Nutrients in the St. Lawrence River

Canadian Environmental Sustainability Indicators

Environment and Climate Change Canada
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Canadian Environmental Sustainability Indicators

Nutrients in the St. Lawrence River

October 2026

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Nutrients in the St. Lawrence River

The St. Lawrence River links the Great Lakes with the Atlantic Ocean and is among the world's most important commercial waterways. It is a complex ecosystem that includes freshwater lakes and river reaches, a long estuary, and a salt-water gulf. Its many different habitats are home to a diverse range of plants, fish and other animals.

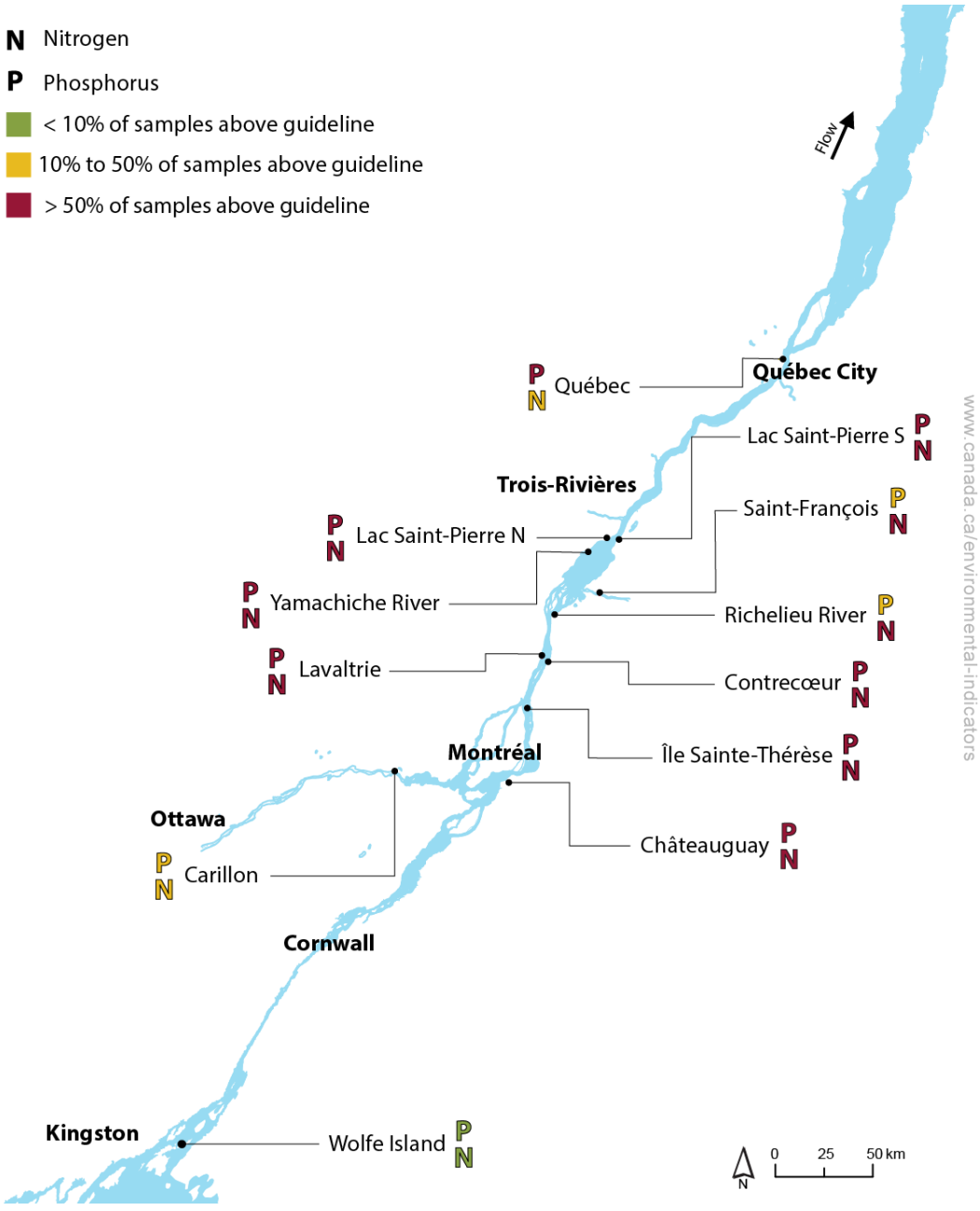
Phosphorus and nitrogen are essential plant nutrients. However, when their levels are too high or too low, they can have harmful effects on river food webs. Human activities, such as the use of chemical fertilizers, can increase nutrient concentrations to unhealthy levels. This indicator presents, for each of the sampling stations in the St. Lawrence River and its major tributaries, the percentage of phosphorus and nitrogen samples that are above the nutrient guidelines for the 2023 to 2025 period. It also provides the concentrations of phosphorus and nitrogen over time from 2010 to 2025.

