

# Historical Landings and Revenue in Groundfish Fisheries



**PACIFIC FISHERY MANAGEMENT COUNCIL  
STAFF REPORT  
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## 1. Introduction

Appendix F to the Final Environmental Impact Statement (FEIS) for the Proposed ABC/OY Specifications and Management Measures for the 2011-2012 Pacific Coast Groundfish Fishery contains tables and figures showing historical 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. This report presents an update. Data are provided in two ways. Tabular data are provided online in a spreadsheet workbook (<http://www.pcouncil.org/groundfish/background/document-library/historical-landings-and-revenue-in-groundfish-fisheries/>), which is intended to allow greater flexibility for end users. This document interprets and discusses data in those tables.

The data underlying these tables were extracted from the vessel daily summary (vdrfd) table in the Pacific Fishery Information Network (PacFIN) landings database or in a few cases the PacFIN web-based Multidimensional Explorer Tool. Species codes (spids) in the vdrfd table were grouped into one of three different sets of custom categories, depending on the table. Appendix B provides additional information about the grouping of species into these categories.

## 2. Trends in Coastwide Landings

### 2.1. Shoreside Landings of all Species by Management Group

Online tables:

**Table 1. Landings (metric tons) by management group, 1981-2010.**

**Table 2. Ex-vessel revenue (inflation-adjusted dollars) by management group, 1981-2010.**

The figures in this section illustrate trends in landings by species groups used in the PacFIN database to reflect management groups. These management groups correspond with managed species in Council’s four FMPs and other major groupings for state managed and other species. Total shoreside west coast ex-vessel revenue in 2010 was \$354 million (not including whiting processed at sea), or 102 percent of the annual average for the 1981-2010 time series when adjusted for inflation and 90 percent of the average for 1981-1990. Looking at inflation-adjusted ex-vessel revenue for the entire period, crab and groundfish account for the highest share of ex-vessel revenue, at 22 and 25 percent respectively. However, in 2010 their shares were 32 and 19 percent, reflecting increased landings and revenues from crab.

Figure 2-2 and Figure 2-1 illustrate trends by showing graphically years in which revenue and landings for each management group was greater than the annual average. The figures suggest an increasing trend in landings of CPS and crab. Groundfish ex-vessel revenue has not exceeded the long-term annual revenue since 1998 although landings volume has exceeded the average in several subsequent years. This likely reflects higher landings of Pacific whiting (a low value species) in those years.

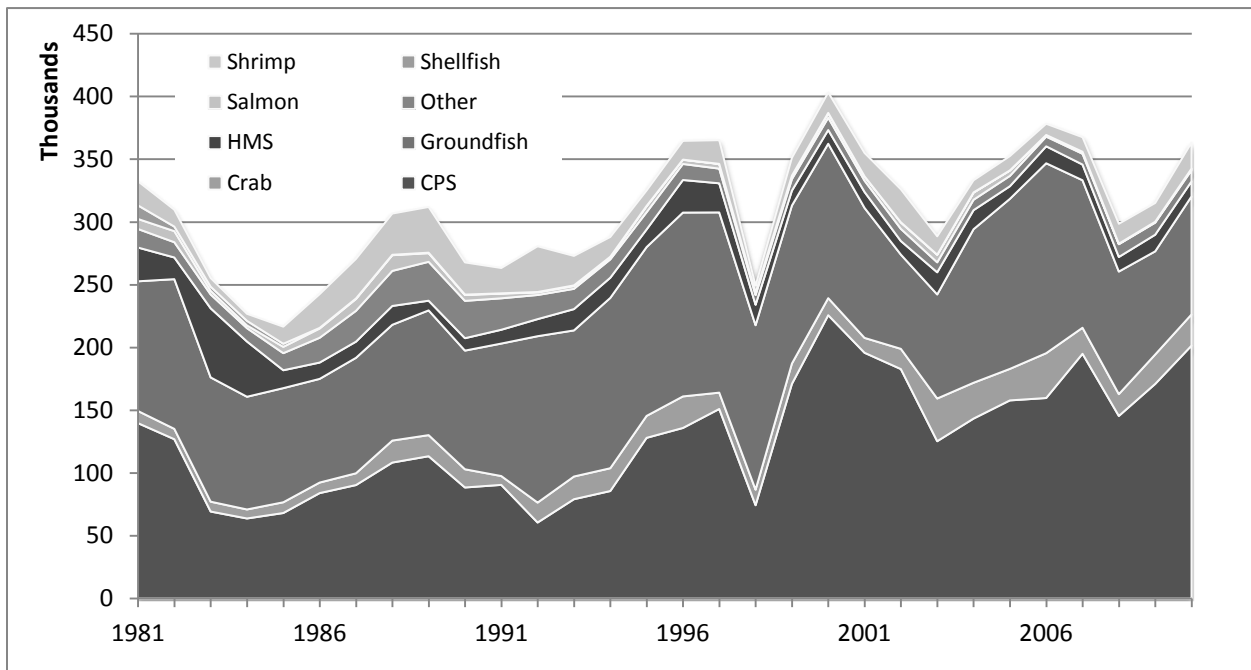
	1985	1990	1995	2000	2005	2010
CPS	■			■	■	■
Crab		■	■	■	■	■
Groundfish	■		■	■	■	■
HMS	■		■	■	■	
Other	■	■	■			
Salmon	■	■	■		■	
Shellfish	■					
Shrimp	■	■	■	■	■	■

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**Figure 2-1. Annual landings compared to annual average for period, 1981-2010, by management group. Shaded cells show years above annual average.**

	1985	1990	1995	2000	2005	2010
CPS	Shaded			Shaded		Shaded
Crab				Shaded	Shaded	Shaded
Groundfish	Shaded	Shaded	Shaded	Shaded		
HMS	Shaded	Shaded		Shaded		
Other		Shaded	Shaded	Shaded		
Salmon	Shaded	Shaded			Shaded	
Shellfish	Shaded	Shaded	Shaded	Shaded		
Shrimp	Shaded	Shaded	Shaded	Shaded		

**Figure 2-2. Annual inflation adjusted ex-vessel revenue compared to annual average for period, 1981-2010, by management group. Shaded cells show years above annual average.**



**Figure**

**2-3. Landings (mt) by management group, 1981-2010.**

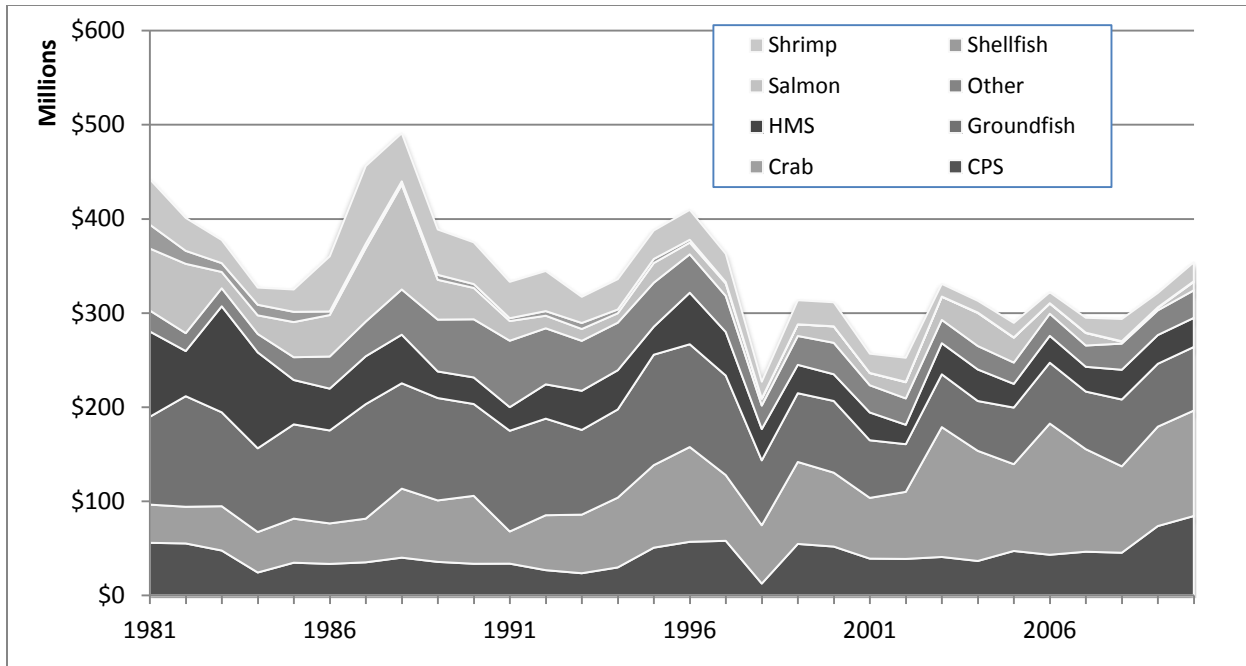


Figure 2-4. Inflation adjusted ex-vessel revenue (\$millions) by management group, 1981-2010.

## 2.2. General Trends in Shoreside Groundfish Landings

Online tables:

**Table 3. Landings (mt) for major groundfish species and species groups, 1981-2010.**

**Table 4. Ex-vessel revenue (inflation-adjusted dollars) for major groundfish species and species groups, 1986-2010.**

**Table 5. Groundfish landings (mt) by selected gear types (gr.group), 1981-2010.**

**Table 6. Ex-vessel revenue (inflation-adjusted dollars) by selected gear groups (gr.group), 1981-2010.**

This section presents a similar set of figures as in the previous section but focusing on groundfish species.<sup>1</sup> Landings in PacFIN are usually reported at a species level; these have been grouped into 11 categories, with those species accounting for a large proportion of ex-vessel revenue displayed. For the entire period the individually reported species—sablefish, Dover sole, Pacific whiting, petrale sole, lingcod, and arrowtooth flounder—account for 56 percent of total revenue. (Note that these data do not include Pacific whiting processed at sea; including those catches would increase the share Pacific whiting accounts for.) Rockfish and thornyheads make up an additional 36 percent of the total. Annual groundfish inflation-adjusted ex-vessel revenue generally increased from 1981 to the mid 1990s and then fell dramatically; ex-vessel revenue in 2002, the low point, was just under 50 percent of the 1996 value. Revenue has subsequently rebounded somewhat, in 2010 slightly exceeding the annual average for the entire period and equaling \$67.5 million. Sablefish and rockfish account for the largest share of ex-vessel revenue for the entire 1981-2010 period at 25 and 28 percent respectively. However, rockfish were a big component of the decline in landings in the late 1990s; in 2010 they accounted for just 7 percent of total groundfish ex-vessel revenue. Sablefish, on the other hand accounted for 53 percent of total revenue in 2010. In terms of landings volume Pacific whiting (landed shoreside) has shown the largest gain over the time period, accounting for 69 percent of total shoreside landings by weight in 2010.

Figure 2-5 and Figure 2-6 compare annual inflation-adjusted ex-vessel revenue and landings to the annual average to indicate trends. Since 2000 Pacific whiting, petrale sole, and sablefish show revenues above the long-term

<sup>1</sup> The PacFIN groundfish category includes a few species not in the Council's groundfish FMP; these are grouped under miscellaneous groundfish.

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average. With respect to landings volume, Pacific whiting sablefish, and petrale sole show above average years since 2000.

