



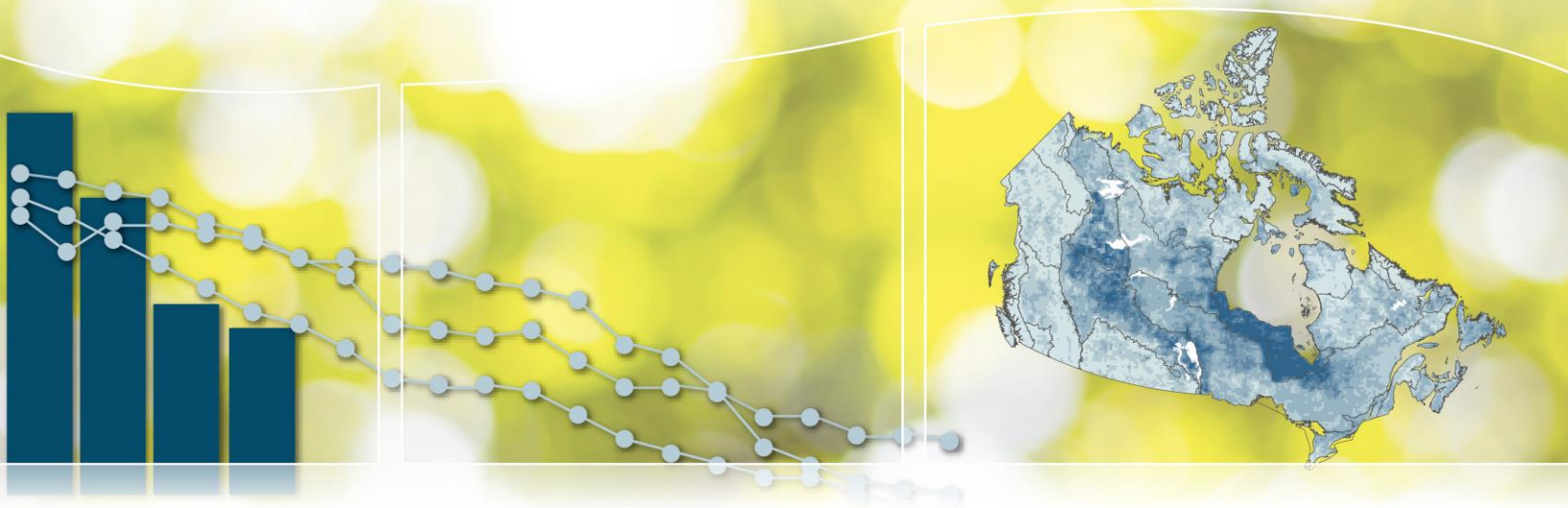
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Canadian Environmental Sustainability Indicators

Management of Canadian Aquaculture



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Canadian Environmental Sustainability Indicators

