

GROUND FISH MANAGEMENT TEAM REPORT ON THE CLASSIFICATION OF THE OTHER FISH AND LIKE STOCKS IN THE GROUND FISH FMP

Per Council direction given at the last meeting, this report continues the groundfish management team's (GMT's) suggested approach to evaluating the Groundfish fishery management plan's (FMP's) classification of stocks but focused just on those related to the Other Fish stock complex.

We described the approach and basic analysis that followed from it in two reports from September 2013:

- [Agenda Item G.8.b, GMT Report 2](#): Groundfish Management Team Report on the Classification of Stocks in the Groundfish Fishery Management Plan
- [Agenda Item G.8.b, Supplemental GMT Report 6](#)

We only briefly cover the background and data presented in those reports. In this report we provide an update on progress and present a set of alternatives for the Council to consider. We plan on providing more targeted background and advice to the Council in a supplemental report, presentation to the Council, or both. Some key tables from those reports—reporting the average catch, PSA vulnerability scores, and other metrics used to gauge relative need for conservation and management—are reproduced at the end of this report.

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Recap of the Approach and Analysis

The 2009 revisions to the National Standard 1 Guidelines (“Guidelines”) suggested a new classification scheme for stocks and suggested that existing FMPs be evaluated against it. The Guidelines recommended an “in the fishery” classification for target stocks and non-target stocks that are valuable or otherwise desirable or vulnerable to overfishing or becoming overfished. The annual catch limit (ACL) requirement, which was the major focus of the revised Guidelines, is reserved for these “in the fishery” stocks. Other non-target stocks caught in the fishery could be classified as ecosystem component (EC) species and do not require ACLs.

As noted by the GMT in previous cycles, the basic problem statement noticed in initial evaluations was that species that are in the FMP currently, and hence “in the fishery” by default, are less vulnerable to the groundfish fisheries than certain species not listed in the FMP. To address this inconsistency, the Council would need to reclassify certain FMP stocks and/or non-FMP stocks as either “in the fishery” or as EC species. Put simply, the Guidelines and general principles of decision-making argue for treating species with similar conservation and management need similarly.

To aid the Council with this evaluation, the GMT used the most comprehensive dataset available for commercial and recreational catch, provided to us by the states and the West Coast Groundfish Observer Program (WCGOP), to look at all species caught in the groundfish and related fishery sectors. With FMP and non-FMP species combined, this dataset included over 500 different species and species categories. The GMT and Council staff had also scored the vulnerability of FMP and several non-FMP stocks using the Productivity and Susceptibility Analysis.

As described in the September 2013 [Agenda Item G.8.b, GMT Report 2](#), we filtered out many of the species caught in the groundfish fisheries so as to focus on vertebrate fish species caught predominately in federal waters and not managed under other FMPs or by the states. The species filtered out on those criteria are listed in that report. Then, to arrive at a narrower list of candidates for reclassification, as described in the September 2013 [Agenda Item G.8.b, Supplemental GMT Report 6](#), we flagged FMP species that had either less than 1 mt of average catch per year from 2007-2011 or more than a 1 mt of catch (rounded to the nearest mt) but less than 50 percent retention (i.e., 50 percent or more of the catch is discarded) and a PSA score of ~2.0 and lower. Then to create an overlapping range of non-FMP species, we included all stocks with an average catch per year of 1 mt and higher.

The intent was to apply transparent and objective criteria that flagged non-target stocks with questionable vulnerability to the fishery. As we stated in September, these criteria were also broad brush and not meant to provide decisive grounds for classification in the FMP. In this next step described here, we attempted to give more scrutiny to the criteria and other factors on a stock by stock basis for the stocks on the candidate list and those that might also be included for consideration.

Corrections to the September Analyses

We noted at least two corrections in our October discussions related to Table 1 in [Agenda Item G.8.b, Supplemental GMT Report 6](#). First, we should have filtered out Thornback Skate because

it appears to be encountered exclusively in state waters. Second, we left Spotted Ratfish off the candidate list when it should have qualified based on the criteria summarized above.

Potential Analysis Yet to Be Completed

As we have noted elsewhere, the federal government shutdown left us without input from the NMFS members of the GMT at our October meeting. One area this affected us in particular was that we were not able to look at the bottom trawl survey data to complete the analysis suggested by the SSC in September ([Agenda Item G.8.b, Supplemental SSC Report](#)). This analysis would help us better gauge if the average catch we report for the candidate stocks was likely to impact the stock or not. For instance, 10 mt of catch could be significant for a stock that is rare and/or unproductive or inconsequential for a stock that is very abundant and/or productive. We believe the analysis would be very informative for several stocks considered here, although not all, and hope to have it available when our NMFS colleagues are available to return to work.

On the List of Candidates Considered Here

The Council's direction was to consider only the Other Fish complex this cycle for reclassification of their FMP status. In questions and answers with the motion on the floor, members of the GMT had noted that the team had not anticipated that the Council would limit consideration of the FMP's stock classification at that point and so had not been rigorous in listing out all the potential Other Fish candidates in the report referred to in the Council's motion. To elaborate, the Council's motion referred to [Agenda Item G.8.b, Supplemental GMT Report 7](#), which considered alternatives for restructuring the Other Fish and other stock complexes. The team attempted to focus on the stock complex alternatives and on the "in the fishery" evaluation at the same time, yet the report writing efforts and discussion were necessarily separated because of time constraints and coordination between the two was not what the team hoped it would be. As a consequence, not every stock that could have been listed with the Other Fish in Report 7 was listed.

