

Salmon Bycatch Frequently Asked Questions

North Pacific Fishery Management Council (Council)

Who is the Council? The Council is an appointed group that recommends management actions for U.S. Federal groundfish fisheries between 3 – 200 nautical miles off Alaska to the U.S. Secretary of Commerce for the overall benefit of the nation. The Council works closely with the National Marine Fisheries Service (NMFS) which is the Federal agency that implements Federal fishery regulations.

Who is on the Council? The Council has 15 members, 11 of which are voting members. Alaska has 6 votes (including one for Alaska Department of Fish & Game), Washington 3, and Oregon 1. NMFS, based in Juneau, also has one vote. The four non-voting members are from US Fish & Wildlife, US Coast Guard, Pacific States Fisheries Marine Commission, and the US State Department.

What is the Magnuson-Stevens Fishery Management and Conservation Act (MSA)? The MSA is the primary law guiding U.S. Federal fisheries management in the 3-200 nautical mile exclusive economic zone. The MSA established National Standards and other requirements for conservation and management of fishery resources, and it created a system of eight Regional Councils, including the North Pacific Council.

Salmon Bycatch Amounts

What is 'bycatch?' Bycatch is defined in the MSA as fish that are harvested in a fishery but are not sold or kept for personal use. Discards include species that by law must be returned to the sea (regulatory discards), and fish that are discarded at the discretion of fishermen because they are not economically worthwhile to keep (economic discards). Although fishermen try to catch only fish that can be sold, fishing gear is not 100% selective, and some undesirable fish and other organisms are caught incidentally while fishing. Bycatch in State waters (0-3 nautical miles) is managed by the State and in Federal waters (3-200 nautical miles) by the Council. A joint protocol committee between the State and the Council ensures coordination of efforts.

What is the difference between bycatch and mixed stock fisheries? Bycatch does not include the intercept of fish destined for other areas in fisheries that target salmon. In western Alaska, such fisheries only occur in State waters. Bycatch is not the harvest of a fish in a mixed stock fishery that are destined to other areas. The management of salmon in mixed stock fisheries (such as Area M) is under the jurisdiction of the State of Alaska.

How many Chinook salmon and chum salmon are caught in groundfish fisheries? In 2021, a total of 15,827 sub-adult Chinook salmon and 535,282 sub-adult chum salmon were taken as bycatch in all Bering Sea groundfish fisheries, most of which were in the pollock fishery. Through July 2022, 5,699 sub-adult Chinook salmon have been taken as bycatch in the Bering Sea pollock fishery (chum salmon are only taken as bycatch in the second half of the year). Very few sockeye, pink, or coho salmon are caught as bycatch, and are grouped together with chum salmon numbers for management purposes.

In 2021, a total of 10,595 sub-adult Chinook salmon and 3,556 chum sub-adult chum salmon were taken in the Gulf of Alaska groundfish fisheries. Through July 2022, 5,945 sub-adult Chinook salmon have been caught as bycatch. In the Gulf of Alaska, the majority of Chinook salmon bycatch occurs in the pollock trawl fishery but fisheries for flatfish, rockfish, and Pacific cod also catch Chinook salmon as bycatch.

What regions are the salmon from? Salmon from the entire Pacific region intermingle in the ocean and are caught as bycatch. Based on the most recent and available data for the Bering Sea pollock fishery, about 52% of the sub-adult Chinook salmon bycatch was estimated to have originated from Coastal Western Alaska in 2020, and about 9% of the sub-adult chum salmon caught as bycatch originate from Coastal Western Alaska in 2021. The Coastal Western Alaska stock group includes all rivers draining into Norton Sound, Yukon River, Kuskokwim River, and Bristol Bay. In the Gulf of Alaska, genetic data have consistently shown that the vast majority of salmon bycatch is not of Alaska origin (~90+%).

How does salmon bycatch impact Western Alaska salmon runs? Scientists conducted an adult equivalency analysis to consider the proportion of Chinook taken as bycatch that would have been likely to survive long enough to return to western Alaska rivers. Since 2011, impact of Chinook salmon bycatch has reduced the runs by an average of 1.9% for the aggregate coastal western Alaska stocks and 0.6% for the Upper Yukon River stock. Chum salmon bycatch is estimated to have affected aggregate coastal western Alaska stocks by 1%. Genetic sampling is done annually, and evaluations are done regularly to understand how salmon runs are affected over time and as conditions change.

