

Great Lakes – St. Lawrence River Water Levels

All the lakes experience a larger than average decline in November

In November, the Great Lakes Basin experienced the following:

- The mean monthly water level of Lake Superior was below average for the first time since April 2022. Lakes Michigan-Huron and Erie remain above average, while Lake Ontario’s water level moved below average.
- All of the Great Lakes experienced very dry water supply conditions (a combination of the precipitation, evaporation, and runoff).
- October precipitation amounts were close to average for Lake Superior, below average for Lake Michigan-Huron, well below average for Lake Erie, and below average for Lake Ontario.
- Lake Superior experienced its fourth largest November decline on record. Lakes Michigan-Huron and Erie experienced greater than average lake-level declines, while Lake Ontario experienced its seventh largest decline in the period of record (1918-2022).

Great Lakes water level information: November 2023 monthly mean levels					
Lake	Level ^a	Compared to November monthly average (1918–2022)	Compared to November 2022	Compared to record high (1918-2022)	Notes
Superior	183.46 m	2 cm below	14 cm below	43 cm below	-
Michigan–Huron	176.51 m	10 cm above	5 cm below	87 cm below	-
St. Clair	175.17 m	23 cm above	3 cm above	65 cm below	-
Erie	174.29 m	26 cm above	4 cm above	56 cm below	-
Ontario	74.49 m	5 cm below	9 cm above	69 cm below	-

^aWater levels are referenced to International Great Lakes (Vertical) Datum 1985 (IGLD85). For more information, please visit International Great Lakes Datum Update – Great Lakes Coordinating Committee at <https://www.greatlakescc.org/en/international-great-lakes-datum-update/>



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As compared to their beginning-of-December levels and with average water supplies for this time of year, some of the lakes are expected to continue their seasonal decline while others may hold steady or even begin their seasonal rise in the coming months.

With water levels remaining above average in some lakes, and the possibility of large storms and winds, low-lying areas are at risk for accelerated coastline erosion and flooding. For current information and forecasts, please refer to the sources listed below.

The Great Lakes Basin has experienced dry water supply conditions throughout the fall, resulting in record setting lake-level declines. Read more about it below.

Great Lakes water level information:				
November lake level changes^a				
Lake	November lake level change	November monthly average change (1918-2022)	Compared to average November change (1918-2022)	Notes
Superior	10 cm decline	5 cm decline	greater than average decline	fourth largest decline on record
Michigan–Huron	10 cm decline	4 cm decline	greater than average decline	-
St. Clair	14 cm decline	7 cm decline	greater than average decline	-
Erie	10 cm decline	4 cm decline	greater than average decline	-
Ontario	14 cm decline	3 cm decline	much greater than average decline	seventh largest decline on record

^a Lake level changes are based on the differences in levels at the beginning of the months and not the monthly average levels.

Great Lakes water level information:					
Beginning-of-December level ^a					
Lake	Level ^{a,b}	Compared to December beginning-of-month average (1918–2022)	Compared to December 2022	Compared to record high (1918–2022)	Notes
Superior	183.40 m	5 cm below	22 cm below	47 cm below	-
Michigan–Huron	176.46 m	8 cm above	4 cm below	85 cm below	-
St. Clair	175.10 m	21 cm above	3 cm above	76 cm below	-
Erie	174.24 m	23 cm above	4 cm above	61 cm below	-
Ontario	74.43 m	11 cm below	1 cm below	78 cm below	-

^a At the beginning of December, all of the Great Lakes were at least 20 cm above their chart datum level. Chart datum is a reference elevation for each lake that provides more information on the depth of water for safe boat navigation on the lakes. For more information, please visit Low Water Datum – Great Lakes Coordinating Committee at <https://www.greatlakescc.org/en/international-great-lakes-datum-update/low-water-datum/>

^b Water levels are referenced to International Great Lakes (Vertical) Datum 1985 (IGLD85). For more information, please visit International Great Lakes Datum Update – Great Lakes Coordinating Committee at <https://www.greatlakescc.org/en/international-great-lakes-datum-update/>

Water levels forecast

Lake Superior is currently just below its average level and is expected to remain near average under typical water supply conditions. If there are very wet water supply conditions, lake levels could move above average, while very dry conditions could result in lake levels moving further below average.

Lake Michigan-Huron is expected to remain above average under most water supply conditions. It would take very dry conditions to bring the level below average by early winter.

Lake Erie is also expected to stay above average under most water supply scenarios, although very dry water supply conditions could result in lake levels falling below average by early winter.

Lake Ontario is just below average and is expected to remain near average under typical water supply conditions. Wetter than average water supply conditions may result in the level moving above average, while drier than average water supply conditions would result in the level moving further below average.

