

THE SHELLFISH WATER QUALITY PROTECTION PROGRAM: PROTECTING PUBLIC HEALTH



Blue mussels

In Quebec, thousands of people like to gather shellfish for their own consumption. At the commercial level, 1000 tonnes of shellfish is harvested annually. Of this amount, some finds its way to Quebec's dinner tables, but most (90%) is exported around the

world. These shellfish, a favourite of seafood lovers, are very sensitive to the quality of the water in which they live. This water therefore undergoes a strict quality control process before any shellfish reaches consumers, in order to protect public health.

Quebec's shellfish areas are located in the Lower St. Lawrence region, North Shore, Gaspésie and the Magdalen Islands. There are currently 101 areas open to harvesting.

Filtering Shellfish

Certain shellfish such as clams and mussels feed by filtering water, ingesting plankton and organic matter suspended in their environment. When the water surrounding a shellfish bed is contaminated by bacteria, marine toxins or chemical pollutants, the shellfish concentrate them and thus become unfit for consumption.

Environment Canada : Working to Protect Your Health

The *Canadian Shellfish Sanitation Program*, administered jointly by Fisheries and Oceans Canada, Environment Canada, and the Canadian Food Inspection Agency, provides consumers with the assurance that the food on their plates is fit for consumption. The provincial government also has a say in shellfish quality control through the auspices of the *ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec* and the *ministère de l'Environnement du Québec*. Their areas of responsibility are presented on third page.

Through this program, Environment Canada ensures the continual surveillance of the bacteriological quality of shellfish waters, as determined by the presence of fecal coliforms. If an analysis of water in an area turns up evidence of bacterial contamination, Environment Canada recommends its closure to the Department of Fisheries and Oceans, which has the final word.



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Frequent Verifications

To assess the water quality in a shellfish area, Environment Canada conducts sampling tours over an entire year to obtain data that correspond to all pollution conditions, from the best to the worst. Water samples are drawn from the several stations distributed throughout the sector. Laboratory analyses are then performed to measure the level of bacteriological contamination. All pollution sources affecting the shellfish area are then inventoried as part of the evaluation.

Such analyses make it possible for officials to recommend whether the shellfish area should remain open or be closed. To remain open to harvesting, an area must meet very stringent Canadian standards. By way of comparison, the standards relative to shellfish consumption are 15 times more severe than those applicable to swimming.

Environment Canada monitors the water quality in each area open to harvest, with sampling frequency depending upon the scope of pollution sources and the abundance of the resource present. Near an urban centre with an abundance of the resource, an area might be sampled six times per year. By contrast, an isolated area, with no sources of pollution, might only be sampled five times in six years. The level of bacteriological contamination in a closed area is only re-evaluated if all sources of pollution are eliminated.

Careful!

By virtue of their feeding mechanism, clams and mussels accumulate bacterial and chemical pollutants and toxins that are present in the water, even when the source of pollution is very distant.

A notice indicating that an area is closed to harvesting signifies that one or many of these contaminants has been detected in significant amounts. In addition to being illegal, it is dangerous to one's health to harvest shellfish in closed sectors.

Staying Healthy



DANGER DE CONTAMINATION
CONTAMINATION RISK

Zone fermée
à la cueillette
des mollusques

Closed areas
for shellfish
harvesting

Eating shellfish taken from areas contaminated with bacteria can cause food poisoning leading to serious intestinal trouble. Worse still, if the shellfish were contaminated with toxins, severe, even fatal poisoning may follow. Such toxins are naturally produced by microscopic marine organisms.

In the North-Shore, the lower St. Lawrence and the Gaspésie

region, several sectors are affected periodically by them. For the Magdalen Islands region, toxins were detected for the first time in 1998. Press releases were sent by the *Ministère de l'Agriculture, des Pêcheries et de l'alimentation du Québec* to local media at that time.

By limiting your shellfish-harvesting activities to open areas, you can be sure that your health is not at risk, and truly enjoy that steaming plateful of mussels you gathered yourself. Shellfish, moreover, are very beneficial to human health, being excellent sources of iron and vitamin B₁₂ and a good source of phosphorus, zinc and niacin.

Who Does What?

Federal Jurisdiction

Environment Canada

- ensures the bacteriological quality of shellfish waters
- identifies sources of pollution
- recommends the closure of areas not compliant with the standards of bacteriological contamination to Fisheries and Oceans Canada
- participates in the recovery of closed areas.

Canadian Food Inspection Agency

- controls the quality of products destined for export
- verifies the presence of poisonous toxins
- conducts analyses of chemical contaminants in shellfish flesh.

Fisheries and Oceans Canada

- opens or closes shellfish areas based on toxins and bacterial and chemical contamination
- patrols areas closed to harvesting
- issues research and depuration permits.

Provincial Jurisdiction

Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec

- controls the quality of products sold locally
- issues permits for mussel farms.

Ministère de l'Environnement du Québec

- sets discharge criteria for municipal wastewater treatment plants.

In Quebec, 218 areas are known to have an abundant amount of shellfish. Among those, 80 are open throughout the year to shellfish harvest and 21 are open from October to May because of periodic bacteriological contamination. One hundred and seventeen areas are closed all year long because of persistent bacteriological contamination.

Sources of Pollution

Most closures are the result of bacteriological contamination. The main sources of contamination are:

- untreated wastewater discharges; poorly maintained septic tanks and cesspools of isolated residences
- overflows of municipal sewer systems and wastewater treatment plants
- runoff water on farmlands and livestock farms
- bird colonies and animal herds.

In regions where shellfish are exploited by locals, tourists and commercial fishers alike, any of these sources of active pollution represent the main obstacle to the economic development of the resource.



Photo: Isabelle Matteau

Shellfish Beds Can be Recovered

Thanks to the implementation of a number of municipal wastewater treatment systems, a major source of pollution has been checked. Nonetheless, the recovery of the majority of closed shellfish areas is still not possible given that contamination continues, primarily from isolated homes and farming activities. The contamination originating from isolated homes can be attenuated through the proper and regular maintenance of septic installations or by the implementation of compliant installations. To reduce agricultural-source contamination, more environmentally-sound manure application practices must be adopted.

A concerted effort on the part of an entire community is necessary to remediate these sources of pollution and lead to the re-opening of closed shellfish areas.

To obtain information on shellfish harvesting in your region, please contact Fisheries and Oceans Canada at:

Gaspé North region 1-800-463-0607
Baie-des-Chaleurs region: 1-800-463-4204
Îles de la Madeleine (418) 986-3882
North shore from Baie-Saint-Paul to Baie-Trinité: 1-800-463-8558
North shore from Baie-Trinité to Natashquan 1-800-463-1736