

GROUND FISH MANAGEMENT TEAM REPORT ON CONSIDERATION OF GEAR REGULATIONS FOR THE TRAWL CATCH SHARE PROGRAM

Overview

The Groundfish Management Team (GMT) was briefed on the draft Environmental Impact Statement (EIS) on their March 1 webinar by Ms. Jamie Goen, National Marine Fisheries Service (NMFS) West Coast Region (WCR). Here the GMT provides comments on all eight issues within the draft environmental impact statement (EIS) and responds to the concerns presented in the NMFS Report ([Agenda Item G.8.a, NMFS Report, March 2016](#)). The GMT reminds the Council that it commented on four of the alternatives in September 2015: (A) minimum mesh size for bottom trawl, (D) Selective Flatfish Trawl (SFFT) allowances, (E) chafing gear, and (F) multiple gears onboard ([Agenda Item H.2.a, Supplemental GMT Report, September 2015](#)).

The overall purpose of this action is to provide more flexibility in gear configuration and use for the Individual Fishing Quota (IFQ) program, while maintaining conservation objectives. Since potential benefits such as innovation, increased efficiency, and reduction in regulatory burden are best described by industry, the focus of this GMT report is to identify management, conservation, and assessment implications in addition to catch accounting. Whether or not individual accountability is an effective method to replace or reduce historic trawl gear regulations, particularly those that were implemented from overfished rockfish species declarations, is the primary question the GMT continues to recommend the analysis explore in detail and for the Council to consider. However, it should be noted that any consequences, positive or negative, are only applicable if the fleet makes behavioral changes, and for many of these regulations, industry has indicated it will not (e.g., not make extensive use small meshes since it increases catch of small unmarketable fish and increases net drag and fuel costs).

The pros and cons of the alternatives are difficult to quantify since they are related to uncertain behavior on the degree to which industry adopts the alternatives, the Council may want to consider an approach that provides the Council, industry and NMFS flexibility, to make adjustments if problems arise. For some of the regulatory proposals, changes could be made if undesirable effects arise without much disruption to industry (e.g., stowing haul option); however, changes to the minimum mesh size, for example, could have significant ramifications if a net purchased no longer meets newly adopted requirements. **The GMT recommends that current gear restrictions be available for use in future management decisions, if the need arises.**

Gear Change Issues

Issue A: Minimum Mesh Size

Alternative A1 - (No Action) Retain 4.5 inch minimum mesh size for bottom trawl, 3 inch for midwater trawl

Alternative A2 - Reduce mesh size to 4 inches for bottom trawl

Alternative A3 - No minimum mesh size for bottom or midwater trawl

The overriding concern the GMT has with a decrease in the minimum mesh size is the potential for increased selectivity for small fish, decreased stock productivity for groundfish, and increased catch of some protected species (e.g., eulachon). National Standard 9 states that “conservation

and management measures shall, to the extent practicable, (a) minimize bycatch and (b) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.” Therefore, while these gear changes would allow greater flexibility and innovation and foster economic benefits, the potential for increasing bycatch should be taken into consideration. Regarding stock productivity implications, an example would be if someone catches their individual quota with 10 immature fish instead of one large fish, ten times as many fish would be harvested for the same quota (increased exploitation rate), and the 10 immature fish would be harvested prior to spawning (zero spawning potential).

Furthermore, with the change in mesh size, there could be increased uncertainty in stock assessments. Because stock assessments are based on catch-at-age, it is important to know the total removals taken as well as the proportion of removals at length, which is a function of gear selectivity. Since trawl meshes are not documented (neither in commercial landing receipts or logbooks, nor by observers), a mix of mesh sizes simultaneously in use in the fishery will increase assessment uncertainty since the catch by each gear cannot be separately accounted for.

Increased selectivity for small fish has been shown to occur in studies that compare trawl mesh size (Lomeli et al. (2016); Perez-Comas et al. (1998); Pikitch et al. (1990)) and among the varying gears used by West Coast trawlers. For instance, pink shrimp trawlers with 1 $\frac{3}{8}$ inch minimum mesh size requirements encounter juvenile groundfish, eulachon, and small ecosystem component species such as whitebait smelt (Hannah et al. (2011)).

