

GROUND FISH MANAGEMENT TEAM REPORT ON THE BIENNIAL HARVEST SPECIFICATIONS FOR 2015-2016 GROUND FISH FISHERIES

The Groundfish Management Team (GMT) reviewed and discussed the materials under this agenda item. In the event the Council does not complete all tasks under Agenda Item H.6 or if additional analyses are requested, the remainder of the harvest specifications decisions can be made under Agenda Item H.10.

Overfishing Levels, Stock Categories, Sigma Values

The GMT reviewed the tables in Agenda Item H.6.a, Attachment 1 and Agenda Item H.6.a, Supplemental Attachment 7 on the proposed overfishing limits (OFL), acceptable biological catches (ABC), and presumptive annual catch limits (ACL) for 2015-2016 groundfish fisheries. It is the purview of the Scientific and Statistical Committee (SSC) to determine and recommend OFLs and ABCs; however we did review them, and have no additional comments or recommendations.

Based on the SSC Groundfish Subcommittee Report (Agenda Item H.6.b, Supplemental SSC Report), it is our understanding that an effort will be made to develop proposed OFLs for kelp greenling off of Washington and Oregon and cabezon off of Washington in December 2013. If the OFLs and associated ABCs, based on the range of overfishing probabilities (P^*) adopted by the Council in September (0.25 to 0.45), are proposed during that time frame, the GMT could review them at our January work session and evaluate any necessary management measures. Any related concerns would be brought to the Council in either March or April. Since these species are currently subject to both state and federal management measures, the delay to specify the OFL, and resulting allowable biological catch (ABC), annual catch limits (ACL) for these species should not delay analysis for the biennial harvest specifications and management measures draft environmental impact statement (DEIS).

P^* and Allowable Biological Catches

The GMT reviewed the staff white paper (Agenda Item H.6.a, Supplemental Attachment 4) on the considerations for deciding the P^* when specifying ABCs. While it generally provides good information on the state of the science against which P^* is applied and advice on how to incorporate risk tolerance against uncertainty, we did not have time to discuss the white paper in detail. Some on the Team think that there may be further guidance that we can give to help the Council understand the ramifications of various scenarios and P^* amounts, so we may provide additional comment under Agenda Item H.10.

Currently, there are no status quo P^* values (values used in 2013-2014) for application to some species in the cartilaginous and other roundfish complexes for which OFL values have recently been derived using swept area estimates of biomass from the trawl survey. The status quo P^* value applied to the Other Fish complex components was 0.4, recognizing a need to acknowledge the greater risk of overfishing component stocks with disparate life histories in contrast to the default P^* of 0.45 applied to the *Sebastes* complexes with more uniform life histories. Now that stocks have been separated into groupings with more similar life histories and co-occurrence, the Council may consider applying P^* values that reflect other stocks with similar characteristics. In line with the Council's preliminary P^* decision for a spiny dogfish P^*

of 0.3, a similar value might be applied to the cartilaginous fishes in recognition of the lower productivity of such stocks and the longer expected period to rebuild such stocks should they become overfished. As for the other roundfish, they have life histories imparting higher productivity and are more similar to the remaining teleost species, thus the concomitant P^* of 0.45 may be more appropriate.

In September, the Council adopted a range of P^* of 0.45 to 0.25. For most species, the presumptive P^* (i.e., that set during the last biennial cycle) set by the Council is 0.45 (the upper limit of P^* ; Table 1). Sablefish, spiny dogfish shark, arrowtooth flounder, starry flounder, and lingcod south of 40°10' N. lat. were assigned preliminary P^* lower than 0.45 (Table 1). Additionally, there are a number of species with new assessments for which the Council may wish to consider a P^* other than the presumptive P^* . For example, the GMT requested a run for the petrale sole assessment that would stabilize the stock at about $B_{30\%}$. Those runs give catches of 2,367 mt in 2015 and 2,533 mt in 2016 for the base case (Agenda Item F.5.a, Attachment 6, June 2013, Table h) which roughly correspond to a P^* of 0.25 in 2015 for 2,310 mt and 0.3 in 2016 for 2,520 mt. The rebuilding year did not change between the two scenarios. However, one reason to consider a lower P^* for petrale sole would be to reduce the risk of it ending up in another rebuilding plan in the future. Natural variability in recruitment always has some potential to cause the stock to fall to a low level even when managed well. The GMT cautions that use of P^* to account for risk tolerance will be explored further and over longer time scales under the Tier 1 Environmental Impact Statement (EIS) that the Council is embarking on. It would be worthwhile to consider that analysis prior to trying to contemplate all possible uses of P^* or developing a more comprehensive policy for its use.

