

## **EM in WGOA Pollock Fishery 2020 Preliminary Results Saltwater Inc.**

### **Background**

In 2019, 14 catcher vessels and 2 tender vessels used electronic monitoring (EM) systems on 100% of trips to test the feasibility of using EM for compliance monitoring in the Western Gulf of Alaska (WGOA) pollock trawl fishery. In 2020-21, 16 catcher vessels and 3 tenders are fishing under an Exempted Fishing Permit (EFP) and using EM as an alternative to on board observers. This EFP aims to assess the efficacy of using EM as a compliance monitoring tool for both catcher vessels and tender vessels by comparing data collected from EM reviewers, logbook documentation from vessels, and eLandings reports from processors. This report discusses the preliminary results from the first half of 2020.

Participating vessels carried EM systems from Saltwater Inc. (SWI). Vessels mailed hard drives and logbooks to Saltwater's office located in Anchorage, AK. Data was reviewed according to a NMFS approved protocol, using SWI's open source software, *O2 Review*. SWI reviewers started 2019 review and the EFP reviewed EM data from dock to dock, trip start to end of offload. This allowed reviewers to mirror the observer program as best as possible, to provide additional or novel information to management, and forewarn WGOA vessels to what the cameras could see. Recognizing cost considerations, Saltwater is working in 2020 with NMFS and industry to target review protocols.

For catcher vessels, reviewers annotated the following data elements during the review process: trip, set(s), gear retrieval(s), offload, marine mammal interactions, and MARPOL. Sets are defined as when the first piece of gear enters the water and ends when the main winches begin winding and the crew comes on deck to bring the net on board. Gear retrievals are defined as starting when the main winches begin winding, and ending when the crew comes on deck to bring the net on board and end when all fishing gear is out of the water, fish are in the hold and/or the crew has finished processing the catch. For tender vessels, reviewers annotated: trip, delivery(ies), offload, marine mammal interactions, and MARPOL events. A delivery is defined as beginning when a vessel ties up to the tender vessel to deliver their catch, and ends when all the catch is on the tender (in the tanks). Reviewers also recorded all identifiable discards and assessed system performance.

Participating vessels submitted logbook documentation for each trip as paper logs (e-logs are currently in testing) to the Saltwater Inc. office and are available to the National Marine Fisheries Service (NMFS). Logbooks provide trip information as well as a discard report.

## Participation

Low quota and a canceled catch share fishery reduced participation in the 2020 Western Gulf of Alaska (WGOA) A and B seasons. Only 6 catcher vessels and 1 tender vessel participated in the A and B seasons versus the 16 catcher vessels and 3 tender vessels that are part of the 2020 EFP. To put these numbers in perspective, compare this to the C season where there were over 93 trips logged by 13 catcher vessels and Saltwater has received 44 hard drives as of 09/15/2020.

For the A/B seasons Saltwater received 24 hard drives; 22 hard drives from catcher vessels and 2 hard drives from tender vessels during the A and B seasons. No drives failed or were lost during the A and B seasons. The 24 hard drives consisted of 42 trips (40 catcher vessels and 2 tender vessels), and 79 hauls or delivery verifications (77 catcher hauls and 2 tender delivery verifications). Of the 42 trips completed, 41 logbooks were turned in for a 97.5% submission rate (up from 61% in 2019). One logbook was lost in transferring documentation to the processor/dock crew. Communication with the vessel indicated there was a mix up at the plant with handing over documentation, but ensured increased effort for future trips to prevent any missing logbooks (Table 1).

The SWI office completed all 42 declared trips for analysis and provided feedback forms to vessels for each trip. The feedback forms provide a summary of overall system performance and camera views, crew responsibilities such as system performance checks and mailing the hard drive on time, and a summary of crew operations specific to the EFP (e.g. were any salmon discarded during the trip).

Table 1. Summary of EM participation in the Gulf of Alaska pollock fishery, A and B season 2020 and availability of logbook data.

2020 A/B Season	Received Trips	Installed Vessels	Sea Days	Tender Deliveries	Hauls	Logbooks	Submission Rate	HDDs Received
Catcher Vessel	40	16	132	2	77	39	0.975	22
Tender	2	3	5	2		2	1	2

## Discard Summaries

This EFP has a maximum retention requirement, but there are some discards that may occur which would be considered either allowable or unallowable. Allowable discards include large marine organisms (e.g. sharks and incidentally caught marine mammals), catch kept for personal consumption, large quantities of organisms that could negatively impact catch refrigeration systems and pumps (e.g. jellyfish), net and deck cleaning operations, and discards that occur for safety, weather, or gear malfunction reasons (e.g. net bleeds and panel blowouts). Unallowable discards include the discard of prohib species such as salmon, and sharks under 6 ft. in length.

Vessels are to record all at sea discards in the logbooks so discard reports can be entered into eLandings.

