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International Joint Commission
Great Lakes
Water Levels Boards

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

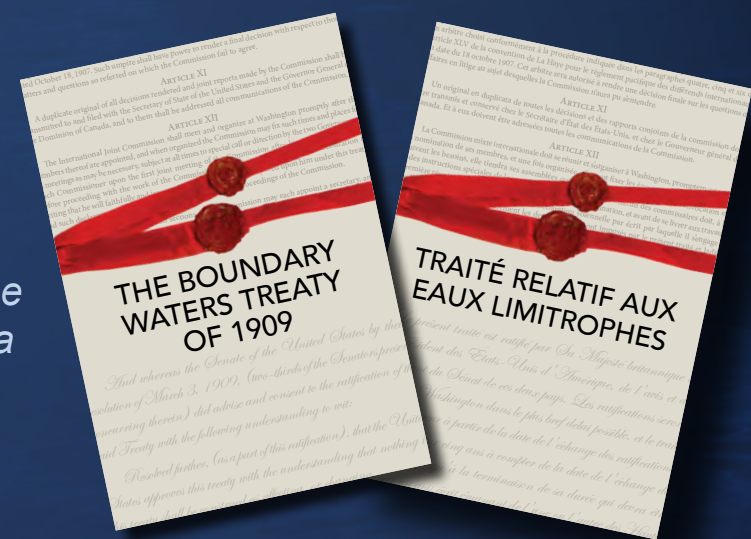
Tri-Board Tribune

The Great Lakes in Depth

Summer 2022

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.



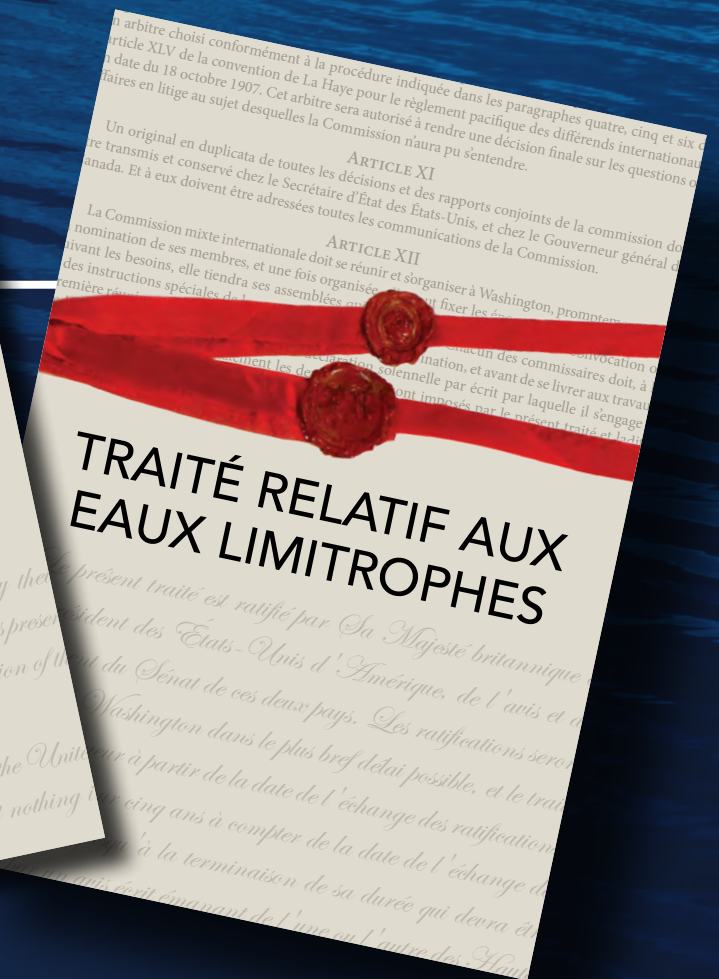
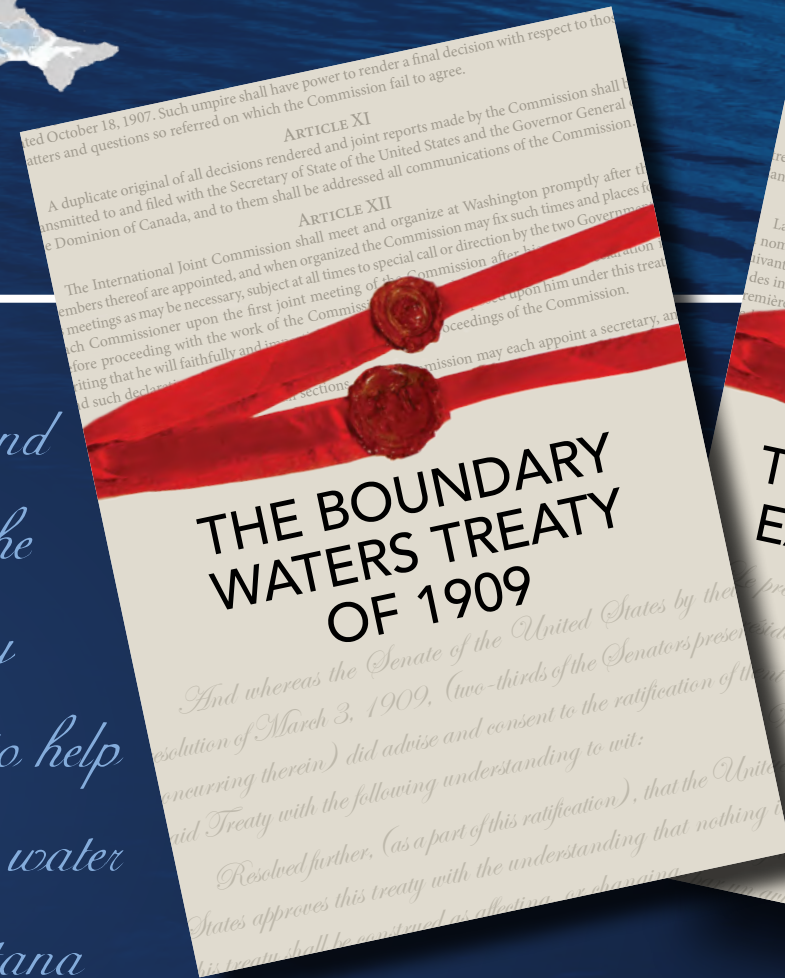
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Image from the Museum of Civilization exhibit in Quebec "This is Our Story. First Nations and Inuit in the 21st Century"