Range of Annual Catch Limits

The GMT reviewed the presumptive ACLs in Table 6 of Agenda Item H.6.a, Supplemental Attachment 7 for 2015 and 2016. In most instances the presumptive ACL was determined by setting the ACL equal to the ABC.

Table 2 summarizes those species or species complexes for which the ACL does not equal the ABC. For black rockfish (OR-CA), Dover sole, longnose skate, and widow rockfish rather than setting the ACL equal to the ABC, a constant catch scenario was chosen; in all four cases, the ACL was then less than the ABC. For several complexes, the component species had a range of P^* that influenced the complex ABC and hence influenced the maximum possible ACL for the complex.

Additionally, the GMT notes that there are several species for which the presumptive ACLs are considerably higher than those for 2014: English sole; longspine thornyhead; shortspine thornyhead; and yellowtail rockfish north of 40° 10' N latitude (Table 3). All of these species had new assessments in 2013, which is the reason for the change. The GMT will briefly explore the potential management implications relative to the changing ACLs under Agenda Item H.10 and in greater detail in the DEIS analysis that will occur over winter.

For overfished species, except for cowcod, there are no new rebuilding plans this cycle. Therefore the GMT anticipates the ACL will be determined by applying the status quo harvest control rule, which is constant spawning potential ratio (SPR), except for petrale sole which is based on the 25-5 rule.

For cowcod, once a rebuilding plan is approved, the harvest control rule will need to be verified. The presumptive ACL for cowcod is over 5 times higher than the 2014 ACL (3 mt vs. 16 mt; see [Agenda Item H.6.a, Supplemental Attachment 7, Table 6](#)). Given the new assessment for cowcod, the Council may wish to choose a more precautionary ACL or annual catch target (ACT). Table 4 provides some recent historical information on catch by sector and total mortality for cowcod.

The 2015 and 2016 harvest specification alternatives for cowcod south of 40°10' N. latitude are based on the 2013 assessment (Dick, et al. 2013) and 2013 rebuilding analysis (Dick and MacCall 2013). A new 2013 cowcod assessment was conducted to evaluate new information available to inform the stock assessment and rebuilding analysis in a data-moderate framework. The current SPR harvest rate ($F_{82.7\%}$) implies that the stock will rebuild by 2020 with a 50 percent probability, so rebuilding is ahead of schedule. The catches of cowcod have been lower than the cumulative ACL during the period of rebuilding. The SSC concluded that progress towards rebuilding is ahead of schedule.

The 2015 and 2016 cowcod OFL and ABCs will be determined using the 2013 newly developed rebuilding analysis method recently reviewed by the SSC at the November Council meeting. The results will be forthcoming once the SSC has had the opportunity to deliberate on the methodology for arriving at values for each portion of the stock at their December meeting. Adoption of the OFL and ABC will be finalized at the March Council meeting.

The 2015 and 2016 ACL alternatives range from 3 mt, which is the status quo ACL to 16 mt based on applying the SPR harvest rate of 82.7 percent specified in the current rebuilding plan, which was the basis for setting the 2013 ACL. Since 2000, catch has not exceeded 3 mt, though impacts within sectors have varied (Table 4). In the past, the Council discussed a higher ACL with an ACT to provide a buffer against management uncertainty. Given the greater range of ACL values available in this biennium, a higher ACL with an ACT may be beneficial. Constraints posed by bocaccio may prevent adjustments to management measures that could be considered under higher ACLs for cowcod in any event. The range of ACLs between 3 mt and 16 mt is sufficient to examine what opportunities may be possible given potential constraints from overfished species limits. In addition, a higher ACL would allow a greater set aside for scientific research such as an extension of the Northwest Fisheries Science Center hook and line survey and trawl survey into the Cowcod Conservation Area to better inform future assessment efforts. Analysis of ACL alternatives from 3 mt to 16 mt would allow evaluation of the potential for additional fishing opportunity, buffers for management uncertainty and research.

