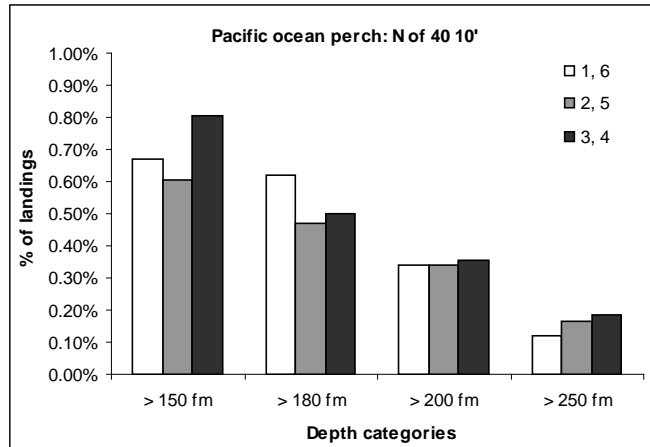
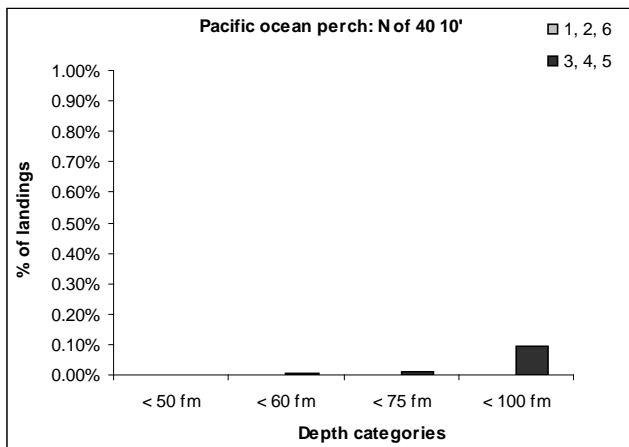
**Figure 11 Bycatch rates (OFS catch / landed species catch) of widow rockfish north and south of 40° 10' by calendar period and depth category.**



**Figure 12 Bycatch rates (OFS catch / landed species catch) of darkblotched rockfish north and south of 40° 10' by calendar period and depth category.**



**Figure 13 Bycatch rates (OFS catch / landed species catch) of Pacific ocean perch north and south of 40° 10' by calendar period and depth category.**



**GMT Recommendations:**

1. Adopt Amendment 21 allocations as shown in Tables 1 and 2\*.
2. Adopt two year allocations necessary for TIQ initial allocation as shown in Table 3\*.
3. Adopt sablefish allocations in Table 4\*.
4. Consider the 157 mt catch of POP if the intent was to set the ACT at the highest catch seen in recent years (i.e. allow greater flexibility in whiting fishery).
5. Consider whether the 2005 stock assessment error changes its rationale for tentatively adopting a cowcod ACL of 3 mt.
6. Consider recent catches in non-trawl sector relative to the Amendment 21 allocations for petrale sole.
7. Specify a blue rockfish HG for California of 241 mt in 2011 and 239 mt in 2012.
8. Consider projected impacts of yelloweye by sector relative to the Council's tentatively adopted ACT and biennial allocation decision.
9. Specify bi-monthly cumulative limits for the LEFG-DTL sablefish beginning January 1, 2011 of 6,500 lbs for Period 1, 7,500 lbs for Periods 2-5, and 6,000 lbs for Period 6.
10. Specify the trip limit structure between OA and LE south of 36 degrees N latitude.
11. Provide guidance of yelloweye and canary sharing between Oregon and California in the directed nearshore fishery.
12. Adopt trip limits and RCA structures for the limited entry non-whiting trawl fishery in the event that trawl rationalization is not in place January 1, 2011.
13. Adopt recreational management measures for Washington, Oregon, and California including HGs.
14. Adopt IFQ incidental trip limits as follows:
  - a. minor nearshore rockfish and black rockfish incidental landing limits for vessels using trawl or fixed gears to harvest IFQ species with a limited entry trawl permit north and south of 40°10 be specified at 300 lbs/month for periods 1-6
  - b. cabezon incidental landing limits for vessels using trawl or fixed gears to harvest IFQ species with a limited entry trawl permit be specified at 50 lbs/month for periods 1-6
  - c. spiny dogfish incidental landing limits for vessels using trawl or fixed gears to harvest IFQ species with a limited entry trawl permit north and south of 40°10 be specified at 60,000 pounds/month
  - d. longspine thornyhead incidental landing limits south of 34°27 N. latitude for vessels using trawl or fixed gears to harvest IFQ species with a limited entry trawl permit be specified at 24,000 lbs/2 months
  - e. remaining fish incidental landing limit for vessels using trawl or fixed gears to harvest IFQ species with a limited entry trawl permit remain unlimited
15. Set trawl RCAs for a rationalized fishery based on risk tolerance.
16. Set non-trawl RCAs consistent based on the non-nearshore model results and yelloweye constraints.
17. Adopt all trawl RCA modifications proposed by ODFW. Such modifications would be in place under a rationalized or status quo fishery structure.

\*Allow the GMT, NMFS, and/or Council staff to make technical corrections as needed to meet the Council's intent under Amendment 21 and 2011-2012 allocations.

OREGON DEPARTMENT OF FISH AND WILDLIFE REPORT ON ESTIMATED ANGLER  
TRIP PROJECTIONS UNDER VARIOUS DEPTH RESTRICTIONS DUE TO REDUCED  
YELLOWWEYE ROCKFISH ACLS

Oregon Department of Fish and Wildlife (ODFW) staff examined the potential impacts to the number of bottomfish angler trips due to reduced yelloweye rockfish allocations, and associated depth restriction regulations necessary to keep Oregon recreational harvest below those allocations. Data was examined at the port and coastwide level. The communities of Astoria, Florence, Winchester Bay and Port Orford are not included in this analysis as those ports account for less than 1% of the recreational bottomfish effort. Charleston and Bandon are combined due to limitations in recreational observer data.

