Les conseils de régularisation
des eaux des Grands Lacs
de la Commission mixte internationale

International Joint Commission
Great Lakes
Water Levels Boards

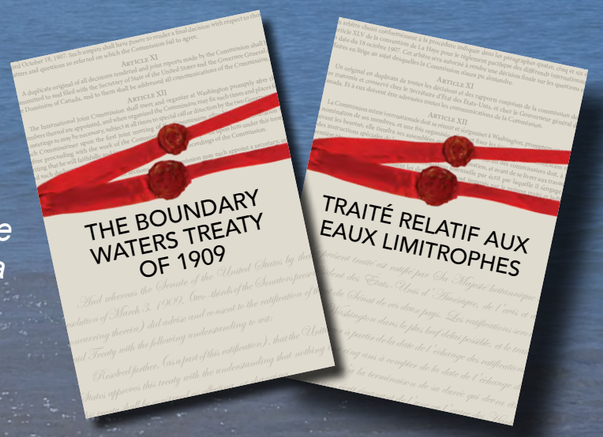
Tri-Board Tribune

The Great Lakes in Depth

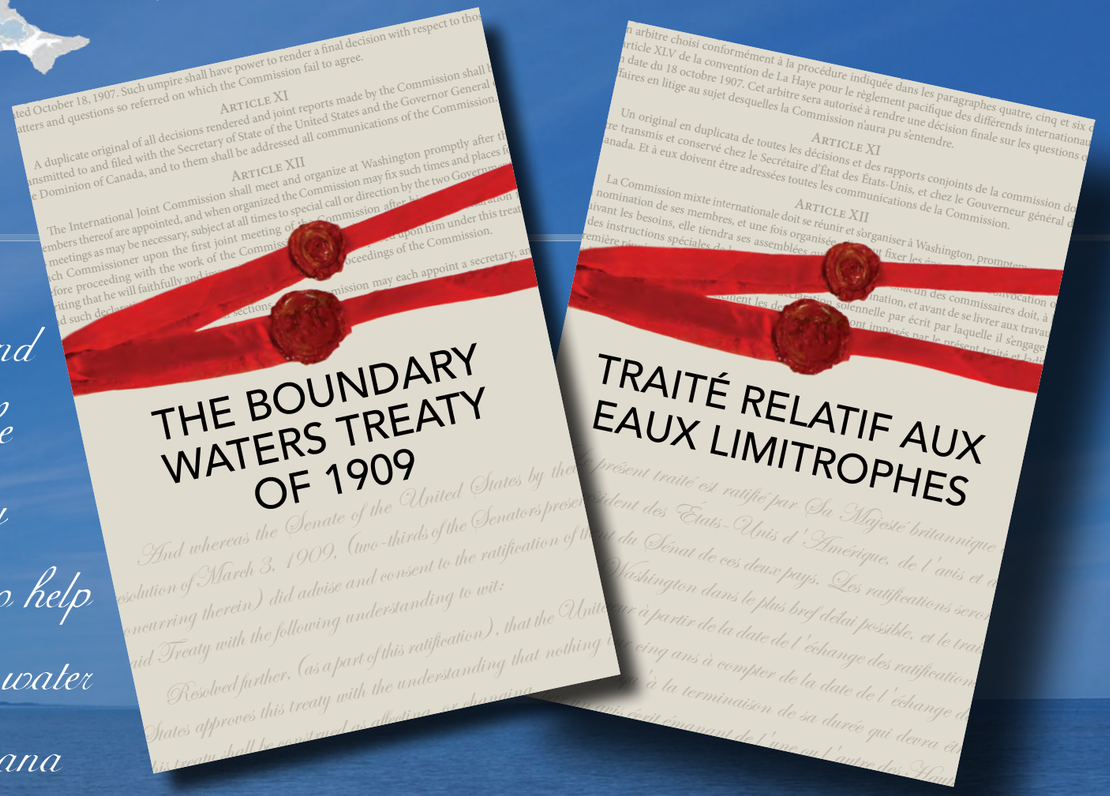
Spring/Summer 2023

WELCOME!

