

Recently Asked Questions

Chinook Salmon Bycatch Management

Prepared by:

Zachary Liller, Research Coordinator, AYK Region, ADF&G

and

Dr. Kathrine Howard, Fisheries Scientist, ADF&G

Salmon bycatch has been and will continue to be an important issue. There have been considerable efforts in recent years to reduce salmon bycatch in Alaskan groundfish fisheries. As a result, the Bering Sea and Aleutian Island pollock fishery is one of the best monitored marine fisheries in the United States. Engaged stakeholders from throughout Western Alaska have played an important role in reducing bycatch by participating in the Federal regulatory process.

This document is intended to provide basic information about the Chinook salmon bycatch in the Alaska groundfish fishery. This document is in response to questions raised by the Kuskokwim River Salmon Management Working Group at an inseason salmon management meeting held in Bethel on June 14, 2017. Responses are not intended to be exhaustive. Further information can be found by visiting websites provided at the end of this document.

1. How long do Kuskokwim River Chinook salmon spend in the ocean?

Kuskokwim River Chinook salmon spend one to seven years in the ocean. The bulk majority of Kuskokwim River Chinook salmon spend two, three, or four years growing in the ocean before they return to spawn. On average, about 19% of Kuskokwim River Chinook salmon spend two years in the ocean, 37% spend three years, and 40% spend four years.

2. Where do Kuskokwim River Chinook salmon go in the ocean?

Young Chinook salmon spend about one year rearing in the Kuskokwim River after hatching before they leave the river and enter the Kuskokwim Bay and the Southern Bering Sea. Young Chinook salmon spend the first few months at sea in shallow near-shore environments before migrating to deeper off-shore locations before winter. By their second year in the ocean Kuskokwim River Chinook salmon are distributed widely throughout the Bering Sea. During their time at sea, Chinook salmon alternate between summer feeding grounds in the central Bering Sea and overwinter areas along the 200 meter contour of the eastern Bering Sea shelf.

3. What is bycatch?

Bycatch is when fish are caught by accident while actively trying to catch another species. By definition, Chinook salmon bycatch in federally managed fisheries are considered prohibited species and cannot be sold.

4. In what ocean fisheries are Kuskokwim River Chinook salmon caught as bycatch?

Some Kuskokwim River Chinook salmon are caught accidentally as bycatch in offshore trawl fisheries that are trying to catch pollock and other ground fishes. Trawl fisheries occur in the Gulf of Alaska and Bering Sea and Aleutian Island (BSAI) areas, but nearly all of the Kuskokwim Chinook salmon bycatch occurs in the BSAI fishery.

5. Who manages the BSAI pollock fishery?

The Alaska pollock fishery is managed by the United States Federal Government. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is the federal agency responsible for approving, implementing, and enforcing management decisions. The North Pacific Fisheries Management Council (Council), with advice from various scientific and advisory committees, makes management recommendations to NMFS. The pollock fishery is managed according to the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area.

<https://www.npfmc.org/wp-content/PDFdocuments/fmp/BSAI/BSAIfmp.pdf>

The State of Alaska Department of Fish and Game works closely with NMFS and the Commissioner of Fish and Game holds a voting seat in the Council process.

6. When does the BSAI pollock fishery occur?

The pollock fishery is split into two seasons: A (roe-bearing) and B (non roe-bearing). The A season begins on January 20 and ends no later than June 10. The B season opens on June 10 and typically ends by mid-October. Chinook salmon are caught accidentally during both the A and B season.

7. How many Chinook salmon are harvested in the BSAI groundfish fishery (including pollock)?

Total bycatch of Chinook salmon has varied widely. Since 1991, the total bycatch has ranged from as low as 8,200 in the year 2000 to a high of 130,000 in 2007. After the very large bycatch in 2007, the Council began working to develop a new management regime to better reduce bycatch, which was enacted in 2011. Each year since the new management regime has been in place, bycatch has ranged from 12,000 to 33,000 fish.

As of June 17, the total Chinook salmon bycatch during the 2017 A season in the BSAI groundfish fishery was 27,746. Nearly all of that bycatch occurred during pollock directed fisheries.

https://alaskafisheries.noaa.gov/sites/default/files/reports/chinook_salmon_mortality2017.pdf

8. Why are Chinook salmon caught as bycatch in the BSAI pollock fishery?

Bering Sea Chinook salmon and pollock overlap in the habitats they use, particularly in the winter. The mid-water trawl gear used to harvest adult pollock is non-selective, meaning that non-target species, like salmon, can be accidentally caught.

9. Is the entire annual Chinook salmon bycatch made up of Kuskokwim River Chinook salmon?

No.

