

## Information

Recorded monthly mean water levels in this bulletin are derived from a representative network of water level gages on each lake (see cover map). Providers of these data are the U.S. Department of Commerce, NOAA, National Ocean Service, and Integrated Science Data Management, Department of Fisheries and Oceans, Canada. The Detroit District, Corps of Engineers and Environment and Climate Change Canada derive historic and projected lake levels under the auspices of the Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data.

This bulletin is produced monthly as a public service. The Corps also, on a weekly basis publishes online the *Great Lakes, Connecting Channels and St. Lawrence River Water Levels and Depths*, which provides a forecast of depths in the connecting rivers between the Great Lakes and the International Section of the St. Lawrence River. This *Monthly Bulletin of the Lake Levels for the Great Lakes* may be obtained free of charge by writing to the address shown on the front cover, by calling (313) 226-6441 or emailing [hhpm@usace.army.mil](mailto:hhpm@usace.army.mil). Notices of change of address should include the name of the publication. This information is available on the internet at <http://www.lre.usace.army.mil/Missions/GreatLakesInformation.aspx>.

### Great Lakes Basin Hydrology November 2019

Preliminary estimates indicate that there was below average precipitation for all of the Great Lakes this November. Precipitation was closest to normal in the Lake Michigan-Huron basin, estimated at about 78% of its average. Totals were the lowest, as compared to average, in the Lake Ontario basin, at only 41% of average. Despite drier conditions, all basins except Lake Superior received above average water supplies. This is likely due to the influence of enhanced runoff from the wet weather in October. Lake Superior was the only basin to receive below average water supply, which can likely be attributed to colder than usual conditions. Outflows for all of the lakes continued to be above average during November.

Monthly mean water levels for November continued to be below their monthly record highs. Lakes Superior, Michigan-Huron, St. Clair and Erie either entered, or continued their seasonal decline this month, declining 3, 1, 2, and 2 inches respectively. Lake Ontario remained at approximately the same monthly mean water level as October. Seasonal declines are forecasted to continue on all of the Great Lakes this month, except for Lake Erie, which is forecasted to remain at the same level in December, before resuming to decline in January. Of note, water levels remain well above their long term average levels for the 100-year period of record (1918-2018).

PRECIPITATION (INCHES)								
BASIN	November				12-Month Comparison			
	2019	Average (1900-2017)	Diff.	% of Average	Last 12 months	Average (1900-2017)	Diff.	% of Average
Superior	1.73	2.49	-0.76	69	29.54	30.58	-1.04	97
Michigan-Huron	2.14	2.76	-0.62	78	34.61	32.52	2.09	106
Erie	1.31	2.85	-1.54	46	36.76	35.53	1.23	103
Ontario	1.28	3.13	-1.85	41	37.28	35.84	1.44	104
Great Lakes	1.81	2.74	-0.93	66	33.71	32.74	0.97	103

LAKE	November WATER SUPPLIES <sup>1</sup> (cfs)		November OUTFLOW <sup>2</sup> (cfs)	
	2019	Average (1900-2008)	2019	Average <sup>3</sup> (1900-2008)
Superior	6,000	17,000	100,000	78,000
Michigan-Huron	126,000	40,000	254,000	190,000
Erie	5,000	-2,000	257,000	201,000
Ontario	38,000	20,000	313,000	239,000

Notes: Values (excluding averages) are based on preliminary computations; cfs denotes cubic feet per second.

<sup>1</sup> Net basin supply is the net result of precipitation falling on the lake, runoff from precipitation falling on the land which flows to the lake, and evaporation from the lake. Negative net basin supply denotes evaporation exceeded runoff and precipitation. The net total supply can be found by adding the net basin supply and the outflow from the upstream lake.

<sup>2</sup> Does not include diversions.

<sup>3</sup> Lake Ontario average water supplies and average outflows are based on period of record 1900-2005