Reviewers annotated both innumerable discards, defined as an estimated discard weight of a catch volume (e.g. net bleeds), and quantifiable discards, defined as singulated catch (e.g. one shark). The under 100 pound innumerable discard category was documented most frequently; that is to say vessels discarded small quantities most often. However, by weight, these smaller discards made up only 1.63% of total discards reported. By weight, 84.88% of the innumerable discards occurred within the greater than 10,000 pounds discard category (Figure 1 and Table 2). Quantifiable discards mainly consisted of catch too large to be pumped from the vessel, catch kept for personal consumption, and other misc. species (flatfish unid., roundfish unid., and invertebrates).

Figure 1. Sizes of EM discards by individual discard event in the Gulf of Alaska pollock fishery, A and B season, 2020.

### Discard Counts by Weight Class

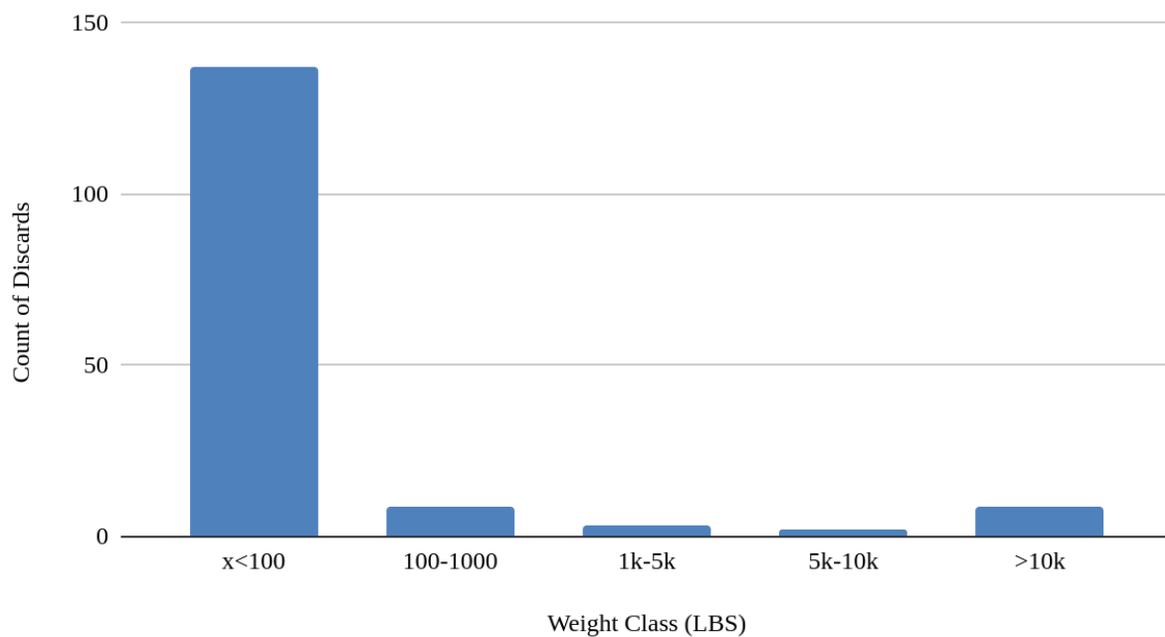


Table 2. Sizes of EM discards by individual discard event in the Gulf of Alaska pollock fishery, A and B season, 2020.

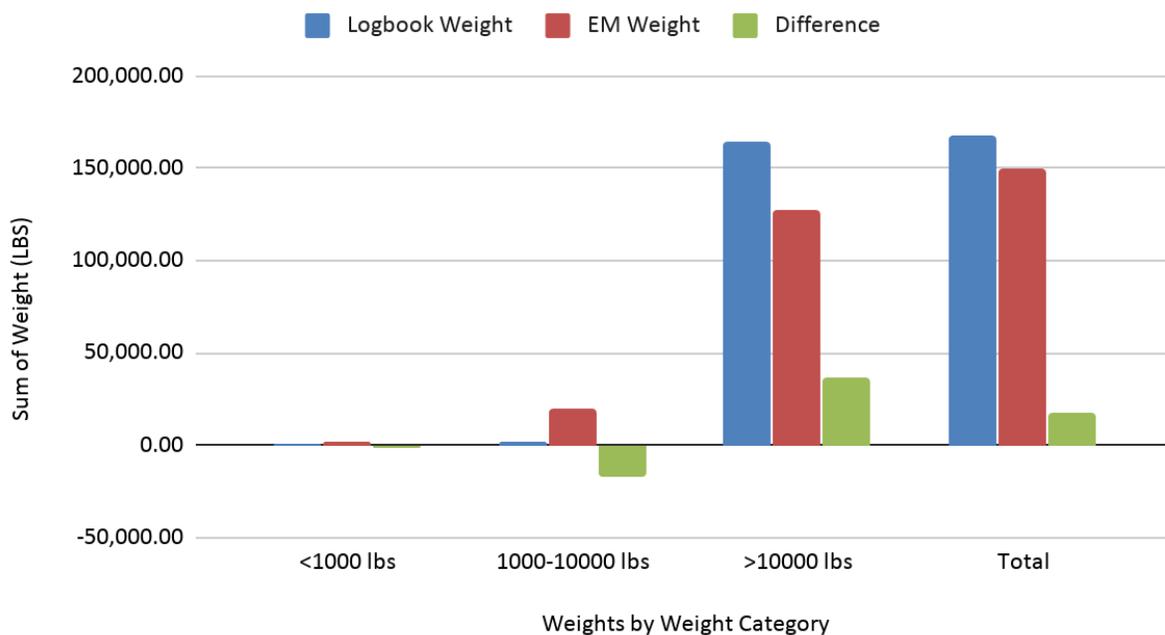
Weight Class (LBS)	<100	100-1000	1k-5k	5k-10k	>10k
Total Weight From Class	2358	3550	4000	12000	123000
Percent of Weight Class by Weight	1.63%	2.45%	2.76%	8.28%	84.88%

