



New England Fishery Management Council

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MEMORANDUM

DATE: November 19, 2019
TO: Groundfish Committee
FROM: Groundfish Plan Development Team
SUBJECT: **Analysis and Development of a Vessel Specific Coverage Level Option for Possible Inclusion in the Draft Amendment 23/Groundfish Monitoring Alternatives**

The Groundfish Plan Development Team (PDT) met on November 5, 2019 in Gloucester, MA. The PDT discussed: 1) possible updates to the draft alternatives for Amendment 23 (A23)/Groundfish Monitoring; 2) possible inclusion of a vessel specific coverage level option in A23; 3) pros and cons of decoupling NEFOP/ASM coverage; and 4) next steps and timeline for the draft Environmental Impact Statement (DEIS) for A23.

Overview

This memorandum summarizes PDT discussion topics 2 and 3 above: possible inclusion of a vessel specific coverage level option in A23 and pros and cons of decoupling Northeast Fisheries Observer Program (NEFOP)/At-Sea Monitoring (ASM) program coverage.

The PDT discussed analysis and development of a possible vessel specific coverage level option in the draft A23 alternatives, following tasking by the Groundfish Committee.

At its October 30th meeting, the Groundfish Committee passed the following motion:

The Committee recommends to the Council to support an option to develop vessel-specific coverage levels.

To substitute to task the PDT to develop and analyze an option to develop vessel-specific coverage levels

(Motion to substitute carried 6/0/0.)

(Motion carried 6/0/0.)

Vessel specific coverage level option

The PDT was again made aware of a letter sent from the Council to the Northeast Fisheries Science Center requesting information on observer deployment data at the vessel level for

groundfish trips, as a follow-up from the June Council meeting when this discussion first occurred. This information is a first step in considering vessel specific coverage levels, to better understand concerns about differences in coverage rates between vessels. The Council is still awaiting a response to the letter. In the absence of data on vessel level observer deployment, the PDT had a discussion on some of the considerations regarding vessel specific coverage levels, including the challenges of designing vessel specific coverage levels under the current system (summarized in more detail in Attachment 1).

Overall, the PDT recommends that the Committee consider the following issues as it further discusses a potential vessel specific coverage level option in A23:

- 1) A vessel specific coverage level option would likely necessitate updates to the Pre-Trip Notification System (PTNS) to address concerns about uneven vessel coverage;
- 2) Even if equal target coverage levels across vessels are set, there is no guarantee that equal coverage can be realized across vessels;
- 3) The relatively new “2nd stage” selection process added to PTNS in May 2018 may help mitigate some of the concerns about unequal coverage;
- 4) The details of a vessel specific coverage level option depend on the overall monitoring standard and program adopted, so it may be more practical to develop after A23 identifies the overall monitoring structure; and
- 5) The PDT is already overloaded with A23 and FW59 analyses that are due in the next several weeks. There may not be sufficient time before the January meeting to develop and analyze vessel specific coverage level options that could be coupled with all the various monitoring alternatives in A23.
- 6) Attaining vessel specific coverage levels in-season with NEFOP and ASM coverage combined is not feasible (more details below).

In summary, the PDT notes that addressing concerns with observer effects and discarding of legal sized fish will require high levels of monitoring, and high levels of monitoring will also likely better address possible concerns about uneven coverage among vessels. A target fixed rate for just ASM (not including NEFOP) rather than a combined target rate would simplify deployment of at-sea monitors and likely result in more even coverage and costs across sectors. If a 100% monitoring standard is selected in A23 the challenges of combined targets is eliminated because if a trip is not selected for NEFOP, it would automatically be selected for ASM.

Decoupling NEFOP and ASM

Related to the discussion on development of a vessel specific coverage level option, the PDT continued its discussion on whether monitoring coverage levels in the A23 alternatives should continue to be total monitoring coverage levels, or should be considered ASM coverage levels that are separate from, and in addition to, NEFOP coverage. As currently written in the alternatives, these are total monitoring coverage levels (NEFOP coverage would be combined with ASM coverage to fulfill minimum total coverage levels). The PDT had some discussion of the considerations of separating the NEFOP and ASM programs, including pros and cons, summarized in Attachment 2.

