GROUNDFISH MANAGEMENT TEAM REPORT ON FISHERIES IN 2015-2016 & BEYOND: STOCK COMPLEX RESTRUCTURING

The Groundfish Management Team (GMT) reviewed the items contained in the Briefing Book (contained in both Agenda Items C.4 and C.8) and had in-depth discussions, aided by insightful observations with industry. In the discussion below, references to rougheye rockfish is used as shorthand for the combination of rougheye and blackspotted rockfish, which is the subject of the 2013 stock assessment and associated component overfishing limit (OFL) contribution to the status quo Slope Rockfish complex.

The GMT began deliberations on stock complex restructuring by having a discussion about management of rougheye rockfish including whether to a) manage rougheye as part of the existing Slope Rockfish complexes north and south of 40°10 N. latitude b) create a new rougheye/blackspotted and shortraker coastwide complex and c) whether to manage rougheye with stock-specific harvest specifications. The GMT provides the following information to inform Council action under this agenda item.

Historical Management Context

Historically, rougheye rockfish has been managed as part of the Slope Rockfish complexes north and south of 40°10 N. latitude. Management measures were implemented to keep total catch of slope rockfish within the respective Slope Rockfish complex annual catch limits (ACL) north and south of 40°10 N. latitude.

Prior to the inception of the West Coast Groundfish Observer Program (WCGOP) in 2001, there was minimal monitoring of the slope rockfish catches and discards either at the complex or species level from the commercial fisheries. Most species were recorded on commercial fish tickets in general or aggregate categories such as “red rockfish,” “deep water reds,” or “misc. rockfish.” This was due, in part, to the fact that the identified rockfish complexes (minor nearshore, minor shelf, and minor slope) did not exist prior to 2000. When the WCGOP was implemented, observers began collecting data on species composition. Since the beginning of the individual fishing quota (IFQ) program in 2011, there has been 100 percent observer coverage on vessels participating in the IFQ and at-sea fisheries as well as catch monitors at shoreside processing facilities. These steps have led to improvements in data collection by species in recent years. The GMT notes that the current WCGOP target coverage rate for non-IFQ sectors, including the non-nearshore fixed gear sector, is 20 percent.

The 2011 Groundfish Mortality (GM) Report, published in October 2012, was the first occurrence that WCGOP provided the composition mortalities for the component species of complexes. At that time, we had been tracking catch against the complex ACLs, which had low attainment. Furthermore, we were adjusting trip limits based on the Slope Rockfish complex ACLs and were unaware that there was a need for monitoring the rougheye rockfish components.

Directing effort off the shelf and onto the slope was a conscious decision to promote rebuilding of overfished species. In recognition of the challenges presented by rebuilding cowcod, canary

and yelloweye rockfishes (i.e., very low harvest specifications), effort was directed away from the shelf as soon as those rebuilding plans were adopted. For example in the 2007-2008 Biennial Specifications Final Environmental Impact Statement (FEIS), overfished species were grouped into shelf north, shelf south, slope, and midwater classifications and rebuilding times compared to optimum yield (OY) alternatives were analyzed (2007-2008 FEIS). That analysis showed that overfished slope species rebuilding times were less sensitive to increases in OY compared to overfished shelf species. As such, management measures, including Rockfish Conservation Areas (RCAs) and cumulative limits, directed effort on to the slope to facilitate the most efficient rebuilding "portfolio" across all areas.

During discussions, a member of the industry noted that awareness of the potential vulnerability of rougheye rockfish has been growing only within the last few years. The industry is therefore interested in voluntary measures to respond to our current rougheye rockfish concerns. These two items were also brought up in Agenda Item C.4.c. Supplemental Public Comment 5. We had some discussion on this matter and provide a history of advisory body statements and recommendations in Appendix 1 as a reference.

Individual Management

Agenda Item C.8.a Attachment 1 shows three alternatives that pull some of the rockfishes out of the Slope Rockfish complex for individual management. These alternatives were analyzed by the GMT at earlier Council meetings (see Appendix 1 for references). **Some on the GMT suggest that the Council focus their discussions on (a) retaining the current slope rockfish complex configurations north and south of 40°10 N. latitude with consideration for a combined harvest guideline (HG) for rougheye/blackspotted/shortraker rockfish, (b) pulling rougheye/blackspotted/shortraker rockfish from the slope rockfish complex and create a new complex that contains the three species (i.e., Agenda Item C.8.a Attachment 2), and (c) implementing stock-specific harvest specifications for rougheye/blackspotted. It is believed that analyzing Alternatives 1, 2, and 3 (Agenda Item C.8.a Attachment 1) are more complex and potentially not feasible by the June Briefing Book deadline.** If the Council desires, analysis for the remaining slope rockfish complex alternatives found in Agenda Item C.8.a Attachment 1 could be prepared for future harvest cycles.

Harvest Guideline vs. Annual Catch Limit Management

The first decision is whether to manage rougheye (1) within the Slope Rockfish complexes north and south, (2) within a coastwide rougheye/shortraker complex, or (3) with stock-specific harvest specifications. If the Council decides to manage rougheye in the Slope Rockfish complexes north and south, the next question is whether to manage to or near the rougheye rockfish component to the Slope Rockfish complex in the north. It is our understanding that mortality compared to the rougheye rockfish OFL and ABC component contribution will be used to evaluate performance of the stock complex.

