AQUACULTURE IN CANADA

Aquaculture is the farming of aquatic organisms in fresh or salt water. Canadian aquaculturists farm various species of finfish (e.g., salmon, trout, char, sturgeon, tilapia, halibut), shellfish (e.g., oysters, mussels, clams, scallops, shrimp), and aquatic plants. Fish are farmed on land in tanks or ponds and in lakes and oceans in cages or netted pens.

There are fish farms in every province in Canada, as well as the Yukon.[1]

Salmon farming off the coast of Newfoundland & Labrador

WHY FISH FARMING? AREN'T THERE ENOUGH FISH IN THE WILD?

Farming fish may help conserve wild fish stocks. Overfishing has resulted in declining numbers of wild fish, e.g., Pacific salmon and Atlantic cod. Consumption of farmed fish may help to decrease the need to harvest stocks of wild fish.[2]

Aquaculture takes place in controlled environments. Fish are protected from predators and health can be carefully monitored.

Algae sea crop

Fish farms can operate year round. Efficiency and cost savings in production results in lower prices for consumers. Salmon and shrimp, once considered luxury items, have become fairly commonplace on Canadian tables.

It's a more reliable, consistent way of producing fish. Fish diets can be tailored to meet the exact nutritional requirements of each fish that is farmed to ensure the best possible conditions for health and growth.

Open pen net for farming Atlantic salmon

The Department of Fisheries and Oceans Canada and each province are responsible to ensure that aquaculture is managed sustainably across the country.[3]

FISH FARMING: ISSUES

As a relatively new industry, fish farming has been faced with challenges and controversies, such as:

- Managing waste from fish farming operations
- The possibility of escaped fish breeding with wild species
- Transmission of diseases among farmed fish to wild stocks
- Using fishmeal and oil made from wild fish for feed, while wild fish stocks are being depleted worldwide
- The impact that new species of fish may have on lake and marine ecosystems

Partnerships among the industry, government, and universities are developing innovative solutions to these challenges by:

- following strict codes of practice to control waste management and contain fish within pens
- developing new sources of plant-based proteins and oils for fish feeds
- using selective breeding programs to develop disease resistance in fish
- vaccinating fish to help manage diseases that could potentially affect wild stocks
- closely monitoring fish farms and the surrounding environment with modern technology such as robots, video cameras and smart phones

Fisheries and Oceans Canada works with the *Canadian Food Inspection Agency* to deliver the **National Aquatic Animal Health Program**[5] to prevent, control and/or eradicate aquatic animal diseases. To import aquatic animals and/or move fish within provinces, permits are required from the Canadian Food Inspection Agency.

Many fish require high quality protein diets. Fishmeal and fish oil (made from fish such as herring, mackerel, anchovies and sardines) are well-balanced, natural sources of nutrients for fish. Globally, aquaculture uses about half a metric ton of wild whole fish combined with other nutrient sources to produce one metric ton of farmed seafood.[4]

Land-based trout farm

On a global basis, fish are the primary source of animal protein in human diets. Aquaculture accounts for more than 50% of the world's fish consumption.[6] Due to anticipated population growth and increasing demand for seafood, aquaculture will increasingly be relied on to fill the growing supply-demand gap because wild fish stocks are currently fished to their limits.[7]

Harvesting mussels