

Update: Observer coverage on vessels delivering to tenders

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1 Introduction

In October 2018, Council staff were directed to update the Council about tender issues in the North Pacific Observer Program. This discussion paper summarizes challenges with observer coverage on tendered fleets, accomplishments to date, and information to help understand factors that affect tasking priorities.

2 Background on the Observer Program and data concerns specific to vessels delivering to tenders

Data collected by well-trained, independent observers and EM are a cornerstone of management in the Federal fisheries off Alaska. These data are needed by the Council and NMFS to comply with the Magnuson Stevens Fishery Conservation and Management Act (MSA), the Marine Mammal Protection Act, the Endangered Species Act, and other applicable Federal laws and treaties. Information collected by observers and EM provides a reliable and verifiable method for NMFS to gain information about fish and shellfish intercepted by commercial fisheries, as well as data concerning seabird and marine mammal interactions with commercial vessels. Section 313 of the MSA (16 U.S.C. 1862) authorizes the Council, in consultation with NMFS, to prepare a fishery research plan that includes stationing observers to collect data necessary for the conservation, management, and scientific understanding of the fisheries under the Council's jurisdiction.

All groundfish and halibut vessels and processors operating in Federal fisheries off Alaska may be required to accommodate NMFS-certified observers or an EM system to verify catch composition and quantity, including catch discarded at sea, and to collect biological information on marine resources. Vessels and processors are included in either a full or partial monitoring coverage category, based on vessel and gear type and fishery participation. In the full observer coverage category, vessels and processors have at least one observer present for all fishing activity; in the partial observer coverage category, NMFS determines when and where observer coverage or EM is needed. Those in the full observer coverage category are required to obtain observer coverage by contracting directly with observer providers to meet coverage requirements in regulation. Those in the partial coverage category must pay a fee based on a proportion of the ex-vessel value of their landed catch and are required to carry an observer or EM system as determined by NMFS through an Annual Deployment Plan. The fee-based system fairly and equitably distributes the cost of observer coverage among all vessels and processors in the partial coverage category and provides a source of revenue directly linked to the value of the fishery. Since 2013, NMFS collects a 1.25 percent fee based on the ex-vessel value of groundfish and halibut in partial coverage fisheries.

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The Council recognizes that the use of tender vessels is longstanding in Alaska fisheries, and may improve efficiency by allowing fuel and time savings. Tender vessels are particularly important in the western GOA, where the location of pollock and Pacific cod fishing grounds are further from port, and the fleet is largely comprised of smaller trawl vessels (57 to 60 ft LOA). At the same time, a primary purpose of restructuring the observer program in 2013 was to remove potential sources of bias that could jeopardize the statistical reliability of catch and bycatch data from the groundfish and halibut fisheries. The approach to implement systematic random sampling taken in the 2013 restructuring did not fully account for the use of tenders by vessels between 40 and 60 ft LOA.

2.1 Salmon bycatch monitoring in the GOA pollock fishery

The Gulf of Alaska (GOA) pollock fishery is in the partial coverage observer category. A key data concern relating to the GOA pollock fishery is that catcher vessel observers follow different sampling protocols when vessels deliver to a tender as opposed to a shoreside processing plant. On observed trips where the vessel is targeting GOA pollock and delivers to a tender, the observer does not have an opportunity to census the offload to account for all the salmon bycatch that has been intercepted and take systematic genetic samples, as would be done if delivery were made at a shoreside plant. Since pollock deliveries to tenders represent a significant portion of pollock deliveries in some areas of the GOA, the inability to census salmon has the potential to create high variance in total Chinook salmon bycatch estimates. In addition, not taking a census from the tender vessels may lead to bias in the analysis of the genetic stock composition of GOA salmon bycatch (and subsequently the understanding of the Chinook salmon bycatch stock of origin), if there is a difference in the salmon populations encountered by catchers delivering to a tender and those delivering shoreside. In recent years, the Council has prioritized implementation of a robust sampling protocol for Chinook salmon in the GOA trawl pollock fisheries to better understand the stock composition of salmon taken as bycatch; however, stock of origin estimates have been stable over the past 5 years in the GOA so this may no longer be a pressing data concern.