Management of Canadian Aquaculture

April 2016

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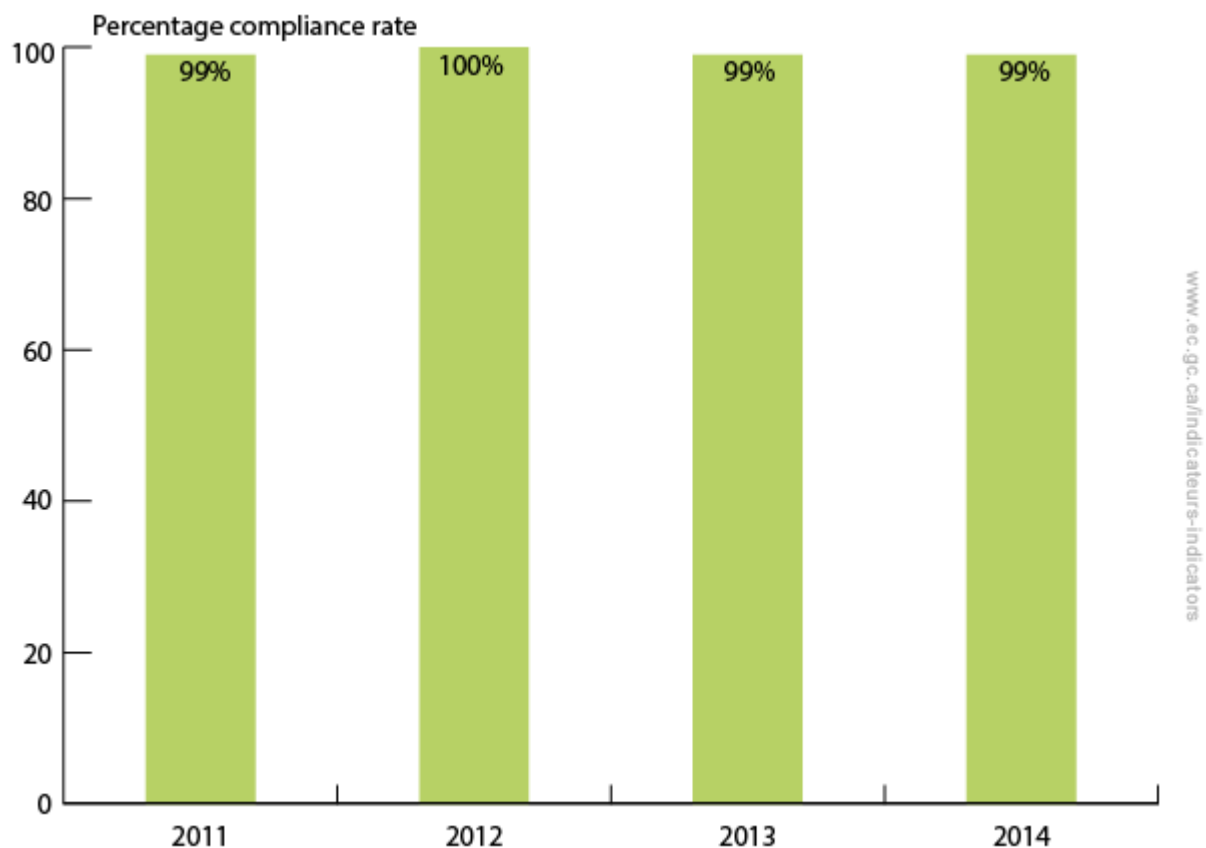
Part 1. Management of Canadian Aquaculture Indicator

Management of aquaculture in Canada is a [shared responsibility](#). The federal government has jurisdiction over fisheries and fish habitat across the country under the *Fisheries Act*. Under this Act, the Minister of Fisheries and Oceans Canada issues aquaculture licences in British Columbia and Prince Edward Island. In the rest of the country, provinces and territories have this authority. The indicator includes all national and regional regulations under the Act that apply to aquaculture.

From 2011 to 2014, the compliance rate of aquaculture operations with *Fisheries Act* regulations was over 99% each year. The compliance rate is the percentage of visits to aquaculture sites where no charges are issued.

Making sure that aquaculture operators meet environmental protection standards helps to protect our aquatic environment and ensure that marine resources are available for the benefit of future generations.

Figure 1. Compliance rates of aquaculture operations with *Fisheries Act* regulations, Canada, 2011 to 2014



[Data for Figure 1](#)

Note: The compliance rate is the percentage of visits to aquaculture sites where no charges are issued. The number of sites checked from 2011 to 2014 reflects responsibilities shared among provinces, Yukon, and Fisheries and Oceans Canada, for the management of site operations through the issuance of licences. In British Columbia, federal fishery officers check all aquaculture sites to ensure compliance with conditions of

licences set under the *Pacific Aquaculture Regulations* under the *Fisheries Act*. Federal fishery officers also check all sites in Prince Edward Island to ensure compliance with conditions of licence. In all other provinces and Yukon, sites are checked by provincial enforcement staff to ensure compliance with conditions of licence set under provincial/territorial licences. Accordingly, the numbers of sites checked by federal fishery officers were as follows: 215 sites in 2011, 225 sites in 2012, 282 sites in 2013, and 494 sites in 2014. The increase in sites checked in 2014 was due to the growing maturity of the program.

