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Canada's New Year's Resolution: Standing Against Salmon Feedlots

By Nicolas Rochon



Photo: Canadian Veggie

Dead salmon washed up to shore in Harrison Hot Springs, British Columbia, 2011.

With the Canadian Food Inspection Agency (CFIA) recently affirming Infectious Salmon Anemia virus (ISAv) to be present in coastal waters beyond eradication, concerned Canadians are standing against the salmon feedlots that are threatening British Columbia's wild salmon population.

In 2012, under the government's investigation into the decline of local sockeye salmon, the Commission of Inquiry into the Decline of Sockeye Salmon in the Fraser River, also known as the Cohen Commission, reported "the potential harm posed to Fraser River sockeye salmon from salmon farms is serious or irreversible."

Now, the young consumer-based movement, Salmon Feedlot Boycott, has created an online petition against the purchase of salmon grown in feedlots, as reported by Canada's Watershed Sentinel (WS). Coordinating

the viral petition, Anissa Reed admitted to WS that she once managed a salmon farm; for this reason, she understands “the nature of the beast.”

“I see this industry as a predator. They lobby the government for access into our communities with promises of good jobs, and pit neighbor against neighbor. They spend millions on advertising campaigns saying it is good for us, but I have seen, and believe, otherwise.”

“The faces of the people who know what is happening haunt me.”

Ever since the Canadian government invited foreign companies to expand the aquaculture industry in the northern Pacific, activists, scientists, First Nations, local business and politicians alike have fought to protect the commodity that provides for their livelihood: salmon.

The birth of neo-aquaculture in Canada

The Canadian government began aquaculture activities, that is, the practice of farming aquatic organisms, in the mid-19th century. By the 1950s, federal and provincial governments were producing as much as 750 million fish per year. Eventually, the decade saw the arrival of commercial aquaculture in Canada as oysters and trout led the supply chain. But by the 1970s, salmon, too, had become an invaluable commodity for both the government and private sector.

And in 1984, the Canadian government chose to revamp national aquaculture and began accepting foreign investment to vamp up the industry.

In a blog post headlined, “Salmon Feedlots – this was not a mistake”, biologist Dr. Alexandra Morton details this story as it was chronicled by *The Fisherman*, a newspaper published by the United Fisherman’s and Allied Workers Union which chronicled the arrival of salmon aquaculture in British Columbia:

In 1984, one member of the plan, David Saxby, urged peers to “act now or lose a commercial employment opportunity.” Following this statement, Science Council of Canada representative, Ann Levi, declared that “the days of common property fishing are over.”

It was estimated by the Science Council of Canada that “only one person-year of employment is generated for every 20 tons of production; it is clear that salmon farming of 30,000 tons of salmon would employ only a fraction of those now employed in the industry.”

In 1985, *The Fisherman* noted, “there has been a hurried restructuring of the government agencies in charge of fish farming.”

Finally, in 1985, in response to concerns about the rise in the number of fish farms and the growing presence of the associated foreign investors, former Department of Fisheries and Oceans aquaculture coordinator George Hunter replied: "Of course the industry is determined by the political structure it grows in and the kind of political structure we have right now encourages this type of development."

Within the first 10 years of re-construction, the Canadian government had constituted eight new laws specific to commercial fisheries, changes that encouraged Norway's private sector to invest:

"Encouraged by the lack of restrictions on the industry, Norwegians began to invest heavily in Sunshine Coast [British Columbia] salmon farming. Not only could they develop larger farms here with less interference by the government, but they could use their Canadian investments to reduce their taxes in Norway," describe authors Betty Keller and Rosella Leslie in their book, *Bright Seas, Pioneer Spirits: A History of the Sunshine Coast*.

Over the course of Canada's aquaculture transformation, the federal government issued hundreds of permits, allowing commercial salmon feedlots to operate without appropriate regulation. Cited in the Cohen Report, the number of salmon-farming companies has gone from 16 to 4 since the 1990s. Today, those four companies – Mainstream Canada, Marine Harvest Canada, Grieg Seafood BC and Creative Salmon Company – account for the whole of British Columbia's aquaculture industry. With the exception of the Creative Salmon Company, all producers hold their headquarters in Norway.

Norway's global salmon network

Norway is the world's largest producer of salmon, though its production only accounts for a mere 2% of the world's entire aquaculture supply. With feedlots in Canada, U.S., Chile, Ireland, Scotland, Spain, Italy, China, South Korea, Singapore, Vietnam and many others throughout the world, Norway has developed the most expansive salmon aquaculture industry to date.

Faced with competition from other countries, Norwegians experienced a dip in the market at the end of the 1980s; in response, the country decided "to shore up prices in the short term and to limit supplies of fresh salmon in the long term," as stated in the Marine Fisheries Review.

In order to retrieve lost profits, farmers pushed for increases in farm size and in the number of licences issued by the government. The government, apathetically, did not succumb to the requests. Instead, "The Government of Norway's limitations on the issuance of new farming licenses and farm sizes led many companies and capital-rich fish farmers to shift their operations to less-regulated areas overseas."