The PDT notes that development of a vessel specific coverage level would necessitate separating the programs so that this would be a vessel coverage level for ASM. Because NEFOP coverage is deployed by Standardized Bycatch Reporting Methodology (SBRM) fleet type, vessels will have different coverage rates based on their SBRM fleet type and it is thus nearly impossible to completely achieve equal target coverage rates for vessels if NEFOP is combined with ASM to achieve a target total monitoring coverage rate. However, because vessels will receive different levels of NEFOP coverage based on SBRM fleet, even setting a fixed level of ASM coverage each vessel must achieve, vessels will still have different achieved levels of total coverage because not all vessels will get the same amount of NEFOP coverage.

PDT Discussion Document: Considerations for a Vessel Specific Coverage Level Option

The PDT first discussed the Committee's intent behind a vessel specific coverage level option. It was interpreted as an interest in achieving fairness between vessels, both in terms of costs and equal coverage rates. In addition, it was mentioned that there are concerns that some vessels are able to "game-the-system" and avoid carrying observers; therefore, a vessel specific coverage level option may help ensure that vessels more equally share the burden and responsibility of monitoring. Further, the PDT discussed how currently the Agency monitors realized coverage levels at the sector level, which means some vessels can have much lower realized coverage rates than others, but the sector overall is still achieving the target coverage level. This aspect of the current program could be perceived as unfair or not ideal.

Fisheries Sampling Branch (FSB) staff explained that the current Pre-Trip Notification System (PTNS) contains a feature to ensure vessel coverage equitability at the selection tier- and strata-levels. This feature was added to PTNS to address vessel equitability, when it was upgraded in May 2018. The stratified random selection process runs first and then the 2nd stage selection process runs to evaluate a vessel's individual coverage relative to the desired target of that strata. If the individual vessel coverage falls above/below the target \pm some specified bounds, the 2nd stage selection feature will override the stratified random selection process. The 2nd stage feature is designed to ensure that vessels are subject to the same sampling programs and selection strata experience equitable coverage (within-strata equitability). However, it should be noted that this feature is not designed to achieve equal coverage for inter-strata variability (for example, such as would occur if two trawl vessels fished out of different port regions (New England vs. Mid-Atlantic) and were subsequently subjected to very different Standardized Bycatch Reporting Methodology (SBRM) sampling rates that may exist between these two SBRM fleets). Further, this feature cannot address the uneven coverage caused by SBRM/At-Sea Monitoring Program (ASM) interactions.

FSB staff further explained that vessel coverage rates vary across vessels and sectors for a variety of reasons. The main reason that vessel-level coverage varies among vessels, as mentioned above, is due to the interactions between SBRM and ASM coverage requirements. Operationally, the objective of FSB is to adjust SBRM coverage, through the operation of PTNS, to a rate that will fully utilize the prescribed sea days in a manner consistent with the SBRM sampling design. Once SBRM coverage has been adjusted, FSB then examines how much SBRM coverage each sector is receiving on average - across the entire sector. ASM coverage rates are then adjusted - at the sector level - to get the sector combined SBRM + ASM coverage to achieve the target level. Any vessel within a sector that is experiencing higher/lower than average SBRM coverage may receive higher/lower ASM coverage relative to the combined total monitoring coverage target. Maintaining these targets real-time across multiple sectors is very challenging.

In addition, there are also many operational reasons individual vessel coverage rates vary, including: random variability, vessel non-compliance, provider selection preference (depending on trip date, trip duration and port and corresponding observer availability) and providers' random selection of trips, observer safety considerations, and other operational considerations. Additionally, groundfish trips excluded from the ASM requirement (FW55 extra-large mesh

gillnet, Exempted Fishing Permits (EFPs) such as several of the electronic monitoring (EM) EFPs), and SBRM exemptions (some EFPs such as the Maximized Retention EM EFP) result in variable coverage rates between vessels and among sectors. FSB staff clarified that the Vessel of Concern list, vessels deemed to have a safety issue for observers, has only a handful of vessels, and vessels and sector managers receive follow-up to resolve the issues as soon as possible. FSB staff emphasized that it should be clear in developing an option for vessel specific coverage levels that it may be possible to set equal target coverage levels across vessels, but it cannot be guaranteed that equal coverage can be realized across vessels – for the operational considerations described above. This is also true for the existing alternatives in Amendment 23, they are all target coverage rates, not realized. Amendment 23 does not include specific measures/actions/penalties that would happen if coverage rate targets are not achieved.