A related concern for vessels is that the offload census of salmon bycatch, which an observer conducts shoreside, provides more precise data for managing the Chinook salmon PSC limit in the GOA pollock fishery. Because of the configuration of tender vessels, a census of the delivery is not an option. When offload data are not available, NMFS estimates Chinook salmon PSC using at-sea samples and extrapolates samples to the delivery of the sampled haul. Observers strive to take multiple, equal-sized samples from throughout the haul to obtain the largest sample proportion possible. However, even with large sample sizes that reduce detectability issues, Chinook salmon is a relatively uncommon species and is characterized by many small and zero counts with occasional large counts. There is a relationship between the abundance of given species in a haul, sample size, and the level of precision in the resulting estimate of species catch from sampling. In general, managers can have very high precision in the catch estimate for common (target species) with very small samples of the haul. Conversely, even large samples of a haul provide relatively imprecise estimates of catch for very rare species, like Chinook salmon. Since Chinook salmon bycatch limits in the trawl fishery are fully utilized, imprecise estimates have the potential to shut down the fishery and cause fishermen to forgo pollock harvest opportunities.

Currently tender vessels are not required to comply with observer coverage. Observers only collect data on vessels and at plants that are required to comply with observer coverage requirements. There are additional logistical and safety considerations that could be problematic with trying to collect data on tender vessels. Tenders often mix catch from multiple vessels in one delivery to a processor and therefore there is no way to identify which haul a salmon came from. Also, since tender vessels are not required to comply with observer coverage, there is no way to verify that salmon had not been removed from the catch prior to delivery at a shoreside processor. NMFS has not supported the approach of deploying observers from tenders due to the safety concerns involved.

2.2 Biased data from observed tender trips

A key data concern of biased data resulting from observed tender trips was first raised in the preliminary 2013 report on the performance of the newly restructured Observer Program, which only reported on the first four months of 2013. Preliminary results reported that the trip length of observed catcher vessels (CVs) delivering to tender vessels was typically shorter than that of unobserved CVs, implying unrepresentative fishing behavior and potentially highlighting an incentive for CVs to stay at sea delivering to tenders when unobserved. Anecdotal reports have also affirmed that CV operators are purposefully taking longer trips (and making more deliveries) when unobserved and delivering to tenders in order to avoid ending the fishing trip and becoming eligible again to be selected for observer coverage through ODDS². Since that time, Annual Reports have repeatedly examined the question of representative data from observed versus unobserved vessels delivering to tenders. Those reports have extended the metrics used to make this comparison to include trip duration, the number of NMFS areas visited during a trip, landed catch weight, the number of different species in the landed catch, and the proportion of the landed catch that was comprised of the predominant species in the catch. There was no definitive evidence of bias in the data during 2013 and 2014, but reports noted that small sample sizes and the challenge of identifying all deliveries to tenders in the landings data may be limiting the data for analysis. In 2015 and 2016, however, an observer effect was clearly evident on tender trips. As a result of these findings, NMFS and the Council acted to improve data collection efforts on tender vessel deliveries through the implementation of tLandings.

In 2017, the Observer Program implemented a tender stratum for each gear type (trawl/pot/longline) for vessels delivering to tenders to ensure that a sufficient number of tender trips would be selected for coverage. The tender strata allow for better tracking and documentation of any potential bias in observer coverage. In 2017, the number of observed trips achieved was never outside of the expected number for any of the tender strata as related to temporal patterns of coverage. However, all three tender strata had a relatively low sample sizes that reduced the ability to make inferences regarding spatial representativeness (from the [2017 Annual Report](#): “Of the six metrics compared in the tender strata (tender pot and tender trawl) there were no metrics with a low p-value. (Note that the tender hook-and-line stratum was not evaluated because there were no observed trips)”).

² Observer Declare and Deploy System

3 Potential solutions and work to date

A tender issues scoping paper prepared by Council staff for the Observer Advisory Committee (now the Fishery Monitoring Advisory Committee, or ‘FMAC’) from [August 2017](#) presented potential solutions to issues on observing tender trips. Information from the 2017 scoping document and resulting FMAC recommendations are summarized in the table below.

