

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* is available free of charge by writing to the address shown on the front cover, by calling (313) 226-6441 or emailing hphm@usace.army.mil. Notices of change of address should include the name of the publication. This information is available on the internet at <https://www.lre.usace.army.mil/Missions/GreatLakesInformation.aspx>.

Great Lakes Basin Hydrology November 2021

Preliminary estimates of precipitation indicate the Great Lakes basin received below average precipitation during the month of November. The individual lake basins also received below average precipitation for the month, which ranged between 54% to 87% of average, depending on the lake. Water supplies were well below average on Lakes Superior and Michigan-Huron, with Superior's provisional water supplies ranking the lowest on record for the month of November. Lake Ontario was the only lake to have above average water supplies during the month. Outflows remained above average out of Lakes Michigan-Huron and Ontario, while Lake Superior's outflow was below average. The flow in the Niagara River was a provisional record high for the month of November.

From October to November, all the lakes experienced a decline in lake level, except for Lake Ontario, which experienced a slight rise in level. Lake Superior and Lake Michigan-Huron each declined 4 inches, Lake St. Clair dropped 5 inches, and Lake Erie declined about 2 inches. Lake Ontario rose 3 inches from October to November. The 6-month forecast projects that all the lakes will decline from November to December.

PRECIPITATION (INCHES)								
BASIN	November				12-Month Comparison			
	2021	Average (1900-2017)	Diff.	% of Average	Last 12 months	Average (1900-2017)	Diff.	% of Average
Superior	2.16	2.48	-0.32	87	23.39	30.59	-7.20	76
Michigan-Huron	1.86	2.76	-0.90	67	27.94	32.52	-4.58	86
Erie	1.56	2.87	-1.31	54	33.46	35.55	-2.09	94
Ontario	2.29	3.15	-0.86	73	34.78	35.83	-1.05	97
Great Lakes	1.93	2.76	-0.83	70	28.17	32.76	-4.59	86

Lake	November WATER SUPPLIES ¹ (cfs)		November OUTFLOW ² (cfs)	
	2021	Average ³ (1900-2008)	2021	Average ³ (1900-2008)
Superior	-73,000	17,000	67,000	78,000
Michigan-Huron	-57,000	39,000	215,000	190,000
Erie	-13,000	-3,000	256,000	201,000
Ontario	38,000	21,000	296,000	238,000

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

¹ 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.

² Does not include diversions.

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