This analysis assumed that angler effort by depth restriction area is proportional to fishing grounds area. In this analysis, depth requirements during the months of April through September were modified, and available Rockfish Conservation Area (RCA) lines shallower than 40 fathoms (fm) were considered. There was insufficient data to estimate effort occurring shoreward and seaward of the 40 fm RCA line during all depth periods (very few observer trips occurred during all depth periods since closures began), therefore staff did not consider depth based closures in months that are already open in all depths, or liberalizing months which are currently closed seaward of the 40 fm RCA line.

Staff used GIS to estimate the recreational fishing area shoreward of the 40, 25 and 20 fm RCA lines on a coastwide basis and around seven communities. Figure 1 shows the percentage of the recreational bottomfish fishing grounds in three depth bins (< 20 fm, 20-25 fm, and 25-40 fm) for each port, and coastwide.

For a yelloweye rockfish annual catch limit (ACL) greater than the status quo (status quo being prior to the recent court ruling) optimum yield (OY) of 17 metric tons (mt) ODFW may be able to liberalize the seasonal depth restrictions or allow groundfish retention during the all-depth Pacific halibut recreational openings. While staff was unable to model the change in angler trips, it is assumed that these actions will entice more anglers to participate in the fishery, as more areas will be open and the potential for more desirable species, such as lingcod, are made available.

For a yelloweye rockfish ACL lower than 17 mt ODFW will have to move the seasonal depth restrictions into shallower water, employing the 25 or 20 fm RCA line. Based on the percentage of area lost with tightening depth restrictions, ODFW estimated the change in the number of bottomfish angler trips. It was assumed that: (1) 50 percent of the bottomfish anglers that would have participated under status quo management (17 mt yelloweye ACL, April through September restricted shoreward of the 40 fm RCA line), would move to the shallower fishing grounds and 50 percent of the anglers would not participate, and (2) angling effort is proportional to area of the fishing grounds. Table 1 shows the estimated bottomfish trips by port under the 40, 25, and 20 fm depth restrictions, the decrease in trips from the 40 fm restriction level, and the percent of trips lost by port and coastwide.



Restricting the bottomfish fishery shoreward of the 25 fm RCA line from April through September is estimated to reduce the total number of angler trips for the Oregon coast by 2 percent; however some ports will see a greater percentage reduction in trips than others. Specifically, under the 25 fm restriction, Garibaldi and Gold Beach are each projected to see a 9% reduction in angler trips. Similarly, under a 20 fm restriction, the percent reduction in bottomfish angler trips is 6 percent coastwide. Garibaldi is projected to experience a 23 percent reduction in angler trips, Gold Beach a 17 percent reduction, and Charleston/Bandon a 10 percent reduction; while the ports of Depoe Bay, Newport and Brookings are each projected to have less than a 5 percent reduction in angler trips.

Those ports where depth restrictions result in the largest reductions in available fishing grounds are also likely to see declines in catch per angler as the ability to search for schools of fish is limited. Over the long term, this is likely to cause additional reductions in angler trips originating from those communities. Reductions in angler trips will impact the ability of these communities to maintain essential infrastructure for recreational fishing such as marinas, jetties and breakwaters, navigable channels, fuel docks, bait and tackle retailers, and lodging facilities.

The commercial nearshore fishery is already restricted shoreward of the 20 fm RCA line. Restricting the recreational fishery shoreward of the 20 fm RCA line as well will further concentrate fishing effort into small areas, with the potential for localized depletion and gear or sector conflicts. This is an ongoing concern for both the recreational and commercial participants, particularly along the southern Oregon coast.

