



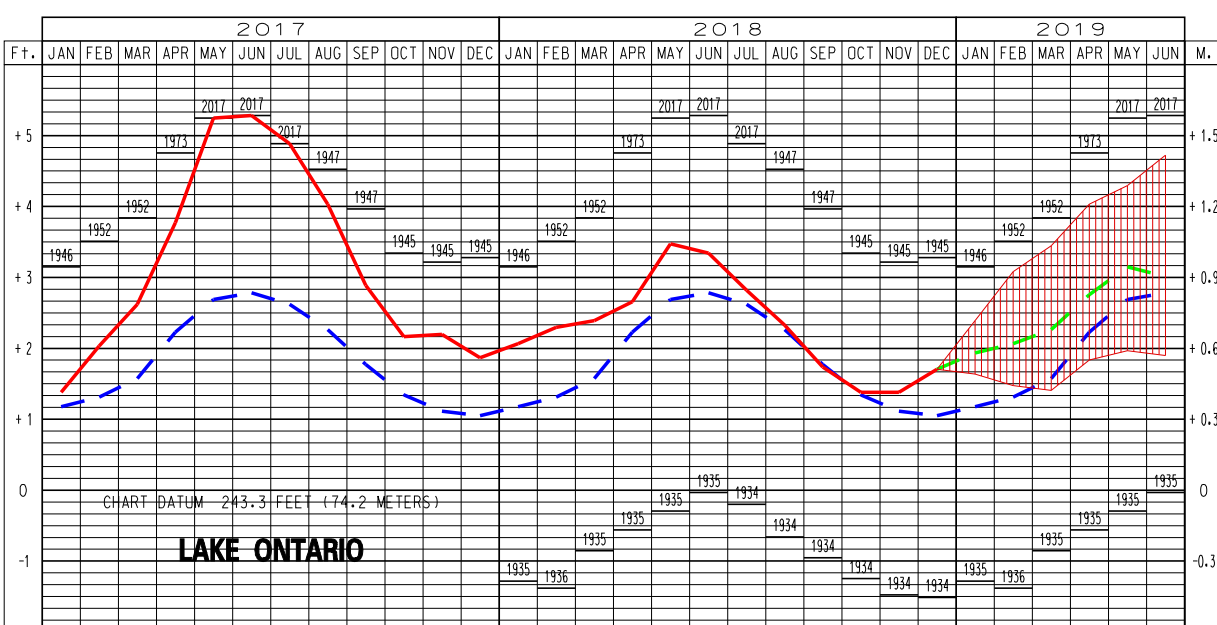
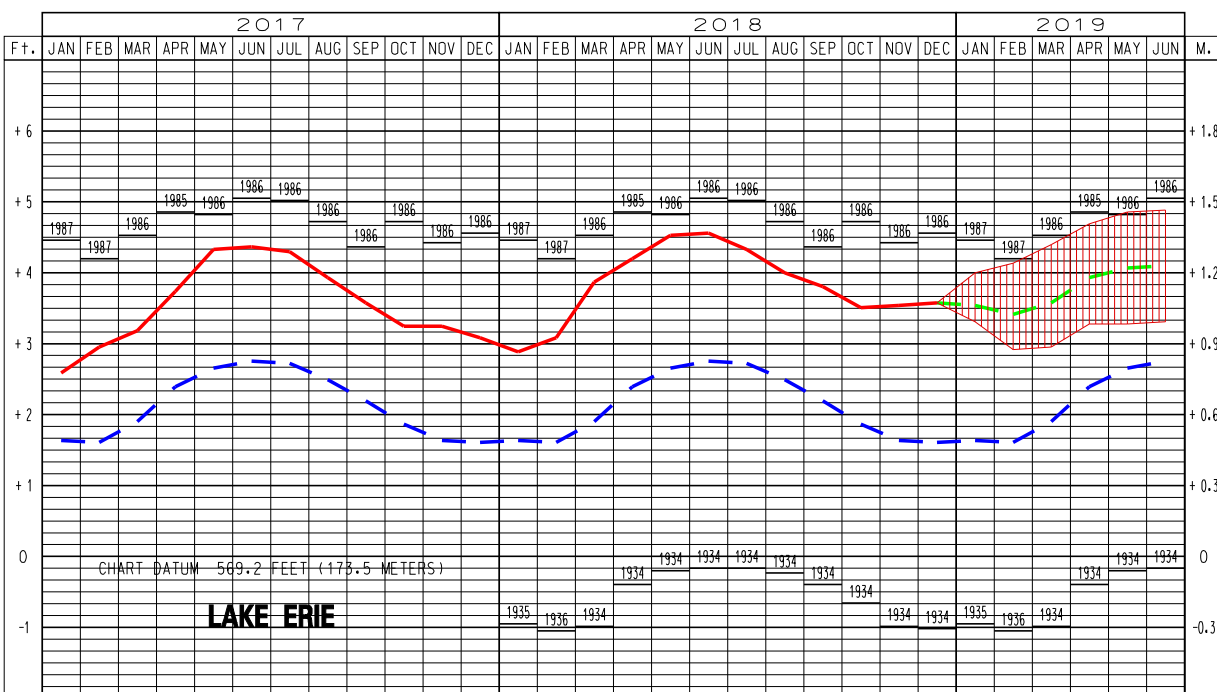
