



LEVELnews

Great Lakes – St. Lawrence River Water Levels

Lakes Michigan-Huron, Superior and Erie stay well above average going into the fall

For the first time in 2020, Lake Michigan-Huron was below its record high monthly level during the period of record (1918-2019), with a September level 4 cm lower than the previous record in 1986. Lake Superior’s level was the ninth highest September level ever recorded, 7 cm below last year’s record level and Lake Erie was at its second highest level coming in at 4 cm below last year’s record level. Lake Ontario was 10 cm above average and 39 cm below the record level of last year.

Lake Superior started October at its seventh highest level on record, 8 cm lower than last year. Lake Michigan-Huron started the month at the same level it was at last year, so once again it starts October at the second highest level on record, 19 cm lower than the record set in 1986. The level of Lake Erie was 8 cm lower than last year, which is the third highest on record. Lake Ontario started the month 36 cm lower than the record high water level of last year.

Precipitation in September was below average for all the lakes, particularly over Lake Superior and Lake Erie. The outflow from Lake Michigan-Huron was the highest September outflow on record and Lake Erie’s outflow was the second highest for the month of September.

Great Lakes Water Level Information				
Lake	September 2020 Monthly Mean Level		Beginning-of-October 2020 Level	
	Compared to Monthly Average (1918–2018)	Compared to One Year Ago	Compared to Beginning-of-Month Average (1918–2018)	Compared to One Year Ago
Superior	25 cm above	7 cm below	27 cm above	8 cm below
Michigan–Huron	82 cm above	7 cm above	82 cm above	Same
St. Clair	78 cm above	2 cm above	71 cm above	8 cm below
Erie	65 cm above	4 cm below	61 cm above	8 cm below
Ontario	10 cm above	39 cm below	8 cm above	36 cm below

At this time of year, all the lakes are continuing their seasonal declines. With average conditions, Lake Superior should remain above average for the next six months. Lakes Michigan-Huron and Erie would approach record levels early next year only if there were wet conditions. Lake Ontario is expected to stay above average during the fall with average conditions.

With high levels on some of the lakes, any storms and strong winds increase the risk for accelerated shoreline erosion and flooding to occur in low-lying areas. For current information and forecasts, please refer to local sources of information listed below.

September monthly levels

Lake Superior was 25 cm above its September monthly-mean water level and 7 cm lower than its level last year (which was the highest in the period of record). This year was the ninth highest September level on record.

Lake Michigan–Huron’s monthly-mean level in September was 82 cm above average at 7 cm above last September’s level. This was the second highest September level on record at 4 cm below the previous monthly record value in 1986.

Lake Erie’s monthly-mean level was 65 cm above average at 4 cm below its September 2019 level. This was the second highest September lake level on record behind only last year’s level.

Lake Ontario’s September monthly-mean level was 10 cm above average and 39 cm lower than the record high from a year ago.

Lake level changes

The level of Lake Superior held steady for a second month in a row during the month of September, while it typically declines by 1 cm.

Lake Michigan–Huron went down by 10 cm during the month of September, more than its average decline of 6 cm.

The level of Lake Erie went down by 15 cm in September, more than its typical decline of 10 cm.

Lake Ontario is another lake that experienced a higher than average decline, with the level going down by 22 cm compared to its average decline of 15 cm.

(Note that lake level changes are based on the levels at the beginning of the month and not the monthly average levels)

September Precipitation over the Great Lakes^{1,2}

Great Lakes Basin	75%	Lake Erie	76%
Lake Superior	65%	(including Lake St. Clair)	
Lake Michigan–Huron	82%	Lake Ontario	69%

September Outflows from the Great Lakes¹

Lake Superior	107%	Lake Erie	124%
Lake Michigan–Huron	133%	Lake Ontario	119%

¹ As a percentage of the long-term average.

² US Army Corps of Engineers

NOTE: These figures are preliminary.

Beginning-of-October lake levels

Lake Superior’s beginning-of-October level was 27 cm above average, which is 8 cm lower than last year, and the seventh highest on record.

Lake Michigan–Huron’s beginning-of-October level was 82 cm above average and at the same level as it was last year. This is tied for the second highest in the period of record, with a level that is 19 cm lower than the previous beginning-of-month record for October set in 1986.

Lake Erie was 61 cm above average at the beginning of October and 8 cm lower than the same time last year. This level is the third highest on record, 15 cm behind the record high in 1986.

Lake Ontario’s level at the start of October was 8 cm above average and 36 cm lower than the record high water levels of last year.

At the beginning of October, all of the Great Lakes were at least 56 cm above their chart datum level (chart datum is a reference elevation

for each lake in order to provide more information on the depth of water for safe boat navigation on the lakes).

Water levels forecast

At this time of year, all the lakes are continuing their seasonal decline.

The level of Lake Superior is expected to stay well above average if it receives average water supplies.

Lake Michigan-Huron looks like it will likely remain below record levels, but much higher than average in the coming months. However, above average water supplies could bring the level back above record levels by the beginning of winter.

With average conditions, Lake Erie would see levels decline even more below the record levels, but stay well above average throughout the fall. Very wet conditions could result in the levels approaching record levels to start the winter.

Lake Ontario would continue its seasonal decline with average conditions and remain above average throughout the fall and into the winter.

For more information on the probable range of water levels consult the July 2018 edition of LEVELnews at <https://www.canada.ca/en/environment-climate-change/services/water-overview/quantity/great-lakes-levels-related-data/levelnews-great-lakes-st-lawrence/july-2018.html>

For a graphical representation of recent and forecasted water levels on the Great Lakes, refer to the Canadian Hydrographic Service's Monthly Water Levels Bulletin at: <https://waterlevels.gc.ca/C&A/bulletin-eng.html>

Summary of the 2020 seasonal rise

Assuming that Lake Superior has now seen its highest level of the season (not a given, but likely), we can look at how the seasonal rise in the lakes compared to their averages.

Lake	Average seasonal rise (1918-2019)	2020 seasonal rise
Superior	34 cm	24 cm
Michigan-Huron	33 cm	23 cm
Erie	44 cm	42 cm
Ontario	60 cm	29 cm

Lake Superior experienced about two thirds of its typical rise this year. Although as the lake started the year near record levels, even this less than typical rise put the level near record levels during the summer.

Lake Michigan-Huron also saw a rise that was less than its average and started the year at record levels. This resulted in the lake experiencing record high water levels for the first 8 months of the year.

The 2020 season rise in Lake Erie was very close to its average. However, most of this rise happened very early in the year, resulting in some record high monthly levels in the late winter and early spring, but going below these record highs by the summer.

The rise of Lake Ontario was about half of its typical seasonal rise, the peak was also about a month earlier than its average.

Information on flooding

With water levels so high, the risk of flooding is also high. Great Lakes water levels are hard to predict weeks in advance due to natural variations in weather. To stay informed on Great Lakes water levels and flooding, visit the Ontario flood forecasting and warning program web site at <https://www.ontario.ca/flooding>.

Additional information can also be found at the International Lake Superior Board of Control web site, <https://www.ijc.org/en/lisbc>, and the International Lake Ontario–St. Lawrence River Board web site, <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 on the [Great Lakes water levels and related data](#) by clicking on "[Daily water levels for the current month](#)". 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 change when it is changing relatively rapidly due to the high precipitation recently experienced.

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:

<http://tides.gc.ca/eng/find/region/6>. 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 on the [Great Lakes water level and related data web page](#) 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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