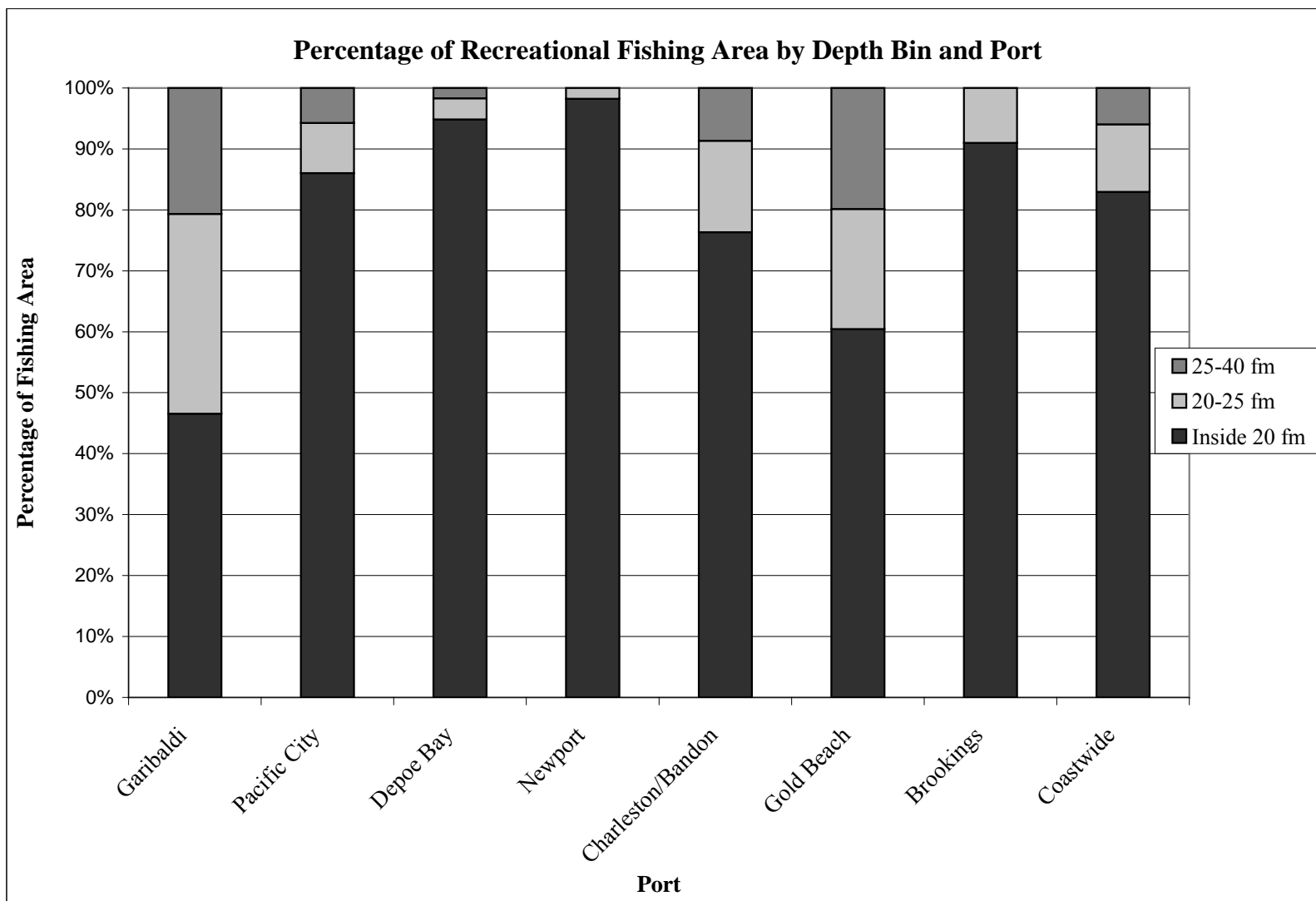


Figure 1. Percentage of Recreational Fishing Area by Depth Bin and Port for the Oregon Coast.

Table 1. Bottomfish angler trips and percent reduction under 40, 25, and 20 fm depth restrictions.

YE ACL Alternative	Alt 1 (20 mt)	Alt 2 (17 mt) status quo	Alt 2 (13 mt)					
Depth Restriction Scenarios	May-Aug inside 40 fm	April-Sept inside 40 fm	April-Sept inside 25 fm			April-Sept inside 20 fm		
Port	Trips	Trips	Trips	Reduction in Trips	Percent Reduction	Trips	Reduction in Trips	Percent Reduction
Garibaldi/Tillamook	> 5,343	5,343	4,867	476	9%	4,112	1,231	23%
Pacific City	> 3,445	3,445	3,365	80	2%	3,249	196	6%
Depoe Bay	> 11,217	11,217	11,134	83	1%	10,966	251	2%
Newport	> 16,293	16,293	16,293	0	0%	16,177	116	1%
Charleston/Bandon	> 11,624	11,624	11,184	440	4%	10,421	1,203	10%
Gold Beach	> 3,443	3,443	3,145	298	9%	2,849	594	17%
Brookings	> 18,268	18,268	18,268	0	0%	17,562	706	4%
<b>Total</b>	<b>&gt; 69,633</b>	<b>69,633</b>	<b>68,256</b>	<b>1,377</b>	<b>2%</b>	<b>65,336</b>	<b>4,298</b>	<b>6%</b>

## OREGON DEPARTMENT OF FISH AND WILDLIFE REPORT DETAILING THE PREFERRED ALTERNATIVE FOR MANAGEMENT OF THE OREGON RECREATIONAL AND COMMERCIAL GROUND FISH FISHERIES IN 2011 AND 2012

This report details Oregon Department of Fish and Wildlife's (ODFW) preferred management measures for the 2011 and 2012 recreational and commercial groundfish fisheries. ODFW recommends the Council adopt the following management measures:

### RECREATIONAL

The preferred season structure (Table 1) for 2011 and 2012 produces a fishery that is open offshore year round, except from April 1 to September 30 when fishing is only allowed shoreward of 40 fathoms (fm). Estimated impacts for yelloweye rockfish and canary rockfish associated with this preferred alternative are 2.1 mt for yelloweye rockfish and 2.4 mt for canary rockfish.

Table 1: ODFW preferred 2011-2012 Oregon recreational groundfish fishery management measures.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Projected Yelloweye Impacts (mt)	Projected Canary Impacts (mt)
Bottomfish Season	Open all depths			Open < 40 fm						Open all depths			2.1	2.4
Marine Bag Limit <sup>1</sup>	Ten (10)			1 Fish Cabezon Sub-Bag <sup>2</sup>						Ten (10)				
Lingcod Bag Limit	Three (3)													
Flatfish Bag Limit <sup>3</sup>	Twenty Five (25)													

<sup>1</sup> Marine bag limit includes all species other than lingcod, salmon, steelhead, Pacific halibut, flatfish, surfperch, sturgeon, striped bass, pelagic tuna and mackerel species, and bait fish such as herring, anchovy, sardine, and smelt

<sup>2</sup> From April 1 through September 30, the marine bag limit is Ten (10) fish per day, of which no more than one (1) may be cabezon.

<sup>3</sup> Flounders, soles, sanddabs, turbot and halibut except Pacific halibut

#### *Marine Fish Daily Bag Limit*

**ODFW recommends adoption of a marine fish daily bag limit of 10 fish in aggregate (as defined above).** This will provide management flexibility to make necessary adjustments to the marine fish daily bag limit through the yearly state process, reflecting the progression of the current year's fishery. The species most affected by adjustments in the marine fish daily bag limit are other

nearshore rockfish. The fishery will be managed within the minor nearshore rockfish harvest guideline.

