

GROUND FISH MANAGEMENT TEAM REPORT ON ELECTRONIC MONITORING PROGRAM GUIDELINES AND MANUAL REVIEW

The Groundfish Management Team (GMT) reviewed the materials in the briefing book and received an overview of this agenda item from Mr. Brett Wiedoff, Pacific Fishery Management Council (Council) staff, and Mr. Justin Kavanaugh, National Marine Fisheries Service (NMFS) staff, on our November 5 webinar. We offer the following thoughts for consideration.

Vessel Monitoring Plans

The draft electronic monitoring (EM) program vessel monitoring plan (VMP) guidelines ([Agenda Item H.3.a, NMFS Report 2](#)) largely reflect the current VMPs used in the EM-exempted fishing permit (EFP) program, which have worked successfully over the past 4 years. The GMT provides some minor suggestions to further improve this document. The GMT suggests that NMFS define sunset and dawn more specifically than “official,” in order to avoid potential confusion between nautical, civil, and astronomical times. A similar discussion occurred during the development of regulations to minimize seabird interactions using streamers; the proposed rule ultimately selected civil dusk and dawn (84 FR 48094 September 12, 2019). The GMT also suggests creating consistency across gears by clarifying that Endangered Species Act (ESA)-listed seabirds should not be discarded as debris under optimized retention fishing. Similarly, the GMT suggests clarifying that salmon already sampled by observers should be discarded at sea, as currently specified in the Terms and Conditions for the EFP, as well as in individual VMPs. This will avoid potential double-counting of salmon across at-sea and shoreside sampling.

Video Review

NMFS reports ([Agenda Item H.3.a, NMFS Report 3](#) and [Agenda Item H.3.a, NMFS Report 4](#)) provided rules for video review, as well as proposing the review criteria and the rate at which video review should occur. NMFS proposes 100 percent review of hauls on midwater trips using maximized retention, including shorebased whiting, non-whiting midwater, and mothership/catcher vessel. These trips do not sort catch at sea and have only minimal, operational discards, so video review is completed quickly and little time would be saved reviewing at a lower rate. **The GMT supports NMFS’ recommendation to review 100 percent of video on maximized retention trips.**

The Pacific States Marine Fisheries Commission (PSMFC) provided additional analysis of video review rates for optimized retention fishing in their report, “Logbook Auditing for EM: Bottom Trawl and Pot Fisheries” ([Agenda Item H.3.a, PSMFC Report 1](#)). The title’s use of the term “logbook auditing” reflects the changing terms used for different steps in the video review process. The GMT will follow NMFS’ current use of “video review” to refer to comparison between the captain’s logbook and the electronic monitoring (EM) video reviewer estimates and “auditing” as the comparison between the EM and West Coast Groundfish Observer Program (WCGOP) video reviewer estimates. The analysis showed that the likelihood of false fails (which results in incorrectly failing trips and reviewing more video than actually needed) was ~5 percent or less for both bottom trawl and fixed gear across all combinations of review criteria (the proportion or weight within which a logbook and video review data are considered matching) and rate (25, 33, or 50 percent). False passes would result in trips being incorrectly passed without necessary

additional review. The rate of false passes differed by gear, criteria, and review rate. Bottom trawl trips were more impacted by review rate than by criteria, while fixed gear was influenced by both variables.

The PSMFC analysis also showed that the underestimate of annual fleetwide discard weight of species and species groups varied little across the range of video review rates within different criteria levels. The differences are unlikely to significantly impact estimates of total mortality or attainment of harvest goals. For example, discard of sablefish north of 36° N. lat. by the bottom trawl fleet represented one of the greatest differences proportionally, but translated to less than 100 lbs difference between the estimated discard at 100 percent review rate and the estimated discard using low criteria and a 25 percent review rate. Similarly, the magnitude of estimated Pacific whiting discard was greater than other species due to the volume of catch, but proportionally was very low.

Understanding how these different review rates and criteria translate into reduced review time and costs is helpful for balancing economic benefits to industry with the need for accurate mortality estimates. To do so, the GMT uses NMFS' suggestion of estimating labor costs at ~\$50 per review hour. The average trip review time for bottom trawl ranged from ~7.5 hours (\$350) using low criteria and 25 percent review rate to ~12 hours (\$600) using high criteria 50 percent review rate. At 100 percent review, a trip on average required 14.1 hours to review. Average review times of fixed gear trips showed a similar pattern, ranging from ~4.5 to ~8 hours (\$225 to \$400), with 11.3 hours required for 100 percent review. To balance the accuracy of species-level discard estimates and costs to industry, **the GMT supports NMFS' recommendation to use high criteria and a 25 percent video review rate for bottom trawl and fixed gear trips, as well as non-maximized retention midwater trawl trips.** Using this criteria and rate, an average trip review would cost ~\$500 for bottom trawl and ~\$300 for fixed gear. Given the similar accuracy across criteria, NMFS could also consider lowering industry costs by selecting the low review criteria, which would translate into average savings for bottom trawl of ~\$125 and fixed gear of ~\$75 per trip.

