



LEVELnews

Great Lakes – St. Lawrence River Water Levels

Three of the Great Lakes had record high levels in February

All the lakes except for Lake Ontario had record high average levels for the month of February, with Lakes Michigan-Huron and Erie topping their previous record by 14 cm and 12 cm, respectively. Both Lakes Michigan-Huron and Erie started March at record high levels for the month, while Lake Superior was tied for its second highest. Lake Ontario's level at the start of March was the sixth highest on record.

We are now at the time of the year when all of the lakes with the exception of Lake Superior are starting or continuing their seasonal rise. Typically Lake Superior should continue its seasonal decline for another month before starting to rise again.

Lake Michigan-Huron has the highest likelihood to remain above record levels in the next few months, as average conditions would still see record highs throughout the spring and into the summer. Lake Erie would also see record highs for the next months with average water supplies while Lake Superior and Lake Ontario would stay below their record values, but still well above average.

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Great Lakes Water Level Information				
Lake	February 2020 Monthly Mean Level		Beginning-of-March 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	37 cm above	6 cm above	33 cm above	Same as last year
Michigan–Huron	96 cm above	42 cm above	94 cm above	38 cm above
St. Clair	99 cm above	38 cm above	92 cm above	22 cm above
Erie	90 cm above	29 cm above	86 cm above	25 cm above
Ontario	51 cm above	15 cm above	47 cm above	10 cm above

Erie would also see record highs for the next months with average water supplies while Lake Superior and Lake Ontario would stay below their record values, but still well above average.

With very high levels on all of the lakes and the possibility of large storms and winds, there is a high 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.

February monthly levels

All the lakes except for Lake Ontario had record high average levels for the month of February. As for Lake Ontario, it was the fourth highest average February lake level in the period-of-record (1918-2019).

Lake Superior was 37 cm above its February monthly-mean water level and 6 cm above last year’s February level. This is the highest February level on record, one cm above the previous highest level set in 1986.

Lake Michigan–Huron’s monthly-mean level in February was 96 cm above average, 42 cm above last February’s level. This also puts it at the highest February level, an incredible 14 cm above the 1986 monthly record value.

Lake Erie’s monthly-mean level was 90 cm above average, 29 cm above its February 2019 level. This was the highest February lake level on record, 12 cm above the record high February values of both 1986 and 1987.

Lake Ontario’s February monthly-mean level was 51 cm above average and 15 cm higher than a year ago. This made it the fourth highest February on record, 15 cm below the record high year of 1952.

Lake level changes

Lake Superior’s levels went down by 10 cm in February, twice its typical decline of 5 cm between the beginning of February and March.

This is the second largest lake level fall for this month.

Lake Michigan–Huron went down by 6 cm during the month of February, while it typically declines by only 1 cm.

The level of Lake Erie did not change from February to March, while it typically rises by 3 cm at this time of year.

Lake Ontario went down by 5 cm, when on average it rises by 3 cm rise from February to March.

February Precipitation over the Great Lakes^{1,2}			
Great Lakes Basin	50%	Lake Erie	57%
Lake Superior	42%	(including Lake St. Clair)	
Lake Michigan–Huron	48%	Lake Ontario	63%
February Outflows from the Great Lakes¹			
Lake Superior	127%	Lake Erie	141%
Lake Michigan–Huron	161%	Lake Ontario	147%
¹ As a percentage of the long-term average.			
² US Army Corps of Engineers			
NOTE: These figures are preliminary.			

Beginning-of-March lake levels

Both Lakes Michigan-Huron and Erie started March at record high beginning-of-month levels for any March in the period of record (1918–2018).

Lake Superior’s beginning-of-March level was 33 cm above average, which is the same level as in March 2019. This beginning-of-March level is tied for the second highest in the period of record, 4 cm less than the highest beginning-of-month recorded in 1986.

Lake Michigan–Huron’s beginning-of-March level was 94 cm above average and 38 cm higher than its level at the same time last year. This is the highest in the period of record, with a level that is 13 cm higher than the previous beginning-of-month record for March set in 1986.