#### *Lingcod Daily Bag Limit*

**ODFW recommends adoption of a lingcod daily bag limit of 3 fish.** This will provide management flexibility to make inseason adjustments to the lingcod daily bag limit through state rules if either the Pacific halibut catch limit is less than in 2010 or the marine bag limit is adjusted inseason.

#### *Flatfish Daily Bag Limit*

**ODFW recommends maintaining a flatfish daily bag limit of 25 fish in aggregate (excluding Pacific halibut).**

#### *Minimum Length Limits*

**ODFW recommends maintaining the existing length limits in place for 2011-2012;**

- Lingcod—22 inches
- Cabezon—16 inches
- Kelp Greenling—10 inches

#### *Stonewall Bank YRCA*

**ODFW recommends maintaining the existing Stonewall Bank YRCA prohibiting groundfish retention within a defined area** (Table 2), encompassing the high relief rocky habitat of Stonewall Bank, residing approximately 15 miles offshore from Newport, Oregon. This same area is closed to the retention of Pacific halibut. Targeting and retention of Pacific halibut and groundfish would be prohibited in the area year-round.

Table 2. Location of the Stonewall Bank YRCA

ID	Longitude	Latitude
1	124°24.92	44°37.46
2	124°23.63	44°37.46
3	124°21.80	44°28.71
4	124°24.10	44°28.71
5	124°25.47	44°31.42
Returning to the first point		

#### *Groundfish retention in the all-depth Pacific halibut fishery*

**ODFW recommends maintaining status quo regulations on groundfish retention during the all-depth Pacific halibut fishery.** Currently only sablefish and Pacific (or gray) cod may be retained during the all-depth Pacific halibut fishery at any depth in the area north Humbug Mountain, Oregon. It is expected that groundfish retention in the all-depth Pacific halibut fishery will be similarly constrained in 2011 and 2012.

#### *Inseason Management*

The inseason actions that may be implemented if the 2011 or 2012 Oregon recreational groundfish fishery does not proceed as expected include: length limit adjustments, bag limit adjustments (including non retention), gear restrictions, and season, depth, days per week and area closures.

Depth management will be the main inseason tool for controlling yelloweye rockfish and canary rockfish harvest, as retention is prohibited. Offshore closures may be implemented inseason at 30, 25, or 20 fathoms as the presence of these two species is reduced nearshore and release survival increases. ODFW will monitor inseason progress toward recreational harvest targets for yelloweye rockfish and canary rockfish.

Adjustments to the daily marine fish bag limit may be implemented through state rules to achieve season duration goals in the event of accelerated or decelerated other nearshore rockfish harvest. The lingcod daily bag limits may be adjusted in the event the marine bag limit changes or the halibut catch limit is reduced from 2010 levels. Season and/or area closures may also be considered if harvest targets are projected to be attained. Non-retention and length restrictions are the likely inseason tools to use for greenling as release survival is very high. They may also be used to reduce impacts on nearshore species, such as black rockfish and other nearshore rockfish species. A cabezon sub-bag limit, April 1 through September 30, will be used as the main tool to reduce cabezon impacts from the ocean boat fishery.

Gear restrictions and/or release technique requirements may be implemented to reduce the impact of overfished rockfish species if successful techniques are developed, researched, reviewed, and accepted.

Directed yellowtail rockfish and/or flatfish fisheries may be implemented inseason, as were implemented in 2004, in the event of a closure of the recreational groundfish fishery due to attainment of target species harvest guidelines or state harvest caps. Specific gear restrictions may be implemented in the event that flatfish remains open during a groundfish closure. Fisheries will be monitored to ensure that impacts to yelloweye rockfish and canary rockfish are not in excess of the harvest targets. In the event that the duration of total season is reduced from 12 months; the nearshore waters are closed to groundfish fishing due to management of nearshore species; or the Pacific halibut catch limit is reduced from 2010 levels, the fishery may be expanded to waters seaward of the RCA that is in effect at the time, promoting directed yellowtail rockfish and offshore lingcod opportunity. Fisheries will be monitored to ensure that impacts to yelloweye rockfish and canary rockfish are not in excess of the harvest targets.

## COMMERCIAL

### *Limited Entry Daily Trip Limit (LEFG-DTL) Sablefish Bimonthly Cumulative Limits*

**ODFW recommends adopting the GMT-proposed bimonthly trip limits (see B.7 GMT Supplemental Report, June 2010) for the Limited Entry Fixed Gear Daily Trip Limit sablefish fishery (LEFG-DTL) beginning January 1, 2011. ODFW further recommends no daily limit, and a weekly cumulative limit of not less than 25% of the bimonthly limit.** The bimonthly cumulative trip limit structure recommended by the GMT was 6,500 lb (period 1), 7,500 lb (periods 2-5), and 6,000 lb (period 6). This trip-limit structure will allow the fishery the opportunity of achieving its annual allocation, provide for a year-around fishery, and provide highest opportunities during seasons associated with better weather. No daily limit is needed for this fishery because the number of permits are fixed (thereby limiting the potential of large increases in fishing effort) and the GMT model showed no relationship between daily limits and bimonthly landings. Finally, the cumulative-weekly limit should be high enough to allow these fishermen the opportunity to reach their bimonthly limit in four weeks (trips) or less to account for weather, breakdowns, or other unforeseen situations that limit the amount of at-sea time.