The GMT notes that the Groundfish Fishery Management Plan (FMP) and regulations speak to the differences between using ACL vs. HG management. It is a policy decision whether one or the other is chosen, but we explain what may be some of the key differences in the two approaches. Groundfish regulations define a HG as a specified numerical harvest objective which is not a quota. Attainment of an HG by one particular sector or all sectors combined does

not require closure of a fishery. An ACL is a harvest limit specified equal to or below the allowable biological catch (ABC) in consideration of conservation objectives, socioeconomic concerns, management uncertainty, ecological concerns, and other factors. It includes all sources of fishing-related mortality including landings, discard mortality, research catches, and catches in exempted fishing permit activities. In contrast to an HG, an ACL could require closure upon attainment and may require stronger inseason action upon projected attainment. It is the understanding of some on the GMT that the Council and NMFS cannot plan to exceed an ACL. Given recent catch history and past guidance, setting an ACL may require setting some of the associated management measures that have been analyzed or discussed (e.g. GCAs, excluders, trip limits, or RCA boundary adjustments). Others on the GMT argue that the standard of exceeding the harvest limit (i.e., whether it is characterized as an HG or ACL) is the same and both will require the same level of inseason action. This view holds that the HG is just a means of lowering the likelihood that catch exceeds an ABC contribution. If a HG does not sufficiently lower this likelihood, then other measures would be needed to bring the risk of an overage down to acceptable levels. Similarly, the NMFS report (Agenda Item C.8.a, Attachment 2), asserts that not setting a HG, and managing only to the OFL/ABC is an option available to the Council to aid in industry-led voluntary reduction of catch. Past practice has been based on individual circumstances, so the exact nature of the standard and any difference between the necessary response is unclear to us at this time.

Since 2013, blackgill rockfish have been managed with a HG within the Slope Rockfish complex south of 40°10 N. latitude. Similarly, blue rockfish is also managed within the Nearshore Rockfish complex north and south of 40°10 N. latitude. We elaborate further on blackgill rockfish since it is a Slope Rockfish species caught by both trawl and non-trawl sectors, similar to rougheye. Blackgill rockfish is allocated as part of the Slope Rockfish south complex under Amendment 21 (63 percent to trawl and 37 percent to non-trawl). To improve inseason tracking of blackgill rockfish south of 40°10' N. latitude, the Council recommended HGs which were equivalent to the 40-10 adjusted ACLs calculated for the stock. Further, the Council recommended that the commercial non-trawl apportionment of blackgill should be 60 percent to limited entry and 40 percent to open access fixed gears. Furthermore, the blackgill HG automatically enacted a sorting requirement and thus the quality of landings data have been improved (i.e., reporting occurs at the species level instead of estimates derived from species composition). Data from PacFIN indicates that blackgill landings have decreased since the implementation of these HGs. In November 2014, we will receive the 2013 GM Report which will inform whether the mortality (landings plus discard) was within the HG.

A similar concept could be considered for the component species within the Slope Rockfish complex and is evaluated herein. Instead of specifying a HG at the species level, a HG could be set for multiple species. For example, the HG for this case would be defined as the sum of the rougheye rockfish, blackspotted rockfish, and shortraker rockfish ABCs (= 204 mt for 2015 and 209 mt for 2016) shown in Agenda Item C.8.a, Attachment 1, Table 2 and Agenda Item C.8.a. Attachment 2, Table 2). Under Agenda Item C.9, the Council can further consider whether a trawl/non-trawl and/or within trawl HG is necessary.

Allocative Steps within the Alternatives

Managing Rougheye/Blackspotted/Shortraker with a HG within the Slope Rockfish Complex North

The current process for establishing the fishery HG for the Slope Rockfish complex is to first subtract anticipated groundfish mortality in incidental open access fisheries, research, exempted fishing permits, and treaty tribal fisheries. The fishery HG is then allocated 81 percent to the trawl sector and 19 percent to the non-trawl sector, based on the allocations specified in the FMP.

In the event the Council adopts a rougheye/blackspotted/shortraker rockfish HG, it is our understanding that the HG would be implemented within the trawl allocation and/or within the non-trawl allocation. The Council could also consider establishing a rougheye rockfish HG between shorebased IFQ fishery and the at-sea sector. The GMT offers the following flowchart as an example (i.e., the ACL is only an example) of where the various HGs could be implemented. The short-hand R/S is used to indicate the combined rougheye/blackspotted/shortraker HG.

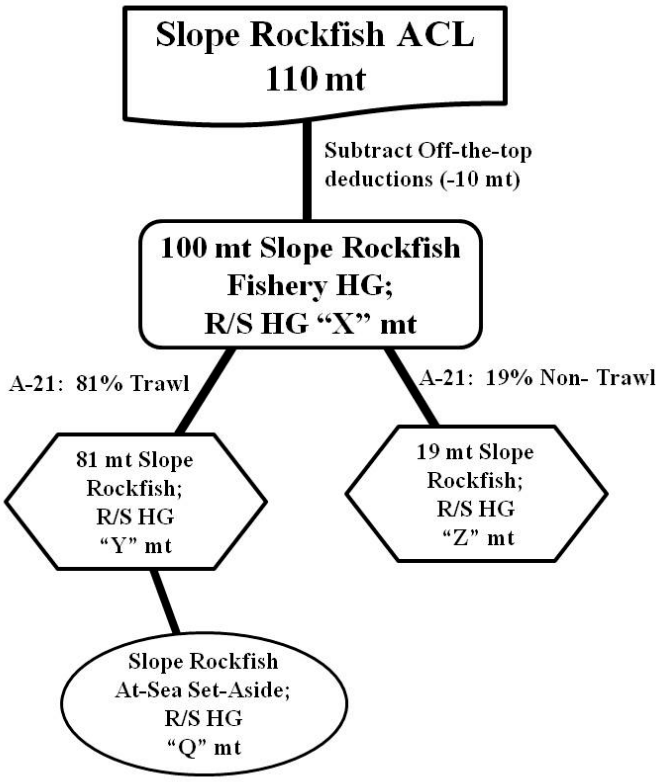

Figure 1. Example of where rougheye/blackspotted/shortraker (R/S) HGs could be implemented. The slope rockfish ACL of 100 mt is for example purposes only.