Issue	FMAC Recommended Solutions	Current Status
<p>Salmon bycatch monitoring in the GOA pollock trawl fishery</p> <p><i>Are we obtaining a count of the number of salmon caught as bycatch in each observed pollock delivery?</i></p> <p><i>Are we obtaining genetic samples from these fish to determine stock of origin?</i></p>	<ol style="list-style-type: none"> 1. Develop an alternative program for gathering genetic samples 2. Monitor all offloads at the plant, including tender offloads, and require vessels delivering to tenders to have EM onboard to ensure that no salmon are discarded at sea 	<p><i>Progress has been made by NMFS in 2018 to develop an appropriate sampling program that is specifically for vessels delivering to tenders.</i></p> <p><i>Project #13 on the Observer Analytical Tasks List. The Council re-focused the EM Committee to focus on trawl in April of 2018, and the Committee is preparing a Cooperative Research Plan for 2019, to be presented in December of 2018. Research projects address EM for compliance monitoring of full retention in pollock fisheries including tender vessels in the Western GOA, and EM to support alternate methods of dockside salmon accounting.</i></p>
<p>Are we getting biased data from observed tender trips?</p> <p><i>Are observed tender trips identical to unobserved tender trips?</i></p> <p><i>Are vessels delivering to tenders in order to avoid carrying an observer?</i></p>	<ol style="list-style-type: none"> 1. Separate tender strata for each gear type (longline, pot, trawl) 2. Change the definition of a tender trip using one of the following: <ol style="list-style-type: none"> a) Each delivery to a tender starts a new trip b) Vessels may deliver no more than X number of deliveries during a tender trip without relogging into ODDS <p>Include evaluation of allowing observers to deploy from tenders</p> 3. Changes to ODDS to reduce potential for gaming: when an observed trip is cancelled, the next trip <i>taken</i> is automatically observed, rather than the next trip <i>logged</i> 	<p><i>In place in 2017 and 2018. First analysis of effectiveness will be in the 2017 Annual Report (due May 2019).</i></p> <p><i>Project #14 on the Observer Analytical Tasks List. Staff have not yet been tasked to this project, pending completion of observer fee analysis. See further discussion in Section 3.1 of this paper.</i></p> <p><i>Project #6 on the Observer Analytical Tasks List. Requires programming changes in ODDS. In June 2018, the Council supported formation of an Agency Subgroup to document how ODDS operates and identify alternatives for improvement. Changes could include improving the link between ODDS and eLandings, allowing vessels that also fish trawl gear to be placed in the EM selection pool, and changes to the trip cancellation and inherit process.</i></p>

Specifically, the FMAC recommended (in September 2017) and the Council endorsed (in October 2017):

- a) FMAC: The ideal solution for Chinook salmon sampling in the GOA pollock fishery is to monitor all offloads at the plant, and require EM on trawl vessels to ensure there are no discards;
 - Council initiated development of EM for trawl vessels fishing in the GOA pollock fishery (October 2017), and in February 2018, reconstituted the EM Committee to focus specifically on developing EM use on trawl catcher vessels. The trawl EM Committee has prepared a 2019 Cooperative Research Plan for making swift and meaningful progress on developing EM for GOA pollock vessels. By early 2019, the trawl EM Committee further aims to have a clear timeline for developing EM as a compliance tool on GOA pollock trawl CVs.
- b) FMAC: The Council should initiate a regulatory analysis to change the definition of a tender trip so that either every delivery starts a new trip, or a tender trip may constitute no more than a maximum number of deliveries; and, any analysis should evaluate allowing observers to deploy from tender vessels.
 - Council initiated an analysis to change the definition of a tender trip, included evaluation of allowing observers to deploy from tender vessels.

In 2018, NMFS collected genetic samples from salmon caught as bycatch in groundfish fisheries to support efforts to identify stock of origin. For vessels delivering to shoreside processors in the GOA pollock fishery trips that were randomly selected for observer coverage were completely monitored for Chinook salmon bycatch by the vessel observer during offload of the catch at the shoreside processing facility. For trips delivered to tender vessels and trips outside of the pollock fishery, salmon counts, and tissue samples were obtained from all salmon found within observer at-sea samples of the total catch.