The main problem the team representatives attempted to communicate to the Council during discussion of the motion was that the "in the fishery" approach is one of relative comparison where like species are compared with like. Because the list of stocks considered in that Report 7 was incomplete, not all "like species" would be compared and contrasted at the same time leaving the potential for inconsistent treatment in the Council's final recommendation. As told to the Council during the question and answer session, the team has included all species here that it would have listed in Report 7 if time would have allowed. If the Council wishes to limit its reclassification recommendations to those species listed in Report 7, there may be a valid way to do so. We think there is value, however, in at least considering those species side by side with the fuller list presented here.

On a similar note, there is some concern among the team about conducting the "in the fishery" classification piecemeal. The reason is that the Council may make recommendations for the Other Fish related stocks that might be different if the Council were also considering the rockfishes and flatfishes. As noted below, however, the Guidelines suggest regular attention to the FMP's classification of stocks and so there should be opportunity to revisit any classification decisions based on new information and circumstances. Moreover, the species considered for reclassification are mainly those in marginal or questionable need of conservation and

management. The GMT sees this evaluation as addressing logical inconsistencies more so than pressing conservation risks. The FMP already has and will maintain those stocks most in need of conservation and management attention as “in the fishery.”

Again, what might be consistent with the National Standard Guidelines or otherwise acceptable interpretation of the Magnuson-Stevens Act is a matter for the Council to discuss with NMFS and National Oceanic and Atmospheric Administration (NOAA) General Counsel (GC). We recommend the Council seek clarification or correction of any of the interpretations and rationale we present here.

On the Feasibility of Calculating Overfishing Limits

During Council discussion in September on this motion, Council staff advised that it was important to know the list of candidate stocks so that overfishing levels (OFLs) could be requested. We all agree that OFLs are required and desirable for such stocks. Yet if given opportunity to respond, we would have pointed out that the question of whether an OFL could be calculated for a stock or not is one that follows after, logically speaking, from the classification question. The Guidelines speak to the relative need for conservation and management as the main factor to consider in classifying stocks in the FMP. And, the requirement for OFLs, acceptable biological catches (ABCs), and annual catch limits (ACLs) comes after the determination that the “in the fishery” classification is appropriated. To draw out the point, it would be theoretically possible to calculate OFLs for species that are in no appreciable need of conservation and management and for which the “in the fishery” classification is unnecessary. At the same time, it may be impractical over the short-term to calculate OFL given data and time constraints for stocks where the need for conservation and management is clear.

Our main point here is that whether or not OFLs could be calculated should not be the main factor for deciding to classify a stock as “in the fishery” or an EC species. OFLs for the new candidate stocks would certainly be informative to the question in that it provides a quantitative measure of how much fishing pressure a stock can take. Yet, again, an OFL could prove a stock to have very low vulnerability to overfishing; enough to suggest it would be best classified as an EC species. Shortbelly Rockfish is one such species in the FMP now with an OFL that we would likely have recommended for classifications as an EC species had the Council chosen to take up the full “in the fishery” evaluation.

With the federal government shutdown affecting NMFS, we are unsure of which species if any may have OFLs calculated in time to be reviewed at this meeting. The reality may be that OFLs are not achievable this cycle for one or more of the stocks this cycle. If so, the team recommends that these be viewed as scientific gaps to be filled in when practical to do so but not gaps that necessarily prevents the Council from making solid recommendations here. Yet these are matters on which the Council should seek advice from NMFS and NOAA GC. We do note that there are species in the FMP now without OFLs.

Lastly, the GMT recognizes that there may be practical considerations that arise for having stocks with undetermined OFLs in the FMP. We address these considerations more directly as part of the stock complex analysis and elsewhere.

The Problem with the Percent Retained Metric

As explained in our supplement report in September’s [Agenda Item G.8.b, Supplemental GMT Report 6](#), candidates for reclassification were identified using “less than 50 percent retained” as one of the selection criteria. We chose this factor based on the Guidelines, which advise that EC species classification can be used for non-target stocks that are not generally retained and then elaborate that occasional retention of a species would not rule it out as a possible EC species classification. The interpretation that follows is then that stocks with general or more than occasional retention should be classified as “in the fishery.”

In September we noted that our ability to apply this factor was limited because the landings of many species are reported on fish tickets in market categories that do not identify the species. We used Washington’s Miscellaneous Fish category as an example. Eelpouts and even Pacific Grenadier would be reported under this category and the state does not sample the landings to produce estimates of each species as it does for other market categories like Slope Rockfish. To calculate the percent retained, it is necessary to match observer records to fish tickets. And observers record discard on a species specific basis that makes matching to landings records difficult if not impractical for many of these stocks that haven’t received much management attention.

The Council specifically asked about the estimates for Pacific Grenadier. It provides a good example of the problem. Landings of Pacific Grenadier are reported in generic categories, again as Miscellaneous Marine Fish in Washington and mainly as “Grenadier” in California and Oregon. The observer records, in contrast, will report the catch as Pacific Grenadier, Giant Grenadier, etc. The result is that in our dataset Grenadier Unidentified—which represents mostly landed catch— appears to be highly retained and Pacific Grenadier and Giant Grenadier—which come from observer data—are fully discarded.