	1985	1990	1995	2000	2005	2010
Pacific Whiting			■	■	■	■
Sablefish		■		■	■	■
Lingcod	■	■	■	■		
Other Roundfish		■	■	■	■	
Rockfish	■	■	■	■		
Thornyheads		■	■	■		
Arrowtooth Flounder	■	■	■	■	■	
Dover Sole	■	■	■			
Petrale Sole	■	■	■	■	■	■
Other Flatfish	■	■	■			
Misc. Groundfish			■	■	■	■

**Figure 2-5. Landings compared to annual average for period, 1981-2010, for major groundfish species and species groups. Shaded cells show years above annual average.**

	1985	1990	1995	2000	2005	2010
Pacific Whiting			■	■	■	■
Sablefish	■	■	■			
Lingcod	■	■	■			
Other Roundfish	■	■	■		■	
Rockfish	■	■	■	■		
Thornyheads		■	■	■		
Arrowtooth Flounder		■	■	■	■	■
Dover Sole	■	■	■			
Petrale Sole	■	■	■	■	■	■
Other Flatfish	■	■	■	■		
Misc. Groundfish			■	■	■	■

**Figure 2-6. Annual inflation adjusted ex-vessel revenue compared to annual average for period, 1981-2010, for major groundfish species and species groups. Shaded cells show years above annual average.**

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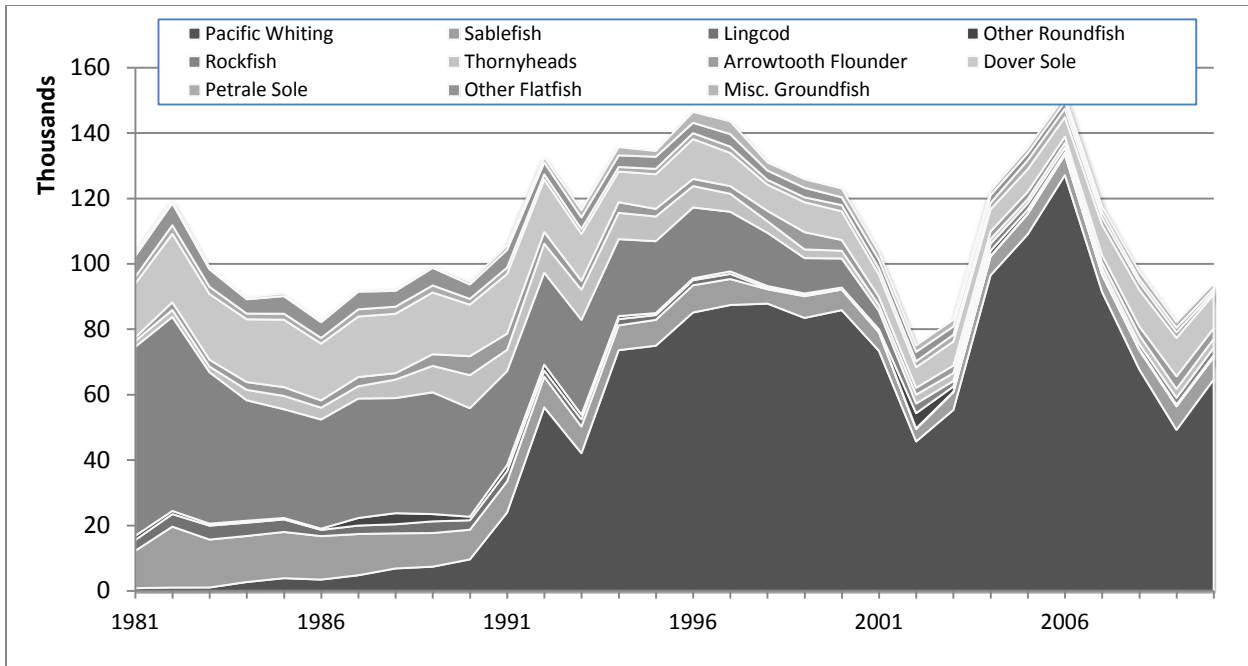


Figure 2-7. Landings (thousands of metric tons) for major groundfish species and species groups, 1981-2010.

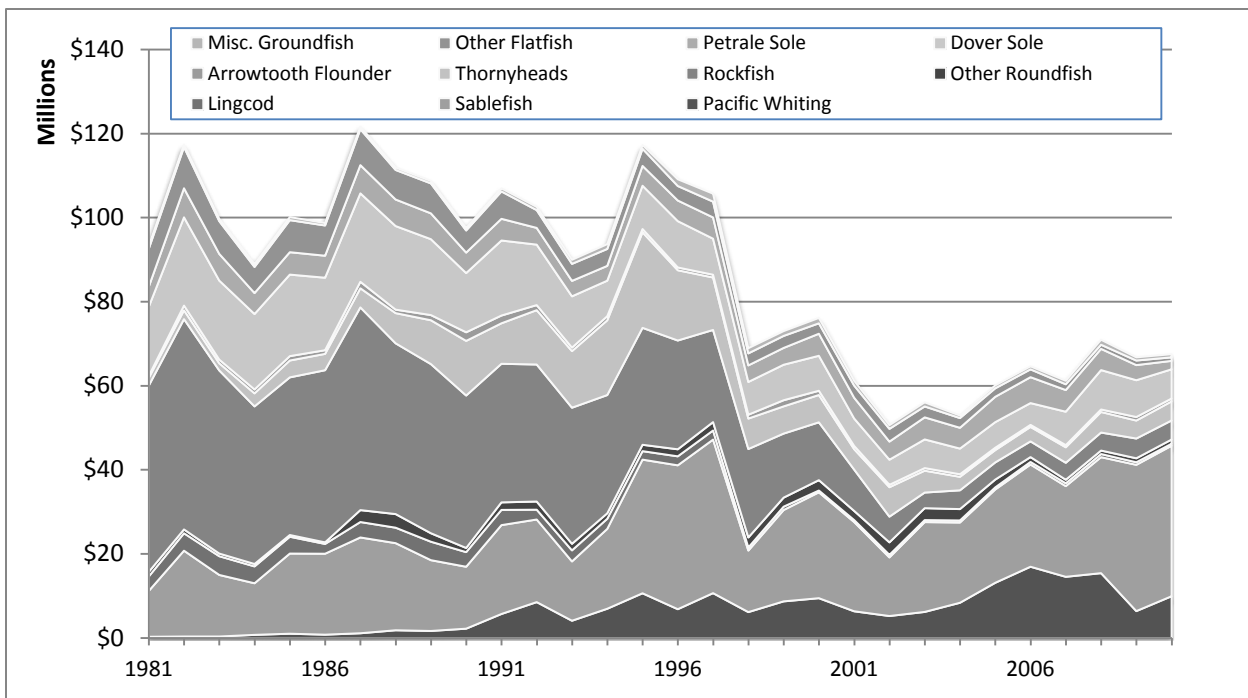


Figure 2-8. Inflation adjusted ex-vessel revenue (\$millions) for major groundfish species and species groups, 1981-2010.

The vast majority of groundfish landings have been made by groundfish trawl gear. For the entire 1981-2010 period this gear accounted for 91 percent of shoreside landings but 73 percent of inflation adjusted ex-vessel revenue. Landings from trawl gear increased relative to other gear types (from 86 percent, 1981-1990, to 94 percent, 2000-2010) while revenue has declined (78 percent, 1981-1990 to 65 percent, 2000-2010). (See Figure 2-9 and Figure 2-10.)

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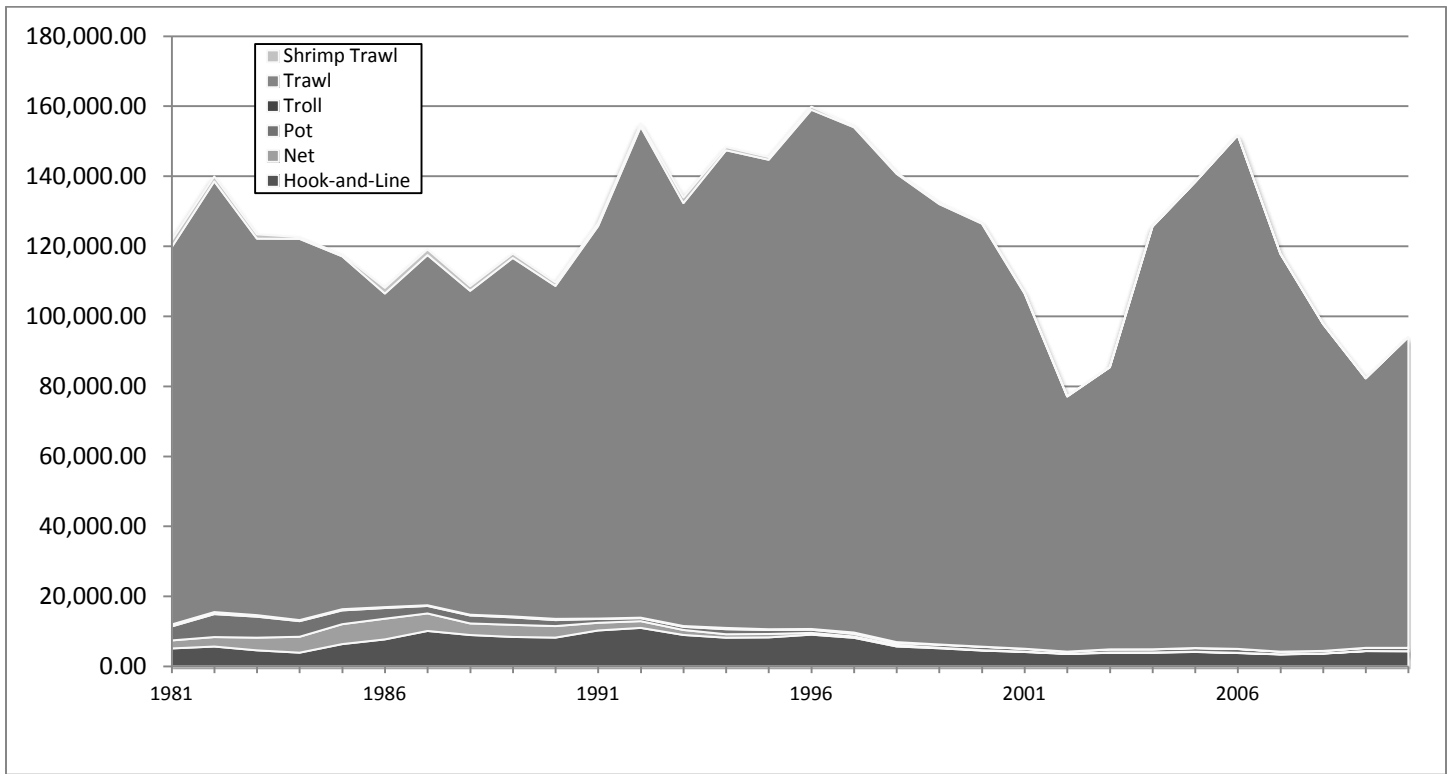


Figure 2-9. Groundfish landings (mt) by gear type, 1981-2010.

