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Is Fish Farming Safe?

Aquaculture has become the world's fastest-growing food business. But it's taking a hit from environmentalists

By [TERRY MCCARTHY/CAMPBELL RIVER](#)



REX RYSTEDT/SEATTLEPHOTO.COM FOR TIME

FARM FRESH? Heritage Salmon executive Odd Grydeland near Campbell River, British Columbia

Panhandle. As the plane drops over a ridge, a floating hut appears, anchored in the channel and nestled in a grid of net-covered pens. It all looks innocuous enough — no smoking chimneys, no visible plumes of discharge, no growling of chainsaws, not even a road.

This is Venture Point, 15 minutes northeast of Campbell River by air, one of 91 salmon farms licensed to operate in British Columbian waters. They produce some 50,000 tons of salmon a year, most of it destined for the U.S. market. Young men work their way along the floating walkways around the 10,000-sq.-ft. pens, tossing brown food pellets that are met by a swirl of fish. In these 12 pens, there are about 1 million salmon, each a delicious, silver-sided beauty, and when harvested in 18 months, they will fetch more than \$10 million in retail sales.

What could be wrong with this picture? The farm-grown harvest is

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Monday, Nov. 25, 2002

Flying in a seaplane up the east coast of Vancouver Island in British Columbia you see little but forested hills, a myriad of islands and the blue waters of the narrow channel that runs from Seattle to the Alaska

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cheap, predictable and year-round. "A fillet of farmed salmon in your supermarket is fresher than a wild fish netted at sea that can take five to six days to get to harbor," says Odd Grydeland, 54, former president of the British Columbia Salmon Farmers Association and an executive at Heritage Salmon, based in New Brunswick, B.C. Moreover, each farm-grown salmon means, in theory, one less fish taken from wild stocks that have been declining for decades. (Farm-raised fish now make up most of the fresh salmon sold in U.S. supermarkets.)

But the story isn't that simple. Salmon farming can be a dirty business. According to Otto Langer, 56, a biologist who worked 30 years for Canada's Department of Fisheries, a large salmon farm may pour as much liquid waste into the sea as a small city. Add to that the plagues of destructive sea lice that thrive in densely packed salmon pens and the schools of farm-grown fish that inevitably escape to the open sea, where they spread diseases and compete for food and breeding grounds with wild stocks.

Because salmon are voracious eaters of smaller species, it takes several pounds of wild fish, ground up into meal, to yield 1 lb. of farmed salmon — an exchange that depletes the world supply of protein. The diet of farmed salmon lacks the small, pink-colored krill that their wild cousins eat, so the flesh of farmed fish is gray; a synthetic version of astaxanthin, a naturally occurring pigment, is added to the feed.

Aquaculture — the commercial raising of fish — is being touted as a "blue revolution," a seagoing version of the Green Revolution that vastly multiplied agricultural output in underdeveloped countries. But just as the Green Revolution sparked concerns about its reliance on pesticides and chemical fertilizers, so has the blue revolution provoked a rebellion among scientists and environmentalists who fear that the industry, if left unregulated, could wreak havoc in oceans and estuaries. "We are not against aquaculture," says Langer, "but we are against the way it is being done now."

It has been several decades since there were enough fish in the sea to meet, on a sustainable basis, the growing worldwide demand for seafood — which accounts for 16% of global animal-protein intake, up from 14% in the early 1960s. About half the world's wild fisheries have been exhausted by overfishing. In the North Atlantic, one of the most depleted oceans, populations of popular fish (cod, flounder, haddock, hake and tuna) are just one-sixth of what they were a century ago. A European Union panel last week backed calls for a total ban on the fishing of cod in the North Atlantic and a moratorium on the fishing of haddock and whiting there.

Aquaculture was supposed to pick up the slack. It's already the world's fastest-growing food industry, with production increasing more than 10% a year. Farmed fish and shellfish supply 30% of all the seafood consumed worldwide today, up from 10% two decades ago.



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But while the principles of aquaculture are generally accepted, experts fiercely debate which types of fish farming are safe to pursue. Says Andrew Fisk, 37, aquaculture coordinator for Maine's department of marine resources: "Aquaculturists used to be the good guys, and now they aren't, and there is a lot of anger on both sides."


On an eco-friendly scale, bivalves generally rate highest among the more than 220 species of fish and shellfish that are cultivated commercially. Mussels and oysters are filter-feeders that make the surrounding water cleaner, so small-scale farming of them is not usually harmful to the ecosystem. Farming of crayfish in China — the largest supplier to the U.S.--is a relatively low-maintenance, drug-free business carried out in rice paddies. Next come the vegetarian freshwater species that do not need large quantities of fish meal — carp, catfish and tilapia. At the bottom are salmon and shrimp, onetime luxury foods that, thanks to aquaculture, can be purchased around the world in any season at supermarket prices. Both species eat several pounds of fish meal to gain a pound of weight. And both create lots of waste.

From the Nov. 25, 2002 issue of TIME magazine

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