The Tri-Board Tribune is a quarterly newsletter designed by the Great Lakes Water Levels Boards of the International Joint Commission (IJC) to share information and articles related to the entire Great Lakes basin and provide regional updates presented by each Board. The Great Lakes Water Levels Boards includes the International Lake Superior Board of Control, International Niagara Board of Control, and International Lake Ontario-St. Lawrence River Board.



Visit the Tri-Board Tribune subscription page to sign up for email notifications. You can unsubscribe at any time.



The Boundary Waters Treaty was signed in 1909 to prevent and resolve disputes over the use of the waters shared by Canada and the United States and to settle other transboundary issues. The treaty established the International Joint Commission (IJC) to help the two countries carry out its provisions. At the time, disputes over water were already creating tension along the border. Settlers in Montana and Alberta were building competing canals to divert the waters of the St. Mary and Milk Rivers for their own use. On the Niagara River, it was increasingly clear that the two countries needed a management plan that could balance the growing demand for hydroelectric power with the interests of navigation, while safeguarding the unique natural beauty of Niagara Falls. The treaty provided a framework to deal with these disputes. The IJC held its first meeting in 1912 and has worked to resolve more than 100 matters raised by the two federal governments.

Read the entire treaty.

Tri-Board Tribune

The Great Lakes in Depth

International Joint Commission
Great Lakes
Water Levels Boards

Les conseils de régularisation
des eaux des Grands Lacs
de la Commission mixte internationale

Spring

A Month's Worth of Rain in a Matter of Days at the end of Freshet Season

International
Lake Ontario -
St. Lawrence River Board

Conseil international
du lac Ontario
et du fleuve Saint-Laurent

Water levels in Lake Ontario and the St. Lawrence River rose quickly and steadily due to a widespread rain event throughout the region from April 27 through May 3, combined with Plan 2014 regulation. Approximately a month's worth of rain, 90 mm or 3.5 inches, fell in a matter of days in the heaviest areas. Overall, water levels in May were 19 cm (7.5 inches) above levels one year ago, 33 cm (13 inches) above the May long-term average, and 44 cm (17 inches) below the record high.

According to the Ottawa River Regulation Planning Board, 60 percent of the Ottawa River flows naturally and is unregulated, and three significant events observed in three unregulated tributaries of the Ottawa River shaped the 2023 freshet:

1. Record high, summer like temperatures of up to 30 degrees Celsius (86 degrees Fahrenheit) from April 10 to 17 caused the snowpack to melt more rapidly than normal.
2. Precipitation of up to 35 mm (1.4 in) fell on a large portion of the basin April 22-23, when snowmelt runoff was still high in all tributaries and on the main stem of the Ottawa River.
3. Major precipitation event brought 55-70 mm (2.2-2.75 in) of rain over much of the basin between April 29 and May 3, bringing flows and levels to a peak on the main stem of the Ottawa River a few days later.

Water levels in the Lake Ontario-St. Lawrence River basin have remained above long-term average. The six-month forecast is updated each week. This forecast represents the projected range of water levels that may be expected to occur under potentially wet, average, and dry conditions. Actual water levels will depend primarily on weather and water supplies, and during periods of extreme conditions, may fall outside of the projected range that is forecast.

Flow Measurements Completed in the Niagara River

International
Niagara
Board of Control

Conseil de contrôle
international du Niagara

Flow measurements in the Niagara River are an important part in ensuring that water use in the Niagara River is in accordance with the 1950 Niagara Treaty. The first section of the Treaty states that the primary obligation of the governments of Canada and the United States is "to preserve and enhance the scenic beauty of the Niagara Falls and River and, consistent with that obligation, their common interest in providing for the most beneficial use of the waters of that River". Lower Niagara River flow measurements were completed in the Niagara River June 27-29, 2023, to verify the Ashland Avenue Stage-Discharge rating that is used to determine the flow over Niagara Falls. During this time, a range of flows over Niagara Falls were measured in conjunction with the Power Entities to check the validity of the rating. Later this year the Board intends to verify the American Falls rating with additional measurements.