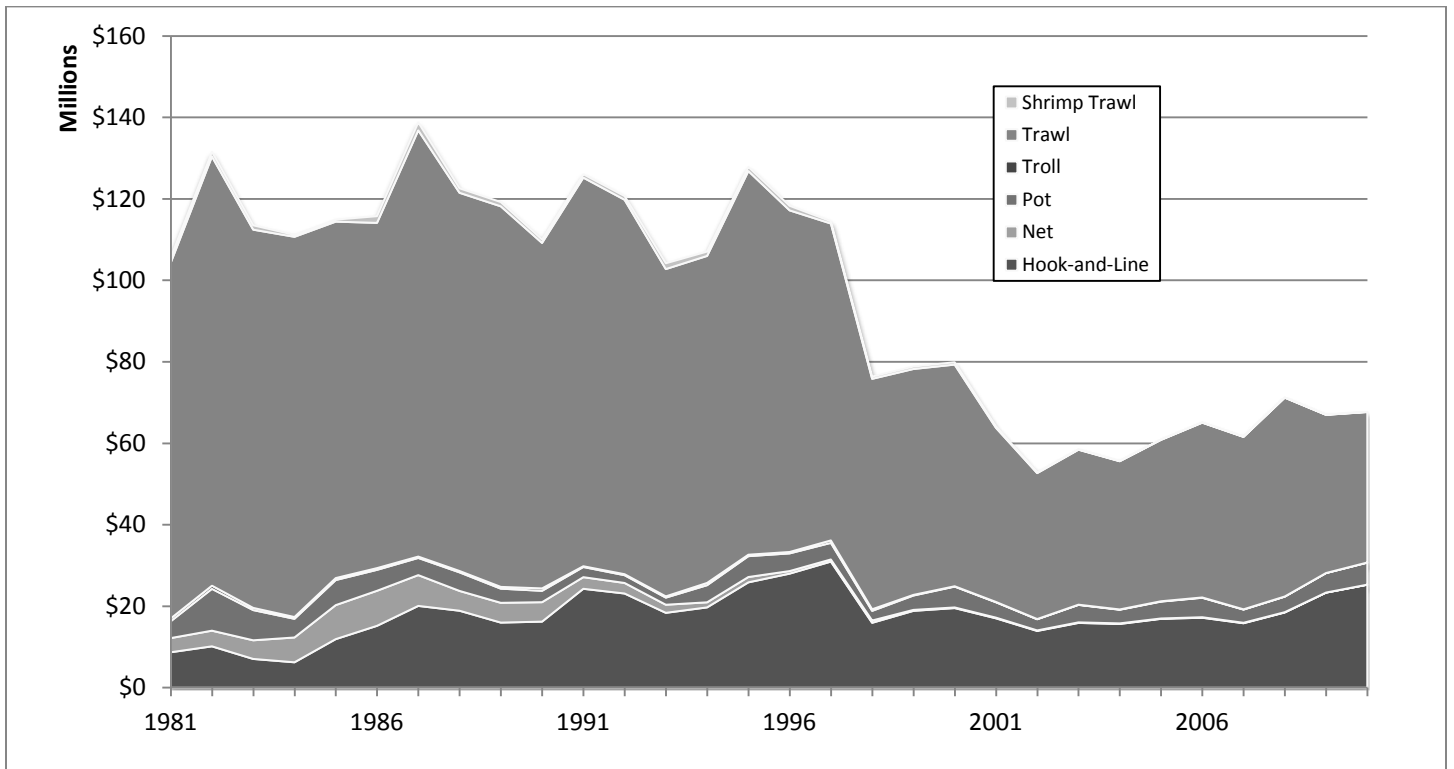


Figure 2-10. Groundfish ex-vessel revenue (inflation adjusted dollars) by gear type, 1981-2010.

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## 3. Landing and Revenue by Fishery Sectors, 2006-2010

For management purposes groundfish fisheries are classified in a variety of “sectors” based on vessel permit status, allocation of fishing opportunity, fishing strategy, and other factors. 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. Beginning in 2010 Council staff worked with PacFIN staff to develop methods to code PacFIN data so that landings could be grouped according to these categories. In 2011 these codes were implemented directly into the PacFIN vdrfd table and used to generate the tables for this section.

Appendix A describes the procedures and criteria used to create 19 separately coded fishery sectors, 16 of which are applied to PacFIN data. The remaining 3 sectors cover Pacific whiting processed at sea; information on these catches is stored in a different database. PacFIN staff provided a custom dataset on these at-sea sectors used in generating the relevant tables in this report (see Section 3.3).

### 3.1. Commercial Nonwhiting Sectors

Online tables describing landings and revenue by nonwhiting commercial fishery sectors:

**Table 7. Landings by selected species and species groups (mt) by the nonwhiting groundfish limited entry trawl sector, 2006-2010.**

**Table 8. Ex-vessel revenue from selected species and species groups (inflation adjusted dollars) by the nonwhiting groundfish limited entry trawl fishery, 2006-2010.**

**Table 9. Landings of selected species and species groups (mt) by the limited entry fixed gear sector, 2006-2010.**

**Table 10. Ex-vessel revenue from selected species and species groups (inflation adjusted dollars) by the limited entry fixed gear sector, 2006-2010.**

**Table 11. Landings of selected species and species groups (mt) by the directed open access sector (includes fixed gear, net gear, and troll gear), 2006-2010.**

**Table 12. Ex-vessel revenue from selected species and species groups (inflation adjusted dollars) by the directed open access sector (includes fixed gear, net gear, and troll gear), 2006-2010**

**Table 13. Landings of selected species and species groups (mt) by the non nearshore fixed gear fishery, 2006-2010.**

**Table 14. Ex-vessel revenue from selected species and species groups (inflation adjusted dollars) by the non nearshore fixed gear fishery, 2006-2010.**

**Table 15. Landings of selected species and species groups (mt) by the nearshore sector, 1996-2010.**

**Table 16. Ex-vessel revenue from selected species and species groups (inflation adjusted dollars) for the nearshore fixed gear sector, 2006-2010.**

**Table 17. Landings of selected species and species groups (mt) by the incidental open access sector, 2006-2010.**

**Table 18. Ex-vessel revenue from selected species and species groups (inflation adjusted dollars) by the incidental open access sector, 2006-2010**

**Table 19. Landings of selected species and species groups (mt) by the limited entry and open access nonnearshore nonsablefish sector, 2006-2010.**

**Table 20. Ex-vessel revenue for selected species and species groups (inflation adjusted dollars) for the limited entry and open access nonnearshore nonsablefish sector, 2006-2010.**

**Table 21. Groundfish landings (mt) by commercial fishery sector, 2006-2010.**

**Table 22. Groundfish ex-vessel revenue (inflation adjusted dollars) by commercial fishery sector, 2006-2010.**

For reporting purposes PacFIN sector codes have been grouped into the following fishery sectors:

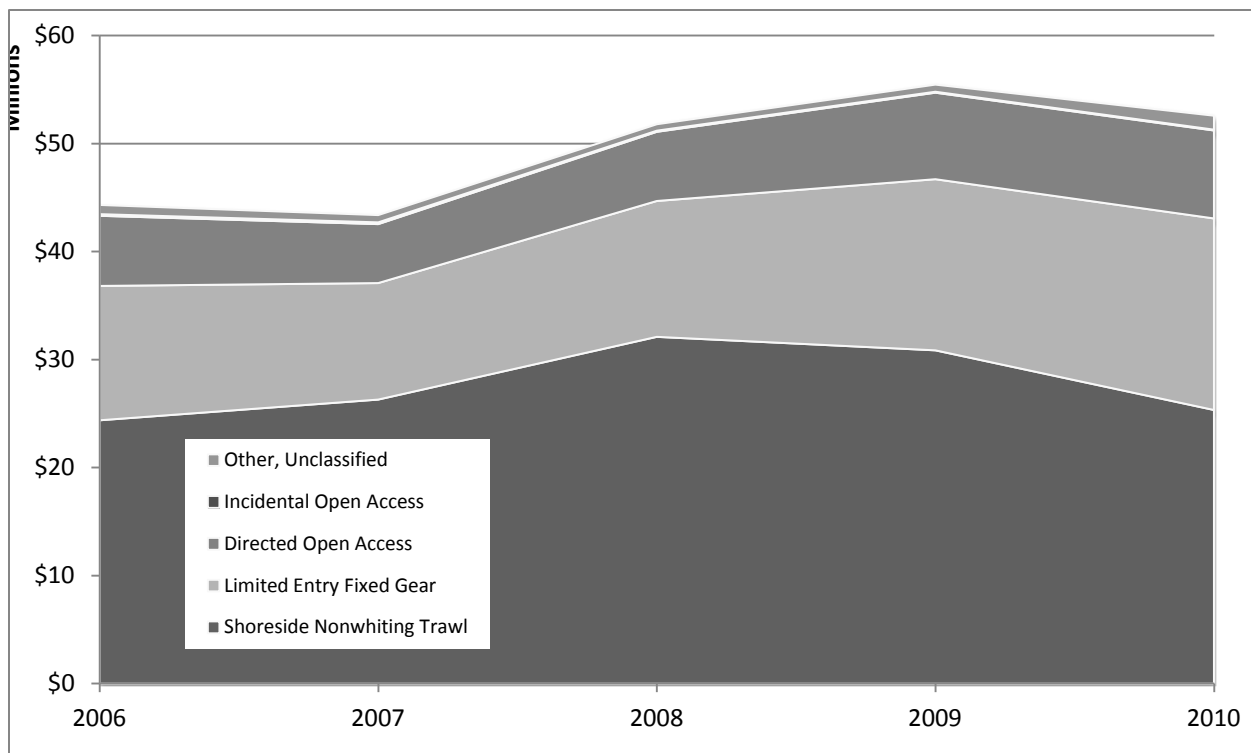
- Nonwhiting groundfish limited entry trawl (sector 4)
- Limited entry fixed gear (sectors 5, 7)
- Directed open access (all gear types, sectors 6, 8, 11)
- Non nearshore (sectors 7, 8) catching sablefish
- Nearshore (sectors 5, 6) not catching sablefish and also defined by the catch of selected rockfish species

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- Non nearshore non sablefish (sectors 9, 10)
- Incidental open access (sector 12)
- Other groundfish fishery landings, including vessels operating under exempted fishing permits, research catches, and groundfish caught in exempted trawl fisheries (targeting shrimp, prawns, and California halibut) (sectors 13, 14)

Finally, some vessel activity is unclassified because the catch is not from the Pacific Council’s management area; catch in the PFMC area is a criterion for all the sector definitions. Note that the limited entry fixed gear and directed open access fisheries overlap with the spatially defined nearshore and non nearshore fisheries. “Non nearshore” is a term of art for classifying vessels fishing offshore on the continental slope and catching sablefish.

Figure 3-1 presents the data from online Table 22 graphically. The limited entry nonwhiting trawl sector earned 53 percent of overall inflation adjusted revenue during the period, followed by the limited entry fixed gear sector earning 28 percent and the directed open access sector (14 percent); the incidental open access sector (fisheries not targeting groundfish) and other/unclassified landings make up the remaining 2 percent of total revenue.



**Figure 3-1. Groundfish ex-vessel revenue (inflation adjusted dollars) by commercial fishery sector, 2006-2010.**

Table 3-1 shows the fraction of inflation adjusted ex-vessel revenue earned from the top three highest earning species in the commercial nonwhiting limited entry trawl, limited entry fixed gear, and directed open access sectors (information from online tables 8, 10, and 12), 2006-2010. In all three of these sectors sablefish is the top earner, comprising between 36 and 84 percent of total revenue. In the trawl fishery Dover sole is second (it is the top landed species by weight in this sector) followed by petrale sole. The limited entry fixed gear sector, which fishes offshore, depends secondly on thornyheads while the directed open access sector, primarily fishing nearshore earns a large portion of revenue from rockfish. In all three of these sectors the top three species account for a large fraction of total revenue, ranging from 78 to 97 percent. (Online tables 13-16 present landings and ex-vessel revenue for the cross-cutting nearshore and non nearshore sectors. By sector definition the nearshore

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sector does not catch sablefish while this species dominates the non nearshore sector with 89 percent of total revenue.)