Discards occurred both during and outside of gear retrievals with 98.54% of discards occurring during gear retrievals and 1.46% occurring outside of gear retrievals.

In comparing EM reviewer data with logbook reported discards, logbooks overall reported a higher discard volume than EM reviewers. Vessels reported ~168K pounds and EM reviewers estimated ~145K pounds discarded across the 42 trips (Figure 2). EM data and logbook discard information comparisons vary: both EM reviewers and vessels are providing estimates, reviewers or vessels have their own limitations on what discards can be seen (vessels and/or reviewers may have a more difficult time observing smaller discards, a captain may not see a crew member discarding a salmon, or reviewers could miss a discard based on available data), and it depends on the review protocol in place. For example, changing protocols can alter the amount of video watched, the types of discards marked and/or how discards are marked.

Figure 2. Logbook and EM discard comparisons in the Gulf of Alaska pollock fishery, A and B season, 2020.

### Logbook Weight, EM Weight and Difference



### Large Marine Organisms and Salmon Bycatch

No take of marine mammals or birds were reported by EM reviewers or on logbooks. EM reviewers did report marine mammal interactions with the vessels. Most interactions consisted of vessels attempting to deter sea lions away from their vessels.

The only large organisms captured were sharks. EM reported 21 sharks discarded at sea and at offloads, logbooks reported 11 discarded at sea, and eLandings reported 7 sharks total. Reviewers reported both Salmon and Sleeper sharks were pulled out during offloads and left on

the deck to be discarded later by the vessel. 33% sharks reported by EM reviewers were captured in the review of offloads and were not reported in eLandings data.

EM reviewers reported the discard of 2 Spiny dogfish sharks during the A and B seasons, and communicated to the vessels that smaller sharks should be retained. With current limitations reviewers have on providing length information for sharks, the simplest approach reviewers found to assess this compliance piece is to determine whether or not the length of the discarded shark is roughly equal to the height of a crew member. If a crew member is able to carry the shark over to the rail to be released, the shark is typically less than 6 ft.

EM reviewers did not observe any salmon discarded during the A and B seasons.

### **Offload Review**

In addition to reviewing trip video footage, SWI reviewed offloads of participating vessels. There was only 1 instance out of 42 offloads where, during an offload, a service technician needed to shut the system down to service the vessel. The technician reported the instance to the review team.

### **eLandings Comparisons**

During the A and B seasons, eLandings data was reviewed and compared with EM data and vessel logbooks. In making these comparisons, issues were found in the reporting of both vessels and processors. Some of the issues included landed discards not being reported in eLandings, submitted logbooks not being entered into eLandings, vessels not providing complete information needed for eLandings reporting (vessels may have been missing a weight or species), vessels failing to initially submit their logbook to the processors, and delivered salmon coded as being discarded at sea.

We worked with processors and vessels during the A and B seasons to get these errors corrected, and are continuing education and outreach to ensure all participants recognize and understand their responsibilities in this program.

### **Conclusions and Comments**

EM reviewers have noticed an improvement both in catch retention (fewer discards) as well as reporting by the WGOA vessels participating in this EFP from 2019. Logbook submission has increased from 67.5% to 97.5% and no salmon have been discarded. Overall, logbooks estimated a higher volume of discards than EM, but this varied from trip to trip. As mentioned earlier, EM data and logbook discard information comparisons vary: both EM reviewers and vessels are providing estimates, reviewers or vessels have their own limitations on what discards can be seen (vessels and/or reviewers may have a more difficult time observing smaller discards, a captain may not see a crew member discarding a salmon, or reviewers could miss a discard based on available data), and it depends on the review protocol in place.

For example, changing protocols can alter the amount of video watched, the types of discards marked and/or how discards are marked.

Reviewers were able to identify and enumerate shark discards, and they found that only 33% of discarded sharks made it into eLandings reports. No bird or marine mammals were incidentally caught, but there were marine mammal interactions reported by EM reviewers. Reviewers did not observe any salmon discarded during the A and B seasons.

A few issues were identified in analyzing this data that are mentioned to assist in the further development of this program. As noted earlier, one logbook was not submitted and there were instances where logbooks did not provide enough information for processors to enter data into eLandings. Until 2019, the WGOA vessels were not required to keep a logbook which has created a learning curve for vessels that has caused numerous issues in elanding reports with missing and incorrect information. We are continuing outreach and education to vessels and processors to assist in providing complete and accurate information for management.