

**Groundfish Electronic Monitoring Exempted Fishing Permits Update and NMFS
Recommendations for the Whiting Regulatory Amendment
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EFP Status Report

In April 2015, NOAA's National Marine Fisheries Service (NMFS) approved four applications for exempted fishing permits (EFPs) to test the use of electronic monitoring (EM) in the Pacific coast groundfish fishery. The EFPs allowed participating vessels to use EM in place of human observers to meet requirements for 100-percent observer coverage in the Pacific Coast Groundfish Trawl Rationalization Program. The Pacific Fishery Management Council recommended these EFPs for approval to inform the development of regulations for an EM program for the groundfish fishery. NMFS issued EFPs to a total of 37 vessels, of which 22 are whiting midwater trawl, 8 are bottom trawl, and 7 are fixed gear (pots). Of these, 25 vessels have fished under the EFP since May, and more vessels are starting each month. NMFS is providing this update to the Council to acquaint the Council with the EFP program and share preliminary results in preparation for the Council's more comprehensive discussion of EM regulations for the whiting fishery at its November meeting.

Program Overview

Each vessel has been issued an EFP detailing exemptions from specific regulations and the rules and requirements for participation in the EM program. Terms and conditions include standards for equipment and vessel monitoring plans (VMPs), allowable discards, procedures for handling equipment malfunctions, reporting requirements, and other responsibilities of the vessel operator and crew (the final EFPs are available on the Council's website: <http://www.pcouncil.org/groundfish/trawl-catch-share-program-em/em-efps/>). Vessels were able to procure EM equipment from any "qualified service provider," which NMFS defined as any service provider that had previously provided equipment for a pilot project or operational program in the U.S. All EFP participants opted to use Archipelago Marine Research, Ltd. for the EFP. Once the equipment is installed, vessels submit a VMP for review and approval by NMFS, which includes a diagram of the vessel with discard control points labeled, measurements to aid in estimating discard weight, and vessel-specific information like equipment layout and settings and special catch handling instructions. Pacific States Marine Fisheries Commission (PSMFC) and NMFS staff review the images in the VMP to determine whether camera views are adequate before a VMP is acceptable for use so the vessel can start fishing under the EFP.

Before each trip, the vessel provides 48-hour notice to the West Coast Groundfish Observer Program for purposes of deploying scientific observers. The vessel must also be declared into the EFP with the VMS program to aid NMFS and PSMFC in tracking vessel activity. Before departing port and daily while at sea, the captain must run a function test on the EM system to ensure that the system is working properly throughout the trip. Function tests are logged by the EM system so that NMFS can verify compliance with this requirement.

During an EFP trip, the EM control box logs location and sensor data every 10 seconds. When the vessel engages its hydraulics, the sensors trigger cameras to record and recording continues until the vessel enters port. The vessel has specific rules about what species can be discarded and instructions in its VMP for catch handling and discarding. All but one vessel are fishing under a “maximized retention” approach, which requires that all individual fishing quota (IFQ) and non-IFQ species be retained with a few exceptions for large organisms, prohibited and protected species, invertebrates, mutilated and depredated fish, and debris. One bottom trawl vessel will fish under an “optimized retention” approach, which would allow discarding of non-IFQ species that can be differentiated from IFQ species, as well as Arrowtooth flounder, English sole, Dover sole, and whiting. All vessels are required to retain salmon to ensure accurate piece counts and allow some biological data collection at the dock. Captains record piece counts and weights of discards from each haul in a logbook. Mothership catcher vessels also transmit discard estimates to the mothership to be included in the mothership observer data for each haul.

