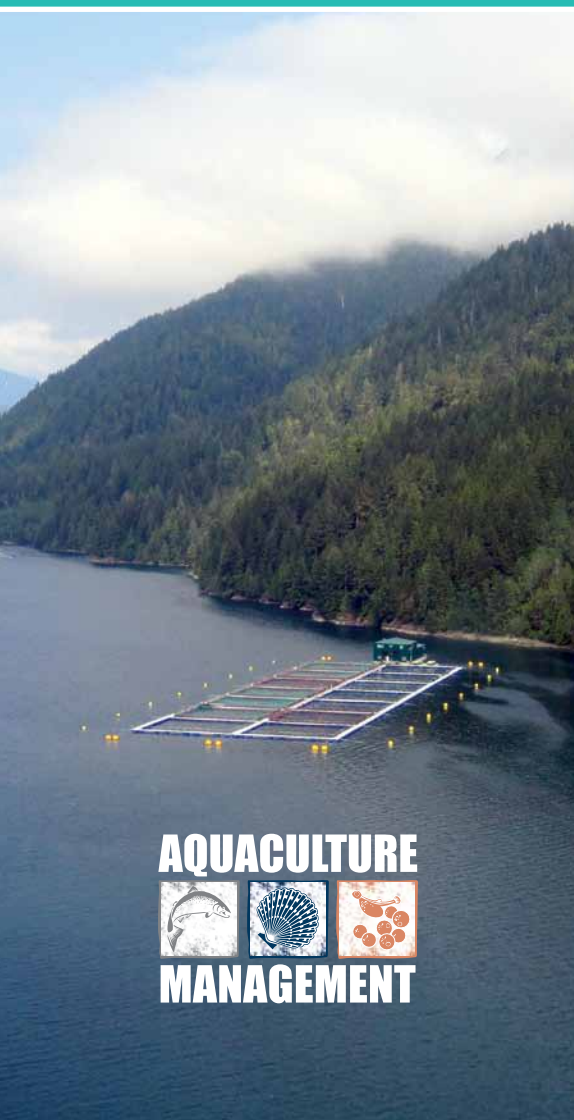




Fisheries and Oceans Canada / Pêches et Océans Canada

Aquaculture in British Columbia



AQUACULTURE



MANAGEMENT

PROTECTING THE ENVIRONMENT

REGULATION AND RESEARCH

MAINTAINING A VIABLE INDUSTRY

REPORTING BACK TO BRITISH COLUMBIANS

Aquaculture in British Columbia

In 2010, Fisheries and Oceans Canada (DFO) assumed the primary management and regulation of aquaculture in B.C. A new set of regulations under the *Fisheries Act* has been developed to ensure that the aquaculture industry in B.C. operates in a sustainable manner, so that the marine environment is protected for future generations.

British Columbia’s aquaculture industry is a significant component of the marine fisheries in the province and an important contributor to the economy of resource-based coastal communities. It creates close to 6,000 jobs, which results in \$224 million in wages for British Columbians.

About 740 aquaculture operations in B.C. produce salmon, other finfish and shellfish year-round, with a total harvested value of nearly \$534 million.

The aquaculture industry in B.C. represents more than half the total aquaculture production in Canada. Salmon farming is the province’s largest agricultural export and the weight and value of the harvest is greater than the wild salmon fishery harvest.

The value of the aquaculture harvest in B.C. in 2010 was:

Salmon and other finfish... \$511.5 million
Shellfish \$22.3 million



Photo: Centre for Shellfish Research



What is Aquaculture?

Under the *Pacific Aquaculture Regulations*, aquaculture is defined as the cultivation of fish.



DFO regulates four types of aquaculture in B.C.:

- **Marine finfish** (almost exclusively Atlantic salmon) – approximately 130 sites primarily in the Campbell River, Port Hardy and Tofino areas
- **Shellfish** (e.g., clams, oysters, mussels, scallops and geoducks) – approximately 500 sites
- **Freshwater finfish** (pond culture of rainbow trout; private hatcheries for sturgeon, coho salmon, and sockeye salmon) – approximately 80 sites
- **Enhancement facilities** where Pacific salmon are raised and released to rebuild wild fish stocks and provide fishing opportunities



Protecting the Environment

The new *Pacific Aquaculture Regulations* have strengthened the environmental controls that are in place for the aquaculture industry in B.C. Ensuring sound environmental performance by the industry is a priority for DFO.

Regulation and Research

Strong regulations, compliance measures and enforcement ensure that the aquaculture industry respects its responsibility for the environment.

The Department places a high priority on aquaculture research and science advice to ensure that the best and most up-to-date science informs the management regime and contributes to stewardship of marine resources.

Maintaining a Viable Industry

The new *Pacific Aquaculture Regulations* help to protect the environment while providing a more efficient and effective regulatory system for the aquaculture industry.

Reporting Back to British Columbians

Under the new regulations, aquaculture operators must continually monitor their operations, ensure they are compliant with the regulations, and report required information and data on their operations and environmental performance to DFO on a regular basis. DFO actively enforces the regulations through inspections and audits. The Department also publicly reports on the environmental and regulatory performance of the industry.

Protecting the Environment

The conservation of marine ecosystems and wild fish stocks is a priority for DFO. Under the new management regime, the Government of Canada is responsible for managing both farmed and wild fish populations. Wild and cultivated fish stocks can coexist and thrive when managed appropriately. The aquaculture regulations provide the basis for effective management of aquaculture in B.C.