**Table 3-1. Top three income earning species for three sectors, 2006-2010.**

Species	Ann. Average	Pct Total
Limited Entry Trawl		
Sablefish	\$10,138,423	36.3%
Dover Sole	\$7,468,802	26.8%
Petrale Sole	\$4,283,686	15.3%
<b>Total</b>	<b>\$21,890,911</b>	<b>78.4%</b>
Limited Entry Fixed Gear		
Sablefish	\$11,773,444	83.6%
Thornyheads	\$1,541,733	11.0%
Rockfish	\$362,759	2.6%
<b>Total</b>	<b>\$13,677,935</b>	<b>97.2%</b>
Directed Open Access		
Sablefish	\$3,437,438	48.8%
Rockfish	\$2,435,537	34.6%
Other Roundfish	\$635,849	9.0%
<b>Total</b>	<b>\$6,508,825</b>	<b>92.4%</b>

## 3.2. Tribal Fisheries

Online tables:

**Table 23. Landings of species and species groups (mt) by the treaty nonwhiting sector, 2006-2010.**

**Table 24. Ex-vessel revenue from species and species groups (inflation adjusted dollars) by the treaty nonwhiting sector, 2006-2010.**

Several Pacific Northwest Indian tribes have treaty rights to fish for groundfish in their usual and accustomed fishing grounds. The Federal government has accommodated these fisheries through a regulatory process described at 50 CFR 660.324. Participants in the tribal commercial fisheries use similar gear to nontribal fishers. Groundfish caught in the tribal commercial fishery pass through the same markets as nontribal commercial groundfish catch. In addition to 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 (PacFIN landings data for the tribal whiting fishery are discussed in the next section along with the other Pacific whiting sectors.)

Tribal nonwhiting groundfish fisheries are grouped into a single sector comprising all gear types. Sablefish and rockfish are the principal species landed, with sablefish accounting for the largest share of ex-vessel revenue according to online tables 23-24. Table 3-2 shows the composition of landings by gear type (PacFIN gear group). Trawl gear accounts for over half of landings by weight although fixed gear (hook-and-line and pot) is more important in terms of ex-vessel revenue, earning 76 percent based on data for the 2006-2010 period.

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**Table 3-2. Proportional nonwhiting tribal sector landings by gear group and species, 2006-2010 cumulated.**

Species	Hook-and-Line	Pot	Troll	Trawl	Total
Sablefish	86.2%	97.0%	<1%	3.2%	39.6%
Rockfish	4.5%	1.7%	57.1%	35.5%	22.1%
Dover Sole	<1%	<1%		23.2%	12.8%
Other Flatfish	<1%			11.7%	6.5%
Arrowtooth Flounder	<1%			11.0%	6.1%
Other Groundfish	5.2%		<1%	4.8%	4.9%
Lingcod	2.5%	1.3%	42.7%	3.1%	3.2%
Petrals Sole	<1%			5.3%	2.9%
Thornyheads	1.4%	<1%	<1%	2.4%	1.9%
Gear as Pct Total	43.4%	0.5%	0.9%	55.2%	100.0%

### 3.3. Pacific Whiting Sectors

Online tables:

**Table 27. Landings of Pacific whiting and other species (mt) by Pacific whiting sectors, 2006-2010.**

**Table 28. Ex-vessel revenue from Pacific whiting and other species (inflation adjusted dollars) by Pacific whiting sectors, 2006-2010.**

**Table 29. Nonwhiting landings by species category (mt) and whiting sectors, 2006-2010.**

**Table 30. Nonwhiting ex-vessel revenue by species category (inflation adjusted dollars) and whiting sectors, 2006-2010.**

Figure 3-2 shows the trend in Pacific whiting landings by sector for the 5-year period, 2006-2010. Landings declined between 2006 and 2009, rebounding slightly in 2010 to 170,938 mt. Figure 3-3 shows the share of ex-vessel revenue from Pacific whiting by sector. Catcher-processors account for the largest share of revenue at 32 percent followed by the shoreside sector.

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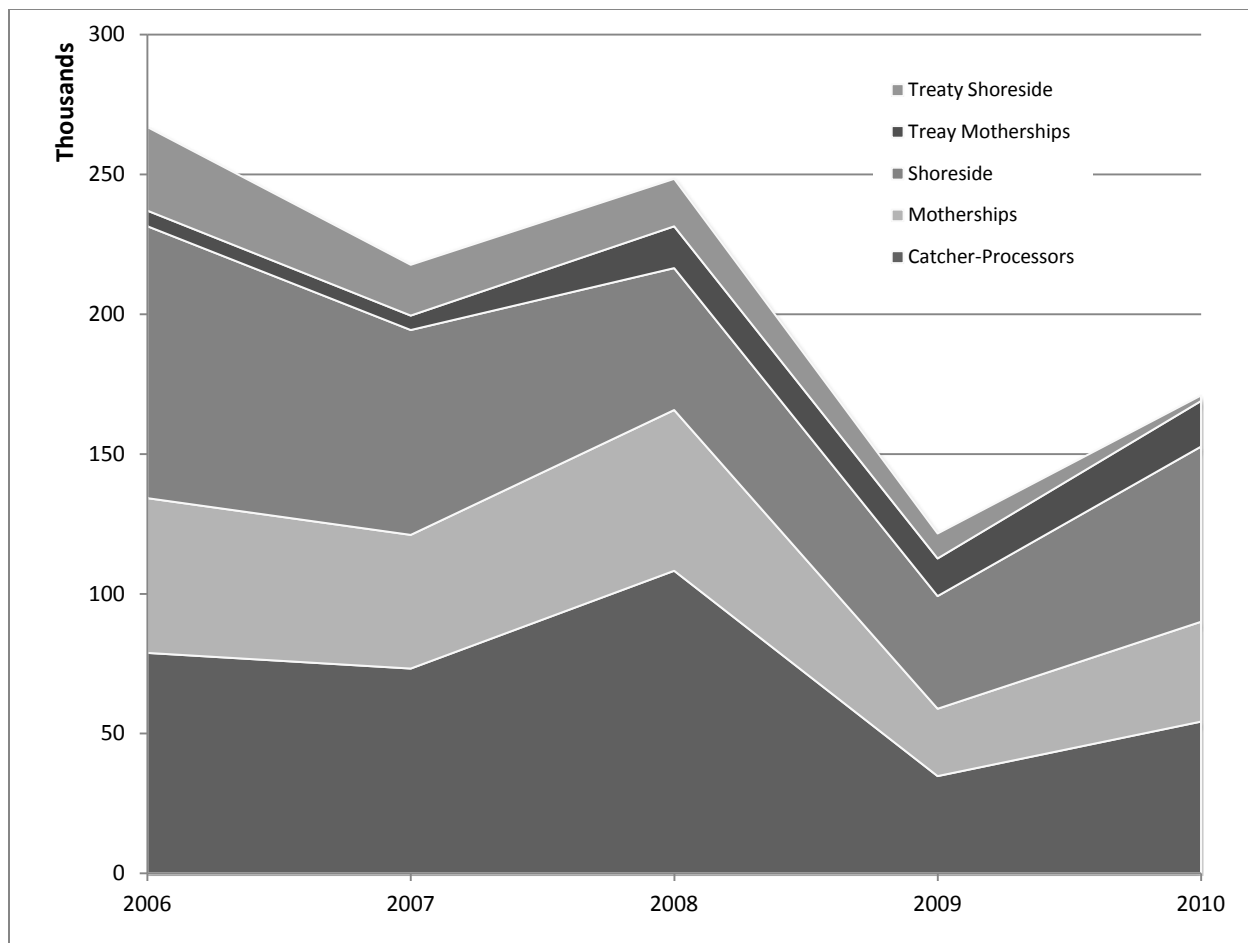


Figure 3-2. Landings of Pacific whiting (mt) by whiting sectors, 2006-2010.

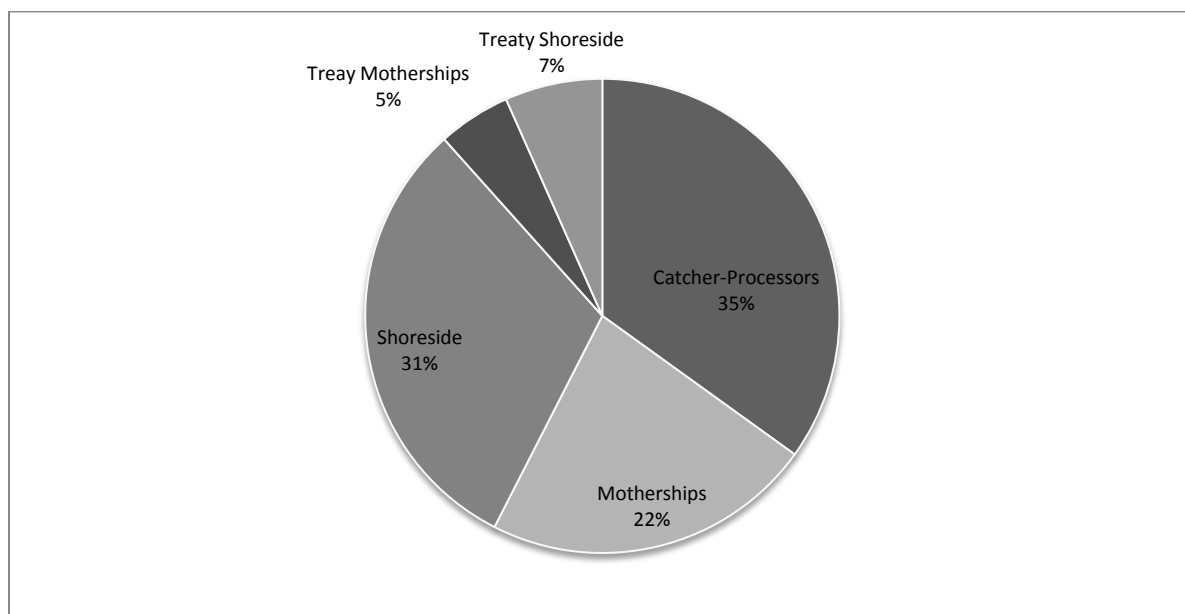


Figure 3-3. Ex-vessel revenue from whiting by whiting sectors, 2006-2010.

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## 4. Landings and Revenue by Month

Online tables:

**Table 25. Average groundfish landings (mt) by 2-month period and species by the tribal nonwhiting fishery sector, 2006-2010.**

**Table 31. Average annual groundfish landings (mt) by 2-month period and fishery sector, 2006-2010.**

**Table 32. Average annual groundfish ex-vessel revenue (dollars) by 2-month period and fishery sector, 2006-2010.**

**Table 33. Average monthly landings of Pacific whiting (mt) by whiting sectors, 2006-2010.**

**Table 34. Average monthly ex-vessel revenue from Pacific whiting (inflation adjusted dollars) by whiting sectors, 2006-2010.**

**Table 35. Average groundfish landings (mt) by 2-month period and species, 2006-2010.**

**Table 36. Average groundfish ex-vessel revenue (inflation adjusted dollars) by 2-month period and species, 2006-2010.**

Figure 4-1 presents information from online Table 32 graphically, showing the three principal nonwhiting fishery sectors. Across all sectors revenues tend to peak during the summer months, although this trend is more pronounced in the limited entry fixed gear and directed open access fisheries. The trawl fishery shows a 7 percent difference between the highest and lowest earning bimonthly periods while the limited entry fixed gear sector shows a 26 percent difference. The seasonal allocation of sablefish fishing opportunity drives the more pronounced pattern in the fixed gear fisheries. In contrast, limited entry trawl prosecutes a significant winter fishery on the continental slope principally targeting Dover sole. Also, through 2010 this sector was managed by 2-month cumulative landing limits, intended to more evenly distribute landings throughout the year.