Following the trip, logbooks must be submitted to PSMFC within 24 hours of landing and hard drives every trip (mothership catcher vessels), every two trips (bottom trawl and fixed gear), or every five trips (shorebased whiting). PSMFC enters the logbook data within one business day of receipt and logbook data is uploaded to the vessel account system nightly. Video is reviewed within two business days for fixed gear and whiting trips. Bottom trawl trips are generally reviewed within four business days, although only two bottom trawl vessels have fished under the EFP at this time, so this timeline may not be representative. At this time, video review is occurring on 100-percent of hauls to check for compliance with EFP rules and collect discard weights and piece counts for comparison to logbooks. Transit time is also reviewed on an ad-hoc basis when compliance issues are suspected. One EFP is testing total IFQ catch accounting on one fixed gear vessel. To achieve this, reviewers also record counts and weights of retained species. At this time, only IFQ discards present in the video and absent from the logbook are uploaded to the vessel account system nightly. NMFS and PSMFC are still building the business rules that will govern how close estimates of IFQ discards on the video and logbook should be.

Preliminary Lessons Learned

Work to date has focused on implementing the EFPs, including installing equipment, reviewing vessel monitoring plans, refining protocols, and establishing program infrastructure. This work continues as new vessels begin fishing under the EFP in the late summer and early fall. However, NMFS, PSMFC, and EFP participants have already learned much that would improve implementation of an operational EM program for the groundfish fishery. Some key lessons-learned are summarized below.

1. A tiered approach to the regulations may be beneficial and would allow more timely incorporation of lessons-learned. For example, in the EFPs NMFS specified general performance standards in its decision memorandum on the overall EM EFP program as the first tier, and more detailed requirements were described in the EFPs and criteria for vessel monitoring plans, as the second and third tiers. This approach has worked well and allowed NMFS and EFP participants to refine requirements and protocols, without the delay of issuing new EFPs or a decision memorandum. NMFS is exploring how this tiered approach could be used in EM regulations, such as by including general

performance standards and requirements in regulation, and addressing more detailed requirements in guidance for VMPs. A similar approach is used for first receiver catch monitoring plans with great success.

2. Tracking compliance and communicating feedback to vessel owners and captains requires significant time and effort, but is critical to program success. NMFS and PSMFC need to have infrastructure in place to track individual vessel performance trip to trip, and to communicate with vessel owners/operators when performance needs to improve. In addition, there needs to be clear standards for performance, consequences for continued non-compliance, and procedures for re-evaluating a vessel's eligibility to use EM when all other efforts to improve performance have failed. Much of this infrastructure is already being developed to support the EFPs, and NMFS has begun working on the additional procedures and policies that will need to be part of the whiting regulations or program implementation.
3. Vessel owners and operators need to be more engaged early in the program to facilitate proper catch handling, reporting, and equipment operation and maintenance. Many of the compliance issues in the EFPs have resulted because a vessel owner or operator was not aware of or did not understand a particular EFP requirement. In some cases, the information was not communicated to those actually in control of vessel operations. Proactive education of vessel owners and operators appears to be needed to ensure everyone understands what the EM program requires of them. NMFS has begun to explore ways to engage vessel owners, captains, and crew early in the program, such as pre-season trainings and more concise guidance. The vessel monitoring plan may be used to facilitate a dialogue between NMFS and the vessel owner and captain about EM program requirements and what changes will be needed to their own individual operation, similar to how catch monitoring plans are used by first receivers.
4. The logbook is not only a record of discard estimates, but also an important tool for communication between the vessel and video reviewer. Comments and other notations in the logbook can provide key information to NMFS and PSMFC about the circumstances surrounding an incident, such as a data gap or discard event. It also encourages captains to be mindful of discard activity on the vessel, improving catch handling and discard compliance. NMFS believes a vessel logbook is a key component of a successful groundfish EM program, including for the whiting fishery.
5. There need to be procedures in place to deal with equipment malfunctions at sea, which are more common than originally expected. The majority of incidents encountered during the EFPs have been of a technical nature, such as camera glitches or radar interference. In the EFP, captains call Archipelago for technical assistance first, then NMFS if the problem is not easily fixed. So far, no vessels have had to end a trip as a result of technical issues, but as a precaution some motherships carry spare camera systems for their catcher vessels. These experiences have emphasized the need for vessels and NMFS to have plans in place to address technical problems at sea and prevent them where possible. The VMP may be a way for vessel owners and NMFS to develop back-up plans best suited to each individual operation. In addition, technicians could be

required to test common issues at installation as a condition for approval of a VMP, to ensure that most issues are resolved before a vessel starts fishing.