Managing Rougheye and Shortraker in a Coastwide Complex

In the NMFS report (Agenda Item C.8.a Attachment 2), potential Council decision points are highlighted in Figure 1. The report notes that the need to calculate a fishery HG is based on the need to further allocate the ACL (i.e., whether with HGs or more formal trawl and non-trawl allocations). If there are no sector-specific HGs or allocations, and all sectors are managed under a single ACL, then it becomes more difficult to establish sector-specific tools, such as trip limits for non-trawl or IFQ for the trawl fleet, to keep catch within the ACL.

The GMT notes that the process for the majority of stocks and complexes is to remove the off-the-top deductions from the ACL, establish a fishery HG, and establish trawl and non-trawl allocations - either formal FMP amendments or two-year (see Tables 10-13, Agenda Item C.4.a, Supplemental Revised Attachment 2). The species that do not follow this process are, for the most part, nearshore species that are managed by the states.

In the event the Council chooses to establish a fishery HG and generate trawl and non-trawl allocations, the GMT notes that two-year allocations for rougheye and shortraker could be established. Allocations could be informed by using data in a) Agenda Item C.4.a, Attachment 3, which displays the trawl and non-trawl mortality estimates for rougheye/blackspotted and b) the NMFS report which contains coastwide mortality estimates of rougheye/blackspotted and shortraker. Another table should be created to show historical catches of the species that remain in the Slope Rockfish complexes north and south of 40°10 N. latitude when rougheye and shortraker are removed. The Council could review the historical data and anticipated future catches to determine whether the Amendment 21 allocation is still appropriate for the new Slope Rockfish complexes north and south of 40°10 N. latitude (i.e., without rougheye and shortraker) and consistent with the original objectives. In the event the Council decides the Amendment 21 allocation is no longer applicable, an FMP amendment would be needed and a two-year or long term allocation could be established.

Table 1 contains a comparison of the harvest specifications (ACL vs. HG) and management options available for the Slope Rockfish complex. Options and measures in Table 1 that result in sorting of rougheye - e.g., implementing a scientific sorting requirement, a HG, a coastwide rougheye/shortraker ACL, or stock-specific harvest specifications for rougheye rockfish - would provide more timely information to industry and managers, compared to No Action. Such information could also be used to facilitate voluntary measures to reduce rougheye rockfish mortality.

Table 1. Comparison of management measures available under current management, management of R/S with HGs within the Slope Rockfish complexes (N&S), or creating a new coastwide R/S complex. The management measures shown in the table will be discussed in more detail in the C.9 statement.

Management Measure	Current management (R/S within the Slope (N&S) ACLs)	Managing R/S with a combined HG within the Slope (N&S) ACLs	Create a new coastwide R/S complex and manage the complex with a coastwide ACL	Comments
HG	No	Yes	Yes	-Implementation of a HG requires sorting on fish tickets -Because sorting is required inseason tracking is more accurate over the long term and timely
Scientific Sorting Requirement	No	HG has a sorting requirement (Note: A scientific sorting requirement could be added in lieu of a HG and similar benefits would occur)	ACL has a sorting requirement	-Because sorting is required inseason tracking is more accurate over the long term and timely
Trip limits	Yes (for non-trawl, no sublimit)	Yes, including a sublimit for R/S	Yes, R/S trip limits needed	-No difference in management measures between the two Action Alternatives
IFQ	Issued at the Complex level, not R/S	Issued at the Complex level, not R/S	Options A-C = No Option D = Yes	-R/S complex could have HGs established within IFQ sectors -No difference in management measures between the two Alternatives.
RCA	Yes	Yes	Yes	-No difference in management measures between the two Action Alternatives -May need to establish lines that approximate deeper depths

Management Measure	Current management (R/S within the Slope (N&S) ACLs)	Managing R/S with a combined HG within the Slope (N&S) ACLs	Create a new coastwide R/S complex and manage the complex with a coastwide ACL	Comments
Excluder Device	No	Yes	Yes	-May be disruptive to industry, particularly in high whiting abundance years/areas.
GCA	No	Yes	Yes	-May be disruptive to industry under either Action Alternative. -Implementing broad area closures would be in conflict to industry requests for increased accountability and opening of RCA closure areas

Average catches of rougheye rockfish among the sectors have had a high degree of inter-annual variability due to market demands, distribution and composition of target species (e.g., Pacific whiting), and environmental conditions. The GMT notes that this pattern was also observed with the dogfish mortality impacts analyzed in management measures (Agenda Item C.4.b, REVISED GMT Report). However, the comparison may be valid in that there may be methods in which the Council could further explore complex reorganization as another management measure tool to address controlling catch for stocks that have a recent history of exceeding their contribution OFL/ABC to the complex OFL/ABC. It may be beneficial for the Council to explore strategies that preserve aspects of the inter-annual variability in a manner that avoids some of the disruptions, according to some industry comments, associated with IFQ management, as might be avoided in the NMFS report (options A-C decision points) on slope rockfish reorganization (Agenda Item C.8.a, Attachment 2). However, when ascertaining the appropriate level of risk of balancing increased voluntary industry co-management along with inter-annual/sector variability preservation, it will be important for industry to provide their strategies of controlling catch in advance, and for the Council to determine if voluntary plans to reduce catch are sufficient. The GMT reviewed the public comments in Agenda Item C.4., which applied specifically to the subject matter under this agenda item. The GMT would like to acknowledge the joint industry letter (Agenda Item C.8.c. Supplemental Public Comment 5) and recognize that they have proactively and cooperatively taken the first step to outline their proposed strategies.

Sector-specific ACLs can be specified, especially in cases where a sector has a formal, long-term allocation of the harvestable surplus of a stock or stock complex. Sector-specific ACLs may serve as the basis for invoking adaptive management measures (not to be confused with accountability measures). However, inter-sector HGs may be more appropriate in certain circumstances where greater flexibility is needed. In either scenario, increased regional place-

based management may be advanced, while also ensuring that a proper balance is developed coastwide in preventing OFL, ABC, and ACLs from being exceeded.