Figure 4-2 shows monthly landings of Pacific whiting by the whiting sectors. The season starts May 1, although some fishing has been allowed before then (for confidentiality all these landings are grouped in the “All months before June 1” category). Landings peak early in the season although there is second surge in landings late in the year. However, the seasonal distribution varies by sector; the mothership sector made 54 percent of their landings before June 1 while the shoreside sector made 66 percent of landings in June and July during the 2006-2010 period. Catcher-processors and the treaty sectors tend to comprise a higher proportion of the landings in the fall and winter months.

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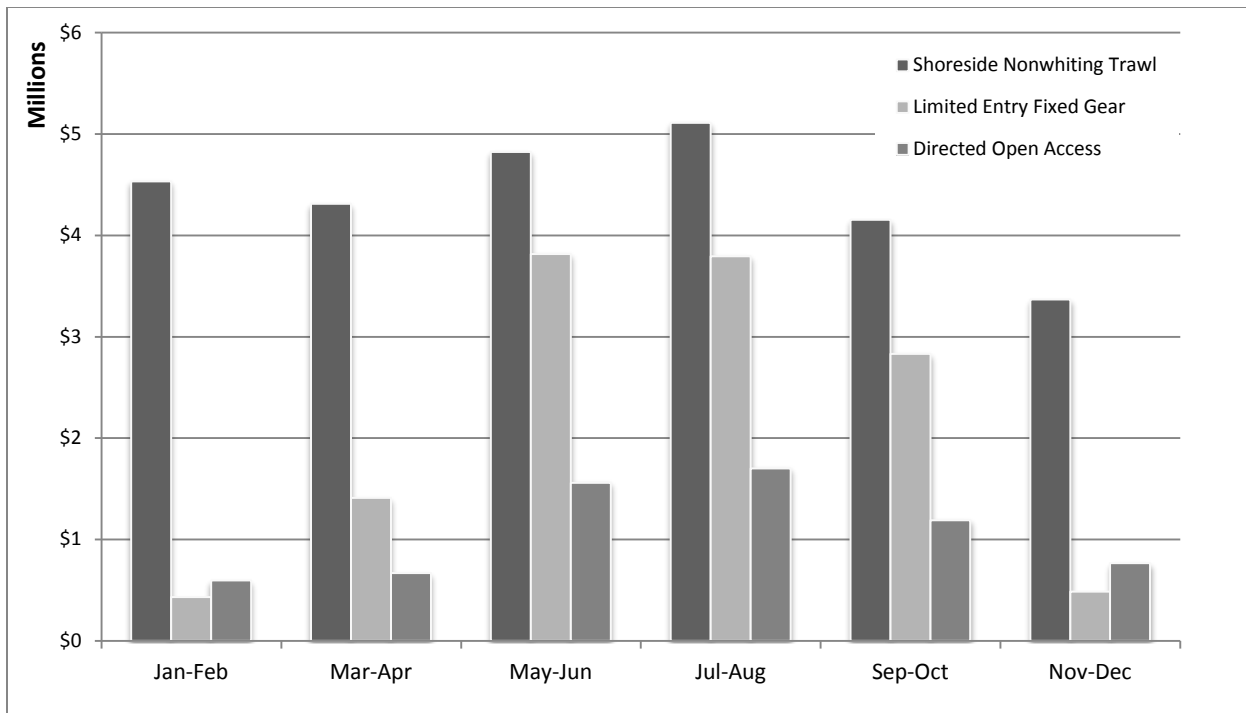


Figure 4-1. Average annual groundfish ex-vessel revenue (dollars) by 2-month period and fishery sector, 2006-2010.

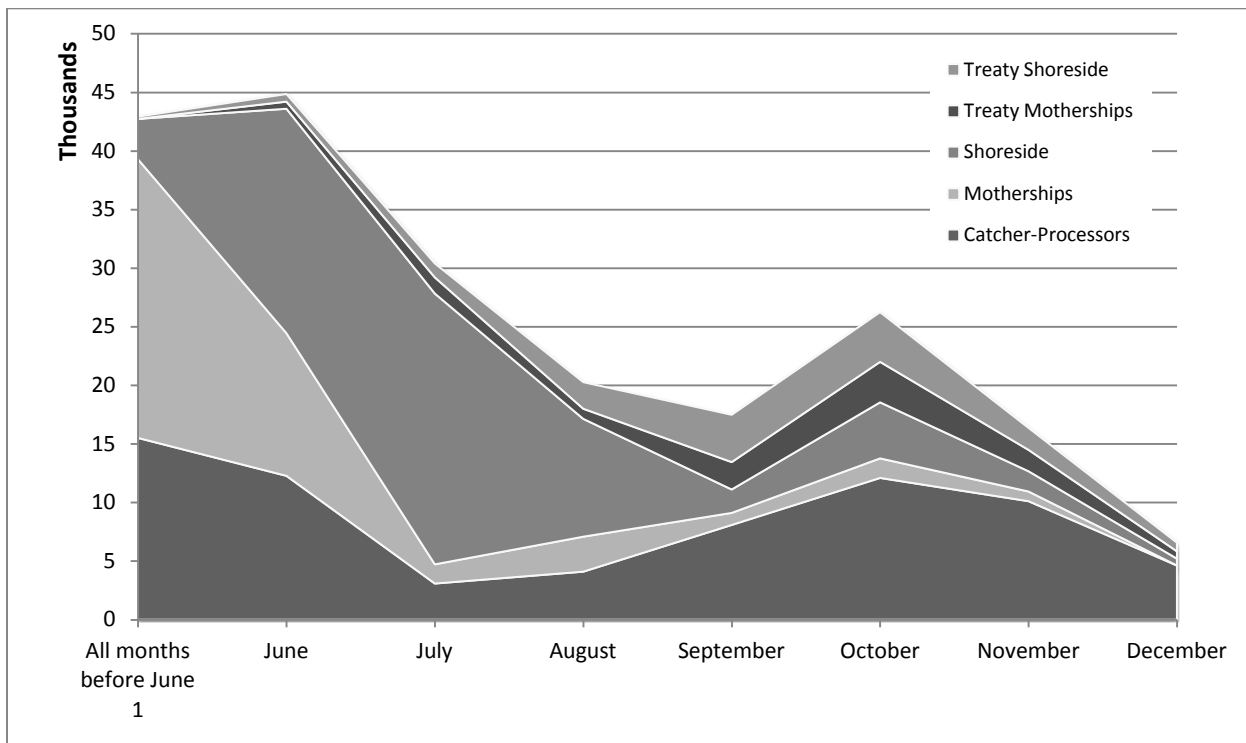


Figure 4-2. Average monthly landings of Pacific whiting (mt) by whiting sectors, 2006-2010.

## 5. Landings and Revenue by Port

Online tables:

**Table 37. Groundfish landings (mt) by port group area, 2006-2010.**

**Table 38. Groundfish ex-vessel revenue (inflation adjusted dollars) by port group area, 2006-2010.**

**Table 39. Engagement (groundfish landings in port as percent of coastwide landings) and dependence (groundfish landings in port as percent of total landings in port), 2006-2010.**

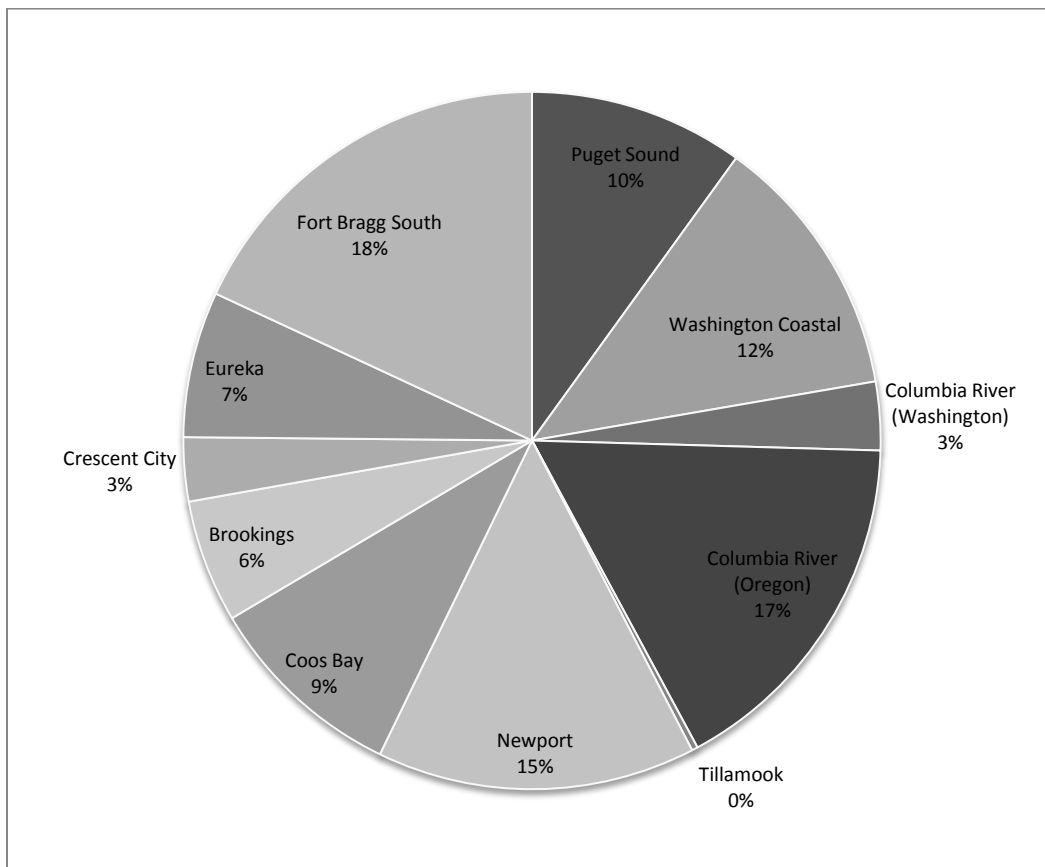
**Table 40. Groundfish landings (mt) by species and species groups by port group area, 2009-2010.**

**Table 41. Groundfish ex-vessel revenue (dollars) by species and species groups by port group area, 2009-2010.**

**Table 42. Groundfish landings (mt) by fishery sectors and port group area, 2009-2010.**

**Table 43. Groundfish ex-vessel revenue (dollars) by fishery sectors and port group area, 2009-2010.**

Figure 5-1 shows the distribution of groundfish ex-vessel revenue across west coast port regions, based on the data in online Table 38. Revenue from all port groups from Fort Bragg, California south have been grouped into one category in the figure, because the ports in this region individually account for a small proportion of coastwide revenue. The Oregon ports of Astoria (in the Columbia River port area) and Newport are the largest groundfish port areas measured by revenue, followed by the Washington coastal region. From a state-wide perspective Washington, Oregon, and California account for 24 percent, 36 percent, and 30 percent of coastwide revenue respectively.



**Figure 5-1. Proportion of groundfish ex-vessel revenue (inflation adjusted dollars) by port group area, 2006-2010.**

Online Table 39 presents information on port engagement and dependence. Consistent with the previous figure, Astoria, Newport, and the Washington coast region are the most highly engaged ports in groundfish fisheries. However, Morro Bay, California, is by far the most dependent with 68 percent of total fishery revenue coming from groundfish, followed by Fort Bragg with 47 percent and Eureka, California, with 33 percent.

# DRAFT

Figure 5-2 is based on online Table 43 showing groundfish landings by fishery sector and port group area in 2010. Tribal groundfish fisheries occur in Washington State only; the limited entry trawl fishery is prominent in Oregon ports while fixed gear fisheries dominate in California.