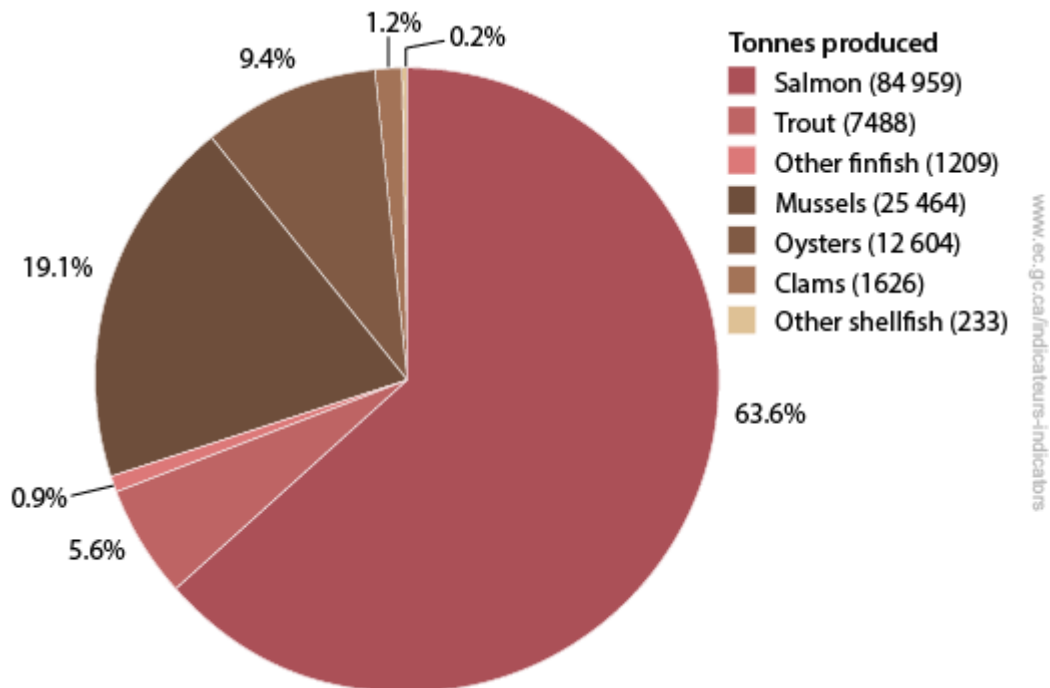
Source: Fisheries and Oceans Canada (2015).

Between 2011 and 2014, six operators were charged with eight violations. Fines were levied on three of those operators during the reference period. In 2011, a Gulf region operator was found in possession of several undersized oysters and fined \$300. In 2013, a fine of \$500 000 was levied following the illegal use of a pesticide that had contributed to lobster kills in the nearby waters of southwestern New Brunswick in 2009. A fine of \$10 000 was levied against an operator in Pacific Region in 2014 for violating the condition of licence that establishes the maximum biomass allowed on the licensed site.

The Government of Canada established the Sustainable Aquaculture Program in 2008 to contribute to developing an environmentally, economically, and socially sustainable aquaculture sector. Sustainability is improved by increasing scientific knowledge and fact-based decision-making, developing and improving regulations, and ensuring transparency through enhanced reporting.

Aquaculture operations in Canada vary depending upon the species being farmed, the environment being used (i.e., marine or freshwater), and the culture technologies being applied (i.e., land- or water-based). Salmon is by far the most common product, and Canada is the fourth largest producer in the world. Mussels are second in importance.

Figure 2. Aquaculture production weight by species, Canada, 2014



[Data for Figure 2](#)

Note: Numbers may not add to 100 due to rounding.

Source: Fisheries and Oceans Canada (2015).