*Move Fixed Gear RCA between Cape Blanco and Cascade Head from 125 fm to 100 fm*

**ODFW recommends moving the fixed gear RCA between Cape Blanco (43° N latitude) and Cascade Head (45.06° N latitude) from the 125 fm line to the 100 fm line.** The GMT demonstrated that this RCA change results in an increase of 0.1 mt yelloweye rockfish and canary rockfish, which would be within their allocation (Agenda Item B.3.b, Supplemental GMT Report 4, June 2010). Allowing fixed gear fishermen in this area to return to fishing grounds seaward of 100 fm will provide more opportunity for harvesting target species while reducing the increased expense and risk of traveling farther off shore.

#### *RCA Line Modifications*

**The ODFW recommends adopting three RCA-line modifications that were proposed in pages 65-68 of Agenda Item B.3.a, Attachment 1, June 2010 and in Agenda Item B.3.b, Supplemental ODFW Report 2, June 2010).** ODFW also recommends that if adopted, that these RCA modifications be further reviewed by NMFS enforcement to ensure that the proposed modifications meet required specifications (e.g., do not cross EFH lines). Modifications were minor and were acceptable to Oregon Enforcement. The purpose of the fixed gear RCA modifications at the southwest corner of Heceta Bank (Tables 3 and 4; Figures 1 and 2) was to offer further protection to yelloweye rockfish, whereas the purpose of the trawl-RCA modification (Table 5; Figure 3) was to provide more fishing area for DTS trawlers while not increasing impacts to overfished species. In fact, we feel that original points that were adjusted for this latter RCA line were erroneous, and this adjustment reduces the impact of that error.

**Table 3. ODFW-proposed changes to 100 fm RCA line off the southwest corner of Heceta Banks.**

Fathom Line	Proposed Coordinates						Action	Long Change	Original Coordinates Published in the Federal Register			
	Point	Lat		Long		Lat			Long			
		Deg	Min	Deg	Min	Deg			Min	Deg	Min	
100-fm	117	44	12.92	124	56.28	Retain	None	44	12.92	124	56.28	
100-fm	118					Delete		44	0.14	124	55.25	
100-fm	119					Delete		43	57.68	124	55.48	
100-fm	120					Delete		43	56.66	124	55.45	
100-fm	A	44	2.340	124	55.455	Addition	Seaward					
100-fm	B	43	59.175	124	56.944	Addition	Seaward					
100-fm	C	43	56.738	124	56.738	Addition	Seaward					
100-fm	D	43	55.764	124	55.764	Addition	Seaward					
100-fm	E	43	55.406	124	52.205	Addition	Seaward					
100-fm	F	43	54.622	124	48.229	Addition	Seaward					
100-fm	G	43	55.901	124	41.112	Addition	Seaward					
100-fm	H	43	57.359	124	38.681	Addition	Seaward					
100-fm	121	43	56.47	124	34.61	Retain	None	43	56.47	124	34.61	





