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Stop Fish Farming

Fish farming, or aquaculture, is the world's fastest-growing food industry, with farmed fish and shellfish accounting for 30% of all seafood consumed, up from 10% in 1980.¹ On the surface, fish farming appears to be the perfect solution to overfishing and destructive fishing practices on the open sea. It's profitable, too, with the average salmon farm producing 50,000 tons of salmon annually, worth \$10 million in retail sales.²

For the Fish

A fish farm is a floating feedlot, with a series of cages made from synthetic nets acting as a giant sieve to keep fish in, while allowing their waste to drop into the ocean. In a large farm, as many as 1.3 million fish are raised in a caged area the

The more aquaculture there is, the more disease there will be.

— Callum Roberts,
marine conservationist,
University of York, England

size of four football fields.³ Farmed fish spend their lives in cramped quarters, subject to injury from their cages and each other, suffering a mortality rate of 10% to 30%⁴ and a blindness rate of 40%.⁵

A Matter of Waste

Open net cages release untreated sewage directly into the ocean, discharging contaminated feed, toxic chemicals, artificial colorants (farmed fish are dyed so their meat will resemble that of their wild cousins), antibiotics and leaked oil into the surrounding marine ecosystem. A large fish farm produces the sewage equivalent of a city of 20,000 people. In the Clayoquot Sound's UNESCO Biosphere Reserve on Vancouver Island, with a human population of 1,500, the area's fish farms produce as much sewage as a city with 150,000 people.⁶

Great Escapes

A 2002 study by the Royal Society of London found that repeated escapes from salmon farms could lead to the extinction of wild salmon populations worldwide, because interbreeding reduces the population's fitness and ability to survive.⁷ In 2002, 600,000 salmon escaped from a single farm in the North Atlantic's Faroe Islands, bringing the worldwide total of recorded fish farm escapees for that year to 2 million.⁸ In 2004, 1 million farmed salmon escaped in



DANIEL BELTRA/GREENPEACE

Led by Greenpeace, a flotilla of boats protesting the industry's expansion along the west coast surrounds a fish farm in B.C.'s Broughton Archipelago.

Chile, bringing that year's total above 2 million, as well.⁹ Researchers in Norway have found as many as 80% of the fish from some rivers to be descendants of fish farm escapees.¹⁰

The Health of the Ocean

Crowding thousands of fish together also facilitates the rapid spread of parasites, such as sea lice and kudoa (soft flesh syndrome), and infections such as bacterial kidney disease. The kudoa parasite costs British Columbia's salmon farming industry \$30 million to \$40 million annually.¹¹ With open cages, these diseases spread easily to wild fish. Sea lice infestations have been recorded as being 70% higher than normal among wild salmon in close proximity to fish farms, while still exceeding natural levels up to 18 miles along the salmon's migration route.¹²

Peter Mantle owns a wild salmon and sea-trout fishery in Delphi, Ireland. He first saw the effects of sea lice in 1989 after salmon farms were introduced to the area. "Sea-trout fishing

- Farmed and Dangerous: www.farmedanddangerous.org
- Living Ocean Society: www.livingoceans.org
- Oceans & Sustainable Fishing: www.davidsuzuki.org/Oceans.
- Raincoast Research Society: www.raincoastresearch.org
- Sea Around Us: www.seaaroundus.org
- Watershed Watch Salmon Society: www.watershed-watch.org

was sustainable and eco-friendly," said Mantle, "but the salmon farms killed it off within a decade."

Fish Pharmacy

Antibiotics, pesticides and fungicides are all used against disease outbreaks on fish farms. Since antibiotic use is a relatively new practice, its consequences on surrounding marine life are not yet known. What has been discovered is an increase in antibiotic-resistant bacteria in the sediment under fish farms, in the farmed fish and in other marine life surrounding the farms.¹³ Three of the most common pesticides used in fish farming — ivermectin, cypermethrin and azamethiphos — are toxic to marine life around fish farms, but further studies are needed to understand their full impact.¹⁴

Environmentally Friendly Aquaculture

Closing in on Environmentally Sound Aquaculture: A Fresh Look at the Economics of Closed-Containment Systems is a report compiled by the David Suzuki Foundation, Conservation Strategy Fund, Friends of Clayoquot Sound and the Raincoast Conservation Society in British Columbia. The joint project explores the economic rationale for shifting the environmentally unsustainable, open-net-cage aquaculture industry towards a more sustainable, closed-tank, land-based model.

David Suzuki Foundation scientist Heather Deal has also produced a report, *Sustainable Shellfish*, examining the environmental impacts of commercial shellfish farming and offering recommendations for farmers and policy-makers.