Status of phosphorus and nitrogen

Key results

- Over the 2023 to 2025 period,
    - Phosphorus and nitrogen concentrations were above the guidelines at most monitoring stations
    - For nitrogen, 9 stations had more than 50% of their samples above the guideline, 2 stations had 10% to 50%, and 1 station had less than 10%
    - For phosphorus, 8 stations had more than 50% of their samples above the guideline, 3 stations had 10% to 50%, and 1 station had less than 10%

Figure 1. Status of total phosphorus and total nitrogen concentration exceedances for the 2023 to 2025 period in the St. Lawrence River and its major tributaries, Canada



Data for Figure 1

Note: For the purposes of this indicator, the guidelines are 0.03 milligrams of phosphorus per litre (mg/L of phosphorus) and 0.64 milligrams of nitrogen per litre (mg/L of nitrogen). For more details about the water quality guidelines and categories, please refer to the Data sources and methods section.
Source: Environment and Climate Change Canada (2026).

Phosphorus and nitrogen levels in the St. Lawrence River are affected by the river's flow and a variety of human activities along the river. The Île Sainte-Thérèse and Lavaltrie monitoring stations are located downstream from Montréal, Longueuil and Laval (for the Lavaltrie station only) wastewater treatment plants. Elevated levels of phosphorus and nitrogen at these stations may be linked to wastewater treatment processes that do not fully remove these nutrients.

Farther downstream, tributary rivers draining agricultural regions transport higher concentrations of phosphorus and nitrogen because of the chemical fertilizers and manure used to grow crops. These high nutrient levels along the St. Lawrence River can contribute to harmful algal blooms.[1]

Water from tributaries draining the north shore of the St. Lawrence River, such as the Carillon station, generally have lower phosphorus and nitrogen levels because these tributaries are more heavily forested than those on the south shore. Additionally, total phosphorus and total nitrogen concentrations will often exceed the guidelines during periods of high flow, a situation that is mainly observed during spring snowmelt.

Annual status of phosphorus and nitrogen

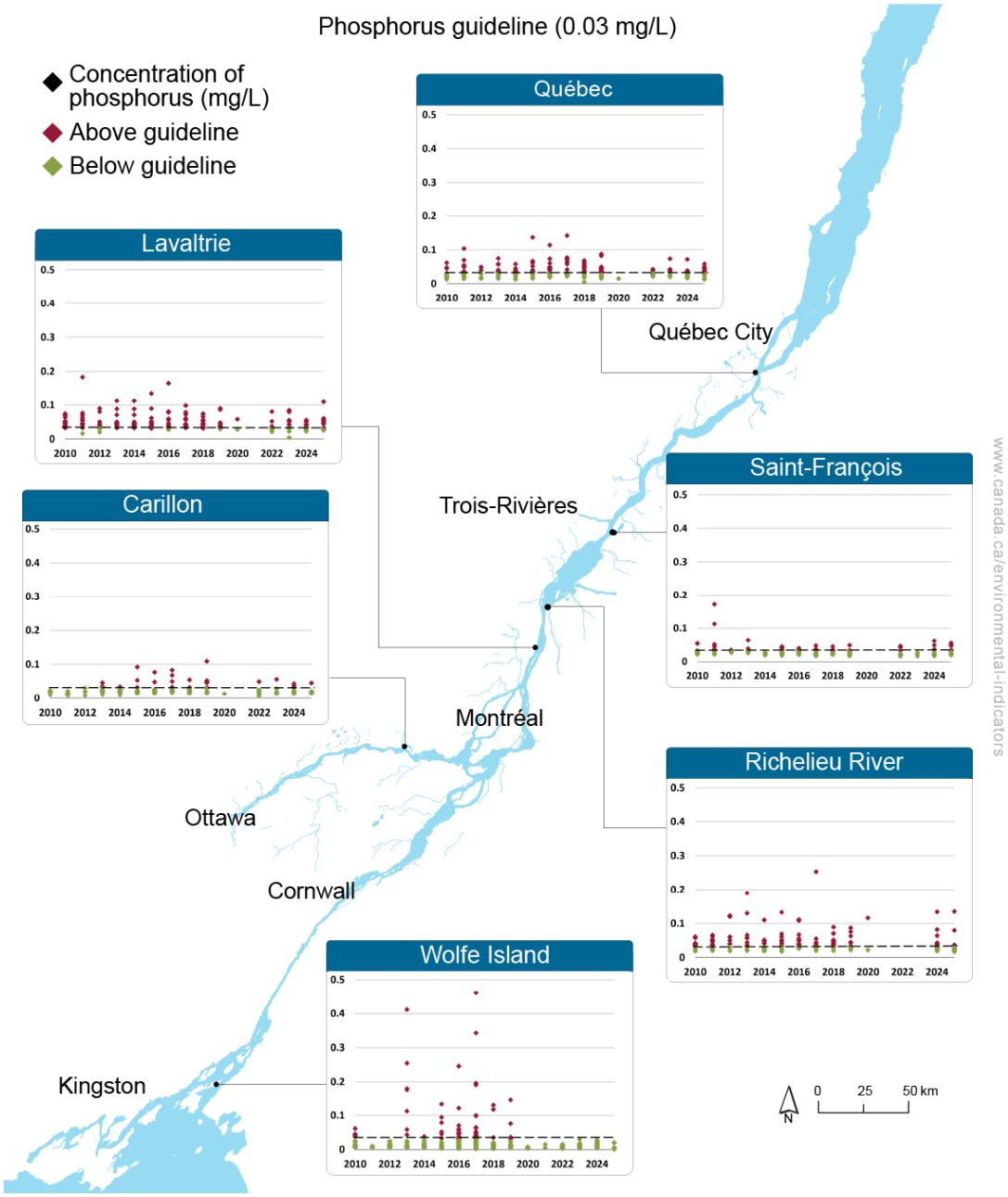
Six (6) stations have been collecting water quality data since 2010: Wolfe Island, Carillon, Lavaltrie, Richelieu, Saint-François and Québec. This section presents the annual phosphorus and nitrogen concentrations at these stations from 2010 to 2025.

