

## Great Lakes – St. Lawrence River Water Levels

### All the Great Lakes experienced very wet conditions during January

During January, the Great Lakes Basin experienced the following:

- The mean monthly water levels of all the Great Lakes were above average.
- All the Great Lakes experienced water supply conditions (a combination of the precipitation, evaporation, and runoff), that were well above average, with Lake Ontario recording its fifth wettest January on record.
- Lake Superior experienced less than average precipitation, Lake Michigan-Huron was close to average, while Lakes Erie and Ontario received higher than average precipitation. The evaporation from the lakes was less than average and the runoff into the lakes was close to average for all the lakes but Lake Ontario, which had much higher than average incoming runoff from rainfall and snowmelt.
- Lakes Superior and Michigan-Huron experienced below average water level declines for January. Both Lake Erie and Lake Ontario rose much more than usual.

Great Lakes water level information:					
January 2023 monthly mean levels					
Lake	Level <sup>a</sup>	Compared to January monthly average (1918–2021)	Compared to January 2022	Compared to record high (1918-2021)	Notes
Superior	183.52 m	18 cm above	28 cm above	19 cm below	-
Michigan–Huron	176.44 m	12 cm above	16 cm below	82 cm below	-
St. Clair	175.15 m	28 cm above	30 cm below	65 cm below	-
Erie	174.28 m	26 cm above	26 cm below	58 cm below	-
Ontario	74.66 m	8 cm above	21 cm below	73 cm below	-

<sup>a</sup>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/>

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Relative to their beginning-of-February levels and with average water supplies for this time of year, Lake Superior is expected to continue its seasonal decline into late winter, while the other lakes are expected to begin the transition from their seasonal decline to their seasonal rise in the coming months.

With water levels remaining above average in all 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.

We have updated the LEVELnews web page to include more timely monthly lake level data. Read more about it below.

<b>Great Lakes water level information:</b>				
<b>January lake level changes<sup>a</sup></b>				
<b>Lake</b>	<b>January lake level change (1918–2021)</b>	<b>January monthly average change (1918-2021)</b>	<b>Compared to average January change (1918-2020)</b>	<b>Notes</b>
Superior	5 cm decline	7 cm decline	less than average decline	-
Michigan–Huron	no change	3 cm decline	less than average decline	-
St. Clair	13 cm decline	12 cm decline	close to average decline	-
Erie	15 cm rise	1 cm decline	much higher than average rise	10th highest rise on record
Ontario	19 cm rise	6 cm rise	much higher than average rise	-

<sup>a</sup> 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-February level <sup>a</sup>					
Lake	Level <sup>a,b</sup>	Compared to February beginning-of-month average (1918–2021)	Compared to February 2022	Compared to record high (1918-2021)	Notes
Superior	183.49 m	19 cm above	31 cm above	19 cm below	-
Michigan–Huron	176.43 m	13 cm above	13 cm below	85 cm below	-
St. Clair	175.15 m	35 cm above	5 cm above	31 cm below	-
Erie	174.33 m	32 cm above	13 cm below	43 cm below	-
Ontario	74.72 m	11 cm above	16 cm below	31 cm below	-

<sup>a</sup> At the beginning of February, all of the Great Lakes were at least 29 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/>

<sup>b</sup>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 above its average level and is expected to remain so under most water supply conditions.

Lake Michigan-Huron is expected to remain above average under most water supply conditions.

Lake Erie is expected to stay above average under most water supply scenarios.

Lake Ontario is above average and is expected to remain so under typical water supply conditions within the next few months. Water levels could move further above average if wetter than average water supply conditions are experienced or move below average if drier than average conditions prevail.

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>.

January basin statistics			
Lake	Precipitation (percentage of LTA) <sup>a,b</sup>	Net basin supply (probability of exceedance) <sup>c,d</sup>	Outflows (percentage of LTA) <sup>a</sup>
Superior	82%	15% (very wet)	105%
Michigan-Huron	105%	10% (very wet)	125%
Erie (including Lake St. Clair)	169%	13% (very wet)	113%
Ontario	126%	3% (extremely wet)	117%

<sup>a</sup> As a percentage of the long-term average (LTA).  
<sup>b</sup> Environment and Climate Change Canada – Canadian Precipitation Analysis System  
<sup>c</sup> <5% extremely wet; <25% very wet; <45% wet; 45-55% average; >55% dry; >75% very dry; >95% extremely dry.  
<sup>d</sup> 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.

### More timely Great Lakes water level data now available

In order to distribute the raw water level data to the public in a more timely manner, preliminary data from the previous month will now be published on the same website as LEVELnews (<https://www.canada.ca/en/environment-climate-change/services/water-overview/quantity/great-lakes-levels-related-data/levelnews-great-lakes-st-lawrence.html#toc0>). It is expected that this table will be updated within the first week of the next month and LEVELnews will follow later in the month with a more detailed description of the lake level information and forecasts. The table contains the average level for the last month for each lake, how it compares to the long-term average, the record values, and the change since the previous month.

### 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

**Daily levels:** Current daily lake-wide average levels of all the Great Lakes are available at <https://lre-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.adobecgms.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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