

GROUND FISH MANAGEMENT TEAM REPORT ON HARVEST SPECIFICATIONS FOR 2009-2010 FISHERIES

The Groundfish Management Team (GMT) reviewed the materials found in Agenda Item H.1 as well as the 2007-2008 Harvest Specifications and Management Measures Environmental Impact Statement (EIS). The Team broke its discussion into overfished species and non-overfished species.

OVERFISHED SPECIES

“Rebuild as Quickly as Possible, Taking Into Account the Needs of Fishing Communities”

Section 304(e)(4)(A) of the Magnuson Stevens Act (MSA) requires the Council to “specify a time period for rebuilding that shall 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, and
- the interaction of the overfished stock of fish within the marine ecosystem.

This provision requires that overfished species be “rebuilt as quickly as possible, but wanted to leave some leeway to avoid disastrous short-term consequences for fishing communities.”¹ This leeway allows the Council to set “limited quotas that would account for the short-term needs of fishing communities (for example, to allow for some fishing of plentiful species despite the inevitability of bycatch), even though this would mean that the rebuilding period would take longer than it would under a total fishing ban.”

To make its final recommendations for rebuilding optimal yields (OYs) in 2007-2008, the Council took into account the status and biology of the stocks by looking for the shortest possible rebuilding periods within a suite of management measures that provided the greatest protection for the most sensitive and lowest productivity species. The Council took the needs of fishing communities into account by providing fishing opportunities where such opportunities would have a minimal effect on rebuilding periods for stocks with higher productivity, and by recommending restrictive management measures focused on stocks with the lowest productivity levels.²

Interaction of the Overfished Stocks within the Marine Ecosystem

The Council’s rebuilding recommendations for 2007-2008 also took into account the interaction of the overfished stocks in the marine ecosystem. The highly interrelated nature of the West Coast groundfish fisheries makes this consideration absolutely necessary. In fact, the degree of interaction between overfished stocks and fishing opportunities is such that the calculus of

¹ *NRDC v. NMFS*, 421 F.3d 872 (9th Cir. 2005)

² See Proposed Rule for 2007-2008 Biennial Specifications and Management Measures; Amendment 16-4; Pacific Coast Salmon Fishery, 71 Fed. Reg. 57764 (September 29, 2006).

“rebuilding as quickly as possible while taking into the needs of fishing communities” is not possible based solely on a species-by-species approach. Rather, the needs of fishing communities and the status and biology of the stocks must be looked at in an integrated fashion across all rebuilding species.

The Effect of the Revised Rebuilding Plans and GMT Recommendation

In November 2007, the Scientific and Statistical Committee (SSC) recommended that the Council revise the rebuilding plans (target rebuilding years and harvest rates) for canary, darkblotched, and cowcod because the best scientific information available resulted in “fundamental revisions to our understanding of the biology” of these stocks (Agenda Item H.1.a, November 2007 SSC Report). These revisions to the best estimates of “as quick as possible” rebuilding times are substantially different than those used to set 2007-2008 harvest specifications and the Amendment 16-4 rebuilding plans. The GMT is therefore recommending an analysis of management measures scenarios before preferred OY alternatives for these species are decided. As described in more detail below, given the integrated nature of the Council’s overall rebuilding strategy, the Team also recommends that the Council wait to set preferred OY alternatives for widow and bocaccio. Yelloweye and Pacific ocean perch (POP), on the other hand, are unchanged from 2007-2008 in terms of our understanding of their status and biology and of their effect on fishing communities. The Team thus recommends that the Council set preferred OY alternatives for these two species during this agenda item.

Discussion of Overfished Stocks with Revised Rebuilding Plans

Canary Rockfish. A new rebuilding analysis for canary rockfish was completed in 2007, which showed that canary rockfish rebuilding is ahead of schedule by 42 years. The Council’s preliminary range of canary OY alternatives include 0 mt, 35 mt, 44 mt (2008 OY), 85 mt, 105 mt, and 155 mt (the OY under the status quo harvest rate) and a preliminary preferred target rebuilding year (T_{target}) of 2021. These alternatives predict a range of rebuilding periods from 2019 under a zero harvest strategy to 2021 under the 155 mt alternative (see Table 2-3 in Attachment 2). The GMT believes the analyses in the 2007-2008 Harvest Specifications and Management Measures Environmental Impact Statement (EIS) have shown the substantially adverse socioeconomic impacts associated with OYs less than or equal to 44 mt. Given the unexpected management actions taken to restrict canary impacts in 2007 and 2008³, the GMT believes rationale exists for exploring OYs higher than 44 mt.