While the GMT recognizes there could be issues if trawlers began fishing smaller meshes, industry has stated that they are unlikely to do so throughout the entire net (e.g., more small unmarketable fish, higher net drag equals more fuel), and that the request is primarily to alleviate enforcement concerns (e.g., net shrinkage and inconsistencies in manufacturing resulting in nets slightly smaller than the minimum size) and provide the opportunity for innovation in net design (e.g. have smaller mesh sizes in certain parts of nets for specific species targeting).

In the NMFS report, NMFS proposes that a minimum mesh size of 3 inches be considered-with the rationale that this provides more flexibility to the fleet and simplifies regulations so that the minimum mesh size is uniform for both the bottom trawl and midwater trawl fisheries. The GMT maintains its overriding concern is that with any decrease in minimum mesh size for bottom trawl nets there exists a potential for biological implications, namely the likelihood to increase the catch of smaller fish. The team also acknowledges that having the same minimum mesh size for both the bottom trawl and midwater trawl fleets simplifies regulations, but it feels that the biological concerns override regulation simplicity in this case and this needs to be given a thorough consideration. And lastly, if a three inch mesh size were recommended, the GMT feels that more data would be needed to determine how this may impact eulachon bycatch mortality.

Regarding Alternative A3 (no minimum mesh size), the GMT concurs with NMFS concern that because of the uncertainty, particularly in biological impacts to non-target and protected species, the associated risks should be carefully considered.

If the above is true, a reduction, but not elimination, of the minimum size would provide industry their desired buffer to reduce enforcement violations and opportunity for innovative net design while preventing the issues associated with much smaller meshes identified above by the GMT. The GMT notes that sustainable trawl fisheries across the nation employ a wide range of regulatory restrictions with regards to mesh size, from wholly self-regulated to highly regulated and enforced.

Finding a middle ground within this spectrum may provide additional flexibility to the fleet and mitigate the potential for increased harvest of smaller fish and non-target species. **As such, the GMT recommends the Council consider reducing the minimum size to 4 inches or possibly 3 inches as proposed by NMFS to match the minimum size for midwater trawls, but not eliminate mesh size regulations entirely.** If the minimum mesh size requirement were eliminated and problems arose due to industry buying and fishing small mesh nets, re-implementing a minimum mesh size could result in industry having to purchase new nets.

The GMT also recommends that mesh size and other major gear configurations (e.g., excluder types) be documented via logbooks to allow measurement of the effects of differing mesh sizes. This will allow us to better determine the effects of differing gear techniques. While industry would be able to learn what gear configuration provides the best strategy to access their portfolios, the documentation would provide a mechanism to learn what is, or is not working well in the fleet as a whole and therefore, develop more effective regulations.

Issue B: Measuring Mesh Size

Alternative B1 - (No Action) Mesh size means opening between opposing knots

Alternative B2 - Mesh size definition modified to mean the opening between opposing knots or corners in knotless webbing.

The intent of this issue is to recommend an adjustment to the regulatory language that recognizes that there are trawl nets made with knotless webbing and that the current measurement method, (as defined in regulations as taken between the knots), would simply be adjusted to include measurements taken between “corners” as well as between knots. This would then address the measurement of the meshes of knotless nets. Therefore, the team believes that comment on this item falls more under the purview of the Enforcement Consultants, and there does not appear to be management implications from this item. Last, should the Council choose to recommend this alternative, the GMT notes that clarifying language needs to be incorporated into other issue alternatives, as currently proposed, to also include language that includes measuring “between corners” as well as measuring between knots.

Issue C: No Codend Restrictions

Alternative C1 - (No Action) Only single-walled codends permitted

Alternative C2 - No codend restrictions (allows double-walls)

As described in the minimum mesh size section above, the primary concern with more liberal codend provisions is increased selectivity for small fish. But once again, the degree to which more liberal codends would be an issue depends on what actions are taken by industry that has stated it has an incentive not to use a double-wall construction for codends. This could increase catch of non-marketable fish (smaller effective meshes). Instead, the proposed liberalization of codends restrictions is more to reduce borderline enforcement violations with current chafing gear regulations to protect their codends. **The GMT therefore recommends Alternative C2; however, the Council should consider the cumulative impacts of this issue with mesh size and chafing gear alternatives.**

Issue D: Selective Flatfish Trawl (SFFT) Allowances

Alternative D1 - (No Action) Two-seamed net (and other restrictions)

Alternative D2 - SFFT definition to allow two-seam or a four-seam net

Alternative D3 - SFFT definition to allow two-seam or a four-seam net; eliminate north of 40°10' N. lat. requirement (replace it with a small footrope – like it is south of 40°10' N. lat.).

