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Dirty secrets of farmed salmon

Raising salmon for consumption is wreaking havoc on wild fish populations—perhaps our bodies, too

By Alastair Bland

Rebecca Stewart, owner of Spice Creek Café in Chico, lived on Vancouver Island for years. There, she operated a restaurant for a decade in the city of Victoria. She sold locally farmed salmon in the early days, but Stewart says dirty industry secrets emerged while the product's quality visibly deteriorated, and she eventually became unwilling to buy it.

"Now they pack them into the cages like sardines and they feed them coloring and antibiotics," said Stewart. "I would never feed someone that stuff."

These days, others are catching on, too. Retail giant Target, for example, recently pulled farmed salmon from its shelves, though that gesture of environmental awareness may be more symbolic than effective. Target stores sold only 250 tons of farmed salmon in 2009, whereas farmed salmon exported to the United States from British Columbia alone totals more than 60,000 tons each year—80 percent of the province's production. Chile and Norway are two other major suppliers of salmon for the United States market, and countless retailers and restaurants throughout America remain strong supporters of the controversial farmed-salmon industry.

Salmon farms, where parasites called sea lice breed in profuse densities and can smother juvenile wild salmon that pass close to the cages, have led to wild salmon extinction in British Columbia, Norway and other northern nations, according to many experts. On Vancouver Island, the epicenter of the West Coast's 30-year-old farmed-salmon industry, the damage allegedly caused by open-ocean fish farms has been especially severe. Many streams in the region have seen rapid declines of their wild pink salmon runs since local farming operations began, and several runs have gone extinct.

The worst may still be coming, according to a December 2007 article in *Science* by Marty Krkosek, who concluded that by 2016 pink salmon will be entirely absent in the waters and rivers of the region's Broughton Archipelago. Problems are just as serious on the mainland of British Columbia, where the once-mighty sockeye salmon runs of the Fraser River collapsed disastrously last year. Twenty million fish returned annually to the Fraser in recorded history, and while fisheries managers expected to see 10 million spawn in 2009, a record-low 1 million turned up. Biologists have said that salmon farms crowding the waters just north of the river's mouth likely are at fault. Meanwhile, voices in the salmon-farming industry have denied responsibility.

Ultimately, though, Americans may be the culprits. We create almost insatiable demand for the product, usually treated heavily with chemicals and coloring, and wild salmon runs in regions near the farms are paying the price. Locally, Canadian farmed salmon appears at large grocery chains like Safeway and Costco. At the restaurant level, The Rawbar serves sashimi cuts of salmon farmed near Vancouver Island.

Others have quit serving Canadian farmed salmon for health and environmental reasons.

Most salmon farms are known users of a multitude of antibiotics, sea lice treatments and synthetic dietary supplements. Some chemicals previously used are now prohibited, recognized as dangerous poisons. For example, dichlorvos, a pesticide and a known carcinogen, was found at relatively high levels in the flesh of farmed salmon and was phased out of use through the 1990s and early 2000s.



If you're eating farmed salmon, chances are you're also consuming chemical dyes that turn the fish's flesh a lovely pink color. Other ingredients used at fish farms include antibiotics and pesticides to control sea lice.

Fish advice:

Monterey Bay Aquarium's Seafood Watch list says when it comes to eating salmon, wild-caught is the way to go. For information on sustainable seafood, visit the Web site.

Emamectin benzoate, marketed as Slice, is still a mainstay of the industry, used almost ubiquitously to reduce levels of sea lice within fish pens. Its effects on native crustaceans, like lobsters and crabs, in the surrounding environment are not fully understood though are suspected to be negative. Worse, perhaps, Slice is losing effectiveness around the globe as sea lice develop genetic resistance to the agent, posing potentially huge problems for the future of salmon farms and the wild salmon that share the same waters.

Nearly all farmed salmon is colored artificially via astaxanthin and canthaxanthin, coloring agents blended into the fish's feed. Without these compounds, the salmon's flesh would remain a dull, pasty gray. Canthaxanthin at high dosages has been linked in humans to retinal damage, partial loss of vision and a serious blood disorder called aplastic anemia.



Such issues associated with salmon farming have swayed many buyers toward fish from a farm called Loch Duart, located in Sutherland, Scotland. Spice Creek Café, Red Tavern, and S&S Produce and Natural Foods all serve Loch Duart salmon from time to time. Throughout the world, Loch Duart thrives on a reputation for producing “sustainable” and “artisanal” salmon and has been commended by some of the most esteemed chefs in the world. Stewart at Spice Creek Café says her wholesaler, American Fish in Sacramento, has assured her the product is “organic.”

It is not, however. According to records from the Scottish Environmental Protection Agency, Loch Duart treats its fish with Slice, Panacur and Excis, all common parasite treatments, and the farm is not certified organic. When the CN&R contacted representatives of Cleanfish, a San Francisco seafood distributor that formally represents the Scottish farm, they did not respond to repeated requests to discuss whether the farm uses Slice or artificial coloring in the fish's feed, both standard applications in nonorganic salmon-farming operations.

Salmon farming operations in ocean net pens may look idyllic, but critics say the antibiotics and chemicals used to raise the fish are harmful to the quality of the product and endanger the nearby wild fish.

Stewart, who has been serving Loch Duart's fish for several years, knew the salmon was farmed.

“But I had thought it was a controlled, clean environment without any chemicals. I remember thinking, ‘Great! Someone is taking salmon farming back to what it should be and producing a sustainable product.’ I hate to think that they might be tricking people,” she said, upon hearing from this reporter that the company appears to use the same methods as other farmed fisheries.

PHOTO COURTESY OF BC SALMON FARMERS ASSOCIATION

Stewart, who said she will no longer purchase Loch Duart's fish, acknowledged that restaurant staff and chefs often put their trust in their fish vendors. “You take their word for what's sustainable and where something comes from, but maybe they don't even know.”

Although the Sacramento River's collapse of chinook salmon is unrelated to fish-farming practices in the Northwest, according to biologists, some California fishermen fear that a consumer base satisfied with farmed salmon will lose all interest in preserving wild runs. Kenny Belov, a part-time commercial fisherman in Marin County and the operator of Fish Restaurant, has launched a campaign against farmed salmon for this reason. More than 20 West Coast restaurants have taken his pledge to never serve pen-raised salmon again.

Ann Leon, owner and chef at Leon's Bistro, has never served farmed salmon in the 10 years since she first opened for business, she says. Instead, Leon buys wild Alaskan sockeye when available.

Stewart is encouraged by Target's move to pull farmed salmon from shelves but thinks the retail industry can do better.

“That's great, but why doesn't Costco stop?” she said. “I would expect that. I think the pressure is on them.”

But an equal, if not greater, pressure from American consumers keeps salmon farms in business, and at the rate that the West Coast's wild salmon are declining, farmed fish might soon be all we have left.