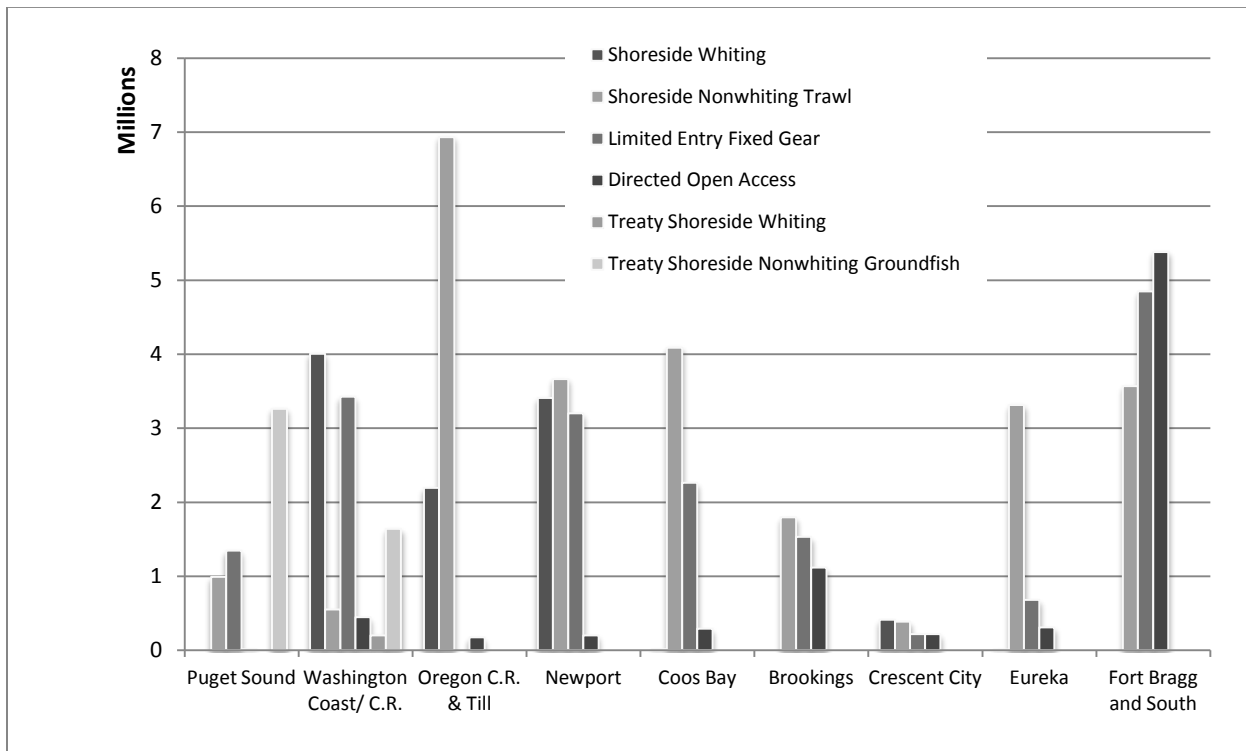


Figure 5-2. Groundfish ex-vessel revenue (dollars) by fishery sectors and port group area, 2010.

## 6. Participation

Online tables:

**Table 44. Number of vessels making at least one groundfish landing by fishery sector and port group area, 2006-2010.**

**Table 45. Number of vessels making at least one groundfish landing, 2006-2010, by fishery sector and length interval (feet).**

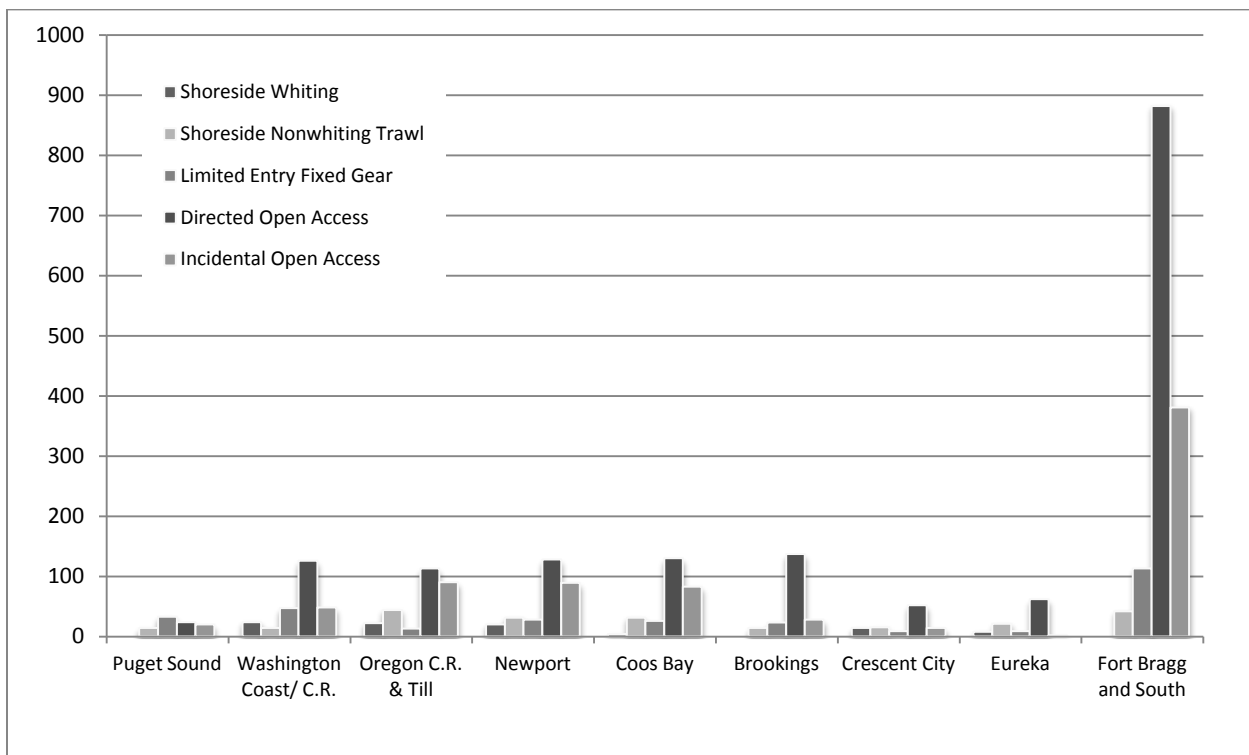
Figure 6-1, which is based on online Table 44, shows the number of vessels making at least one groundfish landing by fishery sector and port group during the 2006-2010 period. (Vessel counts are based on vessels ID numbers stored in the PacFIN database; many tribal vessels do not carry these numbers and thus it is not possible to derive accurate vessel counts. For that reason tribal sectors are not shown in the participation tables.) California from Fort Bragg south has a large number of vessels, dominated by those in the directed open access sector. Although Oregon ports account for a larger share of landings and ex-vessel revenue this is accomplished by fewer vessels.

Figure 6-2 helps to explain this contrast. Based on online Table 45, it shows the proportion of vessels in different length intervals by fishery sector, for vessels that landed groundfish at least once, 2006-2010. Vessels in the directed open access are generally smaller than those in the limited entry trawl sectors while the limited entry fixed fleet is intermediate. Table 6-1 shows the average length of vessels in these sectors, using the same source data on which online Table 45 is based.

# DRAFT

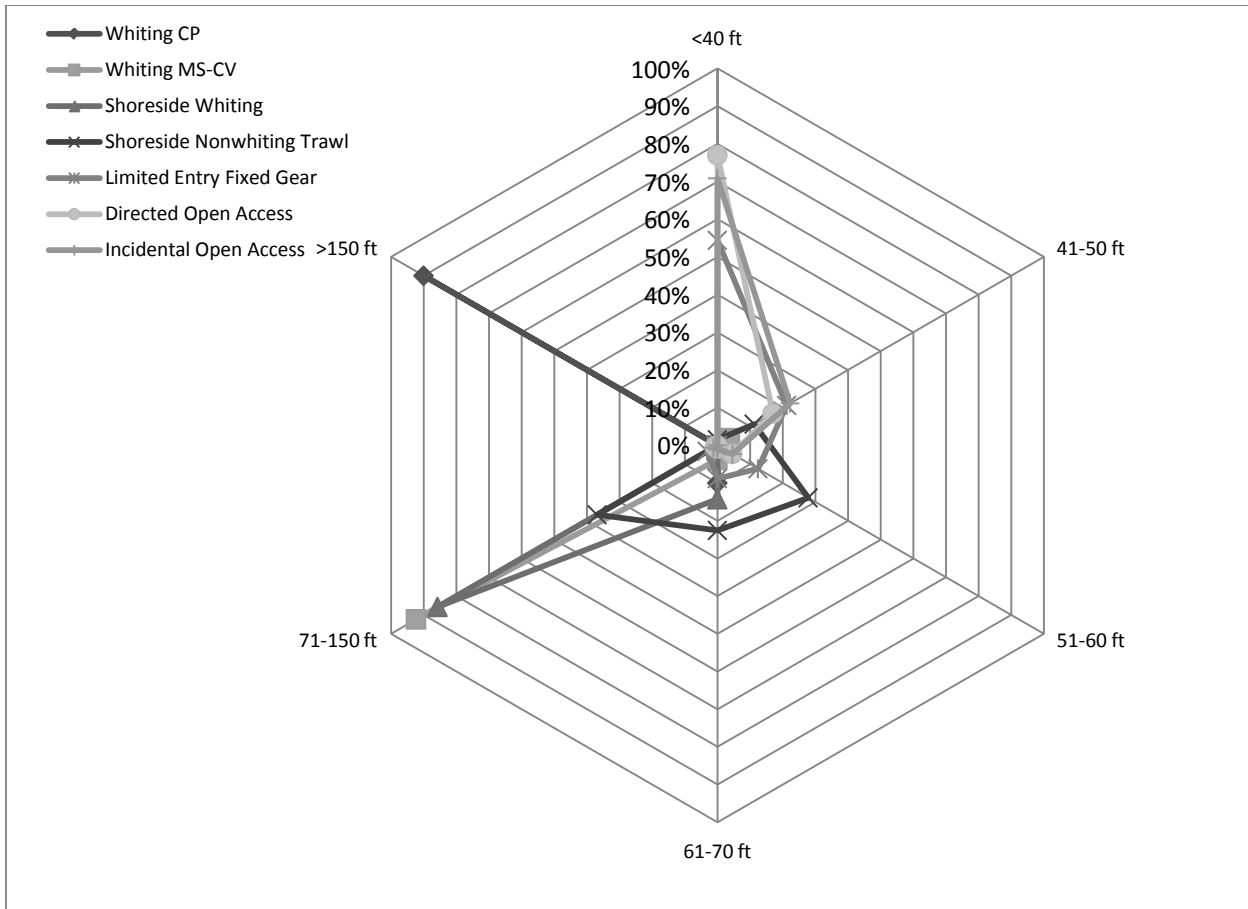
**Table 6-1. Average length of vessels in fishery sectors (based on data used for online Table 45).**

Sector	Average length (ft)
Whiting Catcher-Processors	255
Whiting Mothership Catcher Vessels	88
Shoreside Whiting	84
Shoreside Nonwhiting Trawl	66
Limited Entry Fixed Gear	42
Directed Open Access	32
Incidental Open Access	35



**Figure 6-1. Number of vessels making at least one groundfish landing by sector and port group area, 2006-2010.**

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**Figure 6-2. Proportion of vessels in each sector by length interval (feet) for vessels making at least one groundfish landing, 2006-2010 (CP = catcher-processor, MS-CV = mothership catcher vessel).**

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## APPENDIX A PacFIN Groundfish Sector Criteria

July 11, 2011

The field "dahl\_sector" in the vdrfd table contains numeric codes identifying groundfish "sectors". These sectors are meant to identify landings according to fishery components, or sectors, used in management. Sectors are defined through a combination of species composition of landings, gear type, and permit status, among other factors. It should be noted that the results of this coding may differ from other categorizations of landings, such as that developed by the West Coast Groundfish Observer Program in their total mortality reports, because of differences in the underlying data structure (e.g., use of fish ticket data versus vessel summary data) and the procedures used to code the data. The record level for coding data is:

- Sector codes assigned at vessel-day-gear level
- Species composition criteria used in sector coding are calculated on a vessel-day-gear basis (agid+drvid+tdate+grgroup)

Sector codes 1, 2, and 16 are not available in the PacFIN Explorer tool, because the necessary landings data resides in a separate database (NORPAC).