If the Council were to explore application of the mixed stock exception in this situation, continued mortality exceeding F_{MSY} is permissible in the interim if the appropriate conditions are met as stated in the National Standard Guidelines (e.g., the stock is not overfished). This is a larger issue that should be discussed at greater length outside the specifics of alternatives related to rougheye rockfish. If the mixed stock exception is not applied, then if ACLs are exceeded more than once in the last four years then accountability measures (AMs), such as increasing catch monitoring or increasing stock sampling rates for certain complexes (as in the NMFS proposed R/S complex), may need to be implemented. Inseason adjustments to fisheries may also be needed if industry is not successful in its voluntary catch control efforts, or additional AMs, including setting an annual catch target (ACT), may need to be implemented.

Use of Rockfish Conservation Areas

Stocks fluctuate in temporal and geographic patterns, with some more variable than others. Therefore, prediction of future fishing opportunities is difficult for certain stocks given ecosystem, regulatory, and market changes. Currently, RCA lines are only analyzed and available for use in inseason management out to 250 fathoms, therefore the Council may wish to consider developing deeper management lines for annual or temporary period closures. Further analysis would be required before the Council is able to utilize deeper management lines until such lines could be considered routine relative to inseason rulemaking in order to maintain compliance with: (1) the Administrative Procedures Act (APA) requirements for waiving of notice and comment; and (2) the National Environmental Policy Act (NEPA). During public comment on Agenda Item C.4, an industry member suggested management lines might be needed deeper than the existing 250 fathom lines. For example, there is some evidence of rockfish distribution extending to low oxygen depths well beyond 250 fm (e.g., Field and Pearson 2011). However, it may be important for these RCA lines to be drawn across a wide variety of latitudinal locations to enable as much precision as possible, without unnecessarily compromising access to target species. The GMT envisions such closures to be more temporary in duration than RCAs of the past. However, the GMT notes that the success of voluntary avoidance measures may depend on the incentives in place (e.g., the cost of bycatch avoidance vs. the threat of more stringent regulations in the future). The level of real-time and near real-time precision, as seen this week by the at-sea and shoreside whiting industry, allows for such voluntary measures to be applied due to industry agreements that waive data confidentiality concerns and provide for real-time feedback among the fleet.

Costs to Industry/Management

While the focus of this action to date has primarily been about improving compliance with the National Standard 1 Guidelines, which focus on preventing overfishing, the GMT notes that there are other National Standard Guidelines that need to be considered. For example, National Standard 7 states, "Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication." Likewise, National Standard 8 requires that conservation and management measures ". . . utilize social and economic data to . . . (A) provide for the sustained participation of [fishing] communities and (B) to the extent practicable, minimize adverse economic impacts to such communities."

Currently, the available socio-economic analyses are incomplete. There is a cost to keep rougheye rockfish within either a HG or an ACL, or by closing large areas. The more species that are individually managed, the more complex and costly it may be to sample and track. Additionally, we have heard from industry that there will be realized costs in terms of things like required gear purchases, lost fishing grounds, lost target catch, and increased operational costs while avoiding bycatch, etc. (Agenda Item F.8.b, Supplemental GAP Report, June 2013). There will also be costs to management and monitoring agencies particularly if current funding levels for state sampling programs remains static; costs could include impacts to data quality, state sampling goals, port coverage levels, and/or personnel and time (Agenda Item G.8.b, Supplemental GMT Report, June 2013). For example, the GMT conducted a survey of state port samplers and managers in the spring of 2013. Rougheye rockfish was mentioned as a species that was frequently encountered and sometimes mistaken for shortraker, blackspotted, blackgill, and Pacific ocean perch rockfishes, particularly juvenile or smaller-sized fish. One possible cost to state port sampling programs related to this is the training of agency staff and fishing industry personnel to correctly identify species with new sorting requirements, particularly if turnover of personnel is frequent (Agenda Item G.8.b, GMT Report 3, September 2013) and the existing number of market categories has increased over time (as was stated in Oregon Department of Fish and Wildlife's Agenda Item F.8.b, ODFW Report, June 2013). Please note that the focus of the GMT survey was state sampling personnel; possible costs to fishing operations are better articulated by the fishing industry itself.

Future Catch Projections

The GMT has used a trip limit model for the fixed gear sectors to evaluate slope rockfish trip limits, although we have not specifically examined rougheye rockfish. The GMT does not have a catch projection model for the trawl sectors (i.e., IFQ, Catcher Processor (CP), and Mothership (MS)) for slope rockfish or rougheye rockfish. We could look at what has happened in the past and make some assumptions about what catches might be in the future; however, that would not take into account any changes in management structure or real time responses by industry. Given the recent rationalization of the trawl fishery, such evaluations are more difficult.

In 2012, our understanding of rougheye rockfish stock status and sustainable harvest levels changed with the indications from the data-moderate stock assessment results, then again following the full assessment during 2013 (see Appendix 1). We were informed that once industry became aware of the situation, they began taking measures to reduce impacts to rougheye rockfish on their own. The GMT is having difficulty in figuring out how to link this new information with what has happened in the past in order to predict what might happen in the future.

The GMT conducted a preliminary simulation analysis of the probability of rougheye rockfish catches exceeding the component OFL contribution under alternative assumptions about future catch, including sampling catches from distributions of catch by sector for different periods of recent catch. This analysis is similar to the GMT analysis of at-sea set-asides for spiny dogfish (Section B.9 in Agenda Item C.4.b, REVISED 2 GMT Report, April 2014). This analysis allows a more probabilistic view of the risk of exceeding reference points, but the value of all such

analyses is be limited by the extent to which future fishing conditions match either of these time periods of the past, but may provide a better understanding of the variability among years and recent time periods.