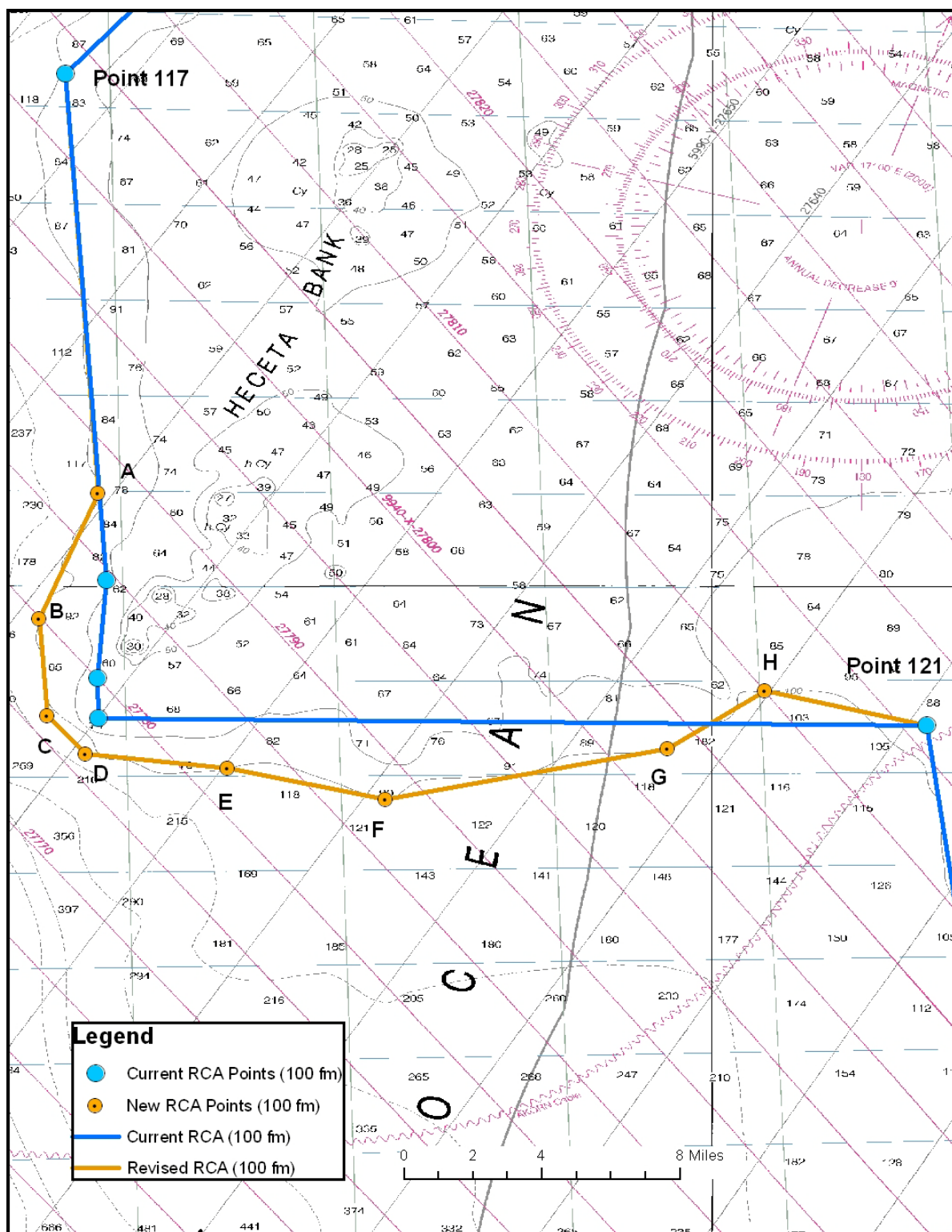


Figure 1. ODFW-proposed changes to 100-fm RCA line off the southwest corner of Heceta Banks. Blue line = original 100-fm RCA; Gold line = proposed 100-fm RCA and points; Gray line = 100-fm depth contour. Units are in fathoms

**Table 4. ODFW-proposed changes to 125 fm RCA lines off the southwest corner of Heceta Banks.**

Fathom Line	Proposed Coordinates						Long Change	Original Coordinates Published in the Federal Register			
	Point	Lat		Long		Action		Lat		Long	
		Deg	Min	Deg	Min			Deg	Min	Deg	Min
125-fm	133	44	1.14	124	56.07	Retain	None	44	1.14	124	56.07
125-fm	134					Delete		43	57.49	124	56.78
125-fm	A	43	59.431	124	57.217	Addition	Seaward				
125-fm	B	43	57.491	124	57.313	Addition	Seaward				
125-fm	C	43	55.728	124	55.407	Addition	Seaward				
125-fm	D	43	54.74	124	53.145	Addition	Seaward	43	57.49	124	56.78
125 fm	135	43	55.74	124	55.34	Retain		43	55.74	124	55.34

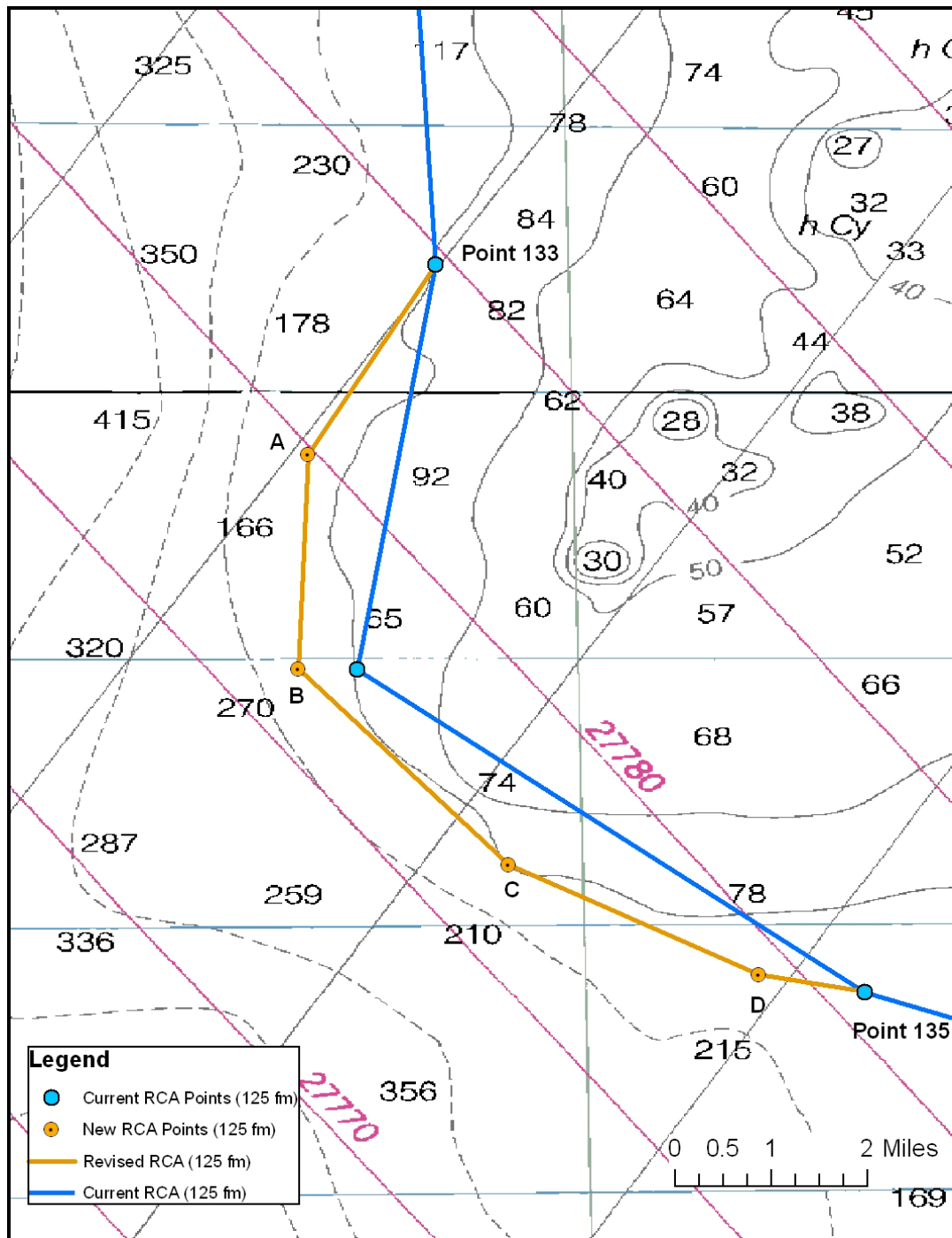


Figure 2. ODFW-proposed changes to 125-fm RCA line off the southwest corner of Heceta Banks. Blue line = original 125-fm RCA; Gold line = proposed 125-fm RCA and points; Gray line = 100-fm depth contour. Units are in fathoms.