Gate Inspection at the Compensating Works on the St. Marys River Completed

International
Lake Superior
Board of Control

Conseil international
de contrôle du lac Supérieur

The United States Army Corps of Engineers conducted an inspection on the gates of the Compensating Works at the head of the St. Marys Rapids on Tuesday, May 23 and Wednesday, May 24, 2023. These inspections are required every five years. During the two-day inspection, the inspection team tested and operated each gate at varying times and flow in the rapids fluctuated between approximately 1,070 cubic meters per second (cms) (37,800 cubic feet per second (cfs)) and 1,210 cms (42,700 cfs), or between a seven to eight gate equivalent. Once the inspection was complete, the gates at the Compensating Works were returned to the designated May setting of approximately eight gates fully open.

Another Great Year at Soo Locks Engineers Day

International
Lake Superior
Board of Control

Conseil international
de contrôle du lac Supérieur

The International Lake Superior Board of Control in conjunction with the U.S. Army Corps of Engineers, Detroit District hosted an exhibit at Soo Locks Engineers Day on June 30. Board members shared information about current conditions through the Great Lakes including water levels and talked about the regulation plan.

This day of fun is hosted in the United States by the City of Sault Ste. Marie, Michigan, Sault Ste. Marie Convention and Visitors Bureau, United States Coast Guard, U.S. Army Corps of Engineers, and Lake Superior State University Center for Freshwater Research and Education. Local vendors and exhibits were available throughout the day, and visitors were able to walk across the MacArthur Lock! The Soo Locks Canal Park, viewing platform, and visitors center were also open to the public from 9:00 am to 10:00 pm. Although the day started with a rain delay, nearly 70 people waited out the storm in eager anticipation for the gates to open followed by hundreds more to enjoy this fun-filled annual event!

Welcome to the Public Advisory Group for Phase II of the Review of Plan 2014

The Great Lakes-St. Lawrence River Adaptive Management (GLAM) Committee began work on the second phase of an expedited review of the binational regulation plan for Lake Ontario and the St. Lawrence River, known formally as Plan 2014. This is the plan that regulates Lake Ontario outflows into the St. Lawrence River and went into effect in January 2017.

This second phase of the Plan's review will strive to find ways that could moderate extreme water levels and possibly reduce impacts on the various uses and interests throughout the Lake Ontario and St. Lawrence River system recognizing that no regulation plan is going to prevent flooding or eliminate all impacts under extreme climate conditions. The GLAM Committee's efforts include re-establishment of a Public Advisory Group (PAG) initiated during Phase 1 to continue robust engagement with the public over the course of the review.

Tri-Board Tribune

The Great Lakes in Depth

International Joint Commission
Great Lakes
Water Levels Boards

Les conseils de régularisation
des eaux des Grands Lacs
de la Commission mixte internationale

The PAG includes 18 citizens: 9 from Canada and 9 from the United States who represent the various interest groups within the basin including Indigenous communities, agriculture, commercial shipping and ports, industrial users, recreation and tourism groups, riparian residential, and conservation and governmental groups, municipalities, and academia. The purpose of the PAG is to share information about the community they represent to help the Committee, Board, and IJC better understand impacts, issues, and concerns of the respective communities. This provides a structured way for opinions and perspectives to be shared as it relates to study issues.

In July, three PAG members hosted events in their community and were joined by Board members to talk about current water levels, regulation plan, and review of Plan 2014. The Board and GLAM Committee look forward to more opportunities to work with PAG members and participate in events in other communities!

What is El Niño?

As a three-year La Niña ended in March, meteorologists around the world began to monitor the likelihood of an El Niño. In a May 3 press release, the World Meteorological Organization, encouraged preparation for El Niño which *typically causes drier and warmer than usual conditions to the northern United States and Canada*. In May there was an approximate 60 percent chance an El Niño would develop later spring and early summer, and an 80 percent chance an El Niño will be present by fall. But as spring ended, the predictions from weeks earlier quickly changed and confirmed the presence of a strong El Niño. But what is El Niño?