The criteria used to code landings by sector are described below.

### Global criteria

- Catch is from a PFMC area
- Sectors 1-15 PARGRP=C
- Sectors 16-19 PARGRP=I
- Sectors 01, 02, and 16 AGID = N (as noted)
- Sectors 03-15, 17-19 AGID = W, O, C

### **1: Whiting Catcher Processor Sector**

- AGID =N
- Gear Group is TWL
- Valid trawl endorsement
- DRVID=PROC

### **2: Whiting Mothership Sector**

- AGID =N
- Gear Group is TWL
- Valid trawl endorsement
- DRVID<>PROC

### **3: Shoreside Whiting Sector**

- Removal type (ftl.removal\_type) <> R (research)
- Whiting (PWHT) RWT >= 50% total vessel-day-gear RWT

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- Gear Group is TWL
- Valid trawl endorsement

## 4: Shoreside Nonwhiting Trawl Sector

- Removal type (ftl.removal\_type) <> E or R (EFP, research)
- Whiting (PWHT) RWT < 50% total vessel-day-gear RWT
- Nonwhiting groundfish (sp.mgrp=GRND and sp.spid <> PWHT) RWT >= 50% total vessel-day-gear RWT
- Groundfish (sp.mgrp=GRND) RWT > California halibut (CHLB,CHL1) RWT
- Pink shrimp, ridgeback prawn or spot prawn (PHSP, RPRW, SPRW) RWT < 100 lbs
- Gear Group is TWL
- Valid trawl endorsement

## 5: Nearshore Sector (Limited Entry)

- Gear Group is HKL or POT
- Removal type (ftl.removal\_type) <> E or R (EFP, research)
- Sum of nearshore species[1] vessel-day-gear RWT >0
- Sablefish RWT = 0
- Groundfish (sp.mgrp=GRND) >= 50% of total vessel-day-gear RWT.[2]
- Valid longline endorsement or pot gear endorsement.

## 6: Nearshore Sector (Open Access)

- Gear Group = HKL or POT
- Removal type (ftl.removal\_type) <> E or R (EFP, research)
- Sum of nearshore species vessel-day-gear RWT >0
- Sablefish RWT = 0
- Groundfish (sp.mgrp=GRND) >= 50% of total vessel-day-gear RWT
- No valid longline endorsement or pot gear endorsement

## 7: Non Nearshore Sector (Limited Entry)

- Gear Group is HKL or POT
- Removal type (ftl.removal\_type) <> E or R (EFP, research)
- Sum of nearshore species RWT =0
- Sablefish RWT >0
- Groundfish (sp.mgrp=GRND) >= 50% of total vessel-day-gear RWT
- Valid longline endorsement or pot gear endorsement

## 8: Non Nearshore Sector (Open Access)

- Gear Group = HKL or POT
- Removal type (ftl.removal\_type) <> E or R (EFP, research)
- Sum of nearshore species RWT =0
- Sum of sablefish vessel-day-gear RWT >0
- Groundfish (sp.mgrp=GRND) >= 50% of total vessel-day-gear RWT
- No valid longline endorsement or pot gear endorsement

## 9: Non Nearshore Non Sablefish Sector (Limited Entry)

# DRAFT

- Gear Group is HKL or POT
- Removal type (ftl.removal\_type) <> E or R (EFP, research)
- Sum of nearshore species RWT =0
- Sablefish RWT =0
- Groundfish (sp.mgrp=GRND) >= 50% of total vessel-day-gear RWT
- Valid longline endorsement or pot gear endorsement

## 10: Non Nearshore Non Sablefish Sector (Open Access)

- Gear Group = HKL or POT
- Removal type (ftl.removal\_type) <> E or R (EFP, research)
- Sum of nearshore species RWT =0
- Sablefish =0
- Groundfish (sp.mgrp=GRND) >= 50% of total vessel-day-gear RWT
- No valid longline endorsement or pot gear endorsement

## 11: Non Fixed Gear Directed Open Access Sector

- Gear Group = NET or TLS
- Removal type (ftl.removal\_type) <> E or R (EFP, research)
- Groundfish (sp.mgrp=GRND) RWT >= 50% of total vessel-day-gear RWT

## 12: Incidental Open Access Sector

- Removal type (ftl.removal\_type) <> E or R (EFP, research)
- Groundfish (sp.mgrp=GRND) RWT > 0 and <50% of total vessel-day-gear RWT
- Gear Group = HKL or POT or NET or TLS
- No valid longline endorsement or pot gear endorsement

## 13: Exempted Trawl Sector (With Groundfish Landings)

- Removal type (ftl.removal\_type) <> E or R (EFP, research)
- Gear group is TWL or TWS
- Groundfish (sp.mgrp=GRND) RWT > 0
- California halibut (CHLB, CHL1) RWT > 0 or pink shrimp, ridgeback prawn or spot prawn (PHSP, RPRW, SPRW) RWT >= 100 lbs
- No valid trawl endorsement

## 14: EFP and Miscellaneous Sector

- Groundfish (sp.mgrp=GRND) RWT > 0
- *Landings not accounted for in other sectors*

## 15: Commercial Nongroundfish Sector

- groundfish (sp.mgrp=GRND) RWT = 0

## 16: Treaty Mothership Whiting Sector

# DRAFT

- AGID =N
- Whiting (PWHT) RWT >= 50% total vessel-day-gear RWT
- Gear Group is TWL
- PROC is a mothership

## 17: Treaty Shoreside Whiting Sector

- Whiting (PWHT) RWT >= 50% total vessel-day-gear RWT
- Gear Group is TWL

## 18: Treaty Shoreside Nonwhiting Groundfish Sector

- Whiting (PWHT) RWT < 50% total vessel-day-gear RWT
- Groundfish (sp.mgrp=GRND) RWT > 0

## 19: Treaty Nongroundfish Sector

- Groundfish (sp.mgrp=GRND) RWT = 0

**Table A1.** Sector code.

Code	Sector Name
1	Whiting Catcher Processor
2	Whiting Mothership
3	Shoreside Whiting
4	Shoreside Nonwhiting Trawl
5	Nearshore (Limited Entry)
6	Nearshore (Open Access)
7	Non Nearshore (Limited Entry)
8	Non Nearshore (Open Access)
9	Non Nearshore Non Sablefish (Limited Entry)
10	Non Nearshore Non Sablefish (Open Access)
11	Non Fixed Gear Directed Open Access
12	Incidental Open Access
13	Exempted Trawl (With Groundfish Landings)
14	EFP and Miscellaneous
15	Commercial Nongroundfish
16	Treaty Mothership Whiting
17	Treaty Shoreside Whiting
18	Treaty Shoreside Nonwhiting Groundfish
19	Treaty Nongroundfish

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**Table A2.** Nearshore species list. (Source: M. Bellman, Heery, E., Jannot, J., and Majewski, J. 2010. *Explicit Retrieval and Processing of PacFIN Data Used in Total Mortality Estimation*. FRAM, NWFSC, NMFS.)

SPID	Common Name	SPID	Common Name
BISC	BROWN IRISH SCULPIN	KLPG	KELP GREENLING
BLCK	BLACK ROCKFISH	KLPR	KELP ROCKFISH
BLK1	NOM. BLACK ROCKFISH	NSHR	NORTHERN NEAR-SHORE ROCKFISH
BLU1	NOM. BLUE ROCKFISH	NUSR	NOR. UNSP. NEAR-SHORE ROCKFISH
BLUR	BLUE ROCKFISH	OLV1	NOM. OLIVE ROCKFISH
BRW1	NOM. BROWN ROCKFISH	OLVE	OLIVE ROCKFISH
BRWN	BROWN ROCKFISH	QLB1	NOM. QUILLBACK ROCKFISH
BSCCL	BUFFALO SCULPIN	QLBK	QUILLBACK ROCKFISH
BYEL	BLACK-AND-YELLOW ROCKFISH	RCK2	UNSP. BOLINA RCKFSH
BYL1	NOM. BLACK-AND-YELLOW ROCKFISH	RCK7	UNSP. GOPHER RCKFSH
CBZ1	NOM. CABEZON	RCK9	BLACK+BLUE ROCKFISH
CBZN	CABEZON	RSCL	RED IRISH SCULPIN
CHN1	NOM. CHINA ROCKFISH	SCOR	CALIFORNIA SCORPIONFISH
CHNA	CHINA ROCKFISH	SCR1	NOM. CALIF. SCORPIONFISH
CLC1	NOM. CALICO ROCKFISH	SHPI	NOM. CALIFORNIA SHEEPHEAD
CLCO	CALICO ROCKFISH	SHPD	CALIFORNIA SHEEPHEAD
COP1	NOM. COPPER ROCKFISH	SSHR	SOUTHERN NEAR-SHORE ROCKFISH
COPP	COPPER ROCKFISH	SSRD	Deep So. Near-shore RF
GPH1	NOM. GOPHER ROCKFISH	SSRS	Shallow So. Near-shore RF
GPHR	GOPHER ROCKFISH	SUSR	SOU. UNSP. NEAR-SHORE ROCKFISH
GRAS	GRASS ROCKFISH	TRE1	NOM. TREEFISH
GRS1	NOM. GRASS ROCKFISH	TREE	TREEFISH
KGL1	NOM. KELP GREENLING	UDNR	UNSP. DEEP NEAR-SHORE RF
KLP1	NOM. KELP ROCKFISH	UGLG	UNSP. GREENLING
		USHR	UNSP. NEAR-SHORE ROCKFISH

[1] Nearshore rockfish species as defined by WCGOP spid list, see Table 2.

[2] This is equivalent to Groundfish (sp.mgrp=GRND) >= nongroundfish (all other sp.mgrp) by weight.

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## APPENDIX B Species Groups Used in Reporting

PacFIN species ids (spids), which generally code at the species level were grouped into one of three custom categorizations for reporting in the online tables. The table below shows the relationship between the PacFIN species ids and these categorizations. The species ids shown in the table are filtered to show only those for which landings were recorded in the vdrfd table. The groupings were used in the following tables:

Categorization 1: Tables 7-20.

Categorization 2: Tables 23-26, 35-36, and 40-41

Categorization 3: Tables 3-6

The shaded cells in the Categorization 2 and 3 columns highlight where they differ from Categorization 1.