Key results

- Over the 2010 to 2025 period,
    - the majority of phosphorus concentration observations were below the guideline at Saint-François, Carillon and Wolfe Island stations, and above the guideline at Richelieu, Québec and Lavaltrie stations
    - the majority of nitrogen concentration observations were below the guideline at Québec, Carillon and Wolfe Island stations, and above the guideline at Richelieu, Lavaltrie and Saint-François stations

[1] Goyette GO et al. (2016) Changes in anthropogenic nitrogen and phosphorus inputs to the St. Lawrence sub-basin over 110 years and impacts on riverine export. Global Biogeochemical Cycles 30(7): 1000-1014. Retrieved on June 19, 2026.

Figure 2. Annual phosphorus concentrations of samples for 6 water quality monitoring stations along the St. Lawrence River, 2010 to 2025

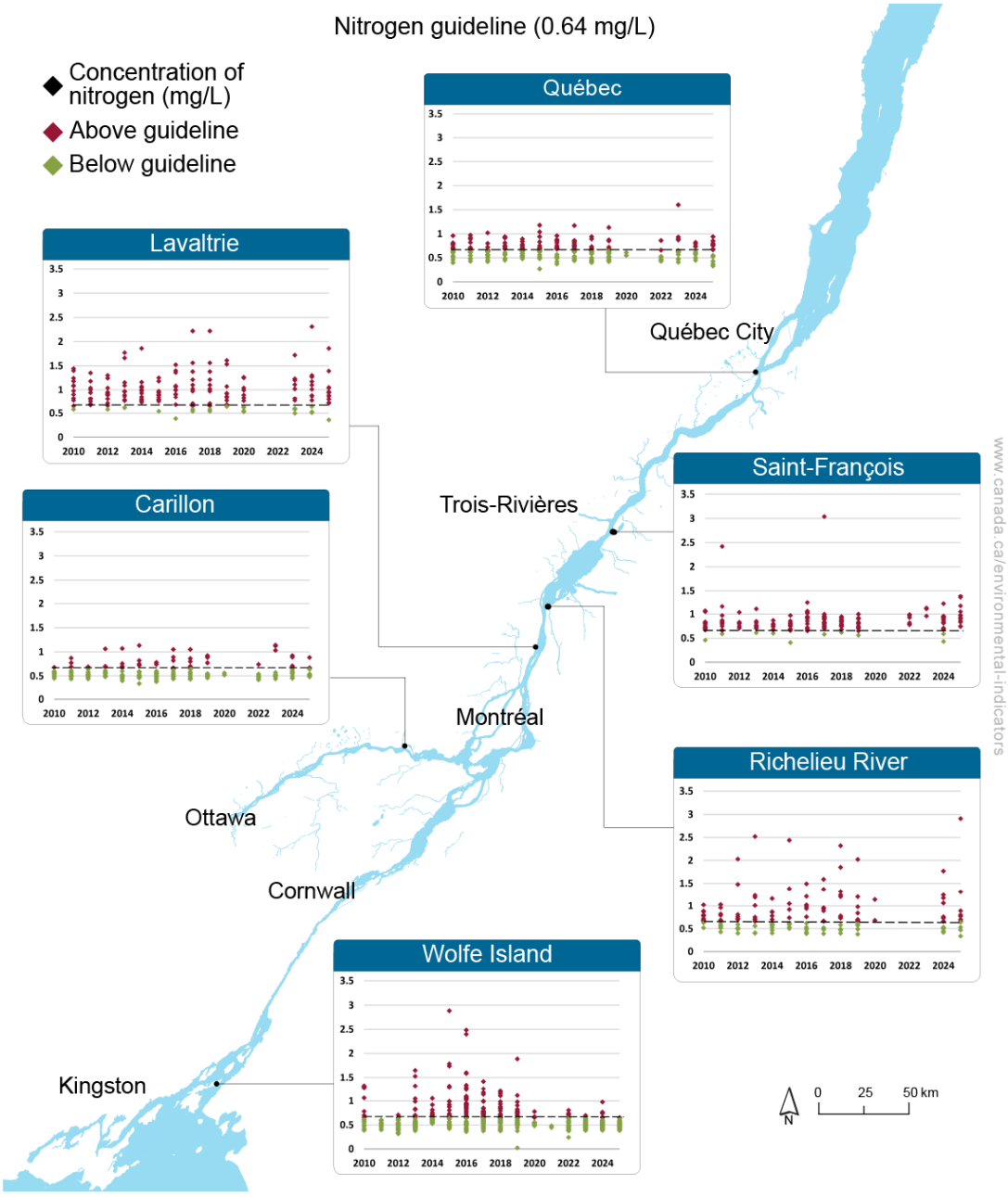


Data for figure 2

Note: This figure summarizes annual phosphorus concentrations recorded at a monitoring station per year from 2010 to 2025. Each point is a sample phosphorus concentration (mg/L of phosphorus) recorded for a given year. For more details about the water quality guidelines and categories, please refer to the Data sources and methods section. Samples from the mouth of the Saint-François River from 2010 to 2020 were collected from May to September only.
Source: Environment and Climate Change Canada (2026).

Of the 6 long-term monitoring stations, Wolfe Island and Carillon had the lowest frequency of guideline exceedances, with Wolfe Island recording no phosphorus exceedances from 2020 to 2025. Lavaltrie consistently recorded the most exceedances per year, often with all samples exceeding the phosphorus guideline. Stations located between Montréal and Québec City (Lavaltrie, Richelieu and Saint-François) consistently showed a greater proportion of phosphorus observations above the guideline.

Figure 3. Annual nitrogen concentrations of samples for 6 water quality monitoring stations along the St. Lawrence River, 2010 to 2025



Data for figure 3

Note: This figure summarizes annual nitrogen concentrations recorded at a monitoring station per year from 2010 to 2025. Each point represents nitrogen concentration sample (mg/L of nitrogen) collected in a given year. For more details about the water quality guidelines and categories, please refer to the Data sources and methods section. Samples from the mouth of the Saint-François River from 2010 to 2020 were collected from May to September only.
Source: Environment and Climate Change Canada (2026).

Nitrogen concentrations varied among stations throughout the monitoring period, and no stations consistently remained below the guideline. The Carillon station had the lowest frequency of guideline exceedances, whereas Saint-François and Lavaltrie stations had the highest. Similar to phosphorus, stations located between Montréal and Québec City (Lavaltrie, Richelieu and Saint-François) consistently showed a greater proportion of nitrogen observations above the guideline.

About the indicator

What the indicator measures

This indicator reports on phosphorus and nitrogen concentrations in the St. Lawrence River and its major tributaries. It measures how often phosphorus and nitrogen concentrations exceed their respective water quality guidelines.

