

Electronic Monitoring in the Alaska Pollock Fishery: partial results of year-2 EFP implementation in 2021

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Background

Volunteer vessels from the Bering Sea and Gulf of Alaska Pollock trawl fisheries have been testing electronic monitoring (EM) systems as an alternative to carrying on-board observers using an Exempted Fishing Permit (EFP). The EFP began in January 2020 and continues through 2023. The testing aims to determine the efficacy of using EM for monitoring and to help guide the operational decisions for implementing EM as a compliance tool in the Alaska Pollock trawl fishery. This report details partial results from the 2021 EFP, including all trips that were received and reviewed by April 15, 2021.

Participating vessels carried EM systems from Archipelago Marine Research (AMR) and Saltwater Inc. (SWI). EM data was sent to Pacific States Marine Fisheries Commission (PSMFC) for review using AMR software. Reviewers identified trip and haul level meta-data and recorded any discard events. Participants also submitted logbook records of their trip, either as paper logs submitted to PSMFC or as electronic logs (e-logs) submitted to the National Marine Fisheries Service (NMFS), that included a report of their discards.

Participation

Volunteer participants in 2021, looking only at trips reviewed through April 15th, were 32 vessels in the Bering Sea and 14 vessels in the Gulf of Alaska (Table 1). These vessels completed 262 trips, with logbooks available and matched for 261 of these trips. The missing logbook was from a vessel that typically submits e-log data, but the data were not available from AKFIN at the time of this report writing. We anticipate the data will be available later in the year.

Table 1. Summary of EM participation in the Alaska pollock fisheries by region, 2021, and the availability of logbook data for these same trips. Only EM trips reviewed by April 15th are included.

Region	All EM Pollock Data			EM Pollock Data with Logbooks	
	Vessels	Trips	Hauls	Vessels	Trips
Bering Sea	32	149	483	32	148
Gulf of Alaska	14	113	246	14	113

Discard Summaries

Discards were compared between EM and logbook records at the trip level. For these comparisons, most species were grouped together by total weight, although large organisms were evaluated

separately (see following section). Additionally, a few logbooks reported discards of species that were not required to be reported and that would not have been reported by EM reviewers (e.g. jellyfish) so these were excluded from analysis.

Most discards seen by EM reviewers were small (<100 lbs.; Figure 1) whether the discard occurred on-deck (allowable discards including small amounts of catch cleaned from the net or deck, unavoidable discards resulting from events beyond the control of the vessel; as well as non-allowable discards) or the discard occurred before the net reached the deck (e.g. net bleeds).

Overall, logbooks reported greater discard volume than EM reviewers for the Bering Sea region while estimates were similar for trips in the Gulf of Alaska (Table 2; Figure 2). However, even the higher logbook estimates totaled only ~368K pounds of discards over 262 trips across both regions (an average of 1,404 pounds per trip). Some EM and logbook estimates were quite similar, but it was also relatively common to have a small or medium sized discard reported by either EM or the logbook with no discards reported on the other. Reviewers on some occasions noted issues with the camera set-up (e.g., glare on the video or camera malfunctions) including on two trips from the same vessel where logbook discards totaled ~146K. Additionally, some discrepancies could be attributed to net cleaning events, where EM reviewers did not see or record these events except during the rare occurrence where the net cleaning occurred during hauling/sorting activity. There were also many trips with no discards reported by either EM or logbook (101 trips, representing 39% of trips).

Table 2. Comparison of EM and logbook discard volume in the Alaska pollock trawl fisheries for those deliveries where both data sets are available, 2021. On-deck discards include all discards after the net has come on the deck. Total discards includes both the on-deck discards and net bleeds or other discards occurring prior to the net coming on deck. Only EM trips reviewed by April 15th are included.

