

State of the St. Lawrence Monitoring Program: An Essential Tool for Water Stakeholders



WHAT IS INVOLVED IN MONITORING THE STATE OF THE ST. LAWRENCE?

The State of the St. Lawrence Monitoring Program was established in 2003 as part of the Canada–Quebec Agreement on the St. Lawrence. Since then, the partners involved have been pooling their expertise in their regular reports on the state of the St. Lawrence ecosystem and the changes affecting it. The results of environmental indicator monitoring are made available through a series of fact sheets, the St. Lawrence Rendez-vous event and the publication of an overview report.

OVERALL FINDING IN 2024

A DELICATE BALANCE IS MAINTAINED

More than a third of the indicators assessed in the 2024 Overview show a “moderate-good” or “good” status, which has been maintained or improved since the 2019 Overview. Despite this, many indicators are not improving, and some are even showing signs of deterioration. As a result, the overall health of the St. Lawrence remains fragile. Consequently, the governments of Canada and Quebec are combining their efforts to provide credible scientific information to support sound decision-making and the implementation of tangible solutions to improve the St. Lawrence ecosystem.

E06-G02a-2408

2024 HIGHLIGHTS



The status of **contamination of river water by toxic substances** is rated “good,” and has remained unchanged since 2004. Although various toxic substances were detected in most river water samples, none exceeded the guidelines for the protection of aquatic life.



The status of the **monitoring of pesticides in Lake Saint-Pierre¹** indicator is rated “moderate.” Although the frequency of detection is lower than that in 2014–2015, many pesticides are still detected in the samples, and some even exceed the guidelines for the protection of aquatic life.



The status of **safety of potential freshwater swimming sites in the St. Lawrence River¹** is rated “moderate,” indicating little change since monitoring began in 2003. Approximately half of the sites consistently have good bacteriological water quality.



The status of **oceanographic processes: acidity and dissolved oxygen²** is rated “moderate-poor.” Therefore, the deteriorating trend that began in the 1930s has not abated, with oxygen saturation and pH values reaching their lowest levels on record.



The status of **oceanographic processes: water temperature and sea ice²** is rated “poor.” Since 2015, temperatures in the deep layers of the estuary and Gulf of St. Lawrence have reached record high levels since record-keeping began in 1915.



Since 2018, the status of **shellfish water quality** has remained “moderate-good.” The shellfish waters in the Magdalen Islands and the Lower North Shore are of excellent quality, in contrast with those in the Gaspé and Lower St. Lawrence regions, where the poor quality restricts shellfish harvesting.



The status of **phytoplankton communities** in the lower estuary and Gulf of St. Lawrence is rated “moderate-good,” with a slight deterioration since 2010. Spring phytoplankton blooms are occurring earlier than usual, with biomass values that are higher than normal.



During the 2018–2022 period, the status of **zooplankton communities** in the lower estuary and Gulf of St. Lawrence was rated “moderate.” The low biomass and prevalence of smaller organisms in communities have an impact on the food chain. Zooplankton are a food resource for many species, some of which are of commercial value.



The status of **toxic algae** monitored in the estuary and Gulf of St. Lawrence is rated “moderate-good,” with a slight deterioration since 2010. Changes have been observed in the frequency and intensity of *Alexandrium* and *Pseudo-nitzschia* blooms compared with historical data.



The status of the **Striped Bass** population is rated “moderate-good.” Twenty years after the launch of the reintroduction program, the St. Lawrence River population of the Striped Bass continues to show signs of recovery. The young are surviving and growing, and many are reaching spawning age.



The state of health of fish **communities in fresh and brackish waters** remains “moderate”. However, status and trends vary depending on the species and area. The presence of invasive species, the deterioration of aquatic habitats and poor water quality are among the factors that are contributing to the decline of certain populations.

1. The results for this indicator were not reported in the 2019 Overview.

2. This indicator was part of Oceanographic Processes in the 2019 Overview and has become a separate indicator in the 2024 Overview.



Among **seabird populations**, those of the Common Murre and Razorbill are doing well and remain stable. The condition of the Atlantic Puffin is improving, and the Caspian Tern is making a tentative comeback. In contrast, the Herring Gull population has continued to decline. The status of this indicator is rated “moderate.”



The status of the **wetland area²** indicator is rated “moderate,” with a deteriorating trend since 1990. The most significant pressures on wetlands are agricultural activities, water level fluctuations and the presence of invasive alien plant species.



The status of the **Northern Gannet population** is rated “moderate-poor.” In 2022, fewer breeding pairs were recorded, and breeding success remains low and variable. In contrast, no contaminants of concern were detected in the eggs.



The status of **invasive alien plant species** is rated “moderate,” with 87% of sites studied affected by at least one of the species being monitored. Reed Canarygrass, Common Reed and Purple Loosestrife are the most prevalent invasive plant species in the St. Lawrence wetlands.



Contaminant levels in **Great Blue Heron** eggs have universally declined relative to the historical values at all sites. In addition, the values measured in 2022 were generally below the established criteria. This species’ status is rated “good.”



Although some indicators of the **status of the Beluga population** have improved, its overall status remains “moderate-poor” and a cause for concern. The increased mortality of adult females and newborns has continued since 2010.

PARTNERS

GOVERNMENT OF CANADA

- Environment and Climate Change Canada
- Fisheries and Oceans Canada
- Parks Canada

GOVERNMENT OF QUEBEC

- Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs [Quebec Department of Environment, the Fight Against Climate Change, Wildlife and Parks]

NON-GOVERNMENTAL ORGANIZATION

- Stratégies Saint-Laurent