Use of Harvest Guidelines

The GMT reviewed the staff white paper ([Agenda Item H.6.a., Supplemental Attachment 5](#)) on the use of harvest guidelines (HG) for assessed stocks managed in a stock complex. As mentioned in the Council staff white paper, the use of a HG to manage a stock in a complex needs to be considered on a stock by stock basis. In addition, the GMT provides the following additional thoughts when considering the effectiveness of a HG to address conservation concerns. As described in the Code of Federal Regulations under “General Definitions” at 50 CFR 660.11, “Harvest guideline means a specified numerical harvest objective that is not a quota. Attainment of a harvest guideline does not require closure of a fishery.” As such, regulations do not establish a maximum limit that could be established relative to the harvest specifications (e.g., equal to the OFL or ABC).

After establishing the HG, the Council should state whether they are setting a hard catch limit or simply a harvest target. If implemented, it would be important to consider how to evaluate the performance of a HG over time and whether reaching this HG on average over a particular time period is acceptable.

The next question to be considered is what tools are necessary to be effective; HGs must be linked to other management tools such as landing limits, sorting requirements, or area closures to adequately address conservation concerns. Once the Council identifies the species in which they would like to apply a HG and whether the HG is to be treated as a limit or a target, the GMT can briefly weigh in on the efficacy of management measures under Agenda Item H.10 and in greater detail in the analysis completed for the DEIS.

Ecosystem Workshop

The Council has expressed interest in the Tier 1 EIS approach and in advancing ecosystem based fisheries management through the Fishery Ecosystem Plan (FEP) and related initiatives, especially Initiative 9. The gist of our reports to the Council has been that there is much in common between the two in terms of the analyses involved¹. The Ecosystem Workshop was the first opportunity attempt to explore those connections with invited experts and members of the SSC.

Two members of the GMT attended the workshop. Based on their reports, the discussion was very productive. We thank the Workshop participants and thank Council staff for arranging our participation in and input to the discussion. We had submitted a discussion document for the Workshop (available on the FTP site included under Agenda Item H.6) laying out a view of the long-term road map the team has had in mind. In brief, there are three main pieces to that:

1. Using ecosystem models and other analysis to guide our understanding of the ecosystem and the relative magnitude and importance of the effects the groundfish fisheries are having on the ecosystem (and other components of the ecosystem on the groundfish fisheries). It is envisioned that this information could be an important part of the framework that could be one focal point for guiding discussions on impacts analysis in the future.
2. Using indicators to help focus the discussion on how changes in the science or in the fisheries or elsewhere may or may not affect our understanding of the relationships between the groundfish fisheries and various components of the ecosystem.
3. A “research and data needs” approach for the Tier 1 EIS to help guide research and management on where improvement to the next iteration of Tier 1 EIS and other National Environmental Policy Act (NEPA) documents could be made. This would also help direct science resources to highest conservation and management needs and help the Council understand where the ecosystem science suggests those needs might be. And importantly, this step combined with the indicators allow look to the science to guide the question about the appropriate timeline for updating or supplementing portions of the EIS analysis.

¹June 2013, [Agenda Item F.7.b. Supplemental GMT Report](#); November 2012, [Agenda Item I.2.b. Supplemental GMT Report](#), [Agenda Item K.1.c. Supplemental GMT Report](#), [Agenda Item K.2.c. Supplemental GMT Report](#), and http://www.pcouncil.org/wp-content/uploads/K3c_SUP_GMT_NOV2012BB.pdf; and March 2013, [Agenda Item H.4.b. Supplemental GMT Report](#).

These three steps are the core structure of many ecosystem-based management efforts. The Workshop and the analysis that will come out of it will help with the beginning of step one. To best integrate NEPA analyses into the ecosystem-based effort, would likely involve gradual, iterative pursuit of the three steps through FEP Initiative 9 and similar efforts. We believe this first step, which largely involve translation of what ecosystem models can say about the connections between the groundfish fisheries and the ecosystem, is very important for the Council, its advisors, and the public. When the results are presented in the March Briefing Book, we would like to hear and be involved in the discussion with the SSC to the extent that schedules and budgets allow. We will request such participation again during Future Meeting Planning.

Table 1. Species or Species Complexes where the Council adopted P* values lower than 0.45, the upper limit of P* values contemplated in the FMP, and species with new assessments and additional considerations for setting of P* may be warranted for 2015-2016.