This indicator assumes that water in the St. Lawrence River and its major tributaries would rarely exceed water quality guidelines for phosphorus and nitrogen in the absence of human development. It provides information about how human activity contributes to phosphorus and nitrogen concentrations in the river. The more often the water quality guidelines are exceeded, the greater the risk to the health of the St. Lawrence River.

Why this indicator is important

Clean freshwater is an essential resource. It protects aquatic plant and animal biodiversity. We use it for manufacturing, energy production, irrigation, swimming, boating, fishing and domestic use (for example, drinking and washing). Degraded water quality damages the health of all freshwater ecosystems, such as rivers, lakes, reservoirs and wetlands. It can also disrupt fisheries, tourism and agriculture and make it more expensive to treat to drinking water standards.

Phosphorus and nitrogen are important nutrients that support aquatic life. However, when phosphorus and nitrogen concentrations in water become too high, aquatic plant growth can become excessive and harmful. The decay of excess plant material can reduce the amount of oxygen available for fish and other aquatic animals. High nutrient concentrations can also lead to harmful algal blooms, which can kill animals that use the water and affect human health. Conversely, too little phosphorus or nitrogen can result in not enough plant growth to support a river's food web, which could reduce fish populations and harm local fisheries.

Human activities contribute phosphorus and nitrogen to the St. Lawrence River through sources such as agricultural runoff, urban runoff, wastewater discharges, erosion and air pollution. Over time, excess nutrients can alter the river's ecological condition and affect biodiversity.

This indicator is used to provide information about the state of the St. Lawrence River. Ongoing tracking of phosphorus and nitrogen concentrations allow governments and citizens to better understand an important aspect of the river’s environmental condition.

Related initiatives

This indicator contributes to the Sustainable Development Goals of the 2030 Agenda for Sustainable Development. They are linked to Goal 6, Clean water and sanitation and Target 6.3, "By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally."

In addition, the indicator is being proposed to contribute towards reporting on Target 7 of the draft Canada’s 2030 Nature Strategy: "Pollution and Biodiversity". This target is related to Target 7 of the Kunming-Montreal Global Biodiversity Framework: "Reduce pollution risks and the negative impact of pollution from all sources, by 2030, to levels that are not harmful to biodiversity and ecosystem functions and services, considering cumulative effects, including: reducing excess nutrients lost to the environment by at least half including through more efficient nutrient cycling and use; reducing the overall risk from pesticides and highly hazardous chemicals by at least half including through integrated pest management, based on science, taking into account food security and livelihoods; and also preventing, reducing, and working towards eliminating plastic pollution."

