

## **Data Sources and Their Uses for Pollock Catcher Vessels**

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This document describes the different data sources collected from pollock catcher vessels in the Bering Sea (BS) and Gulf of Alaska (GOA) used to manage groundfish catch, monitor Prohibited Species Catch (PSC) limits, and track incidental take of protected species. These data generally rely on at-sea and shoreside observer data collection as well as landing reports, also known as fish tickets, created by the shoreside processors. Other data sources also exist in this fishery, such as VMS and paper or electronic logbooks, but these data are currently used for compliance monitoring and not for fisheries management. If Electronic Monitoring (EM) is implemented to monitor full retention of salmon PSC, replacement data sources will be needed to manage the fishery. Considerations of other observer data uses such as the collection of biological information and spatial catch information for species are not part of this document.

The tables at the end of this document describe the type of catch, the data sources uses to determine the amount of that catch, how the data is used, and identifies gaps in data if EM is implemented for pollock catcher vessels in the BS and GOA.

### **Delivering to Shoreside Processors in the Bering Sea**

All AFA pollock catcher vessels have an observer aboard the vessel for any pollock trip in the BS. Shoreside processors generate landing reports and record all landed groundfish and PSC. At-sea discard estimates are obtained from the observer estimates of discard by species for that trip and other similar trips applied to the landed weight on the landing report. The retained catch from the landing report and the at-sea discard estimates together create the total groundfish catch for that trip. This accrues against several accounts including the AFA inshore sector season allocations and seasonal Stellar sea lion conservation area (SCA) limits.

Shoreside processor observers conduct a census of all salmon at the shoreside processor. For Chinook salmon, these counts accrue against several limits including the season BS pollock trawl PSC limit and the season AFA inshore cooperative limit. Census counts of non-chinook salmon are tabulated in the Catch Accounting System (CAS) and monitor Bering Sea and Aleutian Islands (BSAI) trawl PSC, BSAI trawl catcher vessel operation area (CVOA) limit and the Chum salmon savings area.

For halibut PSC, the weight obtained from the vessel observer's samples for a trip extrapolated to the total weight on the landing report is applied to the BSAI halibut PSC limit. A fleetwide mortality rate of 100% is applied to the weight of the halibut.

The weight of herring in the vessel's observer samples for the trip is expanded and a rate is applied to the trip's landing report to obtain the PSC estimate for herring. This accrues against

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the BSI trawl limit for herring.

Crab numbers in the observer samples for the trip are expanded and a rate is applied to the trip's landing report to obtain the PSC estimate for crab. These numbers accrue against limits in special areas. Crab weights from vessel observer samples are used to monitor overfishing levels. Obtaining crab weights and number is difficult for observers because the crab caught in trawl nets are usually no longer whole crab.

Seabirds found in observer samples at sea are extrapolated and applied to the trip's landing report to estimate counts for each seabird species, if the species can be determined. This information is stored in the CAS and is used to track incidental catch of threatened and endangered seabirds and to compile the Alaska Region's seabird bycatch report.

Marine mammal takes by the vessel are also tracked by the observer. Observers collect information about the size and species of the marine mammal caught and collect specimen data if possible. This information is provided to the Marine Mammal Laboratory (MML) directly from the Observer Program. The MML obtains target fishery information from trips with marine mammal takes from the CAS.

If EM is used to monitor full retention of salmon PSC, replacement data sources will be needed for observer's at-sea samples used to estimate at-sea discard, crab, herring and halibut PSC, and seabird bycatch. Alternative methods to monitor marine mammal take will need to be determined.

### **Delivering to Shoreside Processors in the Gulf of Alaska**

Pollock catcher vessels in the GOA that deliver to shoreside processors are in the partial coverage category and only have an observer aboard their vessel a portion of their trips. No observers are assigned to shoreside processors in the GOA.

For both observed and unobserved trips, retained groundfish catch is obtained from the shoreside processor's landing report for that trip.

For at-sea discards aboard observed trips the at-sea observer data of that trip and similar observed trips are applied to the landing report to obtain a discard estimate for groundfish species. For unobserved trips, the at-sea discard rate from other observed trips is applied to the vessel's landing report for that trip.

If an observer is aboard when the pollock catcher vessel delivers to a shoreside processor, the observer conducts a census of all salmon found at the shoreside processor. If an observer is unable to complete a census at the shoreside processor for any reason, the observer's at-sea samples are used to determine the salmon PSC rate for that trip. The salmon PSC rate for unobserved trips is derived from other observed trips' census or at-sea observer data and applied to that trip's landing report. For Chinook salmon, the compilation of these estimated counts accrue against annual CGOA or WGOA pollock trawl PSC limits. Estimated counts for non-

Chinook salmon are used to monitor GOA trawl catch amounts for each salmon species.