El Niño is a climate phenomenon that occurs irregularly but typically every 2 to 7 years. It is characterized by the warming of sea surface temperatures in the central and eastern equatorial Pacific Ocean. This warming alters atmospheric circulation patterns which have far-reaching impacts on weather and climate across the globe. During El Niño, the trade winds weaken, allowing warm ocean waters to shift eastward toward the South American coast. This can lead to several consequences:

- **Changes in weather patterns:** El Niño can bring heavy rainfall and flooding to some regions while causing droughts and wildfires in others. The specific impacts depend on the strength and duration of the event.
- **Shift in storm tracks:** El Niño can alter the paths of tropical storms and hurricanes, leading to more active seasons in certain areas.
- **Marine ecosystem effects:** The warming waters can disrupt marine ecosystems, affecting fish populations, coral reefs, and other marine life.
- **Global temperature and climate:** El Niño events contribute to short-term increases in global average temperatures, enhancing the overall warming trend due to climate change.
- **Economic and social impacts:** El Niño can have significant economic consequences, affecting agriculture, water resources, and infrastructure, particularly in vulnerable regions.

It is important to note that each El Niño event is unique, and the impacts can vary widely based on its strength, duration, and interactions with other climate patterns. Scientists and meteorologists closely monitor these events to provide timely warnings and assess their potential effects on local and global weather patterns.

Summer

Please Take the Survey – Tell Us How Great Lakes Water Levels Impact You!

The Great Lakes–St. Lawrence River Adaptive Management (GLAM) Committee is seeking to better understand how changing Great Lakes – St. Lawrence River water levels impact people that live and work along the shoreline as well as the ecosystem. The GLAM Committee has developed a short questionnaire to enable impacted shoreline property owners to report on their direct experiences for 2022 and 2023. Responses to the questionnaire will only be reported in a summarized format to ensure the privacy of respondents and your participation is completely voluntary.

2022 Water Level Impacts Questionnaire
https://www.surveymonkey.com/r/GLAM2022

2023 Water Level Impacts Questionnaire
https://www.surveymonkey.com/r/GLAM2023

Join Us for a Virtual Public Meeting

International Niagara Board of Control

Conseil de contrôle international du Niagara

The International Niagara Board of Control and International Lake Ontario-St. Lawrence River Board will host a virtual public meeting to present information on the Lake Erie-Niagara ice boom, current water levels, and forecast for Lake Ontario and the St. Lawrence River.

International Lake Ontario - St. Lawrence River Board

Conseil international du lac Ontario et du fleuve Saint-Laurent

Advance registration is required. Click the links below to register. Questions and comments must be submitted in advance during registration.

Wednesday, August 30, 5:30-6:30 pm (Eastern), English speaking webinar

Thursday, August 31, 5:30-6:30 pm (Eastern), French speaking webinar

It May Be Hot Outside, But Some Are Planning for Winter

International Niagara Board of Control

Conseil de contrôle international du Niagara

The International Niagara Board of Control has already advised the power entities to make plans for the installation of the ice boom. Each winter since 1964, the Lake Erie-Niagara River Ice Boom has been installed near the outlet of Lake Erie to reduce the amount of ice entering the Niagara River. A reduction in ice entering the river reduces the potential for ice jams, which can result in damage to shoreline property and interfere with hydroelectric power production.

In accordance with the International Joint Commission's (IJC) 1999 Supplementary Order of Approval, placement of the spans may begin when the Lake Erie water temperature at Buffalo reaches 4 degrees Celsius (39 degrees Fahrenheit) or on December 16, whichever comes first. Due to recent shoaling in the nearshore area adjacent to the Canadian shore of ice boom installation, water depths have decreased, and it has been determined that vessels could hit lake bottom during installation. Last year, the IJC issued a Temporary Order of Approval to allow for installation of 21 of the 22 sections of the Niagara River ice boom. It is expected that another Temporary Order may be required this year.

Tri-Board Tribune

The Great Lakes in Depth

International Joint Commission
Great Lakes
Water Levels Boards

Les conseils de régularisation
des eaux des Grands Lacs
de la Commission mixte internationale

The New York Power Authority (NYPA) and Ontario Power Generation (OPG), who are responsible for ownership, and cost of operating and maintaining the ice boom will develop and implement a monitoring plan for this ice season to ensure the installation of 21 spans instead of 22 has minimal impact to the integrity of the ice boom and the stable ice cover formation behind the ice boom.