The GMT reviewed historic catch relative to the canary rockfish OY. Specifically, Table 1 in the SSC statement from November 2007 regarding rebuilding analyses (Attachment H.1.a, November 2007 SSC Report on Rebuilding Analyses) shows that canary catch has been 114% of the OY over the 2000-2006 period despite progressively more restrictive management measures. Canary rockfish are increasingly difficult to avoid as they rebuild, leading to the argument that a higher OY than 44 mt may be necessary to achieve the expected amount of activity in fishing

³ In 2007 the Council received new information indicating the bycatch of canary rockfish in the trawl fishery was higher than assumed during the Amendment 16-4 process. In response to these higher than expected bycatch rates, highly restrictive area closures for trawling were implemented off northern Washington and southern Oregon. These management actions appear to have resulted in the elimination of Neah Bay as a non-tribal trawl community, adversely impacting those that rely on fishing in that community.

communities originally envisioned in Amendment 16-4. It appears that such an increase could be accommodated while maintaining or perhaps even decreasing the harvest rate from status quo.

The GMT believes the following considerations may be helpful in revising the harvest rate in the canary rebuilding plan. First, the status quo harvest rate is the one used to calculate OY Alternative 6 (155 mt in 2009). The GMT believes that 44-155 mt is the appropriate OY range to explore. A preferred OY decision needs to be made after understanding the management implications of maintaining an OY of 44 mt and those measures associated with higher OYs up to 155 mt, as well as alternative OYs for other co-occurring species. Therefore, the GMT recommends the Council review initial analyses of management measures under Agenda Item H.5 before deciding a preferred canary OY.

Table 1. Canary Rockfish Alternatives under Revised Rebuilding Plans (summarized from Agenda Item H.1.a Attachment 2).

| Canary | Alt 1 | Alt 2 | Alt 3 | Alt 4 | Alt 5 | Alt 6 |
|---------------------|-------|-------|-------|-------|-------|-------|
| 2009 OY (mt) | 0 | 35 | 44 | 85 | 105 | 155 |
| T _{target} | 2019 | 2020 | 2020 | 2020 | 2020 | 2021 |
| SPR | F=0 | 97.3% | 96.2% | 93.6% | 92.2% | 88.7% |
| T _{max} | N/A | 2041 | 2041 | 2041 | 2041 | 2041 |
| P _{max} | N/A | 75% | 75% | 75% | 75% | 75% |

Darkblotched. The 2007 darkblotched rockfish assessment used a less optimistic prior on steepness (within the stock-recruitment relationship) than the previous assessment, which led to a more pessimistic rebuilding analysis. Alternative 4 (300 mt) is similar to the status quo OY, but results in a much longer rebuilding time (2030 vs. 2011). The SSC acknowledged that this change represents a fundamental change in our understanding of the stock’s productivity and the shortest possible rebuilding time (2018 under a zero harvest strategy) is now predicted to be seven years longer than the current target rebuilding year (2011). Therefore, a revision in the rebuilding plan is clearly required.

The status quo OY of about 300 mt was analyzed with respect to socioeconomic impacts to fishing communities in the 2007-2008 Specifications EIS. However, there is now a different tradeoff in the extended rebuilding time relative to T_{F=0}. Status quo or lower OYs may be mitigated somewhat if the canary OY is set higher than the last 2-year management cycle resulting in increased shelf opportunity for trawl sectors that would otherwise fish on the slope and impact darkblotched. Such considerations compel the GMT to recommend deferring a decision on a preferred darkblotched OY until initial analyses of management measures are considered under Agenda Item H.5.

Table 2. Darkblotched Rockfish Alternatives under Revised Rebuilding Plans (summarized from Agenda Item H.1.a Attachment 2).

| Darkblotched | Alt 1 | Alt 2 | Alt 3 | Alt 4 |
|---------------------|-------|-------|-------|-------|
| 2009 OY (mt) | 0 | 159 | 229 | 300 |
| T _{target} | 2018 | 2022 | 2025 | 2030 |
| SPR | F=0 | 75.6% | 67.7% | 60.7% |

| | | | | |
|------------------|-----|-------|-------|-------|
| T _{max} | N/A | 2040 | 2040 | 2040 |
| P _{max} | N/A | 97.7% | 91.0% | 76.7% |