August 9 is International Day of the World's Indigenous Peoples



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.](#)

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Great Lakes Public Forum – September 2022



The [Great Lakes Water Quality Agreement \(GLWQA\)](#) requires the Canadian and United States governments to host a public forum every three years that provides an opportunity to discuss efforts to restore, protect, and enhance the water quality and environmental health of the Great Lakes. The governments' 2022 [Great Lakes Public Forum](#) is scheduled for September 27, 28, and 29 in Niagara Falls, Ontario, Canada. The hybrid event will provide opportunities to join in person or virtually, and registration is free.

[Registration](#) for the in-person event closes Monday, September 5, and space is limited.

Details to participate virtually will be provided at a later date.

The purpose of the GLWQA is to restore and maintain the chemical, physical, and biological integrity of the waters of the Great Lakes. Under the GLWQA, Canadian and US governments work to attain general and specific objectives for water quality, such as ensuring the waters are swimmable, drinkable, and fishable. During the Forum, governments review the progress accomplished over the last three years as documented in their [2022 Progress Report of the Parties](#) and [2022 State of the Great Lakes report](#), discuss goals that will be set for the next three years, and hear from the public.

The International Joint Commission (IJC) has several responsibilities under the GLWQA. One is to assess the governments' progress toward fulfilling the GLWQA's objectives. The IJC serves as a binational third party and prepares a [Triennial Assessment of Progress \(TAP\) report](#) every three years. The TAP documents the progress of government programs and activities toward achieving the nine general objectives of the GLWQA and provides recommendations to the governments. The IJC will post details on public input activities, including the IJC's sessions at the Forum, on its [website](#) this fall.