Region	Vessels	Trips	Hauls	Total EM Discards (lbs)	On-deck EM Discards (lbs)	Total Logbook Discards (lbs)
Bering Sea	32	148	481	201,299	96,526	385,006
Gulf of Alaska	14	113	246	166,518	138,161	157,260

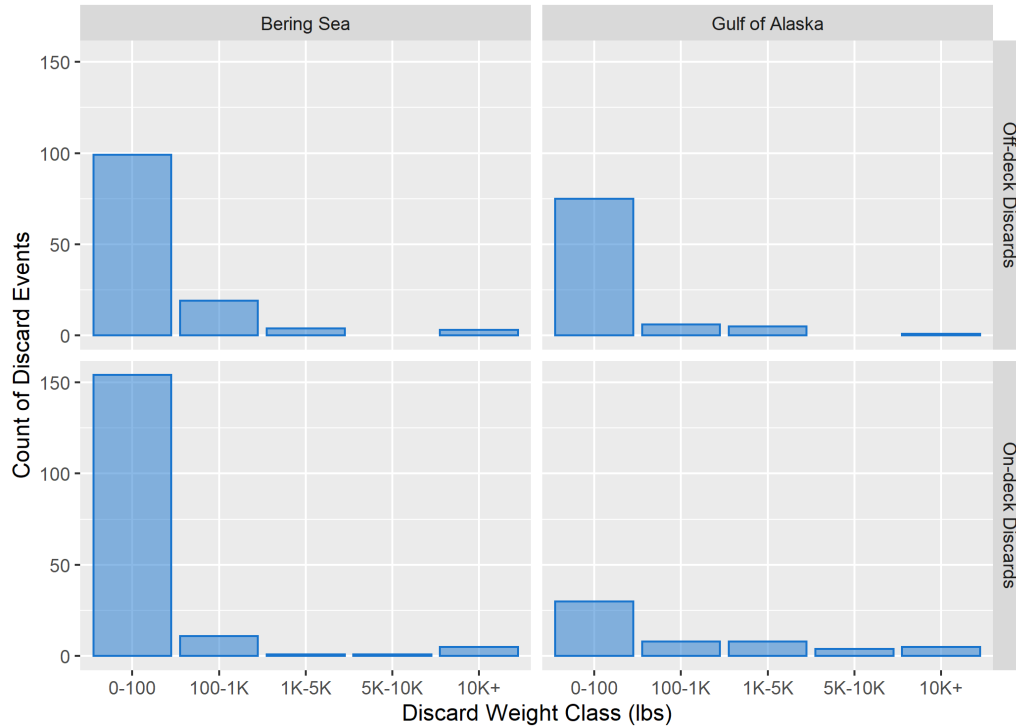


Figure 1. Sizes of EM discards by individual discard event in the Alaska pollock trawl fisheries, 2021. Only EM trips reviewed by April 15th are included.



Figure 2. EM versus logbook estimates of discards by delivery in the Alaska pollock trawl fisheries, 2021. Each data point represents a sum of discards for one trip (148 trips for the Bering Sea, 113 for the Gulf of Alaska). The dashed line represents a 1:1 relationship so a perfect match of EM and logbook data will fall on the dotted line. Points above the line indicate the EM estimate was higher while points below the line indicate the logbook estimate was higher. Note that data is shown on log-2 scaled axes so that smaller discards can be better visualized. Only EM trips reviewed by April 15th are included.

Large Marine Organisms and Salmon Bycatch

Two takes of a marine mammal, both Steller sea lions, were reported by EM reviewers and noted in the logbooks. The only other large organisms captured were sharks. Logbooks reported a total of 5,361 pounds of shark discards while EM reported a total of 9,158 pounds of shark discards. Sleeper shark and salmon shark length/weight tables were provided to vessels and PSMFC. Vessels were instructed to measure and record the length of these sharks on their logbooks. Some vessels only estimated the shark weight, whereas other vessels used the length/weight chart for their weight estimate. When possible, PSMFC estimated length for discarded sleeper and salmon sharks, and used the length/weight chart for the review discard estimate. Counts were not consistently reported on logbooks, but EM reviewers reported a total of 14 individual shark discards.

No salmon discards were reported on logbooks or by EM reviewers.

Conclusions and Comments

Logbooks estimated higher amounts of discards overall, though it was highly variable trip to trip. While there may have been differences between EM and logbook estimates, the total volume of discards was quite low (1,404 pounds/trip per the higher logbook estimate) compared to typical catch volume. During review, no interactions with birds were reported, and there were two instances of a Steller sea lion catch. EM reviewers were able to identify and enumerate sharks.

Data quality issues were continued to be observed in the e-log data: we found several errors when comparing the e-log data in AKFIN to the e-log copies provided by the vessels. We do not know at this time why these errors continue to occur.