The indicator also supports science priorities in the National Freshwater Science Agenda Section 4: Land use stressors and water pollution. These priorities include evaluating beneficial management practices and mitigation strategies to help avoid or mitigate the impacts of land use activities that impact water quality, improving understanding of multiple stressors and cumulative effects of land use on freshwater ecosystems, and assessing the impacts of changes in land cover and vegetation to water quality. The indicator also supports Section 4 knowledge outcomes and science tools by contributing to broadened and accessible data, strengthening data systems and informing targeted water quality monitoring.

Related indicators

The Water quality in Canadian rivers indicators provide a measure of the ability of river water across Canada to support plants and animals.

The Phosphorus levels in the offshore waters of the Canadian Great Lakes and the Nutrients in Lake Winnipeg indicators report on the status of total phosphorus and total nitrogen concentrations in these 2 ecosystems.

The Phosphorus loading to Lake Erie indicators report on the total phosphorus loadings flowing directly into Lake Erie or from its tributary rivers.

The Municipal wastewater treatment indicators measure the level of wastewater treatment provided to the Canadian population.

Data sources and methods

Data sources

Total phosphorus and total nitrogen data were provided by Environment and Climate Change Canada's Fresh Water Quality Monitoring and Surveillance program. The data can be found on the Saint Lawrence River basin long-term water quality monitoring data and the Great Lakes connecting channels monitoring and surveillance data Open Data web pages.

More information

Sampling

The statuses of total phosphorus and total nitrogen concentrations was determined using measurements recorded between January 2023 and December 2025.

The sampling frequencies at the water quality monitoring stations included in the indicator are not uniform. Sampling at the Châteauguay, Carillon, Lavaltrie, Québec and Richelieu stations is generally conducted monthly. Meanwhile, sampling at the Île Saint-Thérèse, Lac Saint-Pierre South and North, and Yamachiche River stations generally takes place between April and October due to site accessibility. Sampling at the Wolfe Island station is typically conducted on a weekly basis, year-round. The Saint-François monitoring station QU02OF3004 typically collected samples on a weekly basis from May to September. This monitoring was transitioned to the Saint François monitoring station QU02OF3005 in May 2022, which collects samples monthly. For this indicator, the 2 monitoring stations are considered as a single location and are not analyzed separately. Gaps exist in the data due to COVID-19, program changes, field laboratory updates, financial limitations, weather and mechanical issues with the equipment used to collect the data.

Water quality monitoring station locations

Data were obtained from 12 monitoring stations located along the St. Lawrence River: from the outlet of Lake Ontario at Wolfe Island near Kingston in the west, to Québec City in the east (Table 1). The stations are used to monitor the principal water sources entering the St. Lawrence River and are sometimes installed at the mouths of tributary rivers.

Table 1. Water quality monitoring stations used for the indicator

Monitoring station	Station code	Station name	Latitude	Longitude
Wolfe Island	ON02MA0030	St. Lawrence River (South Channel)	44.2078	-76.2368
Châteaugay	QU02OA0125	Châteaugay River's mouth	45.3769	-73.7511
Carillon	QU02LB9001	Ottawa River at Carillon	45.5676	-74.3799

Monitoring station	Station code	Station name	Latitude	Longitude
Île Sainte-Thérèse	QU02OA0207	Île Sainte-Thérèse	45.6745	-73.4592
Contrecœur	QU02OJ0059	St. Lawrence River water intake at the water plant in Contrecœur	45.8558	-73.2439
Lavaltrie	QU02OB9004	St. Lawrence River, water intake at Lavaltrie water treatment plant	45.8744	-73.2806
Saint-François	QU02OF3005	Saint-François River's mouth	46.066	-72.8093
Richelieu	QU02OJ0052	Richelieu River, water intake of Sorel's filtration plant	46.034	-73.1176
Yamachiche River	QU02101021	Yamachiche River-Outlet	46.2661	-72.8065
Lac Saint-Pierre North	QU02OC3000	Lac Saint-Pierre Outlet, north shore	46.2802	-72.6581
Lac Saint-Pierre South	QU02OD9039	Lac Saint-Pierre Outlet, south shore	46.2717	-72.6193
Québec	QU02PH9024	St. Lawrence River at Lévis	46.8071	-71.1900

Water quality monitoring station location changes

In 2022 and 2023, 4 monitoring stations that were previously used for this indicator were retired (Table 2). In 2024, 2 monitoring stations were added (Table 3). Richelieu monitoring station was reinstated in 2024.