The PDT discussed that development of a vessel specific coverage level option would necessitate separating the Northeast Fisheries Observer Program (NEFOP) and ASM programs so that this would be a vessel coverage level for ASM only. Otherwise, if realized coverage rates continued to be evaluated as the combination of SBRM and ASM coverage there are still likely to be inequities in coverage between vessels due to differential SBRM coverage and the response delay in making subsequent ASM adjustments. As the SBRM days are being completed throughout the year, adjustments need to be made to the ASM targets within the PTNS to achieve the total target coverage level. Depending on the sector, there are multiple target coverage levels that need adjustment which can be difficult to predict among the different number of fleet types and if fleet type effort changes from previous fishing years throughout the fishing year. There is no mechanism to auto adjust ASM rates in response in a real-time manner. Further, the 2nd stage selection process currently used to adjust individual vessel coverage cannot assist with the inequities caused by SBRM/ASM interactions. This would be best addressed by removing SBRM coverage from the consideration of sector-specific coverage objectives (i.e., make ASM coverage targets independent of SBRM coverage). However, because vessels will receive different levels of NEFOP coverage based on SBRM fleet, even setting a fixed level of ASM coverage each vessel must achieve, vessels will still have different achieved levels of total coverage because not all vessels will get the same amount of NEFOP coverage.

The PDT noted that if the coverage at the individual level could be achieved, it actually could increase the accuracy of fishery data (other than discards, which would be assumed to be adequately covered by NEFOP), since it would eliminate disproportionate vessel-level coverage and increase the representation of uncooperative vessels in the pool of observed trip information. As discussed previously by the PDT, in the absence of bias, NEFOP coverage is deemed sufficient to estimate discards across fisheries. However, that is not necessarily adequate to accurately and precisely estimate total catch (landings + discards) at the sector Annual Catch Entitlement (ACE) level. The ASM program is specific to monitoring catches relative to ACEs. Further, the PDT has documented evidence of bias in the current monitoring system. Achieving individual coverage levels should help to obtain catch estimates that are more representative of true catch, which should equate to more accurate catch estimates, because it ensures that estimates better represent the entirety of the fleet and fishing activity.

The PDT also discussed challenges with designing and analyzing a vessel specific coverage level at this time. This is in part because the issues surrounding vessel specific coverage levels are

different at lower coverage levels (e.g., 25%) than at relatively high coverage levels (e.g., 75-100%). Therefore, an analysis of a vessel specific coverage level depends on the coverage level the Council ultimately selects under A23. Many of the issues for lower coverage levels relate to other concerns at lower coverage levels that have previously been documented (e.g., observer bias). Analyses to date show that under higher coverage levels (e.g., 75-100%) observer bias issues tend to go away, but remain at lower coverage levels (e.g., 25%). In other words, if the Council adopted 25% as the monitoring standard in A23, vessels could conceivably predict whether or not their upcoming trip would be selected for coverage and then behave differently, which becomes less avoidable at relatively high coverage levels. Additionally, at lower coverage levels it could be difficult to evaluate whether realized coverage rates are low due to random selection or due to vessel compliance issues. Further, the PDT does not believe the analysis for this option could be completed for the DEIS by the end of the year. Perhaps after A23 sets the overall monitoring regime a follow-up action could consider vessel specific coverage level options if this remains an issue.

PDT DISCUSSION DOCUMENT: DECOUPLING NEFOP AND ASM TARGET COVERAGE RATES

During its October 22nd webinar, the PDT discussed potential pros, cons, and obstacles for decoupling ASM and NEFOP target coverage rates, so that the total amount of ASM coverage is more constant and consistent. At present, both the current monitoring program and the monitoring coverage levels as considered in the Amendment 23 alternatives consider the target total monitoring rate to be total combined NEFOP and ASM coverage in the fishery. NEFOP, however, has a different stratification than ASM, which results in differential NEFOP coverage rates by sector (Werner et al. 2019¹) and vessel, and therefore different cost obligations for ASM by sector.