Great Lakes Water Levels Boards to Host Tri-Board Webinars



The three Great Lakes Boards will host joint webinars in English and French on August 30 and 31, respectively. Information shared will include current and forecast conditions within the Great Lakes – St. Lawrence River basin. Both events will include presentations by the International Lake Superior Board of Control, International Niagara Board of Control, and International Lake Ontario-St. Lawrence River Board. The boards will share an overview of current and forecast conditions of the Great Lakes and discuss water levels throughout the system. In addition, an update will be provided on current work of the Great Lakes – St. Lawrence River Adaptive Management Committee.

Advance registration is required. Click the links below to register.

- [Tuesday, August 30, English speaking webinar](#)
- [Wednesday, August 31, French speaking webinar](#)

Climate Change – Anything but Average

The years 2016 and 2020 were the hottest years globally ([Scientific American](#)), and the first half of 2022 was the sixth warmest year on record ([US NOAA](#)). As well, the top 7 hottest years have been the past 7 years with NOAA predicting an over 80 percent chance that 2022 will continue that streak ([US NOAA](#)).

As documented in the [United Nations Intergovernmental Panel on Climate Change](#) report released in 2021, climate change and the impacts associated with climate change, are accelerating. The [World Meteorological Organization](#) stated that “Rising global temperatures have contributed to more frequent and severe extreme weather events around the world, including cold and heat waves, floods, droughts, wildfires and storms.”



Climate scientist Noah Diffenbaugh of Stanford University told [USA Today](#) “There’s a whole suite of examples where we have pretty sophisticated systems that have been designed and built around assumptions of an old climate,” and Jay Famiglietti, a hydrologist and Director at Global Institute for Water Security at the University of Saskatchewan in Canada said “What we used to think of as normal is no longer normal”.

In the context of climate and weather, often referring to temperature and precipitation, the average is constantly changing. With respect to the Great Lakes, water levels are also constantly changing due to variations in precipitation, evaporation, and runoff. While the average can be thought of as a level that is characteristic

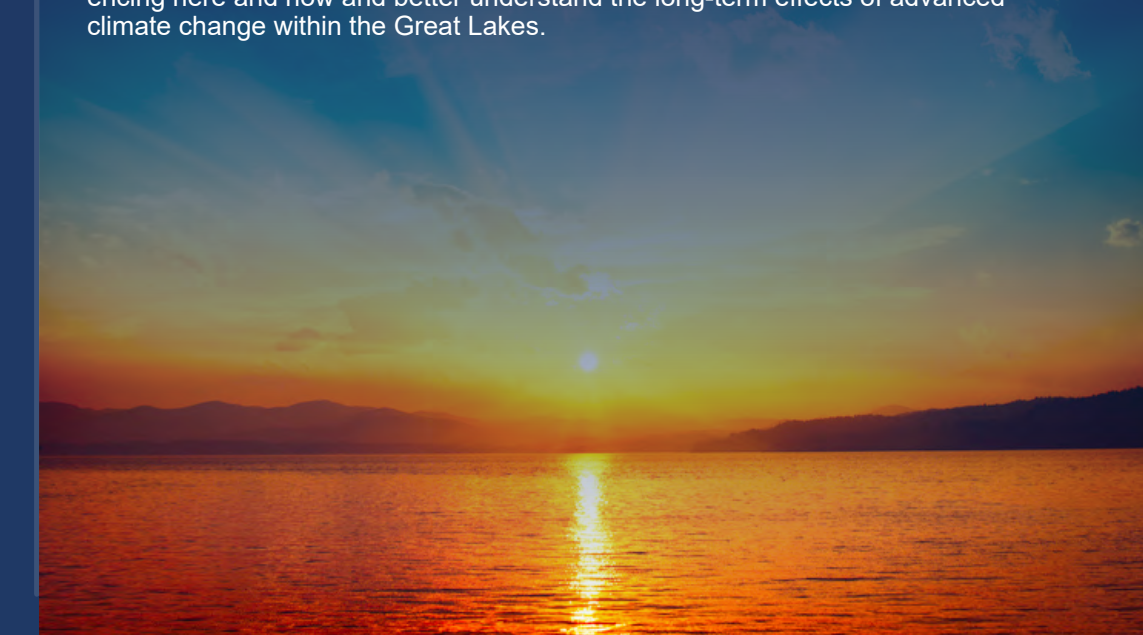
for a lake, it is not a target nor is it “what the level should be”. Levels of the lakes should be expected to vary. Temperature, precipitation, and water levels can be above, below, or at the average value for the known data set. In the case of the Great Lakes, the [water levels data](#) set is a period of record from 1918 to present.