Table 5. ODFW-proposed changes to the 200-fm petrale RCA near Heceta Bank.

Fathom Line		Proposed Coordinates				Action	Long Change	Original Coordinates Published in the Federal Register				
		Point	Lat		Long			Lat		Long		
			Deg	Min	Deg			Min	Deg	Min	Deg	Min
200-fm petrale	83	44	13.19	124	58.66	Retain	None	44	13.19	124	58.66	
200-fm petrale	84					Delete		44	8.3	124	58.72	
200-fm petrale	85					Delete		43	57.37	124	58.71	
200-fm petrale	A	43	57.88	124	58.25	Addition	Shoreward					
200-fm petrale	B	43	56.89	124	57.33	Addition	Shoreward					
200-fm petale	86	43	52.32	124	49.43	Retain	None	43	52.32	124	49.43	

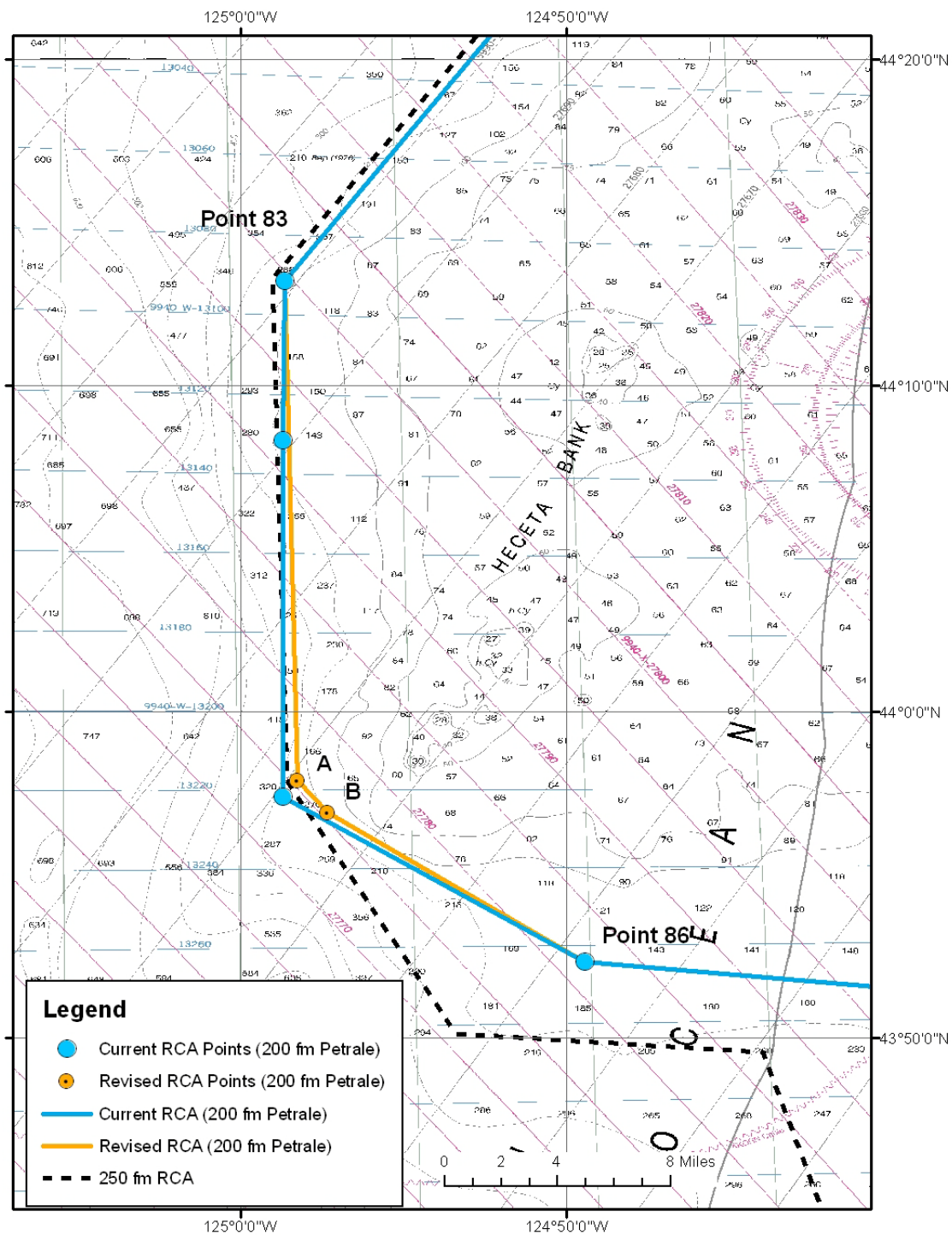


Figure 1. ODFW-proposed changes to 200-fm petrale RCA near Heceta Bank. Blue Line = current 200-fm petrale RCA; Gold Line = proposed 200-fm petrale RCA; Dashed Line = 250-fm RCA.