In the time available we could not better quantify the retention percentage for each species of grenadier. We have heard from port samplers and others that landings are mainly Pacific Grenadier, although we do not have quantified estimates of exactly how much. Yet using this anecdotal information we can conclude with some confidence that Giant Grenadier is almost certainly retained less than 50 percent of the time. And for Pacific Grenadier it is likely close to 50 percent. To illustrate, if we assume that all of the unidentified Grenadier catch in the dataset is Pacific Grenadier, then the overall retention percentage for the stock would be 47.6 percent. If we change the assumptions slightly so that Pacific Grenadier made up only 90 percent of the total unidentified Grenadier catch but then 100 percent of the landed portion, then the retention percentage would be 50.1 percent.

We could detail these calculations for the Council, yet more to the point, we would caution against using retention percentage as the decisive factor for classifying Pacific Grenadier or any stock as either in the fishery or an EC species. For one, we choose 50 percent for the filter arbitrarily because we saw a natural break in the data with most stocks being either highly retained or highly discarded. We could spend more time attempting to translate “generally retained” or “more than occasional retention” into percentages but, again, we recommend that the Council give fuller consideration to all the factors affecting the stock’s potential vulnerability to overfishing and its relative need for conservation and management. We used Spiny Dogfish as an example of why in an earlier report. Over 90 percent of Spiny Dogfish is discarded and yet its

need for conservation and management is pretty clear. Dogfish's relatively high susceptibility to the fishery is driven most by its co-occurrence with target species or unavoidability in fishing grounds. And its relatively low productivity increases its potential vulnerability to overfishing. Another problem the team noted with focusing on retention is that some species might turn out to be retained more because they are difficult to sort out from the rest of the catch rather than because they are marketable. It is a stock's marketability or desirability that would be expected to increase its susceptibility to overfishing. Again, we recommend that the Council consider all such factors when making the final recommendation on how to classify stocks in the FMP.

The Purpose of the EC Species Classification

In team discussions some have wondered what the benefit of bringing new species into the FMP as EC species might be. The Guidelines offer some considerations, including:

- for data collection purposes;
- for ecosystem considerations related to specification of optimum yield (OY) for the associated fishery;
- as considerations in the development of conservation and management measures for the associated fishery;
- and/or to address other ecosystem issues.

They also add that “[w]hile EC species are not considered to be “in the fishery,” a Council should consider measures for the fishery to minimize bycatch and bycatch mortality of EC species consistent with National Standard 9, and to protect their associated role in the ecosystem.” This implies that bycatch should be addressed regardless of whether it rises to the level of overfishing and that the Council could employ management measures or monitoring requirements for EC species.

Mainly, however, the GMT has envisioned that the Council would treat EC species as monitored species. The benefit of classifying them in the FMP is one of public transparency. They would be marked as species that are caught in the fisheries but not thought to be at the risk of overfishing.

This monitoring function is clearly contemplated in the Guidelines. They state that all EC species “should be monitored to the extent that any new pertinent scientific information becomes available (e.g., catch trends, vulnerability, etc.) to determine changes in their status or their vulnerability to the fishery.” And if the new information shows that vulnerability has increased, then stocks “should be reclassified as ‘in the fishery’.”

Along these lines, the Guidelines suggest regular re-visitation of the FMP's classification of stocks. Specifically, section 600.310(d)(6) of the Guidelines states that the Council:

should monitor the catch resulting from a fishery on a regular basis to determine if the stocks and species are appropriately classified in the FMP. If the criteria previously used to classify a stock or species is no longer valid, the Council should reclassify it through an FMP amendment, which documents rationale for the decision.

Lastly, we would like to highlight that the scope of this analysis fits nicely with the intent of the Tier 1 environmental impact statement (EIS) and the broad, longer-term look at how the fisheries

of the Groundfish FMP are affecting the marine environment. More specifically, we have taken a broad look at the species being caught by the various groundfish and related sectors and made our best attempt to advise the Council on the relative vulnerability of those stocks to overfishing. The newness of this analysis made it somewhat time-intensive this round. We imagine with the framework started here, the analysis could be made more routine in future cycles. Nonetheless, doing this analysis every biennial cycle might be too often. Integrating the regular evaluation of the FMP's classification into the timeline of the Tier EIS could be more time efficient.

The Framework of the Alternatives

We have slightly revised the way we present the alternatives from what was shown in September ([Agenda Item G.8.b, Supplemental GMT Report 6](#), Table 1). We have attempted to group the species into alternatives where they are best grouped like with like in terms of being similarly situated as to their relative need for conservation and management. The thought is that this will ease the Council's decision by better highlighting areas of consistency.

As before, the Council's decision really focuses on each stock individually with three options for each: (a) in the fishery, (b) EC species, or (c) not in the FMP.

With this report we also decided to combine the second and third choices into one. That is, our recommendation is for the Council to either use the EC species classification broadly or not at all by only including the "in the fishery" classification in the FMP. So the EC species classification in each alternative below could be replaced with "not in the FMP"

We did this for a couple reasons. For one, it simplifies the alternatives. More substantively however, in our October discussions we could not see a simple way to draw a line on what would qualify a stock as an EC species. As an example, some worried that 1 mt of average catch was too low to consider for classifying a species in the FMP. Yet the reason we chose that level was because catch of some of the FMP species is lower than 1 mt. And at least one species in the FMP, Tiger Rockfish, has an OFL of 1 mt. We did not see a simple way to draw clear cut lines. Moreover, we did not see much of a need to draw such a line because the EC species classification does not have much practical management effect. We should be able to maintain the ability to monitor total catch by species regardless of the EC species designation. So in the team's view, it was just not worth the time to discuss what level of catch or PSA score would warrant an EC species classification over being left of the FMP altogether.

