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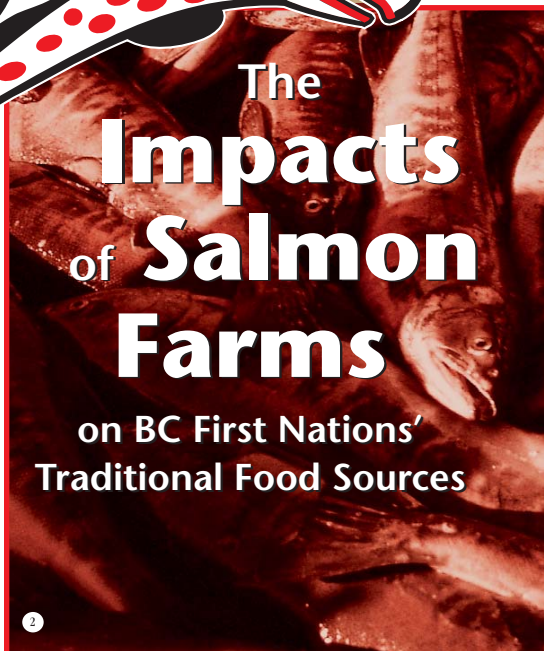
The Impacts of Salmon Farms

on BC First Nations' Traditional Food Sources



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CAAR
Coastal Alliance for Aquaculture Reform

Coastal and river-based First Nations in BC have relied on wild salmon and marine resources for over 10,000 years.

"First Nations culture—
our songs, dances and traditions—are built around our relationship with wild salmon. Salmon farming threatens our very existence as a people."
—Arnie Narcisse
Former Chair, BC Aboriginal Fisheries Commission

"The ocean provides us with all our food necessities. We rely on our salmon, we rely on all the resources from the ocean, and we see fish farms that operate open-net pens as a threat to all those natural resources that live in the ocean."
—Harvey Humchitt
A hereditary chief of the Heiltsuk Nation

What Is Salmon Farming?

Salmon farming is the practice of rearing hatchery-origin salmon from smolt to adult size in a pen, pond or contained system for human consumption. As currently practiced on a commercial scale, salmon farming in most farming regions involves the use of large floating open net-cages, usually located in sheltered bays along the coast. In BC, farms are generally sited in close proximity to wild salmon streams and rivers.

"For isolated communities, the salmon have been a reliable food source easily caught in local systems. People in the community are worried that if salmon farming is allowed in Heiltsuk territory, the salmon that we have relied on for generations won't be available."
—Jordan Wilson, Heiltsuk Traditional Knowledge Scientist

"We were told salmon farms would have minimal impact to the environment and wild stocks. 3.5 million Pinks disappeared in the Broughton back in 2002. That's a major impact to the coastal communities and First Nations that depend on them for food and commercial fisheries."

—Brian Wadhams
Namgis Council and Board of Directors
Musgamagw Tsawataineuk Tribal Council

"The accumulation of salmon farm waste on beaches leads to unchecked algal growth. The algal mats that form suffocate the clams and prevent the baby clams from settling and repopulating the beds. Our clams and clam beaches are turning into dead zones."

—Robert Mountain
Local Outreach Coordinator
Musgamagw Tsawataineuk Tribal Council

Farming Salmon in Open Net-Cages is a Recipe For D

Sea Lice Parasites

Sea lice are small marine 'ecto' (surface) parasites that occur naturally on many different species of wild fish. These creatures feed on fish by attaching to the outside, usually on the skin, fins and/or gills.

A growing body of scientific evidence shows that juvenile pink and chum salmon that swim near open-net salmon farms become infected with sea lice. Because juvenile pink and chum's protective scales are not fully developed when they enter the sea, these young salmon can die shortly after the parasite attaches.

Experiments have shown that pink and chum salmon fry can die when infected with only a single mature sea louse. Data suggest that up to 95 per cent of migrating juvenile salmon can be lethally infected in salmon farming areas.

Recent preliminary science from the Discovery Islands region (east of Campbell River) of British Columbia suggests that larval Pacific herring and juvenile sockeye salmon may also be infected with sea lice originating from salmon farms in the area.

> "Atlantic salmon should not be on the Pacific coast. I have seen them in rivers around Clayoquot Sound and their presence is another threat to wild Pacific salmon stocks."
> —Joe Martin, Tla-o-qui-aht First Nation

Escaped Atlantic Salmon in Pacific Waters

Most salmon farms on the Pacific coast of British Columbia grow Atlantic salmon.

Escaped Atlantic salmon can potentially establish populations in the Pacific basin and displace wild Pacific salmon.

The "success" of an invasive species is related to ecological conditions in the area of introduction. Today's dramatic declines in wild salmon stocks, due to impacts such as over-fishing, logging

isaster

Juvenile pink salmon with lice.