Until 2015, federal enforcement of section 36 (pollution prevention) of the *Fisheries Act* was the responsibility of Environment and Climate Change Canada. Until that time, sites checked

by fishery officers from Fisheries and Oceans Canada were to monitor compliance with licence conditions set outside of section 36. With the coming into force of the *Aquaculture Activities Regulations* (AAR) in July 2015, a transition period of three years began, at the end of which Fisheries and Oceans Canada will have sole responsibility for aquaculture enforcement in aquatic areas under section 36 of the Act.

Since July 2015, Fisheries and Oceans Canada's Conservation and Protection program has been focused on developing a comprehensive understanding of the operational performance of the aquaculture industry, and assessing its current regulatory approach so as to inform future regulatory management decisions. These activities are carried out by fishery officers who conduct regular patrols on land, on sea and in the air. Fishery officers conduct inspections to validate licence reporting, and to determine compliance with aquaculture licences, conditions of licence, and other applicable legislation. When necessary, fishery officers respond to complaints and conduct investigations. In addition, the Department promotes compliance through public education and awareness activities to encourage all Canadians to protect fishery resources and habitats.



This indicator is used to measure progress toward [Target 5.2: Sustainable Aquaculture – By 2020, all aquaculture in Canada is managed under a science-based regime that promotes the sustainable use of aquatic resources \(including marine, freshwater, and land based\) in ways that conserve biodiversity](#) of the [Federal Sustainable Development Strategy 2013–2016](#).

Part 2. Data Sources and Methods for the Management of Canadian Aquaculture Indicator

Introduction

The [Management of Canadian Aquaculture](#) indicator is part of the [Canadian Environmental Sustainability Indicators](#) (CESI) program, which provides data and information to track Canada's performance on key environmental sustainability issues. This indicator is also used to measure progress towards the goals and targets of the [Federal Sustainable Development Strategy 2013–2016](#) and the [2020 Biodiversity Goals and Targets for Canada](#).

Description and rationale of the Management of Canadian Aquaculture indicator

Description

The Management of Canadian Aquaculture indicator measures aquaculture operators' levels of compliance with environmental regulations set out under the [Fisheries Act](#). Information on which species are most commonly farmed is provided as context.

Fisheries and Oceans Canada's Conservation and Protection program promotes and maintains compliance with legislation, regulations, and management measures implemented to achieve the conservation and sustainable use of Canada's aquatic resources and the protection of species at risk, fish habitat, and oceans. The program's National Compliance Framework includes education, shared stewardship, monitoring, control, and surveillance. Under the Framework, investigations are carried out when warranted, including formal intelligence gathering and analysis, forensic audits, and prosecutions.

Rationale

This indicator provides a measure of how well aquaculture operators meet environmental protection standards as set out in Fisheries Act regulations relating to the sector. These standards and requirements are set in regulations to protect the aquatic environment for the benefit of future generations. High compliance rates are required to ensure this environmental protection.

Data

Data source

The data are compiled by Fisheries and Oceans Canada in the Departmental Violations System, a database established by the Conservation and Protection program.

Spatial coverage

Fisheries and Oceans Canada is the federal lead in ensuring that aquaculture is managed sustainably across the country in compliance with the *Fisheries Act* and its regulations, including where the provincial government is responsible for leasing and/or licencing. Since 1928, Fisheries and Oceans Canada has issued aquaculture leases in Prince Edward Island under the *Fisheries Act*. Beginning in 2010, it began licencing aquaculture operations in British Columbia. Aspects of other *Fisheries Act* regulations may apply nationally or regionally, depending on the scope of each regulation.

Temporal coverage

Data are available for 2011 through 2014 calendar years.

Data completeness

No data are missing.

Data timeliness

The indicator is up to date as of 31 December 2014.

Methods

The Management of Canadian Aquaculture indicator is the number of aquaculture sites inspected that have met *Fisheries Act* regulatory requirements divided by the number of aquaculture sites inspected in a given year. The result is expressed as an annual percentage.