The total bycatch is made up of a combination of all Chinook salmon populations that rear in the Bering Sea, which includes: Western Alaska; North Alaska Peninsula; Southcentral Alaska; Southeast Alaska; British Columbia; Washington; Oregon; California; and elsewhere. Fisheries

biologists use genetics to determine where salmon caught as bycatch most likely originated. Current genetic techniques do not allow us to tell Kuskokwim River Chinook salmon apart from most other Chinook salmon that return to Western Alaska Rivers. The Western Alaska group is made up of Bristol Bay, Kuskokwim, Yukon, and Norton Sound. Combined, Western Alaska makes up about 55% – 70% of the total Chinook salmon bycatch in the BSAI groundfish fishery. The Kuskokwim River is only one fraction of this group. For example, the annual run of adult Chinook salmon to the Kuskokwim typically makes up about one-third or less of the total abundance to all Western Alaska Rivers combined.

10. Would all of those Kuskokwim River Chinook salmon return this year?

No.

Chinook salmon caught as bycatch are primarily immature and predominately small fish that are most likely in their second year at sea. Those fish caught in the B season are harvested after salmon have made their spawning migrations, so all of those fish would have remained in the ocean for at least another year before spawning. While current year bycatch could have a relatively small impact to runs over the next couple of years, it would not impact this year's run. Additionally, not all of the fish caught as bycatch would have survived to return to spawn due to natural mortality. It is estimated that about 90% (or more) of Chinook salmon that enter the ocean die of natural causes: for every 10 Chinook that enter the ocean, only 1–2 will survive to adulthood. Scientists estimate "Adult Equivalence", which is the number of fish caught as bycatch that would be expected to have survived to maturity if they had not been caught. Analysis suggests that the impact of bycatch for Coastal Western Alaska stocks (which includes the Kuskokwim River) to be about 1.6% – 2.3%. That size of a reduction, while very unfortunate, can't account for the magnitude of declines we've seen in the Kuskokwim River in recent years.

11. What is being done to regulate Chinook salmon bycatch in the BSAI pollock fishery?

Amendment 91 – This amendment to the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area is the primary regulatory language revolving around Chinook salmon bycatch reduction measures. This amendment was first implemented in 2011 and has since been modified to provide more salmon conservation.

Observer coverage – There are independent observers on all fishing boats and in all processing plants. Observers count and report all salmon caught as bycatch. Observers also sample the bycatch to collect genetic tissue used to determine stock of origin and measure salmon size to estimate age.

Bycatch Caps – An upper limit is placed on the number of Chinook salmon bycatch each year, and if that limit is exceeded the directed pollock fishery for that year is closed. The annual bycatch limit is 60,000 Chinook salmon, unless the adult runs to the Western Alaska are low. During years of low abundance the bycatch upper limit is reduced to 45,000 Chinook salmon.

Incentive plan agreements – All groundfish vessel owners and CDQ (Community Development Quota) groups have voluntarily entered into contractual agreements, which are approved by NMFS, to avoid Chinook salmon bycatch. The incentive plans are designed to avoid getting close

to the bycatch cap. Participants of these incentive plans hold each other accountable for staying below an annual performance cap which is smaller than absolute hard cap described in the section above. The performance cap is 47,591 Chinook salmon unless adult runs to Western Alaska are low, in which case a lower performance cap of 33,318 is used. All vessels work together to stay below the performance caps, and vessels with consistently high bycatch are penalized. If the performance cap is exceeded in any three years out of seven, then the absolute Chinook salmon bycatch limit is reduced permanently. Bycatch information is monitored in near real time and shared among all boats so they can actively avoid areas where bycatch is high. Incentive plan participants are now required to use salmon excluder devices which allow some salmon to escape from trawl nets and to avoid late season fishing when bycatch can be high.

12. What happens to the Chinook salmon that are caught as bycatch?

Chinook salmon harvested as bycatch cannot be sold. All salmon bycatch is counted and reported. A subset of the bycatch is sampled by onboard observers in a way that ensures the samples collected are representative of the entire bycatch. Some bycatch is frozen and donated to food banks primarily through non-profit distribution centers. Some bycatch is discarded.

13. How can I stay informed?

The fishery experts and managers with National Marine Fisheries Service and the North Pacific Fisheries Management Council are excellent resources.

The contact person for North Pacific Fisheries Management Council is:
Diana Stram, (907) 271-2806

Inseason and postseason pollock fishery catch and salmon bycatch information can be found at <https://alaskafisheries.noaa.gov/fisheries-catch-landings?tid=286>.

The easiest document to find up-to-date Chinook salmon bycatch numbers is titled “BSAI Chinook Salmon Mortality Estimates”. The time stamp on these documents is the date posted. The data are compiled through the end of each week and posted by the following Thursday (e.g., data through the week beginning March 12, 2017 are posted on March 23, 2017).

Upcoming council meetings and agendas can be found at <https://www.npfmc.org/upcoming-council-meetings/>

The council website also posts documents related to regulations for Chinook salmon bycatch <https://www.npfmc.org/salmon-bycatch-overview/bering-sea-chinook-salmon-bycatch/>