Next Steps

- More vessels will begin fishing under the EFP, particularly bottom trawl vessels, which will give us more data and possibly raise new questions that will require we refine protocols or develop policies to address.
- NMFS and PSMFC will begin analyzing the EM and logbook data and developing the logbook data quality standard to answer the question of how closely logbook and video discard estimates need to match.
- NMFS will begin developing draft regulations and an implementation plan for an EM program for the mothership and shorebased whiting sectors for the Council to review at its November meeting. Toward that end, NMFS is recommending some changes to the Council's final preferred alternative for the whiting fishery to facilitate amendment approval and regulation development.

NMFS Recommendations for Whiting EM Regulatory Amendment

In September 2014, the Council selected its final preferred alternative (FPA) for the whiting fishery EM program (see motion attached). Among other things, the FPA called for an interim period in which NMFS or its agent would temporarily conduct video review until such time as a certification process could be established for industry-funded third party video review. The FPA also recommended that mothership catcher vessel operational discards be debited preseason using average historical data, rather than inseason accounting. NMFS is concerned that these components of the FPA as proposed may not be consistent with applicable law and recommends that the Council make the following changes to the FPA for the whiting fishery:

1. NMFS recommends that the Council revise its FPA to require only industry-funded third-party video review and allow NMFS to propose an interim funding source through the rulemaking.
2. NMFS recommends that the Council reconsider inseason accounting for mothership catcher vessel discards using logbook and EM data, in order to use the best available information.

With these changes, NMFS believes that the Council's FPA would allow NMFS to incorporate other lessons-learned from the EFPs into the draft regulations and implementation process. If the Council approves NMFS's recommended changes, NMFS will use the Council's FPA along with these changes to develop draft regulations and an implementation plan for the whiting EM program for the Council to review in November.

EM Program Funding

The Council's FPA stated that a certified third party would conduct the video review once a certification process has been established, and until then NMFS or its agent would conduct the video review. NMFS agrees that a transitional phase would be needed for the whiting EM program in which NMFS or its agent would conduct the video review. However, NMFS

believes that this language is not approvable as written based on guidance received from the Department of Commerce Office of General Counsel. According to this guidance, NMFS and the industry cannot both be eligible to fund the same requirement in regulation. A particular program cost is either NMFS's or the industry's responsibility, with NMFS's role defined by its legal obligations to pay for government services. Therefore, the question of who must fund video review relies on a determination from NMFS of its responsibilities in the proposed EM program, rather than a Council action.

NMFS believes that it may be appropriate for a third-party service provider funded by industry to conduct EM video review, as the Council proposes, provided that NMFS has the standards and processes in place to monitor the provider's performance and ensure data quality. In this model, the third party would gather data from the video and provide it to NMFS, and NMFS would set standards for the provider and video review and monitor the provider's performance to ensure data quality. NMFS believes that an Observer Program-like infrastructure, with training, certification, and data QA/QC procedures, would be needed to adequately monitor a third-party service provider video review. As NMFS does not yet have sufficient information to develop standards or infrastructure to support third-party video review, NMFS believes it must conduct the video review itself, likely through a cooperative agreement with PSMFC, to ensure adequate data quality. In this case, the Council's regulatory amendment/EA should assume industry fully funds a third-party video review to analyze the full range of potential cost impacts to the industry. This would allow NMFS to follow-up with a secondary rulemaking in a future year to establish standards in regulation for third-party service provider video review and industry funding.

NMFS strongly recommends that the Council revise its final preferred alternative to require only industry-funded third-party video review, to be consistent with appropriations law. NMFS would specify in the rulemaking any arrangement for NMFS or its agent to conduct video review in place of a third party.