Table 2. Retired water quality monitoring stations

Monitoring station	Station code	Station name	Latitude	Longitude
Bécancour South	QU02PK9000	Bécancour, south shore	46.3835	-72.4092
Cornwall	ON02MC0032	St. Lawrence River, water intake of Cornwall’s water filtration plant	45.0138	-74.7908
Île d'Orléans	QU02PH9065	Île d'Orléans	46.8403	-71.1326
Îles-de-Boucherville	QU02OA0206	Îles-de-Boucherville	45.5966	-73.4997

Table 3. New water quality monitoring stations

Monitoring station	Station code	Station name	Latitude	Longitude
Contrecœur	QU02OJ0059	St. Lawrence River water intake at the water plant in Contrecœur	45.8558	-73.2439

Monitoring station	Station code	Station name	Latitude	Longitude
Yamachiche River	QU02101021	Yamachiche River-Outlet	46.2661	-72.8065

Methods

The status of phosphorus and nitrogen concentrations at each monitoring station was determined by the percentage of samples that exceeded their water quality guidelines.

More information

Water quality guidelines

Total phosphorus

This indicator uses Ontario and Quebec's total phosphorus water quality guideline for the protection of aquatic life, 0.03 mg/L of phosphorus.[2]

Total nitrogen

Neither Ontario, Quebec nor the Canadian Council of Ministers of the Environment (CCME) has a water quality guideline for total nitrogen. Accordingly, a total nitrogen guideline for the St. Lawrence River was derived in keeping with the CCME's lines-of-evidence approach (PDF; 1.95 MB). A total nitrogen guideline of 0.64 mg/L of nitrogen was selected for use in the indicator. This guideline is consistent with the ideal performance standard[3] of 0.63 mg/L of nitrogen for large rivers in the Mixedwood Plains Ecozone recommended during Environment and Climate Change Canada's National Agri-Environmental Standards Initiative.[4]

Calculation of phosphorus and nitrogen status for the St. Lawrence River

The phosphorus status at each of the 12 water quality monitoring stations was determined by comparing total phosphorus concentrations at each station with the total phosphorus water quality guideline for the protection of aquatic life of 0.03 mg/L of phosphorus.[5]

Similarly, the nitrogen status at each water quality monitoring station was determined by comparing the total nitrogen concentrations at each station with the St. Lawrence-specific total nitrogen water quality guideline for the protection of aquatic life of 0.64 mg/L of nitrogen.

COVID-19 impact on the calculation of the indicator

Because of health measures related to the COVID-19 pandemic, some sampling activities and laboratory analysis were cancelled in 2020 and 2021. This disruption led to gaps in all sampling station data. As a result, comparison of results between years and stations, should be interpreted with caution.

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[2] Ontario Ministry of the Environment and Energy (1994) Water Management Policies, Guidelines, Provincial Water Quality Objectives. Government of Canada (2008) Technical Guidance Document for Water Quality Index Practitioners Reporting Under the Canadian Environmental Sustainability Indicators (CESI) Initiative 2008. Environment and Climate Change Canada and Statistics Canada. Ministère du Développement durable, Environnement et Lutte contre les changements climatiques (2009) Critères de qualité de l'eau de surface : phosphore total (en P) (in French only). Retrieved on July 3, 2026.

[3] An ideal performance standard is a long-term goal describing the desired level of environmental quality, which makes it comparable to a water quality guideline. It contrasts with an achievable performance standard, which describes environmental quality attainable using current technology.

[4] Chambers PA et al. (2009) Nitrogen and Phosphorus Standards to Protect the Ecological Condition of Canadian Streams, Rivers and Coastal Waters. National Agri-Environmental Standards Initiative Synthesis Report No. 11. Environment Canada. Gatineau, Quebec. 79 p.

[5] United States Environmental Protection Agency (2000b) Ecoregional Nutrient Criteria Documents for Rivers and Streams: Nutrient Ecoregion VII: Mostly Glaciated Dairy Region (PDF; 331 kB). Report No. EPA-822-B-00-018. Retrieved on June 19, 2026.

Carillon, Lavaltrie, Saint-François and Québec stations: Data were missing for April to December 2020, all of 2021, and January to April 2022.

Wolfe Island station: Data were missing for April to December 2020, January to October 2021, January to February 2022, and February to April 2023.

Richelieu station: Data were missing for March to December 2020, all of 2021 to 2023, and January to March 2024.

Recent changes

Four (4) stations were retired in 2022 and 2023: Bécancour, Cornwall, Île d'Orléans and Îles-de-Boucherville. Two (2) stations were added in 2024: Contrecœur and Yamachiche River. Observations at Richelieu station restarted in April 2024.

In the previous version of this indicator, percentage of exceedances were reported as a status (Good, Fair and Poor) for each station. The indicator now reports only the percentage of observations exceeding the guidelines.

Trend analysis was previously included in the indicator for stations with more than 10 years of data. Trend analysis was not included in the current version of this indicator because data gaps occurring during COVID-19 limit interpretation.

The nitrogen guideline was updated from 0.65 to 0.64 mg/L of nitrogen using data available as of 2026.

Caveats and limitations

The indicators reflect the state of water quality in the St. Lawrence River based on total phosphorus and total nitrogen concentrations. These concentrations do not reflect the effect of spills or other transient events unless they are frequent or long-lasting.