In September 2015, it was the team’s recommendation that references to trawling shoreward of the Rockfish Conservation Areas (RCA) under the SFFT proposals should be adjusted for potential removals of RCAs during the ongoing Essential Fish Habitat (EFH) modification process. As commented upon by the GMT ([Agenda Item H.2.a Supplemental GMT Report, September 2015](#)), proposals could be expanded to “shoreward of the RCA or shoreward of 100 fathoms, without RCAs”, noting that this matter will be addressed in regulation during the 2017-2018 harvest specifications and management measures cycle.

The GMT sees promise in the proposal to liberalize the types of trawls available for trawling shoreward of the RCA. It will provide captains-the flexibility to better attain their target species portfolios, which typically requires effective bycatch reduction strategies. Bycatch limitations vary for individuals; therefore, allowing them the most flexibility to use new types of trawls is a benefit. Given that access to the shelf (shoreward of RCA) may be less constrained due to the rebuilding of canary rockfish (a main reason for the SFFT rule), levels of participation are expected to rise and thus also the need for industry to be adaptive to their individual target and bycatch constraints (e.g., Pacific halibut, yelloweye rockfish). **Therefore, the GMT recommends Alternative D3.**

However, there are some concerns regarding increased catch of protected species (i.e. salmon and eulachon) and the effects of future actions (e.g. salmon consultation, EFH/RCA adjustments). The NMFS report does state that impacts could be reduced if there was accountability at the sector or individual vessel level, such as instituting a sector cap or individual bycatch quota for eulachon or green sturgeon. The GMT did discuss that this could lead to an increasing burden on management and catch accounting. **Overall, the GMT suggests that the Council and NMFS consider the effects of these future actions with the potential removal of the SFFT requirement and further reiterates the recommendation keep current gear restrictions available in the regulations if needed.**

Issue E: Chafing Gear

Alternative E1 - (No Action) Bottom trawl chafing gear would be used on only the last 50 meshes, no more than 50 percent circumference, and only the front edge and sides could be attached to codend (and other restrictions)

Alternative E2 - Align bottom trawl gear with recent midwater changes

Alternative E3 - Eliminate chafing gear restrictions for bottom trawl and midwater trawl

Here, as with the minimum mesh size, the primary GMT concern with changes to chafing gear regulations is the possible increased selectivity for smaller fish, as chafing gear can overlap the mesh and effectively reduce the mesh size. Issues with increased selectivity are described in the minimum mesh size section above. A secondary concern with chafing gear is that this net armoring could reduce the incentive for trawlers to avoid rocky habitats or the bottom in general, as stated in the NMFS report. Specifically, while the GMT recognizes the value of increasing the amount of chafing gear, as it helps protect expensive trawl nets from wear and tear, we have concerns that it could reduce the incentive to avoid sensitive rock habitat areas and it is difficult to monitor if this is occurring, and therefore increasing potential access to overfished rockfish species. However, while increased impacts to overfished rockfish species may occur as per NMFS, individual or

sector accountability (coops) should be sufficient for properly monitoring and managing these impacts.

The GMT recommends the Council consider selecting Alternatives E2 or E3 while taking into consideration the cumulative impacts with alternative selection under Issues A (mesh size) and C (codend).

Issue F: Multiple Gears Onboard and/or in Use

Alternative F1 - (No Action) Only one gear type could be used per trip. Only one type of trawl gear allowed onboard per trip (bottom or midwater) or multiple fixed gears allowed onboard per trip; both trawl and fixed gear not allowed onboard on same trip.

Alternative F2 - Multiple trawl gear types allowed onboard on same trip. Trawl and fixed gear not allowed onboard on same trip. Only one gear type allowed to be used per trip.

Alternative F3 - Multiple gear types would be allowed onboard with the following sub-options. (Note that gear type and sorting sub-options are independent of each other):

- I. Gear Type
 - A. Any trawl gear could be used (bottom or midwater)
 - B. Any legal IFQ groundfish gear could be used
- II. Sorting
 - A. Operators have to separate catch by gear type and recorded on separate electronic fish tickets by gear type
 - B. Catch by gear type could be co-mingled

Recognizing that having multiple gears onboard a vessel and giving the operators the flexibility of using more than one gear on a trip, the primary issue from the GMT's perspective is proper accounting of removals by gear type, and haul level data, especially for vessels that may be utilizing electronic monitoring (EM) solutions.