Cowcod. The 2007 cowcod assessment corrected technical errors in the previous assessment, which resulted in a more pessimistic rebuilding analysis. The 2007 rebuilding analysis indicates the shortest possible time to rebuild under a zero harvest strategy (2061) is 22 years longer than the current target rebuilding year in the cowcod rebuilding plan (2039). Maintaining the status quo OY of 4 mt projects rebuilding until 2072, or 11 years longer than the shortest possible rebuilding time. The preliminary preferred OY of 2 mt is projected to rebuild by 2065, or 4 years longer than the shortest possible time. However, this lower OY for cowcod could adversely impact recreational and trawl fisheries off California relative to the original decision to implement Amendment 16-4. Therefore, the GMT recommends deferring a decision on a preferred cowcod OY until initial analyses of management measures are considered under Agenda Item H.5.

Table 3. Cowcod Rockfish Alternatives under Revised Rebuilding Plans (summarized from Agenda Item H.1.a Attachment 2).

| Cowcod | Alt 1 | Alt 2 | Alt 3 |
|---------------------|-------|-------|-------|
| 2009 OY (mt) | 0 | 2 | 4 |
| T _{target} | 2061 | 2065 | 2072 |
| SPR | F=0 | 90.0% | 82.1% |
| T _{max} | 2098 | 2098 | 2098 |
| P _{max} | 0.784 | 72.4% | 66.2% |

Discussion of Overfished Species with No Revised Rebuilding Plans

Pacific Ocean Perch. The SSC recommended no revision to the Pacific ocean perch rebuilding plan and the Council’s preliminary preferred OY decision maintains the target rebuilding year and the harvest rate specified in the rebuilding plan. The GMT believes the analyses in the 2007-2008 Specifications and Amendment 16-4 EIS were sufficient to support that decision.

Widow. The SSC recommended that the widow rockfish rebuilding plan is on track and there is no need to revise the plan. The Council’s preliminary preferred OY (Alternative 2) is similar to the status quo OY of 368 mt. However, the Council’s preferred OY alternative would require a downward revision of the harvest rate in the widow rebuilding plan. The status quo harvest rate in the rebuilding plan corresponds to Alternative 3 (522 mt in 2009; 509 mt in 2010) and the Council could consider maintaining the harvest rate in the widow rebuilding plan. Initial bycatch analysis suggests the Council preferred OY could have impacts to fisheries and communities that are more adverse than envisioned in the Amendment 16-4 decision. In other words, the original balance struck in Amendment 16-4 between the widow rebuilding year and the needs of communities may be shifted under the preliminary preferred alternative. Therefore, the GMT recommends deferring a decision on a preferred OY until integrated management measure analyses are presented under Agenda Item H.5.

Bocaccio. The SSC recommended no revisions to the bocaccio rebuilding plan. The Council's preliminary preferred OY is equal to the status quo OY amount. However, as in the case made for widow rockfish above, the Council's preliminary preferred OY decision (Alternative 2) departs from the rebuilding plan by adopting a lower harvest rate for rebuilding the stock, potentially shifting the balance between the rebuilding year and the needs of fishing communities. Therefore, the GMT recommends deferring a decision on a preliminary preferred OY until an integrated analysis is presented under Agenda Item H.5.

Yelloweye. The rebuilding OY "ramp down" strategy that was adopted in 2007-2008 under Amendment 16-4 would result in an OY of 17 mt in 2009 and 14 mt in 2010 before adopting a constant SPR harvest rate of F71.9%. The Council's preliminary preferred OY decision is consistent with maintaining the rebuilding plan, which was thoroughly analyzed in the 2007-2008 Specifications EIS. While the OYs under the rebuilding plan (and the alternative OYs adopted in November 2007 for analysis) will continue to severely restrict recreational opportunities and fixed-gear line fisheries on the shelf, the GMT does not believe there is more analysis that would help the Council decide an alternative harvest rate strategy. While more analysis of management measures will be needed to understand how management measures will stay within the OYs in the ramp down strategy, the GMT believes the Council has all the necessary analysis to set 2009-2010 yelloweye OYs. Therefore, the GMT recommends the Council adopt preferred yelloweye OYs under this agenda item and consider alternative management strategies designed to stay within the constraints, dictated by the current rebuilding plan, under Agenda Items H.5 and H.7.