Discard Accounting for Mothership Sector

The Council's FPA recommends that unintentional minor discards by mothership catcher vessels be deducted in aggregate pre-season, because of concern about the cost of reviewing video to estimate many small discard events. Currently with human observers, the catcher vessel observer records catcher vessel discards and reports it to the mothership observer to be included in the mothership observer data for the haul. This allows for inseason accounting of catcher vessel discards. NMFS believes inseason accounting is preferable, because it represents the best available information on catcher vessel discards. It would also ensure consistent accounting of discards between trips using EM and trips using human observers. Therefore, in the EFPs, NMFS and PSMFC are trying to replicate the existing observer process to offer the Council an option to deduct all discards inseason. Catcher vessel operators have been estimating all discards and recording them in their logbooks. The vessel operator radios their logbook discards to the mothership observer to include in the mothership observer data. When video is reviewed, the mothership observer data would be corrected for those entries where the logbook did not meet the data quality standard. NMFS is still analyzing the logbook and EM data at this time, but plans to share results from this analysis with the Council in November.

With respect to review costs, video review of whiting hauls is extremely fast, taking approximately 10 minutes per haul including estimating all discard events (minor and major events). Video review of whiting hauls do not require careful monitoring of sorting, species identification, or length measurements, which are effort intensive. Video reviewers simply pause the review momentarily to estimate the total weight of a discard event, and species composition of the discards are extrapolated from the mothership observer's samples from that haul. Because the Council's FPA would still require review of all trips for large or intentional discard events, NMFS believes that the Council's FPA would not result in a measurable cost savings that would justify not using inseason information. Furthermore, average discard rates would become stale shortly after program implementation and it is not clear how they would be updated. Mothership catcher vessels using EM may not get much scientific observer coverage, and extrapolating observer data from vessels carrying catch share observers may not be representative of EM trips. Therefore, NMFS recommends that the Council reconsider inseason accounting for mothership catcher vessel discards using logbook and EM data.

Council Final Preferred Alternative for EM for the Whiting Fishery (from PFMC Meeting Minutes, September 2014):

“Ms. Lowman moved (Motion 14, seconded by Mr. Myer) that the Council select, as final preferred alternatives for EM for the whiting fishery, the recommendations of the Groundfish Electronic Monitoring Policy Advisory Committee (GEMPAC) found in Agenda Item J.3.b, Supplemental GEMPAC Report, September 2014 (pages 3-4) with the following changes:

- Step 1: Primary data source for discard estimates: Camera Recordings will be used (Alternative 2A with a logbook requirement added) unless audited logbooks produce reliable estimates more efficiently and at a reduced cost. (Alternative 3).
- 2.2.1 Video Review: 100 percent unless Alternative 3 meets the most cost-effective standard above in which case the percent review to be the minimum level determined to be necessary to ensure compliance (no less than 10 percent) with an escalation clause for noncompliance.
- 2.2.2 Discard Accounting: should be on an individual basis (Option A) for Shoreside, but for mothership sector Option D, deduct the aggregate accumulated unintentional minor discards (spillage) estimated to be less than 0.5 percent of the mothership allocation.
- Species composition would be calculated using status quo methods.
- 2.2.7.5 Mandatory Vessel Operational Plan Annual Renewal (B).
- 2.2.8.2 Shoreside Monitor (C) or Vessel Operator (D).
- 2.2.8.4 Certified Third party (D) once a certification process has been established, until then Government (A), NMFS or their agent (e.g., PSMFC).
- Council staff should also monitor EFP progress and at the earliest Council meeting following when information from the EFP which would impact the Council’s final preferred alternative becomes available, NMFS would provide Council with this information and request the Council’s input on refinements on either the EFPs and/or Council’s final preferred alternative.
- Until these policy decisions are verified by EFP testing and confirmed by the Council, proposed rules and associated decision documents would not be deemed for transmittal.”