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Aquaculture

People have been practising fish farming, or aquaculture, for centuries. In Canada, fish farms have been operating on both coasts since the 1970s.

If done sustainably, aquaculture can be a viable alternative to harvesting wild stocks. However, fish-farming practises on the B.C. coast are polluting the environment and threatening the integrity of wild stocks.

The David Suzuki Foundation's current work focuses on [salmon farming](#) and [shellfish farming](#) and their effects on marine environments. Aquaculture is an important and growing industry, and we are committed to finding sustainable [solutions](#) to the many environmental challenges facing the industry.



An open-net-cage salmon farm on the British Columbia coast.

Join the Coastal Alliance for Aquaculture Reform (CAAR) and [get involved](#) in important action to promote sustainable aquaculture practices.

History

The cultivation of plants and animals has a long tradition in human history.

The main historical incentives for cultivated food production are:

- to increase the amount of available food
- to reduce the energy costs involved in searching for, gathering, and transporting food
- to improve the stability and predictability of food production
- to improve the reliability of food supply, by cultivating and storing excess production
- to improve and stabilize food quality

The earliest records of fish farming date back thousands of years to China where carp, a freshwater species, was raised in ponds. In time, the practice spread to Europe where farmed species like tilapia, turbot, cod, sole, catfish, and sturgeon, are raised in ponds and land-based tank systems.

Most of these traditional aquaculture methods have proven to be sustainable because they are ecologically integrated into the agricultural, industrial, and community fabric, meaning, for example, that wastes become fertilizers rather than pollutants. Additionally, these species are herbivores, so other fish species are not used in their production as they are in [salmon farming](#).

The move to marine aquaculture has been fraught with problems, starting with the need to engineer floating mesh and later metal net cages, and in the case of salmon, transferring large quantities of live juvenile fish -- which are produced in freshwater -- to cages in the oceans.

The other commonly farmed seafoods are [shellfish](#), like oysters, clams, mussels, scallops, and shrimp. These are mainly produced in tropical nations where coastal mangrove forests have been cut down and replaced with shrimp farms that supply markets in Europe, Japan, and the U.S. These mangroves once sheltered wild fish and shrimp, which local people caught to feed their families. With shrimp farms, waste builds up in the ponds after a few years, making further cultivation impossible and forcing farmers to move on. Local people are then left without shrimp farms or mangrove forests.

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Shellfish farming can be beneficial because shellfish can improve water quality as they clear the water of excess plankton. Shellfish need clean water, so cultivation can keep coastal waters clean. The size of the commercial operation, however, can have serious impacts because shellfish farming significantly alters the habitats of beaches and intertidal areas.

Bad farming practices, such as driving large vehicles on the beach and changing entire ecosystems to accommodate the farmed species, which are often not native to the area, can damage habitat on the beaches where clams and some types of oysters are farmed.

People around the world are eating more seafood than ever before, which is driving production of farmed species. The ecological impact of fish farming ranges from benign to catastrophic, and depends on which species are raised, how they are raised, and where the farm is located. Before buying farmed fish, a visit to web sites like [SeaChoice](#), the [Monterey Bay Aquarium's Seafood Watch program](#), or the [Audubon Society's seafood guide](#) is a good idea.

A paper published in the peer-reviewed journal *Science* in December 2007 shows 80 percent of the juvenile salmon in British Columbia's Broughton Archipelago are being killed by sea lice. Some populations could be extinct in four years. Here's how and why it's happening.