Lastly, a related thought on this issue was that for FMP species up for reclassification we assumed, perhaps wrongly, that there may be a higher analytical showing needed to remove a species from the FMP altogether as opposed to reclassifying it as an EC Species. This impression comes mainly from NMFS' partial disapproval of Amendment 23 where they disapproved the removal of Dusky Rockfish and Dwarf Red Rockfish from the FMP and the reasoning for it, which is partially addressed in the following excerpt from [the disapproval letter](#):¹

¹ http://www.pcouncil.org/wp-content/uploads/am_16-5_and_23_dec_letter.pdf

Removal of a species from the FMP would reflect a determination that conservation and management measures are not necessary. NMFS is not prepared to make that determination at this time without a more comprehensive discussion and review of how the Council and NMFS manage rockfish genera and species within the family of scorpaenidae. NMFS understands that the Council is planning to refine the existing stock complexes for the 2013-14 specifications and management measures. NMFS believes it is prudent, from a management perspective, to take a comprehensive look at all species and complexes in the FMP before deciding to remove or add any. The option to designate species as ecosystem component species is also another option that may be explored through the Council process.

Understanding that the Council is concerned about workload this cycle, using the EC species designation might be preferable if it indeed does require less analysis and review time to implement.

While we have framed the decision as all or nothing for EC species, the Council may see cause for an intermediate approach where some candidate species are designated as EC Species and others not.

The Grenadier Alternatives

The grenadiers, Pacific Grenadier in particular, may prove to be the toughest. We have therefore presented them first and as a group. As a brief note, by “Other Grenadier” we refer to the species caught within the Council’s management area based on the commercial catch data and NWFSC trawl survey data. We interpret “Other” in the same manner for the other species groups discussed below.

The reason we saw the grenadiers as presenting some difficulty for the Council is because there are two reasonable positions so far taken on Pacific Grenadier. One position gives weight to the low overfishing risk for Pacific Grenadier and the other to the fact that the stock does have some commercial value.

The Groundfish Advisory Subpanel (GAP) recommended removing Pacific Grenadier from the FMP. In brief, they argue that the stock is not in need of conservation and management because it is not targeted and because much of its habitat is closed to the fishery and so fishing is happening on a small portion of the stock. We can confirm this if and when we are able to examine the bottom trawl survey data, but from the data we have seen, we do believe that Pacific Grenadier are distributed deeper than fishing occurs and that recent catch levels will be low relative to what would be allowed by an OFL.

The other position—that Pacific Grenadier should remain as “in the fishery”—follows the Guidelines suggestion that desirable non-target stocks be included in the fishery. Pacific Grenadier does provide a source of revenue for some areas of the coast, especially in Central California. Over the period 2007-12, landings of grenadier have produced ~\$40,000 in ex-vessel revenue per year on average and about \$8,000 in Oregon. Again, we understand this is mainly if not all Pacific Grenadier. In Washington, the data is not available because grenadiers are recorded in a miscellaneous category.

The GMT recommends that the Council focus its policy deliberations on these arguments more so than on the percent retained criteria mentioned above. Other differences between the proposed alternatives are bulleted below Table 1.

Lastly, Pacific Grenadier provide an illustration of how management measures or monitoring triggers/requirements could accompany an EC species. If the Council were to designate Pacific Grenadier as an EC species but was also concerned about changes in targeting of the stock, it might still be possible to include trip limits or other landing limits on the stock, or, alternatively to identify a magnitude of increase in landings that would trigger consideration of reclassifying the stock as “in the fishery.” Such discussions would most appropriately take place under the management measures agenda item (Agenda Item H.10).

Table 1. Grenadier Alternatives

Classification	No Action	Alternative 1	Alternative 2	Alternative 3	Alternative 4
“in the fishery”	Pacific Grenadier	Pacific Grenadier Giant Grenadier	Pacific Grenadier	---	All Grenadiers
EC Species/not in the FMP	Giant Grenadier Other Grenadiers	Other Grenadiers	Giant Grenadier Other Grenadiers	Pacific Grenadier Giant Grenadier Other Grenadiers	---

- *Alternative 1* would keep Pacific Grenadier “in the fishery” and add Giant Grenadier because it is caught in higher amounts than Pacific Grenadier and is thought to have similar vulnerability based on PSA scores. Other Grenadiers would be EC species for monitoring purposes.
- *Alternative 2* differs from Alternative 1 by classifying Giant Grenadier as an EC species instead of as “in the fishery.” The rationale for the difference would be that Giant Grenadier is not marketable for human consumption and not thought to be generally retained. We may provide more information on the marketability of Giant Grenadier in a supplemental report.
- *Alternative 3* follows the rationale that all of the grenadier stocks are likely to be at a low risk of overfishing and so would be more appropriately classified as EC species.
- *Alternative 4* is based on a different approach and rationale than the rest. Its justification would be that Pacific Grenadier is appropriately classified as “in the fishery” but that the catch of all grenadiers would be used in the OFL calculation because of the lack of speciation in the historical catch. The other grenadier species would not necessarily rise to “in the fishery” status based on their vulnerability to the fishery, yet because their historical catch would factor into the OFL, their future catch would continue to be accounted against the OFL. Roughey Rockfish/Blackspotted Rockfish is a purer, recent example of a complex where the OFL and reference points are calculated based on the catch of different species. This suggestion is described in [Agenda Item F.8.a, Attachment 1](#) from the June 2013 meeting. The Council will want to hear from the SSC on the OFL calculation before deciding if this approach is beneficial.