New climate change [research](#) that focused on the impacts to the Great Lakes determined the water levels of Lake Superior, Michigan-Huron, and Erie may increase approximately 20 to 50 centimeters by 2050 (the study did not include an estimated rise for Lake Ontario). According to Climate Modeler Pengfei Xui, the projected higher lake levels will result in more extreme impacts to shorelines as it relates to storm, flooding, and increased natural variability.

A recently [published paper](#) by Environment Climate Change Canada in the Journal of Great Lakes Research showed that the likelihood of more extreme lake levels (both high and low) increases with greater changes in Global Mean Temperatures for all the Great Lakes. These findings demonstrate the importance of global action to prevent climate change and to implement local adaptation measures.

It is important to understand that there is a great deal of uncertainty in any study of the future climate. This is due to a range of assumptions being made about socio-economic factors, emissions levels, and uncertainty about the Great Lakes' response to different weather and climate conditions.

The more than 100 years of water level data for the Great Lakes illustrates periods of high and low water levels and the characteristic variability in the system; how this variability changes in the future will have a great impact on all interests around the basin. That historic data provides a benchmark to help scientists document the impacts of accelerated climate changes we are experiencing here and now and better understand the long-term effects of advanced climate change within the Great Lakes.



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International Day of the World's Indigenous Peoples



In 1984, the United Nations designated August 9th as [International Day of the World's Indigenous Peoples](#). According to the United Nations "Indigenous peoples are inheritors and practitioners of unique cultures and ways of relating to people and the environment. They have retained social, cultural, economic, and political characteristics that are distinct from those of the dominant societies in which they live. Despite their cultural differences, Indigenous peoples from around the world share common problems related to the protection of their rights as distinct peoples."

There are many Indigenous peoples who continue to use their ancestral homelands throughout the Great Lakes basin for subsistence, medicinal, ceremonial, and other cultural traditions. The First Nation¹, Métis Nation², and Tribal Nation³ communities of the Great Lakes share their knowledge of sovereign natural resources including native plants, wildlife, land use, and environmental management responsibilities from generation to generation. In Canada, [National Indigenous Peoples Day](#) takes place on the summer solstice, June 21. "It's a special occasion to learn more about the rich and diverse cultures, voices, experiences and histories of First Nations, Inuit and Métis peoples".

Do you know the Indigenous Nation that were the original inhabitants of the community you call home?

This [interactive map](#), created by [Native Land Digital](#) which is an Indigenous-led not for profit in Canada, allows people to identify the Indigenous Nations who occupied the land before colonialism and can identify the Treaty connected to that land and Indigenous community.

¹ First Nation is a term used to describe Aboriginal peoples of Canada who are ethnically neither Métis nor Inuit.

² Metis Nation is a term used to refer to cultures and ethnic identities that resulted from unions between Aboriginal and European people in Canada.

³ Tribal Nation is a term used in the United States to refer to an American Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges as a federally recognized tribe pursuant to the Federally Recognized Indian Tribe List Act of 1994, 25 U.S.C. 5130, 5131.



What is a Land Acknowledgment or Territory Acknowledgment?



According to [Native Land Digital](#), an Indigenous-led not for profit in Canada, an acknowledgment is a way to recognize and show your awareness of the Indigenous peoples as the original inhabitants of the land where you currently live. An acknowledgement is a statement that recognizes the long history and sustained connection the Indigenous people maintain to their traditional homelands, while recognizing the impacts colonialism has on their culture, traditions, and livelihood.

Land or Territory Acknowledgements are often included in the opening remarks at meetings, political venues, special events, etc. where the non-Indigenous host would like to recognize, honor, and show solidarity with the Indigenous community.

Ecosystem Health of the Great Lakes

The Great Lakes are often cited as the world's largest source of freshwater, but the Great Lakes are also the largest freshwater ecosystem. The Great Lakes coastal ecosystem includes beaches, dunes, wetlands, forests, and more. According to the [State of the Great Lakes 2022 Report](#) "The Great Lakes are ecologically diverse ecosystems, supporting rare and unique species and habitats not found anywhere else in the world."