NMFS noted that trips are now able to use more than one trawl gear type, which could result in a single trip with both optimized and maximized retention hauls. In these cases, **the GMT recommends the NMFS consider reviewing each set of hauls separately with the appropriate review rate.** For example, 25 percent of optimized retention bottom trawl and 100 percent of maximized retention midwater trawl hauls would be reviewed on a trip. This would ensure that the quality of data are maintained, while avoiding an economic penalty for fishing multiple gears. The GMT also supports NMFS' proposed quota debiting business rules, which align with the 'high' review criteria.

In addition to the review rates, the GMT suggests some clarifications and potential further analysis for NMFS to consider. Specifically, NMFS proposes that steam time will only be reviewed if a trip is selected for audit by the WCGOP. Although little to no discard is likely to occur while steaming, the GMT suggests that NMFS provide supporting data and analysis to quantify the potential for overlooked discards and further assess the need for review of steam time video.

The GMT does not believe that industry members should be able to select 100 percent review at any time. Allowing industry members to request 100 percent review for any trip could introduce bias into the data, which will be used for both quota species management and to assess total mortality. Doing so could lead to increased accuracy on a subset of non-random trips and lower

accuracy on the rest of the trips. The GMT suggests that the potential for bias should be further analyzed before allowing this option. Without further information, **the GMT recommends that NMFS consider that industry members be allowed to select either the review rate used for the fleet or 100 percent for an entire fishing year or other set period of time.**

The GMT would also like more clarity on how hauls with lost gear will be assessed. The current rules state that the video from such hauls will not be reviewed, which the GMT agrees is appropriate for hauls where all gear is lost. However, fixed gear hauls often lose only a proportion of gear, and review of those hauls would help ensure that quota, discard, and lost gear amounts are appropriately estimated in these cases. **The GMT recommends that discard, mortality, and lost gear estimates be compared except in cases when all gear is lost and that the NMFS clarify how discard, quota, and lost gear amounts will be estimated for hauls with all gear lost.**

Finally, the review rate and criteria should be re-evaluated if discard rules change, including allowing new species to be discarded. If the number of species or the level of concern for species changes, these rules may not be relevant and should be reassessed. The GMT suggests that NMFS consider guidelines or establish a regular timeline to review and assess how changes to discarding rules impacts the review criteria and rates needed to successfully manage quota and the fishery.

Audit of Video Review

After the video is reviewed and estimates are compared to the captain's logbook for quota species management and discard estimates, the video review itself will be audited by WCGOP. NMFS proposes that the first three EM trips by each vessel, and then 10 percent of randomly-selected trips, be audited by WCGOP. The audit is passed if video review estimates are within 10 percent (or 2 lbs if the amount is less than 10 lbs) of WCGOP estimates. If the audit is failed, WCGOP estimates will replace the video review estimates, and additional training and auditing may be required. The GMT agrees with this criteria for passing, given its similarity to the 'high' criteria described above and supported for video review. However, the GMT suggests that more analysis could be done to select the appropriate audit rate. Given the variation in false pass rates at different levels of video review described above, it is difficult to assess the appropriateness of the selection of 10 percent auditing without additional analysis. The GMT suggests that the protocol be clarified to indicate if WCGOP will review and compare only those hauls previously reviewed, and if weights will be compared at the species, haul, or trip level. Finally, the GMT recommends that observer data should not be used in lieu of WCGOP video review estimates for comparison to provider estimates during the audit. Although observer estimates and video review estimates have been shown to be similar, there is potential for higher 'fail' rates to occur if observers estimate more precisely than video reviewers. To ensure consistency, the GMT suggests that WCGOP video review data be used for comparison to provider video review estimates regardless of the availability of at-sea observer data.

Pacific halibut discard mortality rates

Bottom trawlers who use EM are debited halibut quota pounds (QP) based on a formula that applies higher discard mortality rates to longer times-on-deck. While this formula works well for trips that are reviewed, the GMT was asked to provide guidance regarding non-reviewed trips. One potential option was to assign halibut discards the maximum 90 percent discard mortality rate associated with the International Pacific Halibut Commission's "dead" viability category. Another option was to assign an average discard mortality rate for non-reviewed trips based on either the fleet-wide

average or a vessel-specific average. **The GMT recommends that the vessel-specific average discard mortality rates be used to debit QP for non-EM reviewed bottom trawl trips.** This will better reflect vessel-specific differences in handling practices and provide more incentive for fishermen to return Pacific halibut to the water as quickly and safely as possible. The GMT did not analyze how to select the appropriate time frame over which to calculate vessel-specific rates or how to address fast but damaging handling practices and suggests these decisions be informed by additional analysis by NMFS and PSMFC.

Recommendations:

1. **The GMT supports NMFS' recommendation to review 100 percent of video on maximized retention trips.**
2. **The GMT supports NMFS' recommendation to use high criteria and a 25 percent video review rate for bottom trawl and fixed gear trips, as well as non-maximized retention midwater trawl trips.**
3. **On trips with multiple gear and retentions types, the GMT recommends the NMFS consider reviewing each set of hauls separately with the appropriate review rate.**
4. **The GMT recommends that NMFS consider that industry members be allowed to select either the review rate used for the fleet or 100 percent for an entire fishing year.**
5. **The GMT recommends that discard, mortality, and lost gear estimates be compared except in cases when all gear is lost and that the NMFS clarify how discard, quota, and lost gear amounts will be estimated for hauls with all gear lost.**
6. **The GMT recommends that the vessel-specific average discard mortality rates be used to debit QP for non-EM reviewed bottom trawl trips.**

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