Preliminary results are shown in Figure 2. Like with the at-sea set aside analysis in Appendix B, we calculated means and variance in annual catch by sector and used the random number generator to simulate sector level catches that we then summed to a total catch. To explore differences in patterns over time, we ran three simulations: (1) all years (2002-2012), (2) a recent period (2008-2012); and (3) an early period (2002-2007). We assumed that catch follows a lognormal pattern. We compared the simulated total catch by simulation and compared it against the 2015 ABC of 188.1 mt for rougheye. We chose the ABC because it is the maximum level at which the ACL could be set if rougheye were individually managed.

The preliminary results produced overages of the ABC in 46 percent of the simulation run for the all years' scenario, 89 percent of simulation runs for the recent years' scenario, and only 10 percent of runs in the early years' scenario. As with the at-sea spiny dogfish set aside analysis, looking to the more than once in four years standard from the National Standard Guidelines, these results suggest that rougheye catches would be more likely than not to fail that standard unless catch returns to the patterns seen between 2002 and 2007.

GMT Report Summary and Recommendation

1. The GMT recommends the Council consider the information contained in this report including the efficacy of alternatives and management measures – including voluntary industry avoidance – to reduce rougheye rockfish mortality, in light of variability in historical catches, probability of exceeding the harvest specifications, costs to industry and management, etc.

2. Some on the GMT suggest that the Council focus their discussions on
   (a) retaining the current slope rockfish complex configurations north and south of 40°10 N. latitude with consideration for a combined HG for rougheye/blackspotted/shortraker rockfish,
   (b) pulling rougheye/blackspotted/shortraker rockfish from the slope rockfish complex and create a new complex that contains the three species (i.e., Agenda Item C.8.a Attachment 2)
   (c) implementing stock-specific harvest specifications for rougheye/blackspotted.

   The rationale for this recommendation is that the analysis required for Alternatives 1, 2, and 3 (Agenda Item C.8.a Attachment 1) are more complex and potentially not feasible by the June Briefing Book deadline.

Table 2. Binomial probabilities of experience 0-4 total overages over a four year period for given probabilities of annual overages.

# of overages	Annual prob. of an ACL overage																		
	0.05	**0.10**	**0.15**	**0.20**	**0.25**	**0.30**	**0.35**	**0.386**	**0.40**	**0.45**	**0.50**	**0.55**	**0.60**	**0.65**	**0.70**	**0.75**	**0.80**	**0.85**	**0.90**
0	81%	66%	52%	41%	32%	24%	18%	14%	13%	9%	6%	4%	3%	2%	1%	0%	0%	0%	0%
1	17%	29%	37%	41%	42%	41%	38%	36%	35%	30%	25%	20%	15%	11%	8%	5%	3%	1%	0%
2	1%	5%	10%	15%	21%	26%	31%	34%	35%	37%	38%	37%	35%	31%	26%	21%	15%	10%	5%
3	0%	0%	1%	3%	5%	8%	11%	14%	15%	20%	25%	30%	35%	38%	41%	42%	41%	37%	29%
4	0%	0%	0%	0%	0%	1%	2%	2%	3%	4%	6%	9%	13%	18%	24%	32%	41%	52%	66%
Prob. > 1 overage	1%	5%	11%	18%	26%	35%	44%	50%	52%	61%	69%	76%	82%	87%	92%	95%	97%	99%	100%

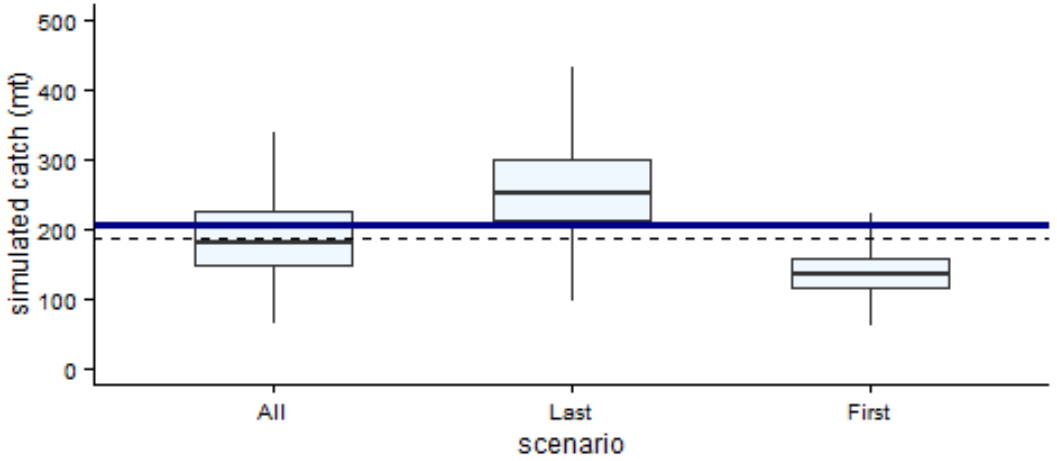

Figure 2. Preliminary results from simulations of sector level annual rougheye/blackspotted catches. The Y-axis is truncated to show more detail in the region of the ABC (dotted line) and OFL (solid line). The three scenarios are: All (2002-2012), Last (2008-2012), First (2002-2007).

Appendix 1. Rougheye rockfish timeline 2009 through 2014. Summary and references of advisory body reports (GMT, GAP, & SSC), March 2009 through April 2014.