Lake Erie was 86 cm above average at the beginning of March and 25 cm higher than the same time last year. This level is the highest on record at 9 cm more than the previous beginning-of-March record set in 1986.

Lake Ontario's level at the start of March was 47 cm above average, 10 cm higher than the water levels last year and the sixth highest on record. The last time the level was this high at the start of March was in 1998.

At the beginning of March, all of the Great Lakes were at least 38 cm above their chart datum level (Note: 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

We are at the time of year when only Lake Superior would typically still be declining under average water supplies and all the other lakes would be starting to go up.

As mentioned above, the level of Lake Superior is expected to decline during the next month if it receives average water supplies staying below record values. However, very wet conditions would see the lake again getting close to those record values.

Considering where Lake Michigan-Huron starts the month of March, it is not surprising that it would stay above record levels with average water supplies, in fact, drier than average water supplies would be needed to prevent record high levels throughout the spring.

It is a similar situation for Lake Erie, which also starts out March at a record high level. This means that even with average conditions, the lake level would stay just above record values for the next few months.

Average water supplies would keep Lake Ontario well above average and very dry conditions would see the water levels approach the average. If the lake experience wet conditions, Lake Ontario would stay below record values for the next few months.

For more information on the probable range of water levels consult the March 2019 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/march-2019.html>

FOR MORE INFORMATION:

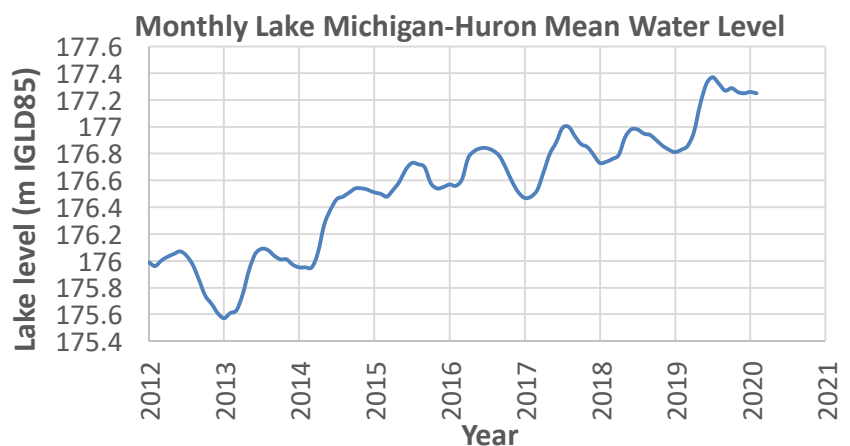
For a graphical representation of recent and forecasted water levels on the Great Lakes, refer to the Canadian Hydrographic Service's Monthly Water Levels Bulletin at:

<https://waterlevels.gc.ca/C&A/bulletin-eng.html>

The recent rise of Lake Michigan-Huron

In January of 2013, Lake Michigan-Huron had a mean water level of 175.57 m, which was not only the lowest January level, but also the lowest of any month. Since then the lake has seen an almost constant seasonal rise (see Figure below) which has resulted in the level of the lake in January 2020 of 177.26 m, the highest February water level in the period of record. Thus the lake went up by 1.69 m in the span of just 7 years, showing just how quickly the lake levels can fluctuate from being record lows to record highs.

According to data from the Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data (<http://www.greatlakescc.org>), there was about 8% increase in the precipitation for Lake Michigan-Huron from 2012-2019 compared to the usual 30 year meteorological averaging period of 1980-2011. For the same period, Lake Superior basin was about 20% wetter, which resulted in an increase in flow to Lake Michigan-Huron from Lake Superior of about 16%. Thus, the rise in Lake Michigan-



Huron levels was a combination of increased precipitation on the lake as well as the increased flow from Lake Superior.

Information on flooding

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.

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ISSN 1925-5713

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