SPID	Name	Complex	Complex2	Categorization 1	Categorization 2	Categorization 3
ARTH	Arrowtooth Flounder	FLAT	TRBT	Arrowtooth Flounder	Arrowtooth Flounder	Arrowtooth Flounder
ART1	Nom. Arrowtooth Flounder	FLAT	TRBT	Arrowtooth Flounder	Arrowtooth Flounder	Arrowtooth Flounder
DOVR	Dover Sole	FLAT	....	Dover Sole	Dover Sole	Dover Sole
DVR1	Nom. Dover Sole	FLAT	....	Dover Sole	Dover Sole	Dover Sole
EGLS	English Sole	FLAT	....	English Sole	Other Flatfish	Other Flatfish
EGL1	Nom. English Sole	FLAT	....	English Sole	Other Flatfish	Other Flatfish
DSOL	Deepsea Sole	FLAT	....	Non FMP Groundfish	Other Species	Other Flatfish
FNTS	Fantail Sole	FLAT	....	Non FMP Groundfish	Other Species	Other Flatfish
HTRB	Hornyhead Turbot	FLAT	....	Non FMP Groundfish	Other Species	Other Flatfish
LDB1	Nom. Longfin Sanddab	FLAT	SDAB	Non FMP Groundfish	Other Species	Other Flatfish
SDB1	Nom. Speckled Sanddab	FLAT	SDAB	Non FMP Groundfish	Other Species	Other Flatfish
SLNS	Slender Sole	FLAT	....	Non FMP Groundfish	Other Species	Other Flatfish
UDAB	Unsp. Sanddabs	FLAT	SDAB	Non FMP Groundfish	Other Species	Other Flatfish
UTRB	Unsp. Turbots	FLAT	TRBT	Non FMP Groundfish	Other Species	Other Flatfish
BSOL	Butter Sole	FLAT	....	Other Flatfish	Other Flatfish	Other Flatfish
CSOL	Curlfin Sole	FLAT	....	Other Flatfish	Other Flatfish	Other Flatfish
FSOL	Flathead Sole	FLAT	....	Other Flatfish	Other Flatfish	Other Flatfish
PDB1	Nom. Pacific Sanddab	FLAT	SDAB	Other Flatfish	Other Flatfish	Other Flatfish
REX1	Nom. Rex Sole	FLAT	....	Other Flatfish	Other Flatfish	Other Flatfish
RSL1	Nom. Rock Sole	FLAT	....	Other Flatfish	Other Flatfish	Other Flatfish
SSO1	Nom. Sand Sole	FLAT	....	Other Flatfish	Other Flatfish	Other Flatfish
SFL1	Nom. Starry Flounder	FLAT	....	Other Flatfish	Other Flatfish	Other Flatfish
OFLT	Other Flatfish	FLAT	....	Other Flatfish	Other Flatfish	Other Flatfish
PDAB	Pacific Sanddab	FLAT	SDAB	Other Flatfish	Other Flatfish	Other Flatfish
REX	Rex Sole	FLAT	....	Other Flatfish	Other Flatfish	Other Flatfish
RSOL	Rock Sole	FLAT	....	Other Flatfish	Other Flatfish	Other Flatfish
SSOL	Sand Sole	FLAT	....	Other Flatfish	Other Flatfish	Other Flatfish
STRY	Starry Flounder	FLAT	....	Other Flatfish	Other Flatfish	Other Flatfish

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UFLT	Unsp. Flatfish	FLAT	....	Other Flatfish	Other Flatfish	Other Flatfish
PTR1	Nom. Petrale Sole	FLAT	....	Petrable Sole	Petrable Sole	Petrable Sole
PTRL	Petrable Sole	FLAT	....	Petrable Sole	Petrable Sole	Petrable Sole
BSKT	Big Skate	MGRN	SKAT	Other Groundfish	Other Groundfish	Misc. Groundfish
CSKT	California Skate	MGRN	SKAT	Other Groundfish	Other Groundfish	Misc. Groundfish
LSRK	Leopard Shark	MGRN	SHRK	Other Groundfish	Other Groundfish	Misc. Groundfish
LSKT	Longnose Skate	MGRN	SKAT	Other Groundfish	Other Groundfish	Misc. Groundfish
OGRN	Other Groundfish	MGRN	....	Other Groundfish	Other Groundfish	Misc. Groundfish
SSRK	Soupin Shark	MGRN	SHRK	Other Groundfish	Other Groundfish	Misc. Groundfish
DSRK	Spiny Dogfish	MGRN	SHRK	Other Groundfish	Other Groundfish	Misc. Groundfish
RATF	Spotted Ratfish	MGRN	....	Other Groundfish	Other Groundfish	Misc. Groundfish
GRDR	Unsp. Grenadiers	MGRN	....	Other Groundfish	Other Groundfish	Misc. Groundfish
USKT	Unsp. Skate	MGRN	SKAT	Other Groundfish	Other Groundfish	Misc. Groundfish
ARRA	Aurora Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
BANK	Bank Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
BLCK	Black Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
RCK9	Black+Blue Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
BYEL	Black-And-Yellow Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
BLGL	Blackgill Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
BLUR	Blue Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
BCAC	Bocaccio	ROCK	....	Rockfish	Rockfish	Rockfish
RCK1	Bocaccio+Chilipepper Rckfsh	ROCK	....	Rockfish	Rockfish	Rockfish
BRNZ	Bronzespotted Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
BRWN	Brown Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
CLCO	Calico Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
SCOR	California Scorpionfish	ROCK	....	Rockfish	Rockfish	Rockfish
CNRY	Canary Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
RCK8	Canary+Vermilion Rckfsh	ROCK	....	Rockfish	Rockfish	Rockfish
CMEL	Chameleon Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
CLPR	Chilipepper	ROCK	....	Rockfish	Rockfish	Rockfish
CHNA	China Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
COPP	Copper Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
CWCD	Cowcod Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
DBRK	Darkblotched Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
FLAG	Flag Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
FRCK	Freckled Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
POP1	Gen. Shelf/Slope Rf	ROCK	....	Rockfish	Rockfish	Rockfish
GPHR	Gopher Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
GRAS	Grass Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
GBLC	Greenblotched Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
GSPT	Greenspotted Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish

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GSRK	Greenstriped Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
HBRK	Halfbanded Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
HNYC	Honeycomb Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
KLPR	Kelp Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
MXRF	Mexican Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
ARR1	Nom. Aurora Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
BNK1	Nom. Bank Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
BLK1	Nom. Black Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
BYL1	Nom. Black-And-Yellow Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
BGL1	Nom. Blackgill Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
BLU1	Nom. Blue Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
BCC1	Nom. Bocaccio	ROCK	....	Rockfish	Rockfish	Rockfish
BRZ1	Nom. Bronzespotted Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
BRW1	Nom. Brown Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
CLC1	Nom. Calico Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
SCR1	Nom. California Scorpionfish	ROCK	....	Rockfish	Rockfish	Rockfish
CNR1	Nom. Canary Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
CML1	Nom. Chameleon Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
CLP1	Nom. Chilipepper	ROCK	....	Rockfish	Rockfish	Rockfish
CHN1	Nom. China Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
COP1	Nom. Copper Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
CWC1	Nom. Cowcod Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
DBR1	Nom. Darkblotched Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
FLG1	Nom. Flag Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
GPH1	Nom. Gopher Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
GRS1	Nom. Grass Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
GBL1	Nom. Greenblotched Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
GSP1	Nom. Greenspotted Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
GSR1	Nom. Greenstriped Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
HNY1	Nom. Honeycomb Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
KLP1	Nom. Kelp Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
MXR1	Nom. Mexican Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
OLV1	Nom. Olive Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
PNK1	Nom. Pink Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
PRR1	Nom. Pinkrose Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
POP2	Nom. Pop	ROCK	....	Rockfish	Rockfish	Rockfish
QLB1	Nom. Quillback Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
RDB1	Nom. Redbanded Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
RST1	Nom. Rosethorn Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish

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ROS1	Nom. Rosy Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
SBL1	Nom. Shortbelly Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
SPK1	Nom. Speckled Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
SNS1	Nom. Splitnose Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
SQR1	Nom. Squarespot	ROCK	....	Rockfish	Rockfish	Rockfish
STR1	Nom. Starry Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
STL1	Nom. Stripetail Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
SWS1	Nom. Swordspine Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
TGR1	Nom. Tiger Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
TRE1	Nom. Treefish	ROCK	....	Rockfish	Rockfish	Rockfish
VRM1	Nom. Vermillion Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
WDW1	Nom. Widow Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
YEY1	Nom. Yelloweye Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
YTR1	Nom. Yellowtail Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
NUSR	Nor. Unsp. Near-Shore Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
NUSF	Nor. Unsp. Shelf Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
NUSP	Nor. Unsp. Slope Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
OLVE	Olive Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
ORCK	Other Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
POP	Pacific Ocean Perch	ROCK	....	Rockfish	Rockfish	Rockfish
PNKR	Pink Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
PRRK	Pinkrose Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
PUGT	Puget Sound Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
PGMY	Pygmy Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
QLBK	Quillback Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
RDBD	Redbanded Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
REDS	Redstripe Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
RSTN	Rosethorn Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
ROSY	Rosy Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
REYE	Rougeye Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
SHRP	Sharpchin Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
SBLY	Shortbelly Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
SRKR	Shortraker Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
SLGR	Silvergrey Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
SPKL	Speckled Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
SNOS	Splitnose Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
SQRS	Squarespot Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
STAR	Starry Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
STRK	Stripetail Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
SWSP	Swordspine Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
TIGR	Tiger Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish

# DRAFT

TREE	Treefish	ROCK	....	Rockfish	Rockfish	Rockfish
RCK2	Unsp. Bolina Rckfsh	ROCK	....	Rockfish	Rockfish	Rockfish
UDNR	Unsp. Deep Near-Shore Rf	ROCK	....	Rockfish	Rockfish	Rockfish
RCK3	Unsp. Dpwtr Reds Rckfsh	ROCK	....	Rockfish	Rockfish	Rockfish
RCK7	Unsp. Gopher Rckfsh	ROCK	....	Rockfish	Rockfish	Rockfish
USHR	Unsp. Near-Shore Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
UPOP	Unsp. Pop Group	ROCK	....	Rockfish	Rockfish	Rockfish
RCK4	Unsp. Reds Rckfsh	ROCK	....	Rockfish	Rockfish	Rockfish
URCK	Unsp. Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
RCK6	Unsp. Rosefish Rckfsh	ROCK	....	Rockfish	Rockfish	Rockfish
USLF	Unsp. Shelf Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
USLP	Unsp. Slope Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
RCK5	Unsp. Small Reds Rckfsh	ROCK	....	Rockfish	Rockfish	Rockfish
VRML	Vermilion Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
WDO W	Widow Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
YEYE	Yelloweye Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
YMTH	Yellowmouth Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
YTRK	Yellowtail Rockfish	ROCK	....	Rockfish	Rockfish	Rockfish
LSPN	Longspine Thornyhead	ROCK	TRNY	Thornyheads	Thornyheads	Thornyheads
LSP1	Nom. Longspine Thornyhead	ROCK	TRNY	Thornyheads	Thornyheads	Thornyheads
SSP1	Nom. Shortspine Thornyhead	ROCK	TRNY	Thornyheads	Thornyheads	Thornyheads
SSPN	Shortspine Thornyhead	ROCK	TRNY	Thornyheads	Thornyheads	Thornyheads
THDS	Thornyheads (Mixed)	ROCK	TRNY	Thornyheads	Thornyheads	Thornyheads
LCOD	Lingcod	ROND	....	Lingcod	Lingcod	Lingcod
LCD1	Nom. Lingcod	ROND	....	Lingcod	Lingcod	Lingcod
PLCK	Walleye Pollock	ROND	....	Non FMP Groundfish	Other Species	Other Roundfish
CBZN	Cabazon	ROND	....	Other Roundfish	Other Groundfish	Other Roundfish
KLPG	Kelp Greenling	ROND	....	Other Roundfish	Other Groundfish	Other Roundfish
CBZ1	Nom. Cabazon	ROND	....	Other Roundfish	Other Groundfish	Other Roundfish
KGL1	Nom. Kelp Greenling	ROND	....	Other Roundfish	Other Groundfish	Other Roundfish
PCOD	Pacific Cod	ROND	....	P. Cod	Other Groundfish	Other Roundfish
PWHT	Pacific Whiting	ROND	....	P. Whiting	P. Whiting	P. Whiting
SABL	Sablefish	ROND	....	Sablefish	Sablefish	Sablefish