Species/Complex	2014 P*	Rationale for 2014 P* Decision	Additional considerations (if any)
Sablefish (coastwide)	0.40	Uncertainty in steepness and decline in stock status.	
Spiny dogfish	0.30	Uncertainty in SPR	
Starry flounder	0.40	Category 2	
Lingcod S. of 40° 10' N. lat.	0.40	Category 2	
English sole*	0.45	Category 1	Moved from a Category 1 to a Category 2
Longspine thornyhead*	0.40	Category 2	Currently a Category 2
Shortspine thornyhead*	0.45	Category 1	Moved from a Category 1 to a Category 2
Yellowtail N. of 40 10' N. lat.*	0.45	Category 1	Moved from a Category 1 to a Category 2
Stripetail rockfish*	N/A		Shelf RF Complex P* was 0.45 both N. and S.
Brown rockfish*	N/A		Nearshore RF Complex P* was 0.45 both N. and S.
China rockfish*	N/A		Nearshore RF Complex P* was 0.45 both N. and S.
Copper rockfish*	N/A		Nearshore RF Complex P* was 0.45 both N. and S.
Aurora*	N/A		Slope RF Complex P* was 0.45 both N. and S.; Currently a Category 1
Rougeye*	N/A		Slope RF Complex P* was 0.45 both N. and S.; Moved from a Category 1 to a Category 2
Sharpchin*	N/A		Slope RF Complex P* was 0.45 both N. and S.; Currently a Category 2
Pacific sanddab*	N/A		Other flatfish Complex P* was 0.4; Currently a Category 3
Rex sole*	N/A		Other flatfish Complex P* was 0.4; Currently a Category 2

* new/updated assessments for the 2015-2016 biennial cycle

Table 2. Excerpt from Table 7, Agenda Item H.6.a, Supplemental Attachment 7, November 2013 for species or stock complexes where the ACL was not set equal to the ABC.

Stock	Default HCR	Comment
Non-overfished stocks		
Black rockfish (OR-CA)	Constant catch strategy	ACL < ABC (P*0.45)
Dover sole	Constant catch strategy	
Longnose skate	Constant catch strategy	ACL < ABC (P*0.45)
Widow rockfish	Constant catch strategy	
Stock complexes		
Minor Shelf Rockfish North	ACL = status quo ACL; ACL < ABC (under P* range of 0.25-0.45)	
Minor Slope Rockfish North	ACL = status quo ACL; ACL < ABC (under P* range of 0.25-0.45)	
Minor Shelf Rockfish South	ACL = status quo ACL; ACL < ABC (under P* range of 0.25-0.45)	
Other Flatfish	ACL = status quo ACL; ACL < ABC (under P* range of 0.25-0.45 in 2015 and under P* range of 0.3-0.45 in 2016)	

Table 3. Species with ACLs different for 2015 than for 2014, taken from Table 6 in Supplemental Attachment 7.

Species	2014 ACL	2015 ACL	Difference
English Sole	5,646	11,040	5,394
Longspine thornyhead N of 34° 27' N lat.	1,958	2,854	866
Longspine thornyhead S of 34° 27' N lat.	347	601	254
Shortspine thornyhead N of 34° 27' N lat.	1,525	2,095	570
Shortspine thornyhead S of 34° 27' N lat.	393	554	161
Yellowtail north of 40° 10' N latitude	4,382	11,213	6,831

Table 4. Historical catch information by sector and total mortality for cowcod in mt.

Year	Non-Whiting Trawl	CA Rec	Research/ Other	Total Mortality	OY/ACL (mt)	% OY/ACL	%ABC
2004	0.9	1.0	0.5	2.4	4.8	50%	10%
2005	1.5	0.4	0.1	2.0	4.2	47%	8%
2006	0.9	0.2	0.0	1.1	4.2	26%	5%
2007	3.0	0.3	0.1	3.4	4.0	83%	9%
2008	0.2	0.2	0.1	0.5	4.0	13%	1%
2009	0.5	0.2	0.2	0.9	4.0	23%	4%
2010	0.3	0.6	0.1	1.2	4.0	55%	9%
2011	0.2	0.83	0.14	0.99	4.0	25%	10%
2012	0.1	0.84	0.22	1.15	3.0	38%	12%

PFMC
11/04/13