Candidates for Classification as In the Fishery or EC Species

Somewhat like the Grenadiers, the species in this section could be, in the GMT’s view, reasonably classified as either “in the fishery” or as EC species. The GMT sees the average catch levels and PSA scores for these species as indeterminate and therefore flags the classifications as a clear policy call for the Council to decide. These are species with average catch in the tens of tons (except for Spotted Ratfish) and PSA scores near 1.8 or higher.

The policy call is centered on the question of whether catch and vulnerability are high enough to require management with ACLs, most likely within a stock complex, or that and monitoring as EC species is sufficient to monitor their conservation and management need for now. With the possible exception of Big Skate and Spotted Ratfish, the GMT sees these stocks as similarly situated enough to be classified in the same manner (or stated in the negative, we do not see definitive reasons to classify them differently). The GMT plans on discussing Big Skate and Spotted Ratfish in more detail at the November meeting.

This is one alternative where additional data would help. All of these stocks appear to be well sampled by the survey and we should have a better idea of catch relative to biomass if we are able to have that analysis complete. Likewise, the SSC may even be able to recommend OFLs for these stocks. The OFL for Big Skate may be recalculated for 2015-16, yet the average catch over 2007-2011 equates to 21 percent of its 2014 OFL.

Lastly, as with the Grenadiers we have included Alternative 3 based on a possible OFL estimation rationale. It may prove necessary or beneficial to base the OFL on the historical catch of all skates. Again, the rationale is that one or more of these skates belong “in the fishery” and that all catch needs to be combined to estimate and track catch against the OFL. If the SSC so advises, then the skates listed in the next section would be affected as well. Longnose skate may or may not be included. In this situation, Brown Cat Shark becomes a question as well. If the Council wishes to place it “in the fishery” it may be best to calculate the OFL based on the catch of all cat shark species given the lack of speciation in the historical catch. We have labeled Alternative 3a for the situation where cat sharks and Spotted Ratfish are in the fishery and Alternative 3b where they are classified as EC species.

Table 2. Alternatives for species that could be classified as either EC species or “in the fishery” based on the Council’s policy preference.

Classification	No Action	Alternative 1	Alternative 2	Alternative 3
“in the fishery”	Big Skate Spotted Ratfish	Brown Cat Shark Bering/Sandpaper Skate Black/Roughtail Skate Big Skate Spotted Ratfish	---	All skates All Cat Sharks (a) Spotted Ratfish
EC Species/not in the FMP	Brown Cat Shark Bering/Sandpaper Skate Black/Roughtail Skate	---	Brown Cat Shark Bering/Sandpaper Skate Black/Roughtail Skate Big Skate Spotted Ratfish	All Cat Sharks (b) Spotted Ratfish

Candidates for EC Species Classification Only

In this section we have grouped species that the GMT viewed as having catch and PSA scores being below the level. The PSA scores for these stocks are less than 1.8 or their average catch is less than 10 mt. We did not calculate PSA scores for stocks with an average catch of less than 10 mt. Like above, we do not see clear reasons to classify this set of stocks differently from one another (i.e., the thought is that they should all be removed/left out of the FMP or designated as EC species).

Walleye Pollock presents somewhat odd circumstances. If we had used 2004-2011 as the window period, its average catch would reach into the hundreds of tons. In some years, thousands of metric tons have been caught by whiting vessels.² As is well known, Pollock are very abundant north of the Council's management area. In some years, the stock has extended southward and been available to the fisheries off this coast. It is an extreme example of the transboundary stock issues we have noted frequently. Pacific Cod is a less extreme example of an FMP stock that is more available in the Council's management area in some years than in others.

Ragfish is another stock where the GMT had some questions and discussion in this group. Its PSA score of 1.8 could have placed it in the previous category and a candidate for "in the fishery" classification. Yet based on our discussions in October, the team believes that the susceptibility score in the PSA is an overestimate.³ In brief, the PSA susceptibility score is based in large part on the overlap of the species' range and depth with the areas fished. The high overlap expected based on those does not appear to be proven out in what we see in the trawl survey reports, where Ragfish are very rarely encountered. This leads us to believe that the species occupies non-trawlable habitats or somehow else has low selectivity to bottom trawl gear. The catch identified in our dataset has all come from the at sea whiting sectors. This could be because the species lives in midwater habitats or more an artifact of the 100 percent observer coverage in those sectors. Ragfish is a species that would not be reliably reported on fish tickets in the shoreside sectors. Over the 2007-2011 period, ragfish catches were variable with two years of the five years showing large catches. And in those years, there were spikes in catch in the month of May. We know very little about ragfish, yet one plausible theory is that Ragfish are thought to come into canyon areas to spawn, and that time, that their susceptibility to the whiting fleet increases. We will report more detail on these catches in a supplemental report.

² In 2002, over 4,500 mt of Pollock were landed on this coast.

³ The PSA scores are detailed in Table 9 of [Agenda Item G.8.b, GMT Report 2](#) in the September 2013 Briefing Book.