## **ODFW RECOMMENDATIONS FOR 2011-2012**

### **Oregon Recreational Groundfish Fishery**

1. **Adopt the status quo season structure, bag limits, and length limits as shown.**
2. **Adopt the seasonal sub-bag limit for cabezon as shown.**
3. **Adopt the status quo Stonewall Bank yelloweye rockfish conservation area.**
4. **Adopt groundfish retention prohibition in the Pacific halibut all-depth fishery North of Humbug Mountain, except for sablefish (black cod) and Pacific (true or gray) cod.**
5. **Adopt the inseason management tools as shown.**

### **Oregon Commercial Fisheries**

1. **Adopt bimonthly trip limits for the Limited Entry Fixed Gear Daily Trip Limit sablefish fishery (LEFG-DTL) beginning January 1, 2011. ODFW further recommends no daily limit, and a weekly cumulative limit of not less than 25% of the bimonthly limit. The bimonthly cumulative limits are 6,500 lbs (period 1), 7,500 lb (periods 2-5), and 6,000 lb (period 6)**
2. **Move the fixed gear RCA between Cape Blanco (Columbia/Eureka INPFC border at 43° N latitude) and Cascade Head (45.06° N latitude) from the 125 fm line to the 100 fm line.**
3. **Adopt three RCA-line modifications that are shown above. If adopted, these RCA modifications are further reviewed by NMFS enforcement to ensure that the proposed modifications meet required specifications (e.g., do not cross EFH lines).**

## Motions for California Management Measures for 2011-2012

I move that the Council adopt as final the following management measures for 2011 and 2012. Details of the management measure analyses are provided in Agenda Item B.3.a, Attachment 1, Agenda Item B.3b, CDFG Supplemental Reports 1 and 2 as well as Agenda Item B.7.b. Supplemental CDFG Report.

### RECREATIONAL

1. Align lingcod seasons in the California recreational fishery for all fishing modes, consistent with those for rockfish in each management area. (Agenda Item B.3b, CDFG Supplemental Report 2, page 12.)
2. Set California scorpionfish (sculpin) depth restriction in the Southern Management Area to 60 fm when scorpionfish is open. (Agenda Item B.3b CDFG Supplemental Report 2, page 14)
3. Eliminate the ten fathom depth closure around the Farallon Islands and Noonday Rock. (Agenda Item B.3b, CDFG Supplemental Report 2 under, page 18)
4. Combine the Monterey South-Central and Morro Bay-South Central recreational management areas. (Agenda Item B.3b, CDFG Supplemental Report 2 under, page 20)
5. Add a management line at Cape Vizcaino (39° 44' N. latitude). (Agenda Item B.3b CDFG Supplemental Report 2, page 20)
6. Increase the cabezon bag limit to 3 fish statewide. (Agenda Item B.3b, CDFG Supplemental Report 2 under, page 20)
7. Decrease the lingcod size limit to 22 inches statewide. This includes a 14 inch fillet length requirement (Agenda Item B.3b, CDFG Supplemental Report 2, page 21)
8. Increase the recreational depth restriction in the Cowcod Conservation Area from 20 fm to 30 fm (Agenda Item B.3.a, Attachment 1, page 77 and Agenda Item B.7.b. Supplemental CDFG).
9. Modify the list of groundfish species allowed to be taken recreationally in the Cowcod Conservation Area to include shelf rockfish (Agenda Item B.3b, CDFG Supplemental Report 2, page 23)
10. Modify cabezon and kelp greenling gear restrictions to be consistent with rockfish regulations (1 rod with no more than 2 hooks) (Agenda Item B.3b, CDFG Supplemental Report 2, page 24)

11. Revise the naming convention for the California recreational management areas (Agenda Item B.3b, CDFG Supplemental Report 2, page 25)
12. Establish the RCA lines the proposed for the CCA found in Agenda Item B.7.b, Supplemental CDFG Report and Agenda Item B.3.a, Attachment 1, page 77.
13. All bag limits, gear restrictions, size limits and possession regulations except those changed with this action remain as status quo.
14. Affirm the catch sharing between Oregon and California for black rockfish contained in Agenda B.3.b. Joint ODFW/CDFG Report.

Existing management measures remain in effect.

### **Recreational Season and Depth Structure:**

Use the season structure for CA recreational season and depths by area from page the top of page 29 in Figure 3 with the following modification: in the North Central North of Pt. Arena from May 14/13 in less than 20 fm through August 15. (This provides for a 3 month season in that area.)

### **COMMERCIAL**

1. Modify the trawl and non-trawl RCA lines in the Cape Mendocino, Big Sur, and San Diego areas to reflect the proposed technical changes by CDFG and industry (Agenda Item B.3, CDFG Supplemental Report 1 and Agenda Item B.3.a, Attachment 1, page 69-71)
- ~~2. Adopt a status quo RCA structure for the CA nearshore fishery which maintains the 20 fm depth between 40°10' and 42° N lat, 30 fm depth between 40°10' and 34°27' N lat, and 60 fm depth south of 34°27' N lat . This is reflected as Option B in Tables 4 23 and 4 24 and Figure 4 8, pg 29 30 (Agenda Item B.3.a, Attachment 1).~~
- ~~3. Use the recommendations contained in the Supplemental GAP Report under this agenda item to address trip limits for sablefish south of 36° N lat as follows:~~
  - ~~• Limited Entry — no daily limit and 2,000 lb per week with no bi monthly limit~~
  - ~~• Open Access — 400 lb/day, up to 1 landing per week up to 1,500 lb, not to exceed 6,000 lb/2 months.~~

For the commercial fishery south of 34°27' N lat as follows:

- ~~• Non trawl RCA — status quo (60-150 fm)~~
- 2010 Status quo limited entry and open access trip limits for the following species:
  - Shallow nearshore rockfish, deeper nearshore rockfish, and shelf rockfish



- California scorpionfish (LE and OA) – 1,200 lb/2 months year round  
(Amendment: Change “year round” to “when open”)

Amendment: Crabbe/Dave Hanson

Amendment carried.