Non-Overfished Stocks

Sablefish. The 2007 coastwide sablefish stock assessment indicates the stock is in the precautionary zone. The strength of the stock is reliant upon the strong 1999 and 2000 year classes, with the possibility of a strong incoming 2004 year class. However, the assessment author cautioned against the use of the apparent "high abundance of these two year classes as an index of overall stock health."

Alternatives 1-3 use the results from the 2007 assessment; differences in the alternatives are a result of model choice and differing methodologies for apportioning the OY north and south of 36° N lat. Under Alternative 1, the base case model provides the coastwide OY and the methodology used to apportion catches between north and south of 36° N lat. is based on average catches by area from 2000 and 2001. This is the same apportionment methodology that was used in 2007/2008 SPEX process. The GMT notes that maintaining the level of harvest indicated by 2000 and 2001 landings data may not be appropriate given the stock distribution indicated by the trawl survey data. Continuing with this apportionment methodology may result in an overharvest of sablefish north of 36° N lat. Under Alternative 1, the Council should consider the economic importance of sablefish to the west coast and potential stock impacts resulting from harvesting at a level higher than the available biomass can sustain.

Alternatives 2 and 3 use different models, but both incorporate a different apportionment methodology from Alternative 1. Alternative 2 uses the base case model, while Alternative 3 is the lower productivity model. The apportionment methodology used in both Alternatives 2 and 3 is based on trawl survey data, with a precautionary adjustment in the south. The GMT believes that the apportionment of biomass using the trawl survey data (Alternatives 2 and 3) incorporates the best available information on the sablefish stock distribution. The reason for the reduction in

the southern OY is that if the survey biomass estimates are utilized to distribute the coastwide OY, it would result in a large OY for the Conception Area relative to recent catches. Additionally, the Cowcod Conservation Area (CCA) closes a significant amount of the Conception Area to fishing and the area-swept biomass estimates for the Conception area are based on the assumption that catch rates outside of the CCAs are comparable to those inside (the survey does not sample within the CCAs). Therefore, a precautionary reduction of 50% in the south was incorporated to account for the uncertainty inherent in using a short time-series of relative abundance for setting the OY.

The Team also notes that recent coastwide catches have been between 5,081 mt (2007) and 6,079 mt (2005), which could be accommodated under any of the alternatives.

Southern Black Rockfish. The GMT discussed the uncertainties in the 2007 southern black rockfish assessment, implications for management, and comments from the SSC indicating “the decision table, coupled with the probabilities assigned to the various states of nature, provides a large contrast in possible outcomes – implying a highly uncertain assessment (relative to other rockfish assessments).”

The OY alternatives include harvest levels based on a low productivity/low catch model (Alternative 1), constant catch under medium productivity levels (Alternative 2), and medium productivity/medium catch model (Alternative 3). Comparison of depletion rates after 7 years (2016) under each alternative indicate that the proportion of spawning stock biomass, relative to initial biomass, is lowest in Alternative 1 (39.9%). This is because Alternative 1 uses the low productivity model, hence the assumption is that the stock can not replenish as quickly as the medium productivity models (Alternatives 2 and 3). Alternatives 2 and 3 both assume medium productivity, but the proportion of spawning stock biomass, relative to initial biomass, is higher under Alternative 2 (51.1%) than Alternative 3 (46.3%). The GMT cautions that if productivity is low, and Alternative 3 is chosen, the projected depletion by 2016 is 29%. Under the same low productivity scenario, depletion under Alternative 2 is projected at 34.7% and not as close to the overfished level as would result under Alternative 3.

The GMT notes that all alternatives provide for black rockfish harvest that is greater than status quo levels. Achieving harvest levels under Alternative 3, is unlikely due to overfished species constraints.

Chilipepper. The GMT reviewed the OY alternatives for chilipepper rockfish and note that current catches have been constrained by interactions with overfished species. Any increase to canary, bocaccio or widow rockfish OYs may allow for greater chilipepper targeting opportunities.

Arrowtooth Flounder. The GMT notes that Alternative 2 (2009- 11,267 mt; 2010 - 10,112 mt) is approximately double status quo (5,800 mt). This is due to the large 1999 year class (Kaplan and Hesler, 2007). Spawning biomass is predicted to decline in subsequent years. Any increase to the arrowtooth flounder OY may be constrained by management measures to reduce impacts on overfished species, particularly canary.

Shortbelly. The GMT recommends removing Alternative 3, in Tables 2-1a and 2-1b, because the OY (13,900 mt) would exceed the ABC (6,950 mt).