Table 3. Alternatives for stocks with low vulnerability to the fishery

Classification	No Action	Alternative 1
"in the fishery"	Finescale codling/Pacific Flatnose	---
EC Species/not in the FMP	Aleutian Skate Duckbill Barracudina Deepsea Skate All Eelpouts Filetail Cat Shark King of the Salmon Longnose Cat Shark Longnose Lancetfish Pacific Black Dogfish Pacific Sleeper Shark Ragfish Salmon Shark All Slickheads and Tubeshoulders All Snailfish Walleye Pollock	Aleutian Skate Duckbill Barracudina Deepsea Skate All Eelpouts Filetail Cat Shark Finescale codling/Pacific Flatnose King of the Salmon Longnose Cat Shark Longnose Lancetfish Pacific Black Dogfish Pacific Sleeper Shark Ragfish Salmon Shark All Slickheads and Tubeshoulders All Snailfish Walleye Pollock

FMP Species that are Caught Mainly in State Waters and/or Other Fisheries

As described in September’s [Agenda Item G.8.b, GMT Report 2](#), we filtered out non-FMP species from consideration based on Council guidance and the fact that they are thought to be caught in state waters or fisheries not regulated by the Groundfish FMP. The FMP stocks listed here would likely meet those same criteria. This set of alternatives is therefore different from the ones above and involve matters of Council versus state jurisdiction, which we briefly address in our first report under this Agenda Item but is an issue best handled in discussions between the Council and NMFS and NOAA GC.

Because of these different considerations, the EC species classification may not make the most sense for these stocks. Instead, the Council may wish to explore the state-federal jurisdiction question, either in this cycle or in the future. We expect to more fully address the reasons why the Council may wish to do so under the discussion of the Other Fish stock complex alternatives. The main issue described there is that these stocks do not fit well with the other stocks in the Other Fish category. Here we present the basic reasons why these stocks present a different set of circumstances.

- Only a small portion of Cabezon and Kelp Greenling are thought to occur in federal waters.
- The catch of California Skate is relatively low and 70 percent of it is taken in the California Halibut fishery, which is not regulated by the Council.
- Leopard Shark appears to be caught almost exclusively in state waters with 92 percent of the catch coming from California recreational fisheries and the remainder in the California Halibut fishery.
- The catch of Soupfin Shark averaged 8 mt per year over 2007-2011, and 85 percent of that catch was taken by gillnet gear where the top species caught include Pacific Herring,

White Sea Bass, California Halibut, and Thresher Shark. Less than 1 mt on average is caught by the Groundfish FMP sectors.

Table 4. Alternatives for species caught predominately in state waters or non-FMP fisheries

Classification	No Action	Alternative 1
"in the fishery"	Leopard Shark Cabezon California Skate Kelp Greenling Soupfin Shark	---
Species predominately caught in state waters or in fisheries not regulated by the Groundfish FMP	---	Leopard Shark Cabezon California Skate Kelp Greenling Soupfin Shark

Tables Adapted from the September GMT Reports

Table 5. PSA scores and average catch for Other Fish related candidate stocks from [Agenda Item G.8.b, Supplemental GMT Report 6](#) (Spotted Ratfish was accidentally omitted in that report but added here).

	Species	PSA score	Catch (avg.)	Notes
Skates & Rays	Aleutian Skate	1.71	3	
	Bering/Sandpaper Skate	1.80	70	
	Big Skate	1.99	95	
	Black/Roughtail Skate	1.68	44	
	California Skate	2.12	14*	*Only 29% from FMP sectors
	Deepsea Skate	--	1	
	Other Skates	--	725*	*Unidentified catch
	Thornback Skate	--	2	
Cat Sharks	Brown Cat Shark	1.84	90	
	Filetail Cat Shark	--	11	
	Longnose Cat Shark	--	3	
Other Chondrich.	Leopard Shark	2.00	35*	*Only 3% from FMP sectors (other than CA Recreational = 82%).
	Pacific Black Dogfish	--	1	
	Pacific Sleeper Shark	--	8	
	Salmon Shark	--	1	
	Southern Shark	2.02	8*	*Only 16% from FMP sectors
	Spotted Ratfish	1.72	146	
Slickheads	California Slickhead	1.10	28	
	Threadfin Slickhead	--	1	
	Other (incl. Tubeshoulders)	--	1	
Grenadiers	California Grenadiers	--	4	
	Giant Grenadiers	1.87	170	
	Other Grenadiers	--	135*	*135 mt of unidentified catch. Other species in data all < 1 mt per year.
	Pacific Grenadier	1.82	131	
Eelpouts	Bigfin Eelpout	--	3	
	Twoline Eelpout	--	3	
	Other Eelpouts	1.51	43	
Misc. Fish	Cabezon*	1.68	101	*Included b/c they're potentially distributed in state waters
	Duckbill Barracudina	--	1	
	Finescale Codling/Pacific Flatnose	1.48	13	
	Kelp Greenling*	1.59	43	*Included b/c they're potentially distributed in state waters
	King of the Salmon	--	6	
	Longnose Lancetfish	--	1	
	Ragfish	1.80	43	
	Snailfish spp.	--	5	
	Walleye Pollock	--	4	*Prior to 2007, catch has reached 1,000s of metric tons in some years

Table 6. Average catch estimates for the non-FMP species meeting the GMT’s first filtering criteria (reproduced from Table 1 in September’s [Agenda Item G.8.b, GMT Report 2](#). The “% FMP” column refers to the percentage of catch coming from sectors regulated under the Groundfish FMP. As discussed above, the “retained %” estimates are recognized to be inaccurate for many of these stocks.