3.1 Factors that affect the priority of the analysis to change the definition of a tender trip

The Status of Observer Analytical Tasks document continues to reflect Council interest in developing EM for trawl CVs, changing the tender trip definition including considering deploying observers from tenders (tasks 13 and 14 on the list, respectively). While trawl CV EM development continues to make progress through the trawl EM Committee, an analysis to change the definition of a tender trip has made slower progress to date. This is in part due to a focus of staff capacity on the observer fee analysis throughout 2018 (see task 11 in the Status of Observer Tasks document).

Whether or not an analysis about tender trip definitions includes an option to require observers to transfer vessels at-sea (from tenders) affects the complexity of the analysis, and the speed at which staff can evaluate the impacts of putting such an action in place. In September 2017, the FMAC heard from a member representing the western GOA that the practicality of returning to town to pick up an observer depends on the season and fishery, but that in some fisheries, the cost of returning to town would be prohibitive; it is for this reason that the FMAC recommend that any analysis of changing the definition of a tender trip include an evaluation of allowing observers to deploy from tender vessels. The member also highlighted that while it is feasible to have an observer onboard a small trawl vessel for the duration of a single trip (24 to 48 hours), having the observer onboard for the whole tendering season, which can last up to 5 weeks, is much more difficult. Previous advice from the US Coast Guard and NMFS has been concerned with inherent safety issues in having observers transfer vessels at the point of a tender delivery (C. Rilling, February 2016); there are also contractual issues to work through with respect to the current 72 hour notice period between logging a trip in ODDS and the contractor providing an observer ready to deploy. Many, although not all, FMAC members disagree with NMFS' assessment of the safety issues, and want to see those issues reexamined. As a result, in October 2017, the Council decided to keep these tender trip definition changes and observer transfer at-sea coupled for analysis.

In October 2017, and at subsequent meetings at which the Council reviewed the priority of observer analytical tasks, the Council agreed with the FMAC recommendation that observer fee analysis be

prioritized ahead of the tender analysis with respect to staff time. In 2016-2017, NMFS announced that Federal funding would not be forthcoming for funding at-sea observer coverage, as had occurred during the initial years of implementing the restructured Observer Program (which occurred in 2013). As a result, the 2017 coverage rates were based almost exclusively on monies from the observer fee. While monitoring was still governed by the scientific sampling plan, which accommodates varying levels of coverage, the Council expressed dissatisfaction with deployment selection rates, which were the lowest since 2013. The Council tasked NMFS and the FMAC to consider options to increase partial coverage selection rates, as an alternative to adjusting the observer fee. A subgroup of the FMAC evaluated options during the summer of 2017. While the FMAC recommended the Council pursue short-term options before considering a change to the fee, the Council opted to fold these options into the fee analysis due to concerns about the availability of Federal funding and the length of time before any regulatory change would result in an effect on monitoring. The Council heard from staff that as a best case, initiating an analysis to adjust the fee in October 2017 would not result in changes to fee collection rates (and potentially increased selection rates) until 2021 at the earliest, and it was reiterated from NMFS that the Council could not rely on continued supplemental Federal funding, despite a one-time allocation that was received for 2018-2019. The Council agreed with staff recommended priorities in October 2017 and February 2018, that the fee analysis comes first as priority. The fee analysis is scheduled for initial review in February 2019. **After completion of the fee analysis, more staff capacity may become available to continue progress on an analysis relating to tender trip definitions (the staff necessary to complete the fee analysis overlap greatly with the staff needed to analyze tender issues).**

4 Conclusions

The Council has made significant progress defining and beginning to develop solutions for issues relating to the observing of vessels delivering to tenders over the past two years. At the same time, issues of high variance in salmon bycatch estimates and the potential for bias in data from observed tender trips persist.

All observer analytical tasks that can be done with current staff capacity (comprising Council, NMFS Alaska Region, and NMFS AFSC Observer Program staff) are moving forward. Progress is being made on most tasks, with the exception of the tender analysis, which will be tasked once the fee analysis is complete. Every priority added to the Observer Analytical Tasks list has the potential to delay or prolong other tasks on the list. The Council may choose to re-assign staff capacity on tender issues immediately, recognizing that this will take staff away from the fee analysis. Alternatively, after initial review of the fee analysis in February 2019 the Council may choose to re-focus staff attention on issues on observing vessels delivering to tenders or choose to assign staff to focus on something else entirely.