For halibut, herring, crab PSC and seabird bycatch on observed trips, the same methodology described in the previous section is used. For unobserved trips, the PSC rates and discard rates are derived from other observed trips applied to weight from the vessel's landing report for that trip. For crab and herring, these estimated counts and weights are used to monitor catch amounts for these PSC species in the GOA trawl fisheries. For halibut, the estimated weights combined with a fleetwide mortality rate of 100% accrues against the GOA shallow-water complex seasonal trawl PSC limit and annual GOA trawl PSC limit with Rockfish Program catch amounts removed.

Marine mammal takes on observed trips are recorded in the same manner as described in the previous section. No extrapolation to unobserved trips occurs. The MML uses the take information from the observer data and applies it to the target fishery information for the trip in which the take occurred to determine the estimated take by fishery.

### **Delivering to Tender Vessels in the Gulf of Alaska**

The tender vessel generates a landing report for each catcher vessel that delivers to it. Since tender vessels do not have extensive sorting areas, bycatch is not recorded on these landing reports. Once the tender delivers the catch from several vessels to a shoreside processor, the shoreside processor generates a landing report for each catcher vessel using the weight generated from the tender vessel's landing report and apportions bycatch encountered during the shoreside delivery. These apportioned landing reports are used to generate the retained catch for each catcher vessel.

The data sources and uses for pollock catcher vessels delivering to tender vessels in the GOA use the same methods as those used for GOA pollock catcher vessels delivering shoreside for at-sea discard estimates, crab, herring, and halibut PSC, seabird bycatch estimates and marine mammal takes.

For salmon bycatch on observed trips, the counts from the observer's at-sea samples for a trip are extrapolated to the total groundfish weight on the landing report to obtain the salmon PSC estimate. For unobserved trips, the observer data from other trips is applied to the landing report to obtain the salmon PSC estimate. For Chinook salmon estimated counts accrue against the annual CGOA or WGOA pollock trawl PSC limit. For non-Chinook, estimated counts are used to monitor annual GOA trawl catch amounts for each salmon species.

If EM is used to monitor full retention of salmon PSC, replacement data sources will need to be found for observer's at-sea samples used to estimate at-sea discard, crab, herring and halibut PSC, and seabird bycatch. Additionally, methods to monitor marine mammal take will need to be determined. Additionally, in the GOA, new methods to obtain salmon PSC rates or census counts will need to be found.

Table 1 AFA Pollock Catcher Vessels

	Observed or Unobserved	Groundfish		Prohibited Species Catch (PSC)		Seabirds Bycatch	Marine Mammals
		Retained Catch	At-Sea Discards	Chinook and Non-Chinook Salmon	Crab, Herring, and Halibut		
Data Sources	Observed	Landing Report	At-sea discard rate from <b>observer data</b> from trip and other trips applied to landing report.	<b>Salmon census</b> taken during offload by shoreside plant's observer	PSC rate from trip's <b>observer data</b> applied to landing report.	At-sea discard rate from trip's <b>observer data</b> applied to landing report.	At-sea <b>observer data</b> and trip target fishery from CAS catch data
Data Uses	Total groundfish catch (retained + at-sea discard estimates) accrue against accounts.  <u>Pollock:</u> BS Pollock TAC - AFA Inshore sector season allocation - Season AFA Inshore cooperative; or - Season AFA open access (OA) sector - Seasonal Stellar sea lion conservation area (SCA) limit - AFA BS Pollock Inshore co-op <99 SCA limit; or - AFA BS Pollock Inshore co-op >99 SCA limit; or - AFA BS Pollock SCA Inshore OA limit  <u>Incidental catch of other groundfish species:</u> - Species' BS or BSAI TAC - non-exempt AFA CV sideboard limits		<u>Chinook:</u> Counts accrue against limits.  <u>Non-Chinook:</u> Counts used to monitor BSAI trawl PSC, BSAI trawl CVOA limit and the Chum salmon savings area.	<u>Crab:</u> Counts accrue against special area limits for Opilio, Bairdi, and Red King Crab. Weights are used to determine overfishing levels.  <u>Herring:</u> Weights accrue against BSAI trawl limited access limit  <u>Halibut:</u> Weights with a fleet-wide mortality rate (100%) are applied to BSAI limited access PSC limit	Estimated counts accrue in CAS and track incidental catch of threatened and endangered seabirds.	Estimates take by fishery.	
Data source replacement needed with EM	Observer's at-sea sample and estimated discard rate		Ensuring no salmon are discarded at sea	Observer's at-sea sample	Observer's at-sea sample	Observer's recording of marine mammal take	