Blue Rockfish. The GMT reviewed the 2007 stock assessment and notes that there were many uncertainties, including temporal and spatial differences in growth, evidence for two species, historical catch levels, and estimates of natural mortality.

Blue rockfish is currently managed under the minor nearshore rockfish complex both north and south of 40°10' N lat. The Team discussed whether to manage blue rockfish under the minor nearshore complex or set an individual OY. In making this determination, the Council should consider stock biology, available management strategies, and current catch levels. If managing to an OY, the GMT would evaluate current data inseason to determine if a resource conservation issue exists and if so, would recommend appropriate management measures to stay within the OY (required under MSA National Standard 1). Management actions available to the Council under inseason include trip limits and RCA adjustments.

When blue rockfish occur offshore they can be targeted separately from other nearshore rockfish, but those that occur inshore mix with other nearshore rockfish stocks. Since blue rockfish mix with other nearshore species, exceeding an OY could result in shutting down the entire nearshore fishery. The GMT notes that catches of blue rockfish are extremely variable with catches in the assessment area (Table 4) ranging from 74% of the 2009 ABC in 2004 to 153% of 2009 ABC in 2006. These highly variable catch rates indicate action must be taken to prevent exceeding the OY and ABC, whether it be a separate OY or a point of concern.

| Table 4. Blue rockfish catch N. of Point Conception, relative to the proposed 2009 ABC, adjusted to reflect area N. of Point Conception. The 2009 ABC includes areas S. of Point Conception (18 mt). | | | | |
|---|-------------|-------------|-------------|-------------|
| | 2003 | 2004 | 2005 | 2006 |
| Recreational | 219.9 | 149.9 | 162.9 | 319.6 |
| Commercial Hook-and-Line | 9.2 | 14.8 | 21.7 | 21.9 |
| Total | 229.1 | 164.6 | 184.6 | 341.4 |
| Total Catch as % of 2009 ABC | 103% | 74% | 83% | 153% |

In lieu of setting a separate OY, the Council could choose to set a harvest guideline for blue rockfish within the nearshore OY. If managing to a harvest guideline, the GMT would evaluate current data inseason to determine if a resource conservation issue exists and if so, would recommend appropriate management measures to stay within the harvest guideline. Management actions available to the Council under inseason include trip frequency limits and RCA adjustments. The GMT notes that if a harvest guideline were used and management action was not taken to constrain the catch to the harvest guideline, then there is a possibility, based on historical catch, that the ABC could be exceeded (Table 4).

The Team notes that a harvest guideline was adopted for kelp greenling in Oregon based on a similar situation. No ABC was adopted for kelp greenling. Under this scenario, the state of Oregon, not the GMT, manages the harvest guideline and takes state action in order to prevent exceeding the harvest guideline. Additionally, an ABC for blackgill was set and it contributes to the minor rockfish south complex. In recent years, catches for blackgill rockfish have been below

the ABC. An ABC and harvest guideline was recommended for gopher rockfish and in recent years catches for gopher rockfish have been below the ABC.

Longnose Skate. Longnose skate is currently managed within the Other Fish complex. The GMT has not been able to analyze longnose skate's contribution to the Other Fish category in order to provide a range of Other Fish alternatives. The GMT recommends that the Council postpone choosing a final OY alternative until these values can be provided in June.

GMT Recommendations

Overfished Species with Revised Rebuilding Plans

1. New stock assessments for cowcod, darkblotched and canary are significantly different than those used to set 2007-2008 harvest specifications and Amendment 16-4 rebuilding plans. The GMT is therefore recommending an analysis of management measure scenarios, under Agenda Items H.5 and H.7, before preferred OY alternatives for these species are decided.

Overfished Species with No Changes to Rebuilding Plans

2. For widow and bocaccio rockfish the GMT recommends an analysis of management measure scenarios, under Agenda Items H.5 and H.7, before preferred OY alternatives for these species are decided.
3. The GMT believes the analyses in the 2007-2008 Specifications and Amendment 16-4 EIS were sufficient for Council action, under this agenda item, to adopt OYs for POP and yelloweye rockfish.

Non-Overfished Stocks

4. *Shortbelly.* The GMT recommends removing Alternative 3, in Tables 2-1a and 2-1b, because the OY (13,900 mt) would exceed the ABC (6,950 mt).
5. The GMT recommends that the Council postpone choosing a final OY alternative for longnose skate until the range of Other Fish specifications are provided (June).

PFMC
4/08/08