

We need a salmon in the river!

The state’s emphasis on salmon production hatcheries is affecting wild salmon over a broad geographic range. This far-ranging affect was not anticipated during the late 1970s when Alaska’s hatchery build-out began. The Board of Fisheries heard a testimony by staff biologists describing the regime shift that recently occurred in the October 2000 meeting. Even then, the nexus of the rapid build out of Alaskan hatcheries and their massive releases of juvenile salmon were not understood. The unexplained regime shift is rarely noted in State sponsored research. Despite the emphasis on sustained yield and the preservation of wild stocks found in state law dating back to the statehood hearings, research on the subject is largely denied and pointedly underfunded. Concerns regarding problems brought on by overwhelming hatchery production have been ignored. A short list of those problems would include: over browsing the marine ecosystem where juvenile salmon rear; interruption of transport of marine derived nutrients into rivers, lakes and streams; genetic selection and resulting weakening of wild stock through straying; the list continues.... The hatchery program was originally expected to strengthen the wild returns and provide sustainable and strong salmon fisheries for the state. The cost recovery program was a mechanism to support the program while extracting value from the primary stakeholders. Early success rapidly transformed a rehabilitation program into an economic enterprise. The permit and review of rehabilitation projects is impeded by the bias for the existing production program. The table below lists some differences between the permitted activities emphasizing rehabilitation and production.

	Restoration	Production Hatchery
Permit type	Educational	PNP Permit
Egg Take	Wild Fish	Subset of hatchery return
E T Location	Same watershed	Regional
Release Life Stage	Unfed Fry	Smolt
Recovery Location	Watershed	Terminal harvest area
Harvestable Surplus		
Of the return	<0-40%	~85%
Goal	Biological Sustainability	Economic Sustainability
	Distribute spawners in Watershed	Maximize harvest
Negatives		
	<ul style="list-style-type: none"> • Difficult to evaluate survival/returns • Requires funding • Limited scale 	<ul style="list-style-type: none"> -Loss of marine derived nutrients -consumption of ecological resources without replenishment - Genetic cloning

- Working with marginal Populations -Likely weak stock impacts
- Limited scale -leveraged investments
- Potentially long-term cycle -over-grazing marine rearing habitat
- Brood stock from depleted stock -harvesting forage fish for pen food

Hatchery operations are handicapped in the Northern half of Alaska due to climate related issues with the water supply. Hatcheries along the Gulf of Alaska benefit from plentiful precipitation, topographic relief and a mild climate conducive to maintaining outdoor rearing facilities. In the colder parts of the state, water is seasonally in short supply, particularly in mid-winter when eggs hatch and metabolic waste floods the incubators. The other critical impediment to fish culture in the north is the widespread collapse of salmon populations in the Bering Sea drainages. Permits for rehabilitation require brood stock to be sourced from the rivers to be rehabilitated, contrary to the brood stock sourcing for PNP hatcheries.

PNP hatchery operations are financially feasible due to the scale of the operation. Fish culture projects on the Bering Sea drainages are limited by the wild stock size and the harvestable surplus available. Water drawn from those watersheds can easily significantly draw down the river during the seasonal lows of mid-winter affecting winter survival of wild stocks. PNP hatcheries in northern Alaska are not economically sustainable, they are often operating at the margins along the Gulf of Alaska. The best option for providing salmon for the residents of western and interior Alaska is rehabilitation of the wild stocks. Naturally returning, naturally spawning, well adapted salmon will be the most sustainable both economically and biologically. This will require a few small hatcheries and a rotating approach to addressing depressed stocks. It will also require a reduction in the over-production of stocks that overwhelm the Bering Sea salmon's marine ecosystem. The Bering Sea stocks have been shown to be the weakest stocks affected by the combination of over-production and over-harvest, but there is strong evidence of collapsing stocks throughout the Gulf of Alaska coast. Salmon are smaller, the older age classes are disappearing across multiple species. The State of Alaska must face the trend of salmon collapse and work on a solution before we face the loss of our wild salmon which is the diamond in the crown of wild Alaska.