Placing the *Pacific Aquaculture Regulations* under the *Fisheries Act* gives DFO the power to minimize potential negative environmental impacts of aquaculture. Similar to wild fisheries licences, licences for aquaculture facilities specify conditions and mandatory requirements that industry must meet.

Protection Through Conditions of Licence

The licence conditions cover:

- Types and numbers of fish that can be cultivated
- What facilities must do to minimize and address fish escapement and incidental catch of other species
- Limits on the extent of environmental impact that is permissible
- What industry must do to compensate should fish habitat be altered

Licence conditions also include other requirements that aquaculture operators must meet. All marine finfish aquaculture operators, for example, are required to:

- Develop a management plan;
- Prevent unintended interactions between wild and farmed fish by using escape prevention measures;
- Maintain complete and accurate records of fish stocking activity and fish health, including all instances of drug (therapeutant) use; and
- Report specific events or incidents, on a mandatory basis, such as elevated sea lice levels, marine mammal interactions, disease occurrences, incidental catch, and more.

Licences also include additional conditions that require mandatory monitoring of key environmental indicators (e.g. routine sediment sampling for soft-bottom sites) and rapid notification if monitoring thresholds are exceeded (e.g. sulphide levels in sediments).

Regulation and Research

DFO has more than 60 full-time employees who manage and regulate the aquaculture industry in B.C. This includes staff responsible for licensing and policy development, consultations, fish health and environmental protection, as well as the introduction and transfers of fish into or out of farm sites.

This includes a team of fishery officers who visit fish farms and enforce the *Pacific Aquaculture Regulations*. Fishery officers enforce regulations for the B.C. aquaculture industry with the same range of tools — the ability to conduct inspections and searches, and lay charges — as they use to enforce other parts of the *Fisheries Act*.

Enforcement at Work

The Department's goal is to achieve industry compliance with the regulations through a variety of activities, including:



- Education and awareness
- Investigations
- Unannounced site inspections
- Audits to verify and validate the data reported by the industry
- Public reporting on the environmental and regulatory performance of industry
- Prosecutions, when other measures have failed, or where there are serious breaches.

Science for Sustainability

Scientific studies conducted by DFO researchers are also an important part of our efforts to protect the environment and ensure the aquaculture industry is well regulated. Research is focused on the possible effects of aquaculture on wild fish, including research on sea lice, disease, and environmental contamination. To read summaries of some of our peer-reviewed, scientific papers, please visit the DFO website:

www.pac.dfo-mpo.gc.ca/aquaculture/index-eng.htm

Maintaining a Viable Industry

While DFO's aquaculture regulations are consistent with those applied to other marine fisheries, they are tailored to the unique aspects of the aquaculture sector in B.C. They were designed to be clear and understandable to both industry and the public, and to support the industry's international competitiveness.

The aquaculture regulations establish a federal licence regime for B.C. aquaculture that:

- Consolidates previous permits and authorizations to simplify the regulatory process for industry;
- Sets enforceable licence conditions that industry can understand and be held accountable for; and
- Establishes a variety of transparency measures to support reporting information to the public on the industry's performance while building public confidence in its regulation.

The federal aquaculture licence addresses environmental matters in a more efficient way by putting conditions that were previously addressed separately on to the same licence.

DFO works with the Province of B.C. and the industry to locate aquaculture facilities and assess all aspects of their operations.



Roles and Responsibilities

Federal Government – Fisheries and Oceans Canada

- Issues licences for marine and freshwater aquaculture, including hatcheries
- Assesses modifications to existing aquaculture sites
- Establishes conditions of licence to conserve and protect fish and fish habitat
- Enforces new aquaculture regulations
- Conducts aquaculture research programs
- Reports publicly on environmental and regulatory performance of industry

Provincial Government

- Issues tenures for marine or freshwater environment
- Regulates business aspects of aquaculture (e.g., workplace health and safety)
- Reports on seafood exports



Reporting Back to British Columbians

As a condition of their licence, aquaculture facility operators must report to DFO regularly on a variety of aspects of their farms or hatcheries. These include such things as movement of fish, fish health, containment of fish, escape response, fish and fish habitat, catching of nuisance fish and mammals, and incidental catch.

DFO provides regular public reports on such things as fish health, sea lice levels, disease, marine mammal interactions (seals, sea lions, etc.), by-catch, and other relevant regulatory and environmental data, based on information that the industry has provided to DFO to meet its licence conditions. In addition to a roll-up of the data above, the “state of aquaculture in B.C.” report includes a summary of the Department’s enforcement activities as well as results of any recent, relevant research conducted by DFO scientists.

A full evaluation of the DFO aquaculture regulatory program is scheduled for 2012/2013. Ongoing feedback from stakeholders and First Nations will be valuable in the ongoing assessment of how the regulatory program for B.C.’s aquaculture industry is performing.

Aquaculture in British Columbia



For more information about
DFO's aquaculture program in B.C., visit the website at
www.pac.dfo-mpo.gc.ca/aquaculture/index-eng.htm

To report incidents or events of concern related to the
aquaculture industry, call DFO's
Observe, Record, Report line at 1-800-465-4336
(604-607-4186 in Greater Vancouver).

Canada

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Ensuring Sustainable Fisheries
Fisheries and Oceans Canada