- The span that will not be installed, is the last span of the ice boom located nearest to the Canadian shore.
- It is anticipated that the ice boom will still promote the formation and strengthening of a naturally occurring ice arch to reduce the amount of ice entering the Niagara River.

For more information, visit the ice boom information page and the frequently asked questions.

Spring Flooding at Whitefish Island

International
Lake Superior
Board of Control

Conseil international
de contrôle du lac Supérieur

The International Lake Superior Board of Control received approval from the International Joint Commission (IJC) to temporarily deviate from Regulation Plan 2012 from May through November 2023. This deviation strategy is similar to the strategy employed in 2019. The Board will continue to adjust the gate settings at the Compensating Works to offset the flow limitations caused by repairs and maintenance at the hydropower plants. The total amount of water released through the St. Marys River will be approximately equal to the flow prescribed by Plan 2012. The deviation strategy will have almost no cumulative impact on the water levels of Lake Superior and Lake Michigan-Huron yet will provide reduced fluctuations in flows and water levels in the St. Marys Rapids, directly downstream of the Compensating Works.

Currently, all the Great Lakes water levels are above their long-term average. The above average water levels on Lake Superior and Huron-Michigan, coupled with the hydroplant maintenance, has led to low-lying areas of Whitefish Island including recreational trails to flood during the Spring, and portions of the Island have been closed by Batchewana First Nation. Users are still encouraged to use extreme caution.

The Board communicates with Batchewana First Nation frequently to share information about current water level conditions, gate changes each month, and status of conditions at Whitefish Island. Visit the Board's webpage for the most recent monthly gate change press release that includes information about conditions at Whitefish Island.

Meteorologists Continue to Monitor El Niño

Planet Earth recorded its hottest average daily temperature on July 7 and the month of July was the hottest on record. Although the World Meteorological Organization encouraged citizens to prepare for El Niño in early May, by July the organization warned that El Niño conditions signaled the possibility of a surge in global temperatures and disruptive weather.

The warmest day on Earth was followed by surging temperatures worldwide, disruptive weather events including unprecedented floods in some regions and drought in others, massive wildfires that have and continue to consume millions of acres of land, and hailstorms and tornados in regions typically less susceptible to such events. The 2023 hurricane season had originally been predicted to be at or below average and that prediction was upgraded at the onset of a strong El Niño which has caused above average water temperatures in the Atlantic Ocean and set the stage for a potentially above average active hurricane season.

As of July, there is a 90 percent probability that El Niño will continue through 2023. An El Niño will continue to defy what many refer to as average, expected, or typical weather for certain regions and is likely to cause more extreme weather events worldwide on a greater frequency and in areas not typically susceptible.

Great Lakes-St. Lawrence River Adaptive Management Committee – Hydroclimate Committee

The Great Lakes-St. Lawrence River Adaptive Management (GLAM) Committee includes many subcommittees that focus on specific research throughout the Great Lakes. This season, we feature the Hydroclimate Committee.

The Hydroclimate Committee has begun a multi-year effort to improve the understanding of water supply components, in particular over-lake precipitation in transboundary watersheds. The hydroclimate team uses data and input from various U.S. and Canadian agencies to improve accuracy of the estimates of each of the water supply components and the overall water balance. This type of research is crucial in being able to understand shifts in the climate particularly under the influence of a changing climate. Research by the Hydroclimate Committee will support the long-term plan review and evaluation efforts of Regulation Plan 2012 in the Lake Superior, St. Marys River, and Lake Michigan-Huron basins, and Regulation Plan 2014 in Lake Ontario and the St. Lawrence River.

Visit the GLAM Committee webpage to learn more.