Sea Lice Treatment

The common treatment for sea lice outbreaks on salmon farms is the pesticide emamectin benzoate, which is named Slice®.

Slice® has been shown to have toxic effects on many crustacean species and its effects on a number of other marine organisms are unknown.

Regarding chemicals ending up in the ocean as a result of sea lice treatments, Joe Martin of the Tla-o-qui-aht First Nation says, "If it is not part of the natural environment, then it should not become part of it."

> "Fish farms are hosts to sea lice, and the methods of disease control used by fish farmers pollute our waters."
> —Harvey Humchitt, a hereditary chief of the Heiltsuk Nation

of salmon streams and climate change, provide increased opportunity for successful introductions.

More than 390,000 farmed Atlantic salmon are reported by industry to have escaped from salmon farms in BC between 1992 and 2002. The actual number of escapes is likely higher.

To date, Atlantic salmon have been found in more than 80 rivers on the Pacific coast of British Columbia.

Clam Gardens

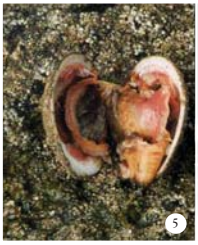
Organic wastes from salmon farms can pollute traditional clam gardens.

"There are over 360 identified clam terraces in the Broughton Archipelago, which is located off north eastern Vancouver Island. Some salmon farms are less than 300 meters from clam beaches. Waste from the farms can flow onto beaches where there is not enough tidal flow or water currents to dissipate or disperse the pollutants. Our people are the only clam diggers in the area and they sounded the alarm in the early 1990s. The clam diggers noticed the beaches near farms had changed. There was a sulphuric smell, unchecked algal growth, the clams had brittle dark shells and mushy dark meat."

—Robert Mountain
Local Outreach Coordinator, Musgamagw Tsawataineuk Tribal Council

A scientific study is currently underway to assess the impacts salmon farming is having on clam gardens in the Broughton Archipelago.

TOP LEFT: Clam from beach downstream from salmon farm. TOP CENTRE: Clam from beach 25 kilometers from nearest salmon farm. RIGHT: Waste coming off salmon farm. BOTTOM LEFT: Polluted clam beach.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is a Recipe for Disaster

ABOVE: Rockfish.
LEFT: Turbots with parasites.

Groundfish

Recent science shows that rockfish populations near salmon farms have elevated levels of toxic mercury, which has been linked to the bacteria living in the sludge beneath salmon farms. Prolonged human exposure to mercury damages the nervous system. Under Health Canada guidelines, the observed mercury levels near many salmon farms would require slightly restricted consumption of rockfish by children and women of child-bearing age.

"The community was surprised at the report, saying there were higher levels of mercury in rockfish nears farms. It put a scare into people. Now people have to go further to catch dinner and are not sure about other species of fish."
—Robert Mountain
Local Outreach Coordinator, Musgamagw Tsawataineuk Tribal Council

"Other groundfish caught near salmon farms often come up full of parasites, sea lice and covered with lesions."
—Robert Mountain
Local Outreach Coordinator, Musgamagw Tsawataineuk Tribal Council

People in a community who are closely connected to the local surroundings are often the first to notice environmental change. Increasingly, government scientists are acknowledging the importance of traditional knowledge and are starting to give it the recognition and weight it deserves.

Effects of Salmon Farming Extend

In addition to being a staple in the diets of orca whales, dolphins, porpoises, sea lions and many species of marine fishes, wild Pacific salmon are also food for many animals of the forest.

"The Thompson Sound grizzlies are starving. Why? Because there are no salmon left for them. Salmon farming is having effects on land as well. The land and sea are very much a part of who we are as a people; if you allow this industry to destroy the food chain, you destroy a way of life we have depended on as coastal people."

—Brian Wadhams
Namgis Council and Board of Directors, Musgamagw Tsawataineuk Tribal Council

