

# The Salmon Excluder

## The Last Line of Defense

*Fishermen working with researchers to help ensure the sustainability of the North Pacific Pollock fishery and the health of Pacific salmon stocks*

**B**oth Pollock and salmon fisheries have a rich history and are important economic engines for coastal communities in the Pacific Northwest region. Fisheries off the coast of Alaska account for over 50 percent of the U.S. domestic fisheries catch, with an annual wholesale value of over \$5 billion. Much of this catch is harvested in the Bering Sea Pollock trawl fishery, which is the largest single-species food fish fishery in the United States. Pollock is a plentiful fish that is often used in the production of products, such as fish sticks and sandwiches as well as imitation crab and shrimp.

The Pollock fishery is certified as sustainable by the Marine Stewardship Council, and by the United Nations FAO Responsible Fishery Management Program.

### The Challenge

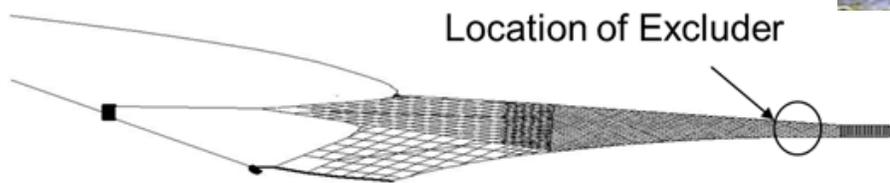
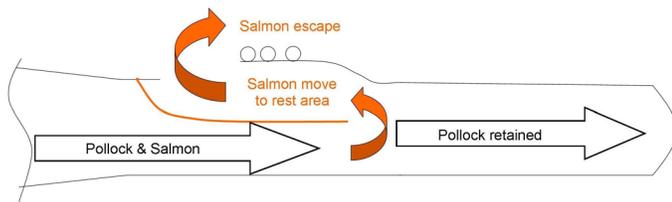
Although the trawl fleet targets Pollock, non-target fish species (bycatch), are sometimes caught. Fishermen are required to keep or release bycatch, depending on the species. Currently, salmon runs in Alaska are at low abundance levels due to natural cycles in North Pacific productivity. The challenge is for Pollock fishermen to conduct a high volume fishery for the nation's interest without affecting the native and small boat fisheries that existed long before Pollock fishing began. To avoid bycatch, the Pollock industry uses several tools, including incentives, timing of season closures, and adaptive management (harvest is adjusted based on population levels).

From 2003–2007, the Pollock trawl fleet began to experience a relatively higher encounter rate of Chinook and chum salmon bycatch. This was a concern because Chinook salmon are culturally, recreationally, and economically important to communities in Alaska and along the West Coast.

The North Pacific Fisheries Research Foundation, in partnership with Pollock fishers, science centers, the National Oceanic and Atmospheric Administration, and others, proactively voluntarily sought new ways to avoid salmon bycatch and began exploring the concept of a salmon excluder in addition to those practices already being implemented (incentives, season timing, and adaptive management, e.g.).

### A New Tool in the Toolbox - The Excluder Device, the “Last Line of Defense”

One idea the industry explored was adding a salmon excluder to Pollock trawl nets to help individually caught salmon escape from the nets unharmed. Researchers found that Chinook salmon have a natural instinct



to swim forward. Differences in fish behavior made it possible to modify the gear to allow for continued harvest of Pollock and allow salmon to escape from the net.

Fish behavior was studied using sonar and cameras. Several phases of excluder design were tested, ranging from a tunnel-era excluder to the flapper, and the over and under design. Despite the challenges, each successive design showed improvements in salmon and chum salmon excluder rates.

## The Commitment to Reduce Bycatch

The first step taken to reduce bycatch was acknowledging the problem. The North Pacific Fisheries Research Foundation then made the commitment to be part of the solution—the Foundation and fishermen proactively agreed to spend valuable time and money working through the complexities and challenges of the issue to create a successful salmon excluder device that enables salmon to escape from the nets without harm. All of this was made possible through collaboration with fishery scientists, fishery managers, Pollock fishermen, and net designers, who worked together to develop innovative ideas, and design and implement a research plan to test the device for effectiveness. These leaders were proactive champions, recognizing the economic and societal benefits of sound commercial fisheries. They sought to ensure the long-term sustainability of those industries, independently evaluate and then partner with industry to support use of excluder devices as a tool to reduce bycatch. Fishers played an integral role, volunteering their boats to test the devices.

## A Model Approach

Actively partnering to support the development and use of effective salmon excluder devices serves as a model for how fishers, government, and conservation organizations can work together to ensure the health and vitality of important commercial fish stocks while still protecting other valuable fish, such as salmon.

Excluders, combined with other tools (hot spot avoidance, incentive programs, etc.) have significantly reduced salmon bycatch. Similar approaches, in which stakeholders collaborate to minimize adverse effects on other species of fish and the environment, are proving helpful in reducing the bycatch of important fish species, such as halibut.



**Salmon Excluder Partners:** North Pacific Fisheries Research Foundation, Pollock Conservation Cooperative, Alaska Fisheries Science Center, NOAA Fisheries Alaska Region, Pacific States Marine Fisheries Commission, North Pacific Fishery Management Council, Pollock captains, vessel crews, vessel owners, Pollock fishermen, Swan Nets, Dantrawl, Hampidjan Nets, NET Systems, Alaska Groundfish Databank, United Catcher Boats Association, The Nature Conservancy