Through the [Fisheries Act](#), Fisheries and Oceans Canada regulates the aquaculture industry in order to protect fish and fish habitat. Current regulations under the *Fisheries Act* that apply to aquaculture are:

- [Atlantic Fishery Regulations](#): the aquaculture industry is subject to these wild capture fisheries regulations.
- [Fishery \(General\) Regulations](#) set out Canada's authorities for approving the release of fish into fish habitat and the transfer of live fish to fish-rearing facilities, based on an assessment of genetic disease and ecological risk. These support management of aquaculture in British Columbia in conjunction with the *Pacific Aquaculture Regulations*.
- [Management of Contaminated Fisheries Regulations](#) authorize Fisheries and Oceans Canada to close areas to fishing and to take other measures when biotoxins, bacteria, chemical compounds, or other substances are present in fish habitat to a degree that may constitute a danger to public health.
- [Marine Mammal Regulations](#) set out an authorization mechanism for the management and control of aquatic mammals that cause a nuisance to fisheries activities.
- [Maritime Provinces Fishery Regulations](#): similar to the *Atlantic Fishery Regulations*, the aquaculture industry is subject to wild capture fisheries regulations that impact farming practices.
- [Pacific Aquaculture Regulations](#) set out Fisheries and Oceans Canada's licensing and management authorities for aquaculture in British Columbia.
- [Pacific Fishery Regulations](#) set out Fisheries and Oceans Canada's authorities respecting fishing in the Pacific Ocean and the province of British Columbia.

Fisheries and Oceans Canada regularly inspects aquaculture operations, and the results of these inspections are collected. In addition, the *Pacific Aquaculture Regulations* require annual reporting by industry. These reports are tracked by Fisheries and Oceans Canada and results are reported on the Department's [website](#).

Caveats and limitations

The indicator is limited to regulations under the *Fisheries Act*, where Canada regulates the aquaculture industry in order to protect fish and fish habitat. It does not include other enforcement tools under the *Fisheries Act*, such as education, inspections to monitor or verify compliance, investigations of alleged violations, warnings, Inspector's Directions, Ministerial Orders, and prosecutions with fines reaching up to \$2 million, imprisonment up to three

years, or both in the case of an individual. Maximum fines are higher when a corporation is found guilty of violating the pollution prevention provisions of the *Fisheries Act*.

Outside of British Columbia and Prince Edward Island, provinces and Yukon manage aquaculture activities under their own laws and regulations, including managing potential environmental impacts, animal welfare, fish health and/or pest control products.

In July 2015, Fisheries and Oceans Canada developed the *Aquaculture Activities Regulations* under the *Fisheries Act*. The regulations clarify conditions under which all licensed aquaculture operators in Canada may treat their fish for disease and parasites, as well as deposit organic matter, under sections 35 and 36 of the *Fisheries Act*. Compliance with the new regulations is expected to contribute to future reports.

Part 3. Annexes

Annex A. Data tables for the figures presented in this document

Table 1. Data for Figure 1. Compliance rates of aquaculture operations with Fisheries Act regulations, Canada, 2011 to 2014

Year	Compliance rate (percentage)	Number of charges	Region in which charges occurred ^[A]	Violation Type
2011	99	3	Gulf	Assault/obstruct Species/size limit Other
2012	100	1	Pacific	Reporting
2013	99	3	Pacific	Illegal transportation reporting
2014	99	1	Pacific	Maximum allowable biomass exceeded

^[A] Fisheries and Oceans Canada [regions](#) are Newfoundland and Labrador, Maritimes, Gulf, Quebec, Central and Arctic, and Pacific.

Source: Fisheries and Oceans Canada (2015).

Table 2. Data for Figure 2. Aquaculture production weight by species, Canada, 2014

Species	Tonnes produced	Percentage of total production
Salmon	84 959	63.6
Trout	7488	5.6
Other finfish	1209	0.9
Mussels	25 464	19.1
Oysters	12 604	9.4
Clams	1626	1.2
Other shellfish	233	0.2
Total	133 583	100

Note: Numbers may not add to 100 due to rounding.

Source: Fisheries and Oceans Canada (2015).

Annex B. References and additional information

References and further reading

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