ALASKA SALMON HATCHERIES

CONTRIBUTING TO FISHERIES AND SUSTAINABILITY

PNP Hatchery Program
Alaska Department of Fish and Game — Division of Commercial Fisheries — P.O. Box 115526 Juneau, AK 99811-5526

ALASKA HATCHERY PROGRAM

The Alaska hatchery program was designed to increase salmon abundance and enhance fisheries, while protecting wild stocks. The program was built in response to depressed commercial fisheries, to meet the needs of the people of the state.

Fisheries enhancement projects are not permitted if they are anticipated to have a significant negative effect on natural production. Our fisheries enhancement program is designed to supplement natural production, not replace or displace it. Hatcheries can decrease fishing pressure on naturally-spawning salmon populations. Alaska commercial salmon harvests have increased greatly since the inception of Alaska's hatchery program and natural stock harvests have improved (Figure 1).

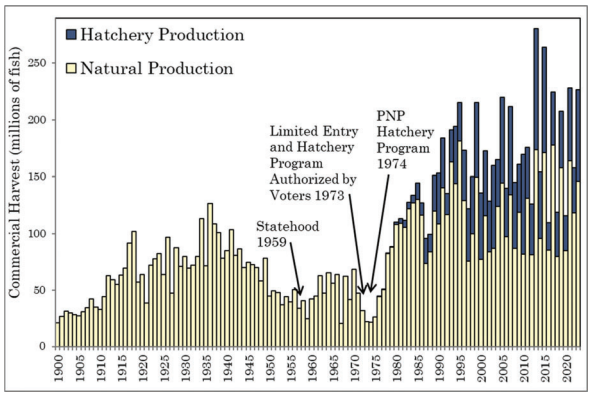
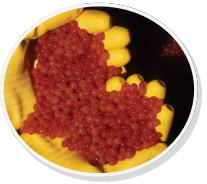


Figure 1. Alaska commercial salmon harvests, 1900-2023.

Salmon produced by Alaska's fisheries enhancement program remain wild. Our programs protect the fish during the early juvenile life stage; the fish put on most of their growth at sea.



By design, the hatchery program in Alaska has attempted to minimize interactions between natural and hatchery stocks by locating hatcheries away from significant naturally-occurring populations of salmon.

Only local stocks are permitted for use so that hatchery-produced fish are locally adapted and have local genetic profiles. Breeding or manipulation of stock characteristics is prohibited and large numbers of broodstock are used in order to maintain diversity, so that Alaska's fish remain wild.

Alaska's salmon fisheries are managed with wild stock priority, to ensure adequate numbers of salmon reach natal freshwater spawning areas to maintain healthy, sustainable, naturally-spawning populations. ADF&G biologists estimate escapement goals for key wild stock systems and monitor returns to these systems annually.

Cooperative development of annual management plans guide hatchery operations, production, and harvest management of returns, lends to success in fisheries management and hatchery contribution to fisheries while maintaining hatcheries' production goals.

FISHERIES CONTRIBUTION

As Alaska's salmon return to their place of origin, they are available for common property harvest in personal use, sport, subsistence, and commercial fisheries.

Hatchery contributions of adult salmon to commercial fisheries have grew over the life of the program and have been as much as 97 million fish, accounting for 35% of the total salmon harvested in common property commercial fisheries in 2013 (Figure 2).

In 1973–1982, hatcheries contributed an average of <1% of common property commercial fisheries. The average percentage grew to 12% in the following 10 years (1983–1992) then grew to 28% and 26% in 2003–2012 and 2013–1982, respectively (Figure 2).

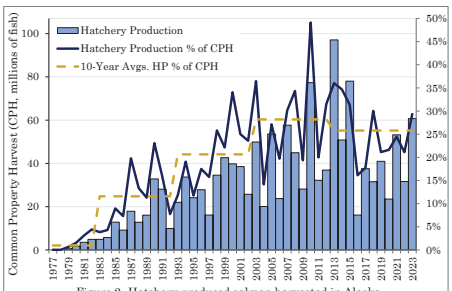


Figure 2.-Hatchery-produced salmon harvested in Alaska commercial common property fisheries, 1977–2023.

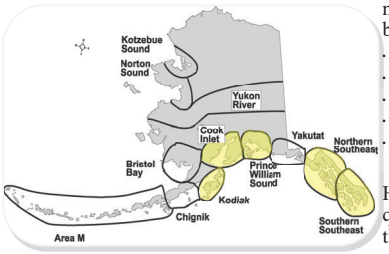
Most hatchery production is pink and chum salmon, with the majority of pink salmon harvested in Prince William Sound (PWS) and Kodiak; and chum salmon harvested mainly in Southeast Alaska (SEAK).

In 2023, hatchery production accounted for 81% of the commercial fisheries harvest in PWS, 39% in Kodiak, and 24% in SEAK.

The PNP hatchery program prepares a comprehensive report on fisheries enhancement for the legislature. Link to 2023 report: https://www.adfg.alaska.gov/FedAidPDFs/RIR.5J.2024.05.pdf

In 2023, fishery enhancement programs were conducted by hatcheries in five of the twelve designated aquaculture regions. The number of active hatcheries by regtion were:

- Southern Southeast - 8
- Northern Southeast - 9
- Prince William Sound - 6
- Cook Inlet - 4
- Kodiak - 2



Hatchery production grew quickly in the 1980's. Since then, production increases slowed and steadied (Figure 3). To evaluate fishery contributions and better estimate survival, hatcheries started marking releases, first with fin clips, then Coded Wire Tags (CWT's) and clipped adipose fins, and more recently, with otolith marks. In 2023, 3% of hatchery releases were CWT'd and ad-clipped, and 96% of hatchery-released fish were otolith marked (Figure 3).

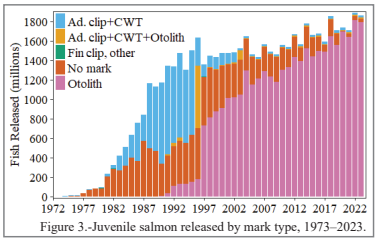


Figure 3.-Juvenile salmon released by mark type, 1973–2023.

Requests for changes in hatchery production are approached with consideration of potential risks to wild stocks. Wild-hatchery salmon interactions studies are occurring to better understand these relationships. As studies provide results, we will evaluate and decide if modifications to the program are warranted.