Year	Event
March 2009	Request from the GAP to consider increasing minor slope rockfish trip limits including darkblotched rockfish in the LE non-whiting trawl sector (Agenda Item G.2.b, Supplemental GMT Report). The GMT recommended consideration of increases to this trip limit.
April 2009	Request from the GAP to consider increasing minor slope rockfish trip limits if darkblotched rockfish were available. The GMT recommended waiting until June when more data would be available (Agenda Item F.2.b, Supplemental GMT Report).
June 2009	Requests were made in March and April for the GMT to analyze increases in minor slope rockfish trip limits for LE trawl. The GMT did not recommend increases due to darkblotched catch levels (Agenda Item E.7.b, Supplemental GMT Report).
September 2009	The GMT received requests to consider changes to minor slope rockfish cumulative trip limits and RCA boundaries for the LE non-whiting trawl fishery (Agenda Item E.4.b, Supplemental REVISED GMT Report). The GMT recommended considering these changes.
November 2009	The GMT analyzed proposed changes to minor slope rockfish trip limits for LE non-whiting trawl (Agenda Item G.10.b, Supplemental GMT Report).
March 2010	The GMT evaluated vulnerability scores for all groundfish within the west coast groundfish FMP (Agenda Item E.2.b, GMT Report). Rougheye and shortraker rockfishes were found to have high vulnerability scores, with vulnerability measured relative to productivity of the stock, and susceptibility measured as the potential impact of fishing activities on the stock. The GMT then recommended that the Council consider rougheye and shortraker rockfishes (as well as China, copper, and quillback rockfishes) for full stock assessments (Agenda Item E.2.b, Supplemental GMT Report). The GMT suggested that rougheye and shortraker could serve as indicator species for the minor slope rockfish complexes. Also, the GMT recommended maintaining the existing minor slope rockfish trip limits for the shorebased whiting EFP (Agenda Item E.5.b, Supplemental GMT Report). The GMT also examined minor slope rockfish trip limits for a 2010 Exempted Fishing Permit (EFP) proposal and recommended trip limits (Agenda Item E.5.b, Supplemental GMT Report).

Year	Event
April 2010	POP and darkblotched rockfishes limit fishing activity on the slope (Agenda Item I.4.b, Supplemental GMT Report 3). Also, the GMT suggested reducing LE non-whiting trip limits for minor slope rockfishes including darkblotched rockfish (Agenda Item I.5.b, Supplemental GMT Report). GAP refers to the GMT statement about rougheye and shortraker being two of the more vulnerability species in the minor slope rockfish complex (Agenda Item I.2.b, Supplemental GAP Report). The GMT reviewed preliminary data and was concerned that the catch of darkblotched rockfish was higher than previously projected. The GMT recommended reducing the minor slope and darkblotched rockfish trip limit for the LE non-whiting trawl sector for the remainder of the year (Agenda Item I.5.b, Supplemental GMT Report).
June 2010	Regarding the Council's preliminary preferred stock complex alternative, the GMT stated that "sub-complex numbers do not take into consideration reallocation of catch from a bycatch species (e.g. splitnose) to a vulnerable species (e.g. rougheye). This is similar to the issue raised with greenstriped and quillback rockfish [in the discussion] above except that catch is shifted to a more vulnerable species within a sub-complex (i.e. minor slope rockfish north) rather than between sub-complexes. To avoid this, the Council could adopt a low P* value for each of the non-target species that have low vulnerability to reduce their overall contribution to the sub-complex OFL" (Agenda Item B.3.b, GMT Report). Table of catch by sector for rockfish complexes, 2006-08 (Agenda Item B.3.b, Supplemental GMT Report 2).
September 2010	The GMT recommended considering increasing the minor slope and darkblotched rockfish trip limit for the LE non-whiting trawl sector (Agenda Item I.2.b, Supplemental GMT Report).
October 2010	At a working session, the GMT discussed stock complex data needs and data timelines, particularly related to the Slope Rockfish complex and species such as rougheye rockfish.
November 2010	The GMT recommended the following: "For LE non-whiting trawl, adjust seaward trawl RCA boundary to 250 fm and close minor slope rockfish limit beginning December 1, and request voluntary slope rockfish avoidance by the fleet in the meantime to stay within the darkblotched OY; For LE whiting trawl consider adjustments to sector-specific darkblotched bycatch limits and/or closure as needed to stay within the darkblotched OY" (Agenda Item H.3.b, Supplemental GMT Report).
January 2011	100% observer coverage of the IFQ sector, increasing the data available for rougheye rockfish
July 2011	The GMT first made a formal request for rougheye rockfish data, among other data, from the West Coast Groundfish Observer Program (WCGOP).

Year	Event
September 2011	From a GMT Report: "If the Council wanted to retain the status quo configuration of a particular complex or all complexes, yet also follow NMFS guidance to make progress in meeting the NS1 guidelines, the GMT notes that there are ways to do that through changes in management measures for stocks within complexes. The Council is scheduled to make its preliminary decision on management measures next April and its final decision in June. For example, if the Council wished to address the issue of the high splitnose OFL contribution to the minor slope rockfish north subcomplex and its potential impact on vulnerable species such as rougheye rockfish, the Council could consider adopting a sorting requirement and subcomplex trip limits for rougheye that prevents it being a large portion of the minor slope north limits. This is similar to the approach taken for blue rockfish within the minor nearshore south subcomplex last cycle" (Agenda Item G.5.b, Supplemental GMT Report). One recommendation from this report: "Consider differential management measures for component species within stock complexes as a tool to better meet the NS1 guidelines this cycle" (Agenda Item G.5.b, Supplemental GMT Report).
November 2011	Catch of rougheye, aurora, and shortraker: "Based on the preliminary investigation of groundfish removals, three slope species in particular have consistently experienced catches higher than their OFL contributions: aurora, rougheye, and shortraker rockfishes (Table 1). These estimates do not include catch from shoreside whiting or recreational fisheries. Shoreside whiting will bump up catch of some species like rougheye, yet recreational catches will not. These three species also exhibit high vulnerability scores (PSA scores of 2.10, 2.27 and 2.25, respectively) demonstrating they are of management concern. In particular, the PSA productivity scores of these species are low, indicating low resilience to overfishing and underscoring the need for management measures that effectively control catch to their respective OFLs and ABCs. More detailed explorations of these data sets may be possible over the winter; however, as shown in Table 1, this first examination clearly identifies the conservation concern. We have been unable to explore the geographic breakdown of catch in detail yet expect that the minor slope rockfish north complex is of most concern. Over 99% of the OFLs and ABCs for rougheye and shortraker are apportioned to that complex. Aurora rockfish is more evenly split between the north and south complexes and so will have to be looked at closely. Table 1: Table 1. Comparison of Contributing Harvest Specifications with Draft Mortality Estimates for Species in the Slope Rockfish Complex, Coastwide" (Agenda Item E.5.b, Supplemental GMT Report 3). Subsequent GMT report: "The information we presented under Agenda Item E.5 showed that catches of aurora, shortraker, and rougheye rockfishes have been greater than the coastwide OFL for some (if not all) years. Table 3 shows that most of the catches have come in the bottom trawl sector. More time is needed to look into these catch estimates and to explore, to the extent possible, information on the area of catch, and investigate the management measures available by sector to control catch to prevent overfishing. Current estimates have catch of the north minor slope rockfish complex in the IFQ fishery at only 20 percent of the overall catch of that complex in 2010. (Attachment 1) identifies the basic options for addressing catch of aurora, shortraker, and rougheye in the various sectors" (Agenda Item E.9.b, Supplemental GMT Report 3).

