

## Wave of controversy greets fish farms

Opinions abound about industry



Kathaleen Milan and Ron Neufeld look at salmon cages just offshore from their property in Port Wade, Annapolis County. (ADRIEN VECZAN / Staff)

**PORT WADE** — At first, it was just a couple of work boats that seemed to be pulling debris off the bottom of the Annapolis Basin.

Then one June morning, Kathaleen Milan and Ron Neufeld looked out the kitchen window of the historic bungalow they've been restoring in Port Wade, Annapolis County, and saw a familiar sight.

"We came here from British Columbia," said Milan, an ex-travel agent turned artist. "We knew all about salmon farms."

Now, instead of open water, seals and the occasional lobster boat, when the couple stare southward they see seven Cooke Aquaculture Inc. cages suspended in the chop no more than 50 metres from the low-water mark on their property.

It isn't just the view, explains Neufeld, who used to work in the telecommunications industry. The caged salmon splash, and seagulls, drawn by the farms, squawk.

It also makes a person a touch queasy to think about the tonnes of fish waste that will eventually be gathering under the nearby cages.

“We just don’t like fish farms,” declares Milan firmly.

Well, get in line.

Once a mighty Atlantic salmon fighting its way up a cold river on a spawning run was an icon of the natural world. But *Salmo salar* is almost gone from Nova Scotia rivers these days.

Instead, their cage-grown counterparts are, for some, a grim symbol of the environmental cost of finding a plentiful source of protein for the world and jobs for coastal folk.

There’s lots of finger-pointing and “he said, she said” from those for and against. Even the mountains of scientific research to support both sides can confuse as much as it illuminates.

The complex debate is being played out on bigger canvasses in Chile, Scotland, Norway and British Columbia, as well as closer to home in New Brunswick and Newfoundland and Labrador, which both depend more heavily upon aquaculture than Nova Scotia.

In this province, where salmon farming is really only a few decades old, the clamour is just starting.

The headlines help stir things up. Earlier this year, infectious salmon anemia, lethal to fish but not humans, was detected at one of Cooke’s Shelburne Harbour farms.

Just last month, Cooke destroyed several hundred thousand fish at another Shelburne farm after discovering the disease. It also killed another 40,000 at a smaller farm in waters near Liverpool for the same reason.

Just the luck of the draw, says Glenn Cooke, owner of Cooke Aquaculture, which is entitled to be compensated by the Canadian government for fish lost to the disease.

“ISA is a naturally occurring disease that every salmon-farming country in the world has experienced,” he said in an interview last week.

“People can’t get used to used to the fact that we are in agriculture and will experience the same kind of risks that farms do.”

Except salmon sometimes escape from those cages when they are damaged or malfunction. For aquaculture’s critics, that complicates things.

They say that farmed salmon have the potential to spread disease to wild fish. And not just infectious salmon anemia.

Cooke Aquaculture says that its Nova Scotia farms are free of the nasty sea lice parasite. Thank heavens for that; sea lice have decimated farmed salmon populations around the world. They are also known to be one of the greatest threats to British Columbia’s wild Pacific salmon fishery.

Even though no direct scientific connection has been established, some critics say that it is not a coincidence that wild Atlantic salmon numbers have plummeted wherever there is a high concentration of saltwater salmon pens.

“The rise of salmon farming on both sides of the Bay of Fundy has coincided with the slow and then rapid demise of the wild Atlantic salmon in the Bay of Fundy,” said Bill Taylor, president of the St. Andrews, N.B.-based Atlantic Salmon Federation.

Salmon don't have to break out of their cages to hurt the fragile ecosystem, in the view of critics. The issue is diet.

Environmentalists call ocean salmon farms aquaculture “feed lots.”

On Nova Scotia farms, an average of 18 kilograms of fish — roughly four full-grown salmon — will occupy a cubic metre of water by the time the fish are mature enough for market.

All those fish need to eat. In the 1990s, ground-up fish meal made up as much as 80 per cent of the pellets that farmed fish ate.

Today, Glenn Cooke says wild fish like herring, sardines and anchovies make up closer to 20 per cent of what his company's salmon eat.

That's progress. If the amount of fish consumed exceeds the amount of aquaculture grown on farms, the practice reduces rather than increases the world's seafood protein supply.

But say that it is not just what the salmon take in. The more that salmon eat, the more waste they produce, and that can do some nasty things underneath the cages.

The question is what exactly.

Last year, marine biologist Inka Milewski, science adviser for the Conservation Council of New Brunswick, used underwater cameras to examine some decommissioned fish farm sites in Shelburne Harbour.

What she found were large mats of bubbling white *Beggiatoa* bacteria, along with worms, covering the ocean bottom under the sites. She calls the bacteria “an indicator species of a highly polluted environment.”

When Milewski examined another area a kilometre away from the farm sites, she didn't find any white bacteria. But when she compared the biological diversity of the two sites, she said there “was not a lot of difference.”

That doesn't square with what Dalhousie University oceanography professor Jon Grant understands.

“By far, the bulk of the studies (of ocean salmon farms) have been of near-field sites,” he said, referring to the area relatively close to farms. “When they examine far-field sites, the signal is just so diluted that it just disappears.”

Tell that to Sheldon Dixon, a lobsterman who has been fishing in District 34, from Yarmouth to Digby, since 1987. He remembers the days when 12 to 15 lobster boats would throw their traps in the waters off Freeport on Long Island.

Then, he said, a Cooke salmon farm appeared.

“Now the lobsters don’t go in there at all, after a couple of years of eating the feed and shit,” he said.

### **Some notes to this article (from APES):**

"Even though no direct scientific connection has been established, some critics say that it is not a coincidence that wild Atlantic salmon numbers have plummeted wherever there is a high concentration of saltwater salmon pens":

There is scientific research published by Ransom Myers from the Department of Biology at Dalhousie University and Jennifer Ford of the Ecology Action Centre (now working for DFO) in 2008: <http://www.plosbiology.org/article/info:doi/10.1371/journal.pbio.0060033>

This research clearly showed a direct scientific connection.

"Through a meta-analysis of existing data, we show a reduction in survival or abundance of Atlantic salmon; sea trout; and pink, chum, and coho salmon in association with increased production of farmed salmon. In many cases, these reductions in survival or abundance are greater than 50% "

You can read more via:

<http://www.lenfestocean.org/sites/default/files/fordmyersloprs2.08.pdf>