Species	Avg. catch (mt)				Species	Avg. catch (mt)			
	FMP Sectors	All Sectors	% FMP	Retained %		FMP Sectors	All Sectors	% FMP	Retained %
1. Skate Unid.	725	741	97.8%	95.8%	25. Hornyhead Turbot	0	4	5.5%	55.6%
2. Giant Grenadier	170	170	100.0%	0.0%	26. Longnose Cat Shark	3	3	100.0%	0.0%
3. Slender Sole	21	149	14.4%	0.0%	27. Aleutian Skate	3	3	100.0%	0.0%
4. Grenadier Unid.	135	135	99.9%	93.8%	28. Bigfin Eelpout	2	3	75.5%	0.0%
5. Shark Unid.	114	116	97.8%	7.2%	29. Twoline Eelpout	3	3	100.0%	0.0%
6. Brown Cat Shark	90	90	99.8%	12.6%	30. Eel Unid.	0	2	7.7%	100.0%
7. Bat Ray	26	75	35.5%	34.3%	31. Thornback Skate	1	2	33.6%	32.4%
8. Bering/sandpaper skate	70	70	99.9%	0.1%	32. Threadfin Slickhead	1	1	100.0%	0.0%
9. Black/Roughtail Skate	44	44	100.0%	0.1%	33. Gray Smoothhound Shark	1	1	100.0%	87.7%
10. Ragfish	43	43	100.0%	51.2%	34. Pacific Dogfish Shark	1	1	100.0%	0.0%
11. Eelpout Unid.	33	43	76.4%	0.1%	35. Duckbill Barracudina	1	1	100.0%	75.5%
12. Deepsea Sole	32	32	99.4%	2.5%	36. Cat Unid. Shark	1	1	100.0%	0.0%
13. California Slickhead	28	28	100.0%	0.0%	37. Salmon Shark	1	1	100.0%	0.0%
14. Sanddab Unid.	21	22	96.7%	84.0%	38. Longspine Combfish	0	1	20.5%	0.0%
15. Shovelnose Guitarfish	19	22	87.0%	80.0%	39. Starry Skate	0	1	46.8%	0.0%
16. Pacific Angel Shark	0	13	0.2%	78.7%	40. Tubeshoulder Unid.	1	1	99.9%	3.7%
17. Pacific Electric Ray	1	11	12.2%	0.0%	41. Deepsea Skate	1	1	100.0%	0.0%
18. Filetail Cat Shark	11	11	100.0%	0.0%	42. Slickhead Unid.	1	1	100.0%	0.0%
19. Pacific Sleeper Shark	8	8	100.0%	2.3%	43. Swell Shark	0	1	5.8%	0.0%
20. Brown Smoothhound Shark	2	7	26.5%	13.7%	44. Fantail Sole	0	1	0.0%	18.3%
21. King of the Salmon	6	6	100.0%	44.6%	45. Pacific Black Dogfish	1	1	100.0%	0.0%
22. Snailfish Unid.	5	5	99.2%	0.3%	46. Longnose Lancetfish	1	1	100.0%	64.8%
23. Walleye Pollock	4	4	100.0%	96.2%	47. Sixgill Shark	0	1	75.6%	0.0%
24. California Grenadier	4	4	100.0%	0.0%					

Table 7. Average catch estimates for the FMP species flagged for initial consideration by the GMT (reproduces Table 2 in September's [Agenda Item G.8.b, GMT Report 2](#).)

Species	catch (mt)		retain. %	Species	catch (mt)		retain. %	Species	catch (mt)		retain. %
	avg.	max			avg.	max			avg.	max	
1. Spotted Ratfish	146	228	0.2%	26. Grass Rockfish	19	23	99.4%	51. Rosethorn Rockfish	4	5	23.4%
2. Pacific Ocean Perch Rockfish	135	179	68.9%	27. Starry Flounder	17	24	79.6%	52. Yellowmouth Rockfish	4	10	53.6%
3. Pacific Grenadier	131	212	0.0%	28. Greenstriped Rockfish	15	25	29.2%	53. Redstripe Rockfish	4	11	89.1%
4. Blackgill Rockfish	120	164	95.8%	29. Quillback Rockfish	15	20	96.6%	54. Squarespot Rockfish	3	6	94.0%
5. Blue Rockfish	120	192	91.8%	30. Greenspotted Rockfish	15	19	95.1%	55. Tiger Rockfish	1	1	96.3%
6. Cabezon	101	128	98.4%	31. California Skate	14	18	0.6%	56. Butter Sole	1	2	8.1%
7. Big Skate	95	170	1.7%	32. Finescale codling/Pacific Flatnose	13	19	0.0%	57. Nearshore Rockfish Unid.	1	3	100.0%
8. Brown Rockfish	90	116	97.8%	33. Stripetail Rockfish	12	15	0.7%	58. Halfbanded Rockfish	1	2	61.2%
9. Gopher Rockfish	85	120	96.7%	34. Slope Rockfish Unid.	12	21	100.0%	59. Greenblotched Rockfish	1	1	98.8%
10. California Scorpionfish	76	104	90.2%	35. Silvergray Rockfish	11	44	17.5%	60. Blackspotted Rockfish	1	1	100.0%
11. Bocaccio Rockfish	73	115	77.8%	36. Shortraker/Rougheye Unid.	10	34	0.3%	61. Cowcod Rockfish	1	1	17.3%
12. Copper Rockfish	69	80	94.4%	37. Yelloweye Rockfish	9	12	13.6%	62. Calico Rockfish	1	2	17.5%
13. Aurora Rockfish	50	68	51.0%	38. Treefish Rockfish	8	14	94.0%	63. Mexican Rockfish	0	0	100.0%
14. Sand Sole	49	85	94.5%	39. Kelp Rockfish	8	18	96.4%	64. Chameleon Rockfish	0	0	99.4%
15. Bank Rockfish	47	93	99.7%	40. Soupfin Shark*	8	18	91.9%	65. Pinkrose Rockfish	0	0	100.0%
16. Kelp Greenling	43	56	97.1%	41. Sharpchin Rockfish	8	12	15.0%	66. Pygmy Rockfish	0	0	0.3%
17. Canary Rockfish	42	52	36.4%	42. Shelf Rockfish Unid.	7	21	100.0%	67. Bronzespotted Rockfish	0	0	78.2%
18. Redbanded Rockfish	36	40	76.9%	43. Flag Rockfish	7	9	92.0%	68. Swordspine Rockfish	0	0	40.2%
19. Leopard Shark	35	38	81.4%	44. Rock Sole	6	8	80.8%	69. Freckled Rockfish	0	0	100.0%
20. Shortraker Rockfish	32	35	69.7%	45. Shortbelly Rockfish	6	11	2.9%	70. Spotted Rockfish Unid.	0	0	0.0%
21. China Rockfish	32	35	92.1%	46. Rosy Rockfish	6	7	83.3%	71. Dusky Rockfish	0	0	0.0%
22. Olive Rockfish	32	54	94.2%	47. Flathead Sole	6	11	36.2%	72. Harlequin Rockfish	0	0	43.0%
23. Rockfish Unid.	29	69	7.7%	48. Speckled Rockfish	5	8	94.7%	73. Pink Rockfish	0	0	100.0%
24. Starry Rockfish	24	30	91.1%	49. Honeycomb Rockfish	5	10	85.2%	74. Dwarf Red Rockfish	0	0	#N/A
25. Black And Yellow Rockfish	23	32	99.0%	50. Curlfin Sole/Turbot	5	10	17.9%				