Caution must be used when comparing these indicators with similar indicators for lakes. In rivers, total phosphorus concentrations are influenced by suspended particles in the water that increase during high-flow events. Elevated total nitrogen concentrations result from high runoff associated with precipitation, which washes nitrogen out of soils. This situation differs in lake ecosystems, as suspended particles generally settle out. Comparisons between lake and river systems may still be useful, provided the methods used to classify water quality are clearly understood.

Resources

References

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United States Environmental Protection Agency (2001) Ecoregional Nutrient Criteria Documents for Rivers and Streams in Nutrient Ecoregion VIII: Nutrient-Poor, Largely Glaciated Upper Midwest and Northeast (PDF; 2.53 MB). Report No. EPA-822-B-01-015. Retrieved on June 19, 2026.

Related information

Environment and Climate Change Canada (2017) Phosphorus in aquatic ecosystems. Retrieved on June 19, 2026.

Governments of Canada and Quebec (2015) St. Lawrence Action Plan 2011-2026. Retrieved on June 19, 2026.

Environment and Climate Change Canada (2017) St. Lawrence River: phosphorus at the mouths of Lake Saint-Pierre tributaries. Retrieved on June 19, 2026.

Annexes

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

Table A.1. Data for

Figure 1. Status of total phosphorus and total nitrogen concentration exceedances for the 2023 to 2025 period in the St. Lawrence River and its major tributaries, Canada

Monitoring station	2023 to 2025 total phosphorus guideline exceedance (percentage)	2023 to 2025 total nitrogen guideline exceedance (percentage)
Wolfe Island	0	7
Châteauguay	97	82
Carillon	15	26
Île Sainte-Thérèse	56	82
Contrecœur	77	62
Lavaltrie	74	83
Richelieu	46	54
Saint-François	33	93
Yamachiche	89	100
Lac Saint-Pierre North	89	67
Lac Saint-Pierre South	92	88
Québec	56	44

Note: For the purposes of this indicator, the guidelines are 0.03 milligrams of phosphorus per litre (mg/L of phosphorus) and 0.64 milligrams of nitrogen per litre (mg/L of nitrogen). For more details about the water quality guidelines and categories, please refer to the Data sources and methods.
Source: Environment and Climate Change Canada (2026).

Table A.2. Data for

Figure 2. Annual phosphorus concentrations of samples for 6 water quality monitoring stations along the St. Lawrence River, 2010 to 2025

Monitoring station	Year	Percent of samples above phosphorus guideline	Number of samples
Wolfe Island	2010	15	26
Wolfe Island	2011	0	13
Wolfe Island	2012	0	30
Wolfe Island	2013	11	65
Wolfe Island	2014	7	28
Wolfe Island	2015	18	33
Wolfe Island	2016	24	63
Wolfe Island	2017	42	55
Wolfe Island	2018	6	48
Wolfe Island	2019	8	52
Wolfe Island	2020	0	11
Wolfe Island	2021	0	2
Wolfe Island	2022	0	70
Wolfe Island	2023	0	68
Wolfe Island	2024	0	92
Wolfe Island	2025	0	26
Carillon	2010	0	11
Carillon	2011	0	14
Carillon	2012	0	14
Carillon	2013	29	14
Carillon	2014	14	14
Carillon	2015	21	14
Carillon	2016	14	14
Carillon	2017	36	14
Carillon	2018	14	14
Carillon	2019	36	14
Carillon	2020	0	2
Carillon	2021	n/a	0
Carillon	2022	0	8
Carillon	2023	8	12
Carillon	2024	27	11
Carillon	2025	9	11
Lavaltrie	2010	100	12
Lavaltrie	2011	92	12
Lavaltrie	2012	75	12

Monitoring station	Year	Percent of samples above phosphorus guideline	Number of samples
Lavaltrie	2013	100	13
Lavaltrie	2014	92	12
Lavaltrie	2015	100	12
Lavaltrie	2016	91	11
Lavaltrie	2017	100	12
Lavaltrie	2018	100	12
Lavaltrie	2019	92	12
Lavaltrie	2020	50	2
Lavaltrie	2021	n/a	0
Lavaltrie	2022	63	8
Lavaltrie	2023	75	12
Lavaltrie	2024	75	12
Lavaltrie	2025	73	11
Richelieu	2010	82	11
Richelieu	2011	75	12
Richelieu	2012	58	12
Richelieu	2013	83	12
Richelieu	2014	50	12
Richelieu	2015	58	12
Richelieu	2016	83	12
Richelieu	2017	58	12
Richelieu	2018	75	12
Richelieu	2019	67	12
Richelieu	2020	50	2
Richelieu	2021	n/a	0
Richelieu	2022	n/a	0
Richelieu	2023	n/a	0
Richelieu	2024	53	15
Richelieu	2025	36	11
Saint-François	2010	33	15
Saint-François	2011	57	14
Saint-François	2012	43	7
Saint-François	2013	56	9
Saint-François	2014	0	9
Saint-François	2015	42	12
Saint-François	2016	38	16
Saint-François	2017	18	17