According to a 2012 report published by the University of Tromsø, “[e]xperiences from 50 years of development assistance in the field of fisheries... indicate that Norwegian assistance has been too widely spread (for the time being involving projects in 18 different countries).”

“The main stakeholders in the aquaculture industry are investors, public authorities, researchers and civil society organizations. They all have important roles to play,

but the key to success is how these four groups interact, constituting an aquaculture system. The story of the Norwegian salmon industry demonstrates the close cooperation between farmers, researchers and public authorities, while civil society organizations have acted as critical correctives, forcing more sustainable practices over time.”

In 2009, the Norwegian Ministry of Fisheries and Coastal Affairs acknowledged their “aquaculture industry faces a range of environmental challenges... The industry and the authorities have already implemented a range of measures, but there is a lot more work yet to be done. Therefore, a major element of aquaculture policy will be the identification of what elements go to making eco-friendly sustainable production.”

Known implications

As part of their process, companies like Marine Harvest, Cermaq and Greig harvest millions of Atlantic salmon eggs, ship them all over the globe and raise them in new waters with established marine populations and ecosystems.

Of the most harmful implications associated with salmon feedlots, are “sea lice”, or copepodid, which feed on the protective mucus of salmon. Professor L. Neil Frazer, from the University of Hawaii, describes this external mucus “as [a] barrier to infection and as part of the osmotic system that controls the salinity of internal tissues... sea lice steal metabolic resources from the host, damage the host’s osmotic system, provide a pathway for secondary infections, and increase a host’s risk of being eaten by large predators.”

In an essay for *Conservation Biology*, Frazer combines the harmful characteristics of sea lice with the host-density effect of salmon feedlots, explaining why fish in a fish farm are more vulnerable to disease than wild fish are:

“Consider a large area of ocean that contains wild fish, no farm fish, and a drifting copepodid... If fish are so few that [a copepodid’s] chances of attaching before it dies are [less than] 1%, the next generation [of copepodids] will be smaller than the present generation. On the other hand, if the fish are so numerous that its chances of attaching are [greater than] 1%, the next generation will be larger than the present one...”

Population levels of lice and fish fluctuate, but neither one of them grows without bound. In biology as in physics, this situation leads to equilibrium.”

“Suppose there are no wild fish present, only farm fish in cages, a copepodid carried by currents into a cage would likely attach to a host... if there are so many farm fish in the cages that the chance of attachment is 2%, then after 6 months, the number of copepodids will increase to 8 times their original level.”

“This exponential growth behavior shows that sea cages and lice by themselves are an unstable system.”

Naturally, with sea lice present in feedlots, working to strip fish of their protective layer of mucus, wild salmon become more susceptible to diseases like the emerging ISA.

The Cohen Commission’s report

Despite the aquaculture industry repeatedly denying the presence of the virus, there have been over 1,000 separate cases of ISA reported since 2006. In the recently published results of the Cohen Commission Inquiry, Honorary Bruce Cohen admitted the presence of ISA in salmon feedlots, but denied disease in local waters. Faced with an obvious decline in Fraser sockeye salmon, the Canadian government commenced the Cohen Commission Inquiry to perform an in-depth research project into the causes of the decline in 2010.

On the Commission’s website, Cohen writes, “some hoped that our work would find the ‘smoking gun’ – a single cause that explained the two-decade decline in productivity – but finding that a single event or stressor is responsible is improbable.”

Contending Cohen’s official statement, Ray Gigg of FAIR (Federal Accountability Initiative for Reform) believes, “We have ISA in BC waters but we don’t have disease. We have different labs getting positive and negative test results on the same fish samples... when a viral disease is reported and the commercial value of fish is threatened, the CFIA (Canadian Food Inspection Agency) assumes a defensive position by questioning the findings of the testing labs, by re-testing the degraded samples of infected fish with its notoriously inaccurate technology, and then recording ‘inconclusive’ results as ‘negative.’”

A citizen petition submitted by a co-op of academic and citizen-based associations, entitled “Canada’s Violations of the Fisheries Act and NAAEC,” reiterates that “as long as open-net pens are used which allow constant exchange of water to the marine environment and salmon are crowded into confined areas, diseases will likely be exchanged between feedlot and wild salmon.”

Unfortunately, as the aforementioned Citizen Petition affirms, “testimony by the Canadian Food Inspection Agency at the Cohen Commission Inquiry revealed that the Department of Fisheries and Oceans is no longer in charge of the ISAv investigation or management because the virus is such a high concern to international trade. The CFIA has no mandate to protect wild salmon and thus there is no agency in Canada tasked to protect wild salmon from the ISA virus.”

Fortunately, the Cohen Report did detail 75 recommendations for the government to consider, including a moratorium on new farming licences and the removal of individual farms.

Speaking to *The International*, the Executive Director of the Living Oceans Society, Karen Wristen, believes: “What’s at stake here is nothing less than the lifeblood of the Province of British Columbia: our wild salmon.”

“This year is the year for implementation of those recommendations.”