How SBRM and ASM sampling programs interact is very complex. For example, in FY2019 there are 9 SBRM fleets operating in the groundfish fishery across 13 sectors. There are a total of 55 distinct active SBRM/ASM strata-level combinations, and additional combinations can always occur throughout the fishing year. It was suggested that decoupling NEFOP from ASM would simplify the process of at-sea monitor selection because the target coverage rate in an ASM monitoring stratum (sector, gear, area, and Exempted Fishing Permit program) will no longer depend on NEFOP strata coverage rates through the course of a fishing year. This may be a more simple approach, and has the advantage of more cost equability across sectors. This would simplify ASM selection and result in more equal ASM selection of all vessels, but would not address the inherent difference in total coverage between vessels related to differing observer coverage for different SBRM fleets.

Furthermore, the PDT discussed a need to specify how decoupling ASM from NEFOP would work in the option for 100% coverage, since the PDT does not think the intent is to have duplication (both an ASM and NEFOP observer selected for a trip), and the current selection system only allows for a single monitoring type per trip. However, at such coverage rates if a trip is not selected for NEFOP then it can be automatically selected for ASM.

The structure of a decoupled NEFOP and ASM program could have implications for what the target rate for ASM should be and how this would be achieved, as well as cost implications and implications for compliance and enforceability with respect to the goals and objectives of the amendment. Specifically, while NEFOP observers and at-sea monitors are not used to achieve compliance (i.e. reporting requirements and requirements to retain legal sized fish), increased compliance is likely an ancillary benefit from both NEFOP and ASM coverage, so the total combined coverage rate is important to consider when evaluating the sufficiency of various options in achieving the objectives of Amendment 23.

The PDT discussed how decoupling the ASM coverage rate from NEFOP coverage might work as opposed to how the A23 alternatives are analyzed (including NEFOP coverage) using an example fixed coverage rate of 50%. Currently, the A23 alternatives assume that the total combined target rate for the fixed coverage rate alternatives includes both NEFOP and ASM, and further, does not attempt to achieve this on an individual level so any individual vessel coverage rate could vary substantially from the target. If this were applied at the individual vessel level, the NEFOP coverage rate would reduce the ASM selection rate to 42% to achieve a combined coverage rate of 50%. So, of every 100 trips, 8 trips would be covered by NEFOP and 42 would be covered by ASM. Inequalities may emerge depending on the NEFOP coverage on a stratum by stratum basis in real time across a fishing year since the goal is to accomplish a combined coverage rate. At the end of the year the realized coverage rates may not match the combined target coverage rates due to the logistical complexities in carrying out such a task. Again,

¹ <https://www.nefsc.noaa.gov/publications/crd/crd1914/>

Attachment 2

this option does not ensure equitable costs across vessels because individual vessel NEFOP rates could still vary widely. In fact, across all options, this will potentially create the most cost inequity by vessel.

Decoupling the ASM target rate from the NEFOP rate might mean that the ASM target would apply after NEFOP. This would mean that the ASM coverage rate only applies to trips that weren't selected for NEFOP. So, using our example target rate of 50%, if a vessel took 100 trips and 8% of them were covered by NEFOP (leaving 92 trips to potentially be covered by ASM), then 46 would be selected for ASM coverage (50% of 92 trips is 46 trips), which would mean 54% of the total 100 trips were covered by either NEFOP or ASM. This option still allows for differences in cost obligations since NEFOP trips still reduce the number of ASM eligible trips and NEFOP rates will vary across sectors, but the cost difference might be reduced by half as compared to the status-quo like option.

The PDT discussed that to achieve perfect equity you would need to select from all trips to meet the ASM target. However, because the system does not deploy both an ASM and NEFOP observer on a single trip, the coverage rate for ASM might have to be increased on an individual vessel level, which may be difficult or impossible for the Pre-Trip Notification System (PTNS) to accomplish (see Attachment 1 for detailed discussion). Overall, the PDT concluded that further discussions with PTNS leads are necessary to further identify options and obstacles to decoupling the ASM and NEFOP coverage rates.