To that end, if the Council chooses Alternative F3, the GMT recommends Sorting sub-option A, separating catch by gear type and recording on separate electronic tickets. This would be critical for stock assessments, as removals are typically separated for gears with different selectivities; it is important to know the total removals as well as the portion of total removals taken from differing age classes. Furthermore, as discussed in the NMFS report, it is important in maintaining accuracy of data used in managing protected species and habitat. This is not expected to be a burden for mixing of fixed gear and trawls, as captains would have incentive to sort their catch since fixed gear catches for some species like sablefish, typically yield higher prices.

However, if sub-option B sorting requirement is chosen and vessels are permitted to co-mingle catch by different gear types, the GMT recommends the Council consider whether fish tickets could be modified to indicate multiple gear types were used on a particular trip, as such a new field on the fish ticket would help improve tracking the overall economic performance of the fishery (i.e. estimating costs for sectors).

Overall, the GMT recommends Alternative F3, sub-option A (all legal IFQ groundfish gear could be used), with the assumption that Sorting sub-option A is selected. The GMT does not support the use of multiple gears without separation of gear types and recording on separate electronic fish tickets.

Furthermore, the GMT discussed the impacts that this change would have on management in combination with other alternatives. If the Council were to choose F3 as well as Alternative G2 (fish in multiple IFQ areas) and/or H2, this could greatly increase management complexity as well as increase the possibility of errors in catch accounting. For example, if a vessel were to fish in two IFQ management areas and fish both trawl and fixed gear in both areas, there would need to be four electronic fish tickets completed by the processor. In addition, assuming the Council selected that catch needed to be sorted by gear type and that vessels could fish before the previous catch was stowed, this would raise the odds of there being errors in sorting and discard recording. This could not only cause potential economic concerns for fishermen (e.g. discards accounted for in wrong area affecting quota share accounts at the end of the year, getting lower prices for fixed gear caught fish because they were combined with trawl caught fish), but also impact catch and discard accounting records for management and for future stock assessments.

Issue G: Fishing in Multiple IFQ Management Areas

Alternative G1 - (No Action) Prohibit fishing in multiple IFQ management areas on the same trip for the Shorebased IFQ program.

Alternative G2 - Allow fishing in multiple IFQ management areas on the same trip. Catch would have to be sorted by area and recorded on separate electronic fish tickets.

The GMT reminds the Council this will primarily affect vessels fishing off of California as the IFQ management areas are: U.S./Canada border to 40°10' N. lat.; 40°10' N. lat. to 36° N. lat.; 36° N. lat. to 34°27' N. lat.; and 34°27' N. lat. to the U.S./Mexico border. The GMT discussed whether or not vessels would want to go between multiple areas and how advantageous allowing this flexibility would be. We believe this can best be addressed by the Groundfish Advisory Subpanel. Under Alternative G2, there would need to be multiple receipts completed for all landings as well as observers on the vessels needing to keep individual records of discards from each management area. Depending on the number of vessels that would take advantage of this allowance to land in multiple IFQ areas, this could affect logistical workloads for both state and federal staff with QA/QC of electronic fish tickets. Furthermore, the West Coast Groundfish Observer Program (WCGOP) would have to keep track of the discards of hauls happening in multiple areas, causing additional time spent reviewing of discard records and producing a finalized report for debiting IFQ accounts. Finally, the GMT stresses the potential additional impacts that would occur with the selection of alternatives under Issue F and H.

Many of the points identified under Multiple Gears Alternative F3 also apply to Alternative G2. NMFS suggests that this alternative should require catch to be sorted by IFQ management area for catch accounting and data purposes. Holds may need to be monitored by observers (or under EM, by cameras) to ensure catch was kept separate by IFQ management area. Here too, the GMT agrees with the NMFS comments and emphasizes that inherent complexities that could come into play - especially when this issue is combined with the multiple gear issue. Furthermore, not understanding the area of catch has been a major source of uncertainty in some area-based stock assessments.

The GMT recommends Alternative G2, with the assumption that catch can be sorted by IFQ management area and separated on electronic fish tickets.

Issue H: Fishing Before Previous Catch is Stored

Alternative H1 - (No Action) Shorebased IFQ vessels are prohibited from bringing a haul on board before all catch from previous haul had been stowed.