For more information on the probable range of water levels, consult <https://www.canada.ca/en/environment-climate-change/services/water-overview/quantity/great-lakes-levels-related-data/levelnews-great-lakes-st-lawrence.html#projection>.

For a graphical representation of recent and forecasted water levels on the Great Lakes, refer to <https://www.tides.gc.ca/en/monthly-water-level-bulletin-great-lakes-and-montreal-harbour>.

November basin statistics			
Lake	Precipitation (percentage of LTA) ^{a,b}	Net basin supply (probability of exceedance) ^{c,d}	Outflows (percentage of LTA) ^a
Superior	93%	88% (very dry)	103%
Michigan-Huron	71%	84% (very dry)	108%
Erie (including Lake St. Clair)	52%	85% (very dry)	107%
Ontario	79%	84% (very dry)	109%

^a As a percentage of the long-term average (LTA).
^b Environment and Climate Change Canada – Canadian Precipitation Analysis System
^c <5% extremely wet; <25% very wet; <45% wet; 45-55% average; >55% dry; >75% very dry; >95% extremely dry.
^d Please refer to the LEVELnews “What is net basin supply” (<https://www.canada.ca/en/environment-climate-change/services/water-overview/quantity/great-lakes-levels-related-data/levelnews-great-lakes-st-lawrence.html#projection>) for a description of net basin supply.
Note: The figures contained in this report are provisional and are subject to change. Data are calculated from the best available observations at the time of posting.

Fall Seasonal Decline Summary

The fall season declines on all the Great Lakes were greater than average as a result of dry water supply conditions in the basin throughout the fall. Aside from the Lake Michigan-Huron Basin, that experienced very wet conditions in October, water supply conditions (characterized by a combination of precipitation, evaporation, and runoff) were dry or very dry for the remaining basins from September to early December. While the seasonal decline has not yet finished in all lakes, we are providing an overview of the above average lake level declines since September.

The following table summarizes the average fall decline from the beginning of September to the beginning of December and highlights the record-breaking season. Lake Superior experienced its fourth largest fall decline on record, while Lake Michigan-Huron experienced close to an average fall decline. Lake Erie experienced its fifth largest fall decline on record, tied with 1952 and 2007. Finally, Lake Ontario experienced its third largest fall decline in the period of record (1918-2023).

Lake	Average fall decline (Sep. – Dec.) (1918–2023)	2023 fall decline (Sep. – Dec.)	Notes
Superior	10 cm	25 cm	Fourth largest fall decline on record
Michigan–Huron	18 cm	22 cm	-
Erie	23 cm	38 cm	Fifth largest fall decline on record
Ontario	29 cm	56 cm	Third largest fall decline on record

Flood information

With water levels remaining high on some lakes, there is a high risk of flooding. Great Lakes water levels are difficult to predict weeks in advance due to natural variations in weather. To stay informed about Great Lakes water levels and flooding, visit the Ontario flood forecasting and warning program website at <https://www.ontario.ca/flooding>.

Additional information can also be found at <https://www.ijc.org/en/labc>, and <https://ijc.org/en/loslrb>.

Information on current water levels and marine forecasts

Monthly levels: A monthly water level bulletin, produced by Fisheries and Oceans Canada is available at <https://www.tides.gc.ca/en/monthly-water-level-bulletin-great-lakes-and-montreal-harbour> and click on the link “[Full Monthly Water Level Bulletin for the Great Lakes and Montréal Harbour \(PDF\)](#)”. This publication is intended to complement the information provided by LEVELnews on a monthly basis.

Daily levels: Current daily lake-wide average levels of all the Great Lakes are available at <https://ire-wm.usace.army.mil/reports/greatLakes/greatLakesLevelsThisMonth/greatLakesLevelsThisMonth.html>.

The daily average water level is an average taken from a number of gauges across each lake and is a good indicator of the overall lake level when it is changing relatively rapidly due to recent high precipitation.

Hourly levels: Hourly lake levels from individual gauge sites can be found at the Government of Canada Great Lakes Water Level Gauging Stations website at <https://canada-preview.adobecqms.net/en/environment-climate-change/services/water-overview/quantity/great-lakes-levels-related-data.html>. These levels are useful for determining real-time water levels at a given site, however, it should be noted that they are subject to local, temporary effects on water levels such as wind and waves.

Marine forecasts: A link to current Government of Canada marine forecasts for wave heights for each of the Great Lakes can be found at <https://www.canada.ca/en/environment-climate-change/services/water-overview/quantity/great-lakes-levels-related-data.html> under the “Wave and wind data heading”. Current marine forecasts for Lakes Superior, Huron, Erie and Ontario are available by clicking on the link of the lake in which you are interested. To view a text bulletin of recent wave height forecasts for all of the Great Lakes, click on the “Text bulletin wave height forecasts for the Great Lakes and St. Lawrence River” link.

FOR MORE INFORMATION:

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