Year	Event
March 2012	The GAP recommends aurora rockfish for a full stock assessment, as an indicator stock for "the most vulnerable slope rockfish stocks (i.e., aurora, rougheye, and shortraker rockfish)" in the slope rockfish complex and due to data availability (Agenda Item F.5.b, Supplemental GAP Report).
April 2012	GMT comments on preliminary preferred management measures for rougheye, shortraker, and aurora sorting requirements N of 40 deg. 10' N latitude (Agenda Item I.3.b, Supplemental GMT Report). The GAP "agreed that sorting for these species should be done according to current regulations (that sorting should occur before the first weighing of the fish) in order to obtain better data" (Agenda Item I.3.b, Supplemental GAP Report).
June 2012	The GMT recommended that if bocaccio was planned as an update assessment, rougheye rockfish should be considered for a full assessment in 2013 (Agenda Item D.3.b, Supplemental GMT Report). GMT discussion on final management measures for rougheye, shortraker, and aurora sorting requirements N of 40 deg. 10' N latitude (Agenda Item D.5.b, Supplemental GMT Report); GAP agrees (Agenda Item D.5.b, Supplemental GAP Report).
September 2012	The GMT recommended adding rougheye rockfish as the last available full stock assessment slot for 2013: "On the question of which species to select for the last full assessment slot, the GMT recommends that rougheye take the last available assessment slot. Yellowtail is of low management concern since it has been so lightly exploited in recent decades. We think that will hold true even if additional targeting takes place in the individual fishing quota (IFQ) fishery. Rougheye is of greater concern because it is highly vulnerable and recent exploitation is above the estimate of its overfishing limit contribution to the minor slope rockfish north complex. In addition, there is some concern that there is relatively little survey data available for rougheye; a critical limitation for conducting a Category 2 data-moderate assessment. Moreover, it is our understanding that there is more data (e.g., age data from trawl survey and biological data from catch sampling over the last ten years) to contribute to a full rougheye rockfish assessment, data that cannot be used in the data-moderate approaches. Lastly, a data moderate assessment would be an incomplete and inefficient way to address concern over the potential status of rougheye now. If the Council has that concern, as some of us do, a full assessment for rougheye would provide a more robust picture of the status and sustainable harvest level than a data moderate assessment could provide. In addition, as we understand it, the data situation will not change significantly between this and the next cycle" (Agenda Item H.3.b, Supplemental Report 2). SSC recommended either rougheye or yellowtail rockfish for a full assessment (noting both should be fully assessed), stating that rougheye has the highest vulnerability score of all groundfish FMP species and has never been assessed, whereas yellowtail was first assessed in 2005 (Agenda Item H.3.b, Supplemental SSC Report). The GAP provided their prioritized list of stocks for data moderate assessments, including rougheye and it's high PSA score (Agenda Item H.3.b, Supplemental GAP Report).

Year	Event
October 2012	2011 Groundfish Mortality Report published by WCGOP, the first report to report rougheye rockfish discards specifically, available at: http://www.nwfsc.noaa.gov/research/divisions/fram/observation/data_products/species_management.cfm
December 2012	The GMT received the WCGOP data, including data for rougheye rockfish. Corrections were made and an updated, final dataset was received in April 2013.
April 2013	"Based on the materials reviewed and produced to date, the GMT developed the following prioritization based on the Productivity and Susceptibility Assessment (PSA) results and historical harvest levels. An alternative approach for prioritization could be based on the ease of application and least impact to fisheries (see section below on the costs of changing stock complexes). Slope Rockfish. This complex consists of species that are difficult to discern from one another (e.g., aurora rockfish from splitnose rockfish; shortraker rockfish from rougheye rockfish) and contains species for which vulnerability is high (e.g., rougheye and shortraker rockfish). In addition, evidence suggests that some components of this complex may have been harvested at levels much higher than their ABC contributions to the complex. The GMT recommends that the slope rockfish complex be given high priority for restructuring, taking into account information from the upcoming aurora and rougheye stock assessments" due to the high vulnerability scores of these species (Agenda Item D.3.b, Supplemental GMT Report). The GMT also mentions that shortraker and rougheye are difficult to distinguish so it may make sense to keep them together when restructuring the slope complex (Agenda Item D.3.b, Supplemental GMT Report). This GMT report also includes the following: "Progress Towards Reconfiguring Stock Complexes. The Situation Summary (Agenda Item D.3) provides links to some statements that describe progress towards reconfiguring stock complexes. In addition to these statements, the GMT provided a detailed overview of work towards this goal in Appendix C of the 2013-2014 FEIS Harvest Specifications and Management Measures (FEIS 2013). In addition to this overview, Appendix C of the FEIS (2013) provides information regarding some costs and benefits of moving aurora, shortraker, and rougheye rockfish out of complexes and managing to their own ACL. This information will be considered as the GMT moves forward with creating new alternatives and tools to evaluate the alternatives. A sample schedule for achieving the goal of reconfiguring stock complexes was shown in Agenda Item G.5.b, Supplemental GMT Report, 2011, and reproduced in Figure 1. Even though progress has been delayed relative to the original plan, this figure clearly illustrates the amount of work accomplished by the Council, Council Staff, and advisory bodies towards achieving this objective. It also illustrates what remains to be done. This figure shows that we are near the end and that most of the necessary background work and analyses have been accomplished" (Agenda Item D.3.b, Supplemental GMT Report).