Monitoring station	Year	Percent of samples above phosphorus guideline	Number of samples
Saint-François	2018	41	17
Saint-François	2019	24	17
Saint-François	2020	n/a	0
Saint-François	2021	n/a	0
Saint-François	2022	38	8
Saint-François	2023	0	3
Saint-François	2024	27	15
Saint-François	2025	50	12
Québec	2010	29	17
Québec	2011	47	17
Québec	2012	29	17
Québec	2013	60	15
Québec	2014	59	17
Québec	2015	65	17
Québec	2016	71	17
Québec	2017	59	17
Québec	2018	65	17
Québec	2019	59	17
Québec	2020	0	2
Québec	2021	n/a	0
Québec	2022	38	8
Québec	2023	58	12
Québec	2024	50	12
Québec	2025	58	12

Note: n/a = not applicable. For the purposes of this indicator, the phosphorus guideline is 0.03 mg/L of phosphorus. Samples from the mouth of the Saint-François River from 2010 to 2020 were collected from May to September only.
Source: Environment and Climate Change Canada (2026).

Table A.3. Data for Figure 3. Annual nitrogen concentrations of samples for 6 water quality monitoring stations along the St. Lawrence River, 2010 to 2025

Monitoring station	Year	Percent of samples above nitrogen guideline	Number of samples
Wolfe Island	2010	42	24
Wolfe Island	2011	0	13
Wolfe Island	2012	7	30
Wolfe Island	2013	15	65
Wolfe Island	2014	29	28

Monitoring station	Year	Percent of samples above nitrogen guideline	Number of samples
Wolfe Island	2015	58	31
Wolfe Island	2016	67	63
Wolfe Island	2017	56	55
Wolfe Island	2018	44	48
Wolfe Island	2019	38	52
Wolfe Island	2020	27	11
Wolfe Island	2021	0	2
Wolfe Island	2022	26	39
Wolfe Island	2023	3	35
Wolfe Island	2024	15	46
Wolfe Island	2025	2	47
Carillon	2010	9	11
Carillon	2011	21	14
Carillon	2012	7	14
Carillon	2013	21	14
Carillon	2014	29	14
Carillon	2015	29	14
Carillon	2016	21	14
Carillon	2017	43	14
Carillon	2018	29	14
Carillon	2019	29	14
Carillon	2020	0	2
Carillon	2021	n/a	0
Carillon	2022	13	8
Carillon	2023	25	12
Carillon	2024	33	12
Carillon	2025	20	10
Lavaltrie	2010	100	12
Lavaltrie	2011	92	12
Lavaltrie	2012	83	12
Lavaltrie	2013	100	12
Lavaltrie	2014	92	12
Lavaltrie	2015	92	11
Lavaltrie	2016	83	12
Lavaltrie	2017	100	12
Lavaltrie	2018	92	12

Monitoring station	Year	Percent of samples above nitrogen guideline	Number of samples
Lavaltrie	2019	67	12
Lavaltrie	2020	100	2
Lavaltrie	2021	n/a	0
Lavaltrie	2022	63	8
Lavaltrie	2023	67	12
Lavaltrie	2024	92	13
Lavaltrie	2025	91	11
Richelieu	2010	83	12
Richelieu	2011	50	12
Richelieu	2012	50	12
Richelieu	2013	67	12
Richelieu	2014	42	12
Richelieu	2015	42	12
Richelieu	2016	58	12
Richelieu	2017	67	12
Richelieu	2018	67	12
Richelieu	2019	58	12
Richelieu	2020	100	2
Richelieu	2021	n/a	0
Richelieu	2022	n/a	0
Richelieu	2023	n/a	0
Richelieu	2024	47	15
Richelieu	2025	64	11
Saint-François	2010	93	15
Saint-François	2011	93	14
Saint-François	2012	100	7
Saint-François	2013	89	9
Saint-François	2014	89	9
Saint-François	2015	92	12
Saint-François	2016	100	16
Saint-François	2017	94	17
Saint-François	2018	94	17
Saint-François	2019	94	17
Saint-François	2020	n/a	0
Saint-François	2021	n/a	0
Saint-François	2022	100	8

Monitoring station	Year	Percent of samples above nitrogen guideline	Number of samples
Saint-François	2023	100	3
Saint-François	2024	87	15
Saint-François	2025	100	12
Québec	2010	41	17
Québec	2011	41	17
Québec	2012	44	16
Québec	2013	60	15
Québec	2014	47	17
Québec	2015	59	17
Québec	2016	59	17
Québec	2017	53	17
Québec	2018	41	17
Québec	2019	29	17
Québec	2020	0	2
Québec	2021	n/a	0
Québec	2022	25	8
Québec	2023	42	12
Québec	2024	33	12
Québec	2025	58	12

Note: n/a = not applicable. For the purposes of this indicator, the nitrogen guideline is 0.64 mg/L of nitrogen. Samples from the mouth of the Saint-François River from 2010 to 2020 were collected from May to September only.
Source: Environment and Climate Change Canada (2026).