Salmon Bycatch Management

What is the Council's program to minimize bycatch? Federal law requires that bycatch be minimized to the extent practicable. The Council has developed a management system that is a blend of hard caps and incentives/penalties for the Bering Sea pollock fishery, to avoid Chinook salmon bycatch at all times. The Chinook caps are 'hard' caps that close the entire pollock fishery for the year if they are reached and are indexed to the projected abundance of Chinook salmon. In the Bering Sea, the overall bycatch limit is either 60,000 Chinook salmon or 45,000 Chinook salmon, depending on whether the previous year's Chinook run size was average or below average (which triggers lower cap). The fleet operates under performance standards, which are lower annual caps of 47,591 salmon, (or 33,318 salmon in years of below average Chinook run sizes), as a protection against reaching the overall hard cap and being forced to close. A key component is that if the fleet exceeds the lower cap 3 out of 7 years, it becomes the hard cap in perpetuity.

Does the Council's program work? Since the implementation of the program, Chinook bycatch levels have stayed well below the caps and the performance standards and the skippers have improved their performance (lower bycatch rates), demonstrating that incentives/penalties work better than relying solely on caps. The results show that incentive plans create pressure to avoid salmon whether the vessel/fleet is near the cap or well below the cap; this is critical to keeping bycatch low in all conditions of both salmon and pollock abundance.

What is the rate of Chinook salmon bycatch? It varies by pollock sector, but in 2021 the rate of Chinook bycatch across the pollock sectors was .01 Chinook salmon per metric ton of pollock harvested. In 2021, the pollock fleet harvested 1.34 million metric tons of pollock with 13,884 Chinook salmon caught as bycatch.

Is there a hard cap for chum salmon? The Council has not set limits on chum salmon bycatch because of the analyses that indicated that measures to avoid chum salmon bycatch would likely result in increased Chinook bycatch. Establishing limits is complicated by consistent annual genetic data showing the majority of chum bycatch is of Asian hatchery origin. Because hard caps can lead to increased bycatch of other species, they must be carefully implemented to avoid unanticipated consequences.

What is being done to manage chum salmon bycatch? Chum salmon bycatch is currently managed through incentive plan agreements in the pollock fishing sectors. These agreements provide incentives for captains to avoid Chinook and chum salmon bycatch under any condition of pollock or salmon abundance, rewards for avoiding Chinook salmon, penalties for failure to avoid Chinook salmon at the vessel level, or both. They also provide an explanation of how the measures in the incentive plan agreements are expected to promote reductions in a vessel's Chinook salmon and chum salmon bycatch

rates relative to what might have occurred in absence of the incentive program rewards and penalties. The pollock fleet also uses hotspot reporting and closures.

What is the Bering Sea pollock fleet doing to avoid salmon? Captains minimize bycatch of salmon by 1) sharing information with other vessels on the water to avoid hotspots, 2) participating in a program that closes areas of relatively high Chinook or chum salmon bycatch to vessels that have higher rates of bycatch, 3) moving away from areas when salmon are taken, 4) using salmon excluders in the trawl nets, 5) avoiding fishing in times of higher Chinook bycatch (e.g., October), 6) conducting research on methods to further reduce bycatch, and 7) a system of rewards, penalties, and other incentives included in the fleets' avoidance plans that makes each individual vessel accountable for their bycatch performance.

Bycatch Monitoring and Estimation

How accurate are the salmon bycatch estimates? Very accurate. By regulation, all salmon are retained until counted by an independent, scientifically trained observer, which occurs onboard catcher-processors or shoreside at the plants for catcher vessels. In the Bering Sea, every pollock vessel always carries 1 – 2 observers, and every pollock delivery is also observed in the shoreside processing plant. With 100% –200% observer coverage on the Bering Sea pollock fleet and a complete census of all salmon (i.e., every salmon is counted), the estimates are accurate and precise. Salmon bycatch is both counted and genetically sampled every year to understand the stock of origin. Every 10th Chinook salmon and every 30th chum salmon is genetically sampled.