*Note: Only 15.6% of the catch of Soupfin Shark comes in the FMP's commercial and recreational sectors. The remainder is taken in the California Halibut and other non-FMP sectors.

Table 8. FMP and Non-FMP stocks with PSA Vulnerability scores of 1.90 and lower (reproduces Table 3 in September's [Agenda Item G.8.b, GMT Report 2](#)).

Stock	P-score	S-score	Vulnerability	Stock	P-score	S-score	Vulnerability
1. Grass rockfish	1.61	2.29	1.89	30. Kelp rockfish	1.94	2.19	1.59
2. Rosy Rockfish	1.61	2.29	1.89	31. Lingcod	1.75	1.92	1.55
3. Greenstriped rockfish	1.28	1.76	1.88	32. Dover Sole	1.80	1.96	1.54
4. Shortspine thornyhead	1.33	1.88	1.88	33. Eelpouts spp.	1.87	2.00	1.51
5. Yellowtail rockfish	1.33	1.88	1.88	34. Finescale codling	1.72	1.75	1.48
6. Giant grenadier	1.33	1.86	1.87	35. Calico rockfish	1.75	1.76	1.46
7. Olive rockfish	1.69	2.33	1.87	36. Freckled rockfish	1.78	1.76	1.44
8. Squarespot rockfish	1.61	2.24	1.86	37. Pygmy rockfish	1.78	1.71	1.42
9. Pacific grenadier	1.44	1.95	1.82	38. Rock sole	1.95	1.95	1.42
10. Pinkrose rockfish	1.31	1.67	1.82	39. California scorpionfish	1.80	1.80	1.40
11. Splitnose rockfish	1.28	1.60	1.82	40. Chilipepper	1.83	1.68	1.35
12. Bering/sandpaper skate	1.37	1.75	1.80	41. Puget Sound rockfish	1.89	1.76	1.35
13. Mexican rockfish	1.50	2.00	1.80	42. Pacific cod	2.11	2.00	1.34
14. Ragfish	1.60	2.12	1.80	43. Rex sole	2.05	1.86	1.28
15. Stripetail rockfish	1.39	1.81	1.80	44. Flathead sole	2.30	2.05	1.26
16. Rock greenling	1.78	2.29	1.77	45. Halfbanded rockfish	2.00	1.76	1.26
17. Gopher rockfish	1.56	2.00	1.76	46. Pacific sanddab	2.40	2.10	1.25
18. Treefish rockfish	1.67	2.10	1.73	47. Curlfin Sole	2.45	2.10	1.23
19. Ratfish	1.63	2.05	1.72	48. Sand sole	2.35	2.05	1.23
20. Aleutian skate	1.42	1.65	1.71	49. Deepsea sole	2.30	2.00	1.22
21. Longspine Thornyhead	1.47	1.78	1.71	50. Arrowtooth Flounder	1.95	1.60	1.21
22. Black-and-yellow rockfish	1.89	2.29	1.70	51. Dwarf-red rockfish	1.80	1.00	1.20
23. Dusky rockfish	1.30	1.00	1.70	52. English Sole	2.25	1.92	1.19
24. Pacific whiting	2.00	2.36	1.69	53. Butter Sole	2.45	2.05	1.18
25. Black/rougthead skate	1.45	1.65	1.68	54. Brown cat shark	2.06	1.63	1.14
26. Cabezon	1.72	2.08	1.68	55. Slender sole	2.25	1.86	1.14
27. Longnose skate	1.53	1.80	1.68	56. Shortbelly rockfish	1.94	1.40	1.13
28. Sablefish	1.61	1.88	1.64	57. California slickhead	2.10	1.60	1.10
29. Kelp greenling	1.83	2.12	1.62	58. Starry flounder	2.15	1.60	1.04