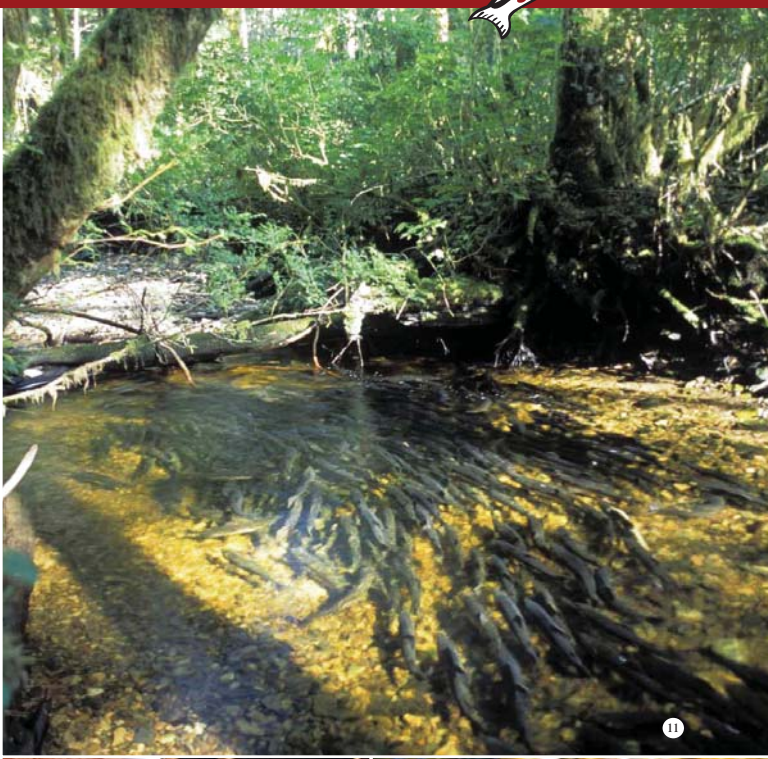
Wild salmon returning to BC rivers in the fall provide nutrients for many creatures of the forest. In healthy systems, bears and coastal wolves gorge on salmon, often eating their successful catches in the estuary, stream, on the river bank or deep in the woods, leaving the half eaten carcasses to be scavenged by many different types of animals including pine martens, eagles, ravens, seagulls and many species of insects. The salmon ultimately end up providing nutrients for many living things, including plants, shrubs and trees of the coastal forest and even interior forests, where sockeye spawn to complete their lifecycle.

"We need to sustain our resources, and the resources will sustain our people. None of us want to take our children or our grandchildren to a museum to see what sockeye salmon or any of the other salmon looks like."

Whuyee Wi Medeek (John Lewis)
Wolf Clan, Tsimshian Nation

LEFT MIDDLE: Bear totem. LEFT BOTTOM: Generations.
TOP: School of salmon. RIGHT BOTTOM: Black bear eating salmon.

Beyond the Sea



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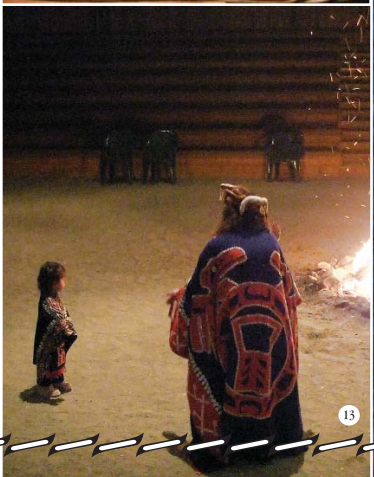

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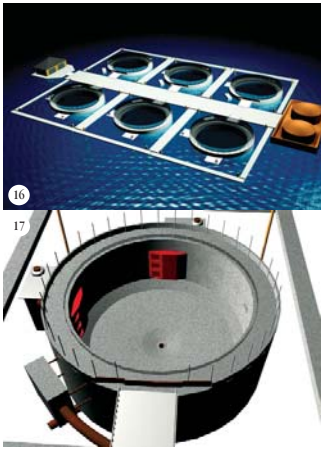
There Are Solutions

Spawning sockeye salmon

1. Halt any further expansion of the open-net cage salmon farming industry in BC.

2. Separate wild and farmed fish.

3. Rapidly change open net-cage salmon farms along the BC coast to ocean-based or land-based closed containment tanks with waste treatment.



Closed containment tanks

"Transitioning to closed containment is a step in the right direction. All farms should be closed containment."
—Harvey Humchitt, a hereditary chief of the Heiltsuk Nation

4. Do not locate fish farms in areas where they are opposed by First Nations or other local communities.

"First Nations up and down the Skeena have made their concerns known. We will not allow fish farms to destroy the wild salmon that sustain us."
—Gerald Amos, Chairman of Friends of Wild Salmon

You Can

Take Action Now

- Share the information in this brochure with family and friends.
- Do not eat farmed salmon.
- Make sure salmon is wild caught when ordering from restaurants or buying at the grocery store. Ask the server or clerk where the salmon came from.
- Insist that the BC government invest in solutions. Ask for the creation of a closed containment fund by sending a fax using the free fax service from www.FarmedandDangerous.org. Or let your voice be heard and write your own letter to the Premier.
- Contact the Musgamagw Tsawataineuk Tribal Council (MTTC) at 250-974-5516 to find out more information regarding the impacts of salmon farming and for information on what you can do in your community.
- See www.FarmedandDangerous.org for more information, including scientific references used in this brochure.
- If you would like to share stories, local knowledge, experiences with fish farms and their impacts on traditional foods, wild salmon, and marine mammals, please contact:

The Coastal Alliance for Aquaculture Reform (CAAR)
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PHOTO & ILLUSTRATION CREDITS

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