Year	Event

April 2013 (cont.)	The GAP recommends analysis of an alternative where aurora and rougheye rockfishes are removed from the Slope Rockfish complex: "Both of these stocks will be assessed this summer and the Council may desire the flexibility to manage these stocks with stock-specific harvest specifications. In the event one or both of these stocks is determined to be overfished, an option for managing these stocks outside of a complex may be needed" (Agenda Item D.3.b, Supplemental GAP Report).
June 2013	GMT discussion of two clustering approaches for evaluating co-occurrence of stocks with results including "a notable grouping of yellowmouth, bank, shortraker, sharpchin, blackgill, and rougheye rockfishes" (Agenda Item F.8.b, Supplemental GMT Report). Discussion of rougheye in/out of Slope Rockfish complex, co-occurrence/c-score information, and component OFL contribution (Agenda Item F.8.b, Supplemental GMT Report 2). The GAP discusses their support for the Slope Rockfish complex No Action alternative (Agenda Item F.8.b, Supplemental GAP Report).
September 2013	The GMT commented on the rougheye and aurora stock assessments for use in management (Agenda Item G.3.b, Supplemental GMT Report). Selected species scorecard, "Rougheye rockfish is the only species appears to be harvested at or above the component OFL" (Agenda Item G.5.b, Supplemental GMT Report 2). All GMT reports and supplemental reports related to stock complex restructuring including method for evaluation stock complexes, classification of stocks in the groundfish FMP, port sampling survey results, etc.: Agenda Item G.8. The GAP recommended keeping the status quo stock complex for slope rockfish (Agenda Item G.8.b, Supplemental GAP Report). The SSC statement relative to rougheye/blackspotted assessment: Agenda Item G.3.b, Supplemental SSC Report. The GAP supported the recommendation to conduct a full assessment for rougheye/blackspotted rockfish (Agenda Item G.3.b, Supplemental GAP Report). The SSC's recommended 2015 and 2016 OFLs for slope rockfish complex species including rougheye (Agenda Item G.7.b, Supplemental SSC Report).
November 2013	NMFS Report on minor slope rockfish complex: Agenda Item H.4.b, Supplemental NMFS Report. The GMT discusses risk and stock complex evaluations (Agenda Item H.4.b, Supplemental GMT Report). Table of average catch estimates for FMP species flagged by the GMT including unidentified rougheye/shortraker (Agenda Item H.4.b, Supplemental GMT Report 2).The GAP "recommends the Council defer action on this issue to provide more time for NMFS to analyze the issue, which would also provide time for NMFS to work with the affected industries to develop a suite of management approaches for Council consideration. Finally, the GAP recommends NMFS (1) provide notice to the fishing industry that contemplation of future management measures for rougheye rockfish, blackgill rockfish, and shortraker rockfish is underway and (2) that NMFS is seeking input from the fishing industry about measures (both voluntary and regulatory) that would help to maintain catches of these species within their harvest targets "(Agenda Item H.4.b, Supplemental GAP Report).

Year	**Event**

November 2013 (cont.)	The SSC designated the rougheye/blackspotted assessment as category 1 (Agenda Item H.5.b, Supplemental SSC Report). GMT table of species or complexes where the Council adopted P* values lower than 0.45, includes rougheye (Agenda Item H.6.b, Supplemental GMT Report 2). The GMT stated that: "Species that the Council may be interested in keeping in the complex and managing with HGs: rougheye N.; shortraker N.; China N.of either 42° or 40°10'; copper N. of either 42°, or 40°10,' or coastwide", also proposed management measures such as GCAs and rougheye excluder device for trawl vessels (Agenda Item H.10.b, Supplemental GMT Report). GMT discussion regarding "Considerations for Management of Stocks for which Mortality has Regularly Exceeded the ABC or OFL of a Component Stock of a Complex" and selected species scorecard (Agenda Item H.10.b, Supplemental GMT Report 4). The GMT received a request to increase the open access slope rockfish complex bimonthly trip limits for south of 40°10' N. latitude for 2014, the request was that the current 10,000 pound bimonthly trip limits be increased subject to the Council's preference. The GMT concluded that there is not enough time to evaluate and analyze an increase to the slope rockfish complex in time for implementation by January 1, 2014. Linked to that is the team's concern about what the estimated bycatch harvest of blackgill rockfish would be, if such a slope rockfish complex increase were implemented. Another concern is the possibility of an unanticipated sizable increase in the number of participants that would move into this fishery as a result of a trip limit increase" (Agenda Item H.9. b, Supplemental GMT Report).
March 2014	GAP discussion on the proposal to remove rougheye from the Slope Rockfish complex, noting that doing so "will cause tremendous disruption to the commercial groundfish fleets" (Agenda Item D.5.b, Supplemental GAP Report).
April 2014	Agenda Item C.4 included GMT analysis of proposed harvest specifications and management measures, and Council decision on a PPA for restructuring the slope rockfish complex. Status quo would keep rougheye rockfish within this complex. More to come under Agenda Item C.8 and C.9 at this meeting.