Table 2 GOA Pollock Catcher Vessels Delivering to Shoreside Processors

	Observed or Unobserved	Groundfish		Prohibited Species Catch (PSC)		Seabirds Bycatch	Marine Mammals
		Retained Catch	At-Sea Discards	Chinook and Non-Chinook Salmon	Crab, Herring, and Halibut		
Data Sources	Observed	Landing Report	At-sea discard rate from <b>observer data</b> from trip and other trips applied to landing report.	PSC rate from <b>salmon census</b> taken during vessel's offload and trip's at-sea <b>observer data</b> applied to landing report	PSC rate from trip's <b>observer data</b> applied to landing report.	At-sea discard rate from trip's <b>observer data</b> applied to landing report.	At-sea <b>observer data</b> and trip target fishery from CAS catch data
	Unobserved	Landing Report	At-sea discard rate from <b>observer data</b> of other observed trips applied to landing report.	PSC rate from <b>salmon census</b> taken during other trip's offloads and other trips' <b>observer data</b> applied to landing report.	PSC rate from <b>observer data</b> of other trips applied to landing report.	At-sea discard rate from <b>observer data</b> of other trips applied to landing report.	N/A
Data Use	Total groundfish catch (retained + at-sea discard estimates) accrue against accounts.  <u>Pollock:</u> - WGOA or CGOA area season allocations; or - WYK area apportionment  <u>Incidental catch of other groundfish species:</u> - Species' GOA TAC; or - Species' area TAC			<u>Chinook:</u> Estimated counts accrue against annual CGOA or WGOA pollock trawl PSC limit  <u>Non-Chinook:</u> Estimated counts used to monitor annual GOA trawl non-Chinook catch amounts	<u>Crab:</u> Estimated counts used to monitor catch amounts for GOA trawl. Estimated weights used to determine overfishing levels. <u>Herring:</u> Estimated counts used to monitor catch amounts for GOA trawl <u>Halibut:</u> Estimated weights with a fleet-wide mortality rate (100%) applied to GOA shallow-water complex seasonal trawl PSC limit and annual GOA trawl PSC limit (minus RPP).	Estimated counts accrue in CAS and track incidental catch of threatened and endangered seabirds.	Estimates take by fishery.
Data source replacement needed with EM	Observer's at-sea sample and estimated discard rate			Ensuring no salmon are discarded at sea and salmon census collection	Observer's at-sea sample	Observer's at-sea sample	Observer's recording of marine mammal take

Table 3 GOA Pollock Catcher Vessels Delivering to Tenders

	Observed or Unobserved	Groundfish		Prohibited Species Catch (PSC)		Seabirds Bycatch	Marine Mammals
		Retained Catch	At-Sea Discards	Chinook and Non-Chinook Salmon	Crab, Herring, and Halibut		
Data Sources	Observed	Landing Report	At-sea discard rate from <b>observer data</b> from trip and other trips applied to landing report.	PSC rate from trip's <b>observer data</b> applied to landing report.		At-sea discard rate from trip's <b>observer data</b> applied to landing report.	At-sea <b>observer data</b> and trip target fishery from CAS catch data
	Unobserved	Landing Report	At-sea discard rate from <b>observer data</b> of other trips applied to landing report.	PSC rate from <b>observer data</b> of other trips applied to landing report.		At-sea discard rate from <b>observer data</b> of other trips applied to landing report.	N/A
Data Use	Total groundfish catch (retained + at-sea discard estimates) accrue against accounts.  <u>Pollock:</u> - WGOA or CGOA area season allocations; or - WYK area apportionment  <u>Incidental catch of other groundfish species:</u> - Species' GOA TAC; or - Species' area TAC		<u>Chinook:</u> Estimated counts accrue against annual CGOA or WGOA pollock trawl PSC limit  <u>Non-Chinook:</u> Estimated counts used to monitor annual GOA trawl catch amounts	<u>Crab:</u> Estimated counts used to monitor catch amounts for GOA trawl. Estimated weights are used to determine overfishing levels.  <u>Herring:</u> Estimated counts used to monitor catch amounts for GOA trawl.  <u>Halibut:</u> Estimated weights with a fleet-wide mortality rate (100%) are applied to GOA shallow-water complex seasonal trawl PSC limit and annual GOA trawl PSC limit (minus RPP).	Estimated counts accrue in CAS and track incidental catch of threatened and endangered seabirds.	Estimates take by fishery.	
Data source replacement needed with EM	Observer's at-sea sample and estimated discard rate		Ensuring no salmon are discarded at sea and observer's at-sea samples	Observer's at-sea sample	Observer's at-sea sample	Observer's recording of marine mammal take	