Tri-Board Tribune

The Great Lakes in Depth

International Joint Commission
Great Lakes
Water Levels Boards

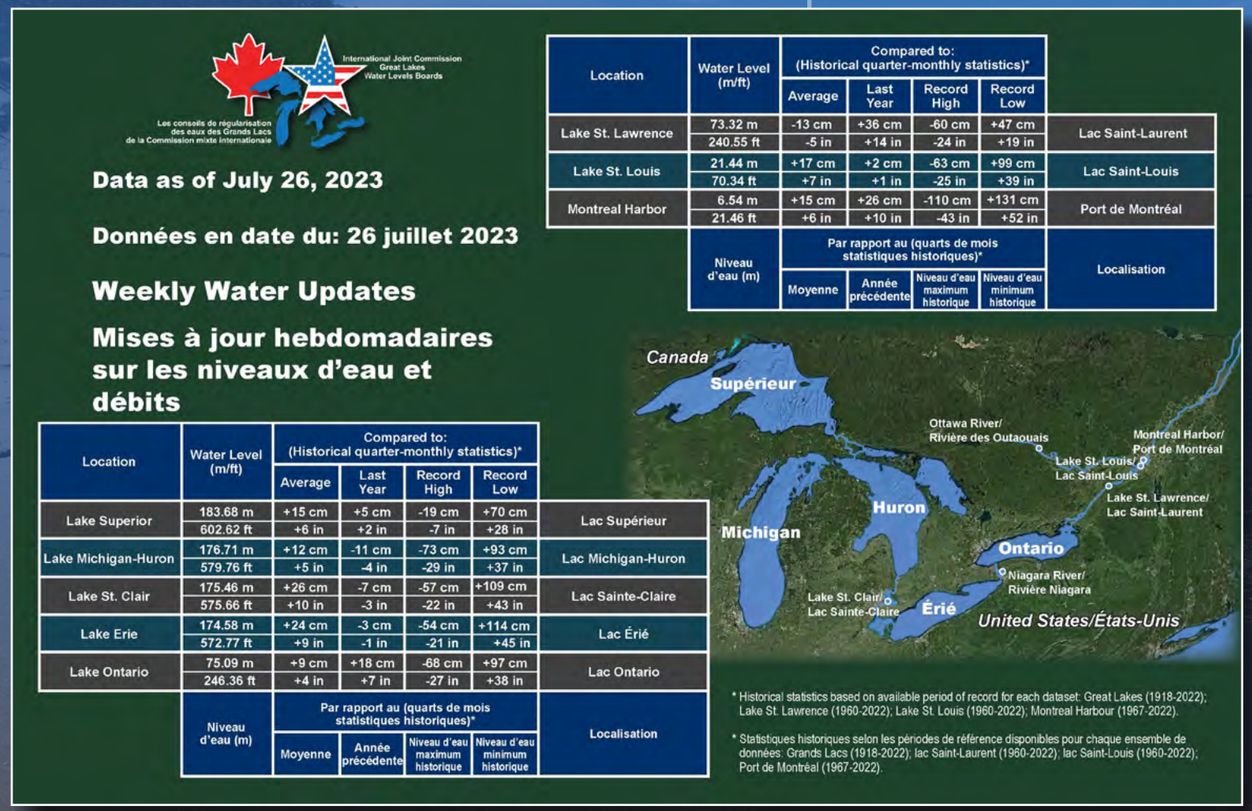
Les conseils de régularisation
des eaux des Grands Lacs
de la Commission mixte internationale

Weekly Water Level Updates

In July the three Great Lakes Boards began to issue a Great Lakes wide weekly water level update. The update includes the daily mean average water level for each of the five Great Lakes as well as Lake St. Clair, Lake St. Lawrence, Lake St. Louis, and Montreal Harbor. The water levels are compared to several historical statistics: long-term average, last year's water levels, record high, and record low. These values put in perspective the current conditions throughout the Great Lakes basin. For example, using the measurements below for Lake Superior and comparing the current water level to historical values:

- Lake Superior water level is 15 cm (6 in) above long-term average (+15 cm/+6 in)
- Lake Superior water level is 5 cm (2 in) greater than this time last year (+5 cm/+2 in)
- Lake Superior water level is 19 cm (7 in) less than the record high (-19 cm/-7 in)
- Lake Superior water level is 70 cm (28 in) greater than the record low (+70 cm/+28 in)