Great Lakes coastal wetlands capture, store, and process excess nutrients originating from upland habitats, protect shorelines and provide critical habitat for many species. The Great Lakes aquatic food web supports ecologically and culturally important fish populations that in turn support Indigenous, commercial, and recreational fisheries. However, urban and agricultural development, pollution, invasive species and other factors can impair the health of Great Lakes species and their habitats."

The [State of the Great Lakes 2022 Report](#) provides a status update on the ecosystem health of each lake which helps the governments assess progress of programs, policies, and activities toward achieving the objectives of the [Great Lakes Water Quality Agreement](#).

Indicator assessments provide information that supports protection and restoration efforts and is used to help inform and engage First Nations, Métis Nations, Tribal Nations, provincial, state, and municipal governments, and the public. The rating definitions contained in the report include but are not limited to:

Good: Most or all ecosystem components are in acceptable condition.

Fair: Some ecosystem components are in acceptable condition.

Poor: Very few or no ecosystem components are in acceptable condition.

Improving: Metrics show a change toward more acceptable conditions.

Unchanging: Metrics generally show no overall change in condition.

A summary of the ecosystem health ratings per lake are below with more lake specific details contained in the report.

Lake Superior: Good and unchanging.

The water quality and ecosystem are maintained by the forested watershed and coastal wetlands.

Lake Michigan: Fair and unchanging.

Invasive species negatively affect water quality and the food web.

Lake Huron: Good and unchanging.

Algal blooms and invasive filter feeding mussels continue to be of concern.

Lake Erie: Poor and unchanging.

Algal blooms and high nutrient loading into the lake continues to be of concern.

Lake Ontario: Fair and unchanging to improving.

Beach closings associated with increased bacteria levels and increased contaminant concentrations in fish continue to be of concern.

According to [An Assessment of the Impacts of Climate Change on the Great Lakes](#) climate change is already affecting the ecosystem. [The Nature Conservancy](#) is working to enhance the ecological integrity of the Great Lakes by bringing together science and innovative conservation action. Visit the [Nature Conservancy Great Lakes](#) to learn more about the places in the region they are currently working to protect and see [how you can help](#).



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News from the Upper Lakes

On June 24, the International Lake Superior Board of Control participated in Engineers Day at the Soo Locks in Sault Ste. Marie, Michigan. Approximately 7,000 people were in attendance and visitors enjoyed exhibits, vendors, and were permitted to walk across the locks for the first time since 2019! The Board shared information about Great Lakes water levels and current and future conditions.



News from the Mighty Niagara



The 1950 [Niagara Treaty](#) establish minimum tourist hour and non-tourist hour flows over Niagara Falls to ensure the scenic value of the Falls is maintained at peak tourist times, while allowing water to be diverted from the Falls for hydro power generation. In order to ensure that the full crest of the Horseshoe Falls has a solid curtain of water flowing over it during daylight tourist hours, the minimum flow has been set at 2832 m³/s (100,000 ft³/s). At nighttime during the tourist season and in the non-tourist season the minimum flow over the Falls is 1416 m³/s (50,000 ft³/s). The continued above average flows in the Niagara River have allowed the power plants in the United States and Canada to meet their power demands, while maintaining flows over Niagara Falls well above their minimum values for this summer's tourist season.

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News from Lake Ontario-St. Lawrence River

The same natural factors that changed water levels in Lake Ontario before regulation continue to influence the levels after regulation. These natural factors include inflow from Lake Erie and weather patterns (precipitation, wind, and temperatures) collectively driving the hydrological system. The vast majority of water supply into Lake Ontario is inflow from Lake Erie. This inflow is uncontrolled and is a function of the larger hydrologic system of the Great Lakes. Short-term adjustments to the outflows of Lake Ontario have little impact on the water level of the lake in comparison to the natural factors. In contrast, adjustments to the outflows of Lake Ontario can have a much larger impact on the water levels along the St. Lawrence River.



Contact Us

International Lake Superior Board of Control



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International Niagara Board of Control



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International Lake Ontario-St. Lawrence River Board



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