Alternative H2 - New haul could be brought onboard and dumped on deck before the previous haul had been stowed; catch would be kept sorted until observers could complete data collection.

Providing that different hauls are accounted for and recorded accurately, and observer or EM data are collected in the approved manner, the GMT sees no issues with this alternative from this logistic perspective. It is acknowledged that allowing the next haul to be brought aboard, as per this alternative, will improve a vessel's fishing operations efficiency. NMFS clarified that catch from separate hauls should not be mixed until after the observer samples the haul. Otherwise, it would reduce the accuracy of fishery data used for stock assessments and protected species management. It also needs to be pointed out that this proposed altered fishing method is considered under the current requirement of 100 percent onboard observation coverage. However, the GMT will comment further on any EM implications when the final EIS document is prepared. NMFS also clarified in their report that hauls should be kept separate on deck until all sorting of the first haul is complete since EM tracks total counts of discards from a haul. However, selecting Alternative H.2 could extend the video review time, therefore increasing costs, because there would be more activity on the deck that the video reviewer would have to watch to ensure catch is not mixed or discarded.

The conservation effects of fishing before stowing the previous catch are uncertain, and could be beneficial (e.g., better staying on a clean school) or detrimental (e.g., repeating a dirty tow if bycatch of constraining species is not immediately noticed, such as a few yelloweye rockfish). While the original analysis only assumes observer coverage, there may be issues with EM due to increases in the data lag for determining overfished species impacts to hold against one's individual quota.

The GMT therefore recommends Alternative H2, with the assumption that under the future EM regulations, accurate monitoring of deck activities can occur.

Cumulative Effects

Several common threads run through these gear changes issue alternatives. The first of which is that some issue alternatives (e.g. mesh size, chafing gear, and codend considerations) may increase the potential for greater mortality of smaller fish. While vessels are held accountable for the mortality of all the IFQ species they catch, including smaller, less desirable and marketable fish, it is assumed, nevertheless, that vessels will structure their fishing activities to minimize this from occurring as much as possible. Despite good intentions, it appears that relaxing one or more of the current regulations could, in fact, lead to a higher mortality of these smaller fish. Coupled with this is the possibility of increased mortality of protected species (e.g. salmon, eulachon) and/or ESA species (e.g. salmon and eulachon) with the elimination of chafing gear and codend regulations. Second, the GMT emphasizes that another commonality running through these issue alternatives is the potential for increased complexity of recording catches necessary for good fisheries management, particularly with respect to multiple gears and areas. Using sorting by gear types as an example, it stands to reason that the more variables that may be available, the greater the chance of errors in the data. The separate sorting, accounting, and surveying of mixed gears is critical to ensure the most accurate data for stock assessments, and the importance here cannot be overstated. Third, the GMT notes that the effects of Council decisions made regarding these alternatives needs to be critically considered under the developing EM program, RCA/EFH adjustments, and salmon consultation and the potential effects. Additionally, an important question arises: will the relaxation of the regulations for some of these issue alternatives have negative impacts to the physical environment?

GMT Recommendations

- **The GMT recommends that current gear restrictions be available for use in future management decisions, if the need arises.**
- **The GMT recommends the Council consider reducing the minimum size to 4 inches or possibly 3 inches as proposed by NMFS to match the minimum size for midwater trawls, but not eliminate mesh size regulations entirely.**
- **The GMT also recommends that mesh size and other major gear configurations (e.g., excluder types) be documented via observers or logbooks to allow measurement of the effects of differing mesh sizes.**
- **The GMT recommends Alternative C2; however, the Council should consider the cumulative impacts of this issue with mesh size and chafing gear alternatives.**
- **The GMT recommends Alternative D3.**
- **The GMT recommends the Council consider selecting Alternatives E2 or E3 while taking into consideration the cumulative impacts with alternative selection under Issues A (minimum mesh size) and C (codend).**
- **If the Council chooses Alternative F3, the GMT recommends Sorting sub-option A, separating catch by gear type and recording on separate electronic tickets.**
- **Overall, the GMT recommends Alternative F3, sub-option A (all legal IFQ groundfish gear could be used), with the assumption that Sorting sub-option A is selected.**
- **The GMT recommends Alternative G2, with the assumption that catch can be sorted by IFQ management area and separated on electronic fish tickets.**
- **The GMT recommends Alternative H2, with the assumption that under the future EM regulations, accurate monitoring of deck activities can occur.**

References:

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