The Boards often hear people compare current water levels in each lake to long term average, or record highs and lows. In addition, many people rely on memory or use objects to compare water levels in each region, such as being able to see large boulders in the water, or water marks on piers, breakwaters, and other landmarks, and then state, "the water has never been this (high or low) at this time in previous years." Our memory can fail us, and sometimes a point of reference on a landmark may not be the most accurate tool to measure water levels. This weekly update provides the numeric values to clearly show how current water levels compare to historical values and to encourage users to reflect on water levels throughout the basin since the Great Lakes are all connected, and each lake is impacted by levels and conditions from upstream lakes and tributaries.



Location	Water Level (m/ft)	Compared to: (Historical quarter-monthly statistics)*				
		Average	Last Year	Record High	Record Low	
Lake Superior	183.68 m	+15 cm	+5 cm	-19 cm	+70 cm	Lac Supérieur
	602.62 ft	+6 in	+2 in	-7 in	+28 in	
Lake Michigan-Huron	176.71 m	+12 cm	-11 cm	-73 cm	+93 cm	Lac Michigan-Huron
	579.76 ft	+5 in	-4 in	-29 in	+37 in	
Lake St. Clair	175.46 m	+26 cm	-7 cm	-57 cm	+109 cm	Lac Sainte-Claire
	575.66 ft	+10 in	-3 in	-22 in	+43 in	
Lake Erie	174.58 m	+24 cm	-3 cm	-54 cm	+114 cm	Lac Érié
	572.77 ft	+9 in	-1 in	-21 in	+45 in	
Lake Ontario	75.09 m	+9 cm	+18 cm	-68 cm	+97 cm	Lac Ontario
	246.36 ft	+4 in	+7 in	-27 in	+38 in	
Niveau d'eau (m)	Par rapport au (quarts de mois statistiques historiques)*					Localisation
	Moyenne	Année précédente	Niveau d'eau maximum historique	Niveau d'eau minimum historique		

Location	Water Level (m/ft)	Compared to: (Historical quarter-monthly statistics)*				
		Average	Last Year	Record High	Record Low	
Lake St. Lawrence	73.32 m	-13 cm	+36 cm	-60 cm	+47 cm	Lac Saint-Laurent
	240.55 ft	-5 in	+14 in	-24 in	+19 in	
Lake St. Louis	21.44 m	+17 cm	+2 cm	-63 cm	+99 cm	Lac Saint-Louis
	70.34 ft	+7 in	+1 in	-25 in	+39 in	
Montreal Harbor	6.54 m	+15 cm	+26 cm	-110 cm	+131 cm	Port de Montréal
	21.46 ft	+6 in	+10 in	-43 in	+52 in	
Niveau d'eau (m)	Par rapport au (quarts de mois statistiques historiques)*					Localisation
	Moyenne	Année précédente	Niveau d'eau maximum historique	Niveau d'eau minimum historique		

* Historical statistics based on available period of record for each dataset: Great Lakes (1918-2022); Lake St. Lawrence (1960-2022); Lake St. Louis (1960-2022); Montreal Harbour (1967-2022).

* Statistiques historiques selon les périodes de référence disponibles pour chaque ensemble de données: Grands Lacs (1918-2022); lac Saint-Laurent (1960-2022); lac Saint-Louis (1960-2022); Port de Montréal (1967-2022).

Contact Us

International Lake Superior Board of Control

Website: https://www.ijc.org/en/lsbc

Facebook: https://www.facebook.com/InternationalLakeSuperiorBoardOfControl

Web form: https://www.ijc.org/en/contact/contact_the_international_lake_s

International Niagara Board of Control

Website: https://www.ijc.org/en/nbc

Web form: https://www.ijc.org/en/contact/contact_the_international_niagar

International Lake Ontario-St. Lawrence River Board

Website: https://www.ijc.org/en/loslrb

Facebook: https://www.facebook.com/InternationalLakeOntarioStLawrenceRiverBoard/

Web form: https://ijc.org/en/contact/contact_the_international_lake_o