Gulf of Alaska groundfish fisheries are not under full observer coverage (100% –200% observer coverage) like they are in the Bering Sea because of regulatory differences. In the Gulf of Alaska, every pollock vessel must retain all Chinook salmon caught as bycatch. Logged pollock fishing trips are randomly sampled for observer coverage. All Chinook are enumerated and all Chinook and chum salmon available to observers are genetically sampled.

Are there observers and/or cameras on the boats? Yes, on all of them. In the Bering Sea, every pollock catcher-processor carries two observers and every catcher vessel carries one observer on every trip. There are also observers in every processing plant taking catcher vessel pollock deliveries. Cameras are also required to ensure that all catch on catcher processors and motherships is monitored after it is transferred below deck.

Is the bycatch sampled for determination of its origin? Both chinook and chum salmon are sampled to determine their origin. These data are used by fishermen and managers to determine how best to reduce bycatch.

Do vessels report their own bycatch data? No. In no case is bycatch reported by the vessels. All bycatch data in the Bering Sea and Gulf of Alaska are reported from certified observers directly to the National Marine Fisheries Service.

Bering Sea Pollock Fishing

Is it possible to catch pollock without catching salmon? No. Salmon are accidentally caught because they swim in the same areas as pollock, and they cannot be entirely avoided by the pollock fishery; any fishing gear designed to catch pollock would catch both pollock and salmon. While bycatch can and should be reduced, it cannot be eliminated without resulting in significant economic consequences, including loss of fish taxes, Community Development Quota group income, and yield of target species. The goal, and the requirement under federal law, is to reduce bycatch to the extent practicable.

Who catches Bering Sea pollock? Pollock are caught with pelagic trawl gear, a cone shaped net. Per Federal law (American Fisheries Act), half of the pollock quota is caught by catcher vessels delivering to

shoreside processing plants in Alaska, 10% is caught by catcher vessels delivering to motherships (floating processors), and 40% is caught by catcher-processors who primarily offload in Dutch Harbor.

What are the dimensions of a pollock trawl net? Pelagic trawls are constructed to achieve large openings with minimum drag, and herd pollock into the back of the net (codend) where they are captured. Pelagic trawls typically have an opening of 160-400' wide by 40-100' high depending on the horsepower of the vessel. Mesh size of a pelagic trawl can be 100' at the opening, progressively getting smaller towards the codend, which typically has 4 to 4.5 inch stretched mesh.

Where does the pollock fleet fish? During the first part of the year, all pollock fishing effort is typically concentrated in the Southern Bering Sea by Unimak Island. Later in the year, catcher vessels continue to fish this area close to Dutch Harbor, while catcher-processors typically fish all along the shelf break up to the Russian border.

Can pollock be caught with hooks or pots? Fishermen have tried other gears, including seines, hooks and pots, and have learned that pollock, which are a schooling species, can only be caught in commercial quantities by using trawl nets, specifically pelagic trawls.

Other

Why isn't subsistence the Council's highest priority? The MSA requires the Council to make management recommendations that provide benefits to the entire nation, including subsistence, recreational, and commercial users, seafood consumers, large and small boat operators, and coastal communities. The Council is required by law to balance a wide range of factors.

Why can't the salmon be saved and given to communities that need them? As much as possible, the food grade salmon captured as bycatch are processed for donations. The regulations prohibit vessels from retaining salmon unless they are donated through a specific non-profit foodbank program. Some of those salmon are distributed to rural communities in Alaska.

Is the salmon taken as bycatch ever sold? No. Salmon bycatch cannot be retained for sale by law.

Does the Council coordinate salmon bycatch management with other nations? Salmon catch data are shared among countries by the North Pacific Anadromous Fish Commission. However, in some cases (e.g., Russia), bycatch of salmon is not reported separately from total salmon catch, and genetic information on stream of origin is not collected.

Is there research to understand what is happening to salmon in the ocean? There is significant ongoing research to understand drivers affecting salmon at different stages of its lifecycle, especially given a rapidly changing climate and marine ecosystem. National Marine Fisheries Service conducts research on salmon in the marine environment in the North Pacific. The Alaska Department of Fish and Game conducts research on salmon in freshwater and nearshore environments. Additionally, in 2022, U.S. scientists collaborated with scientists from other nations as part of the Pan-Pacific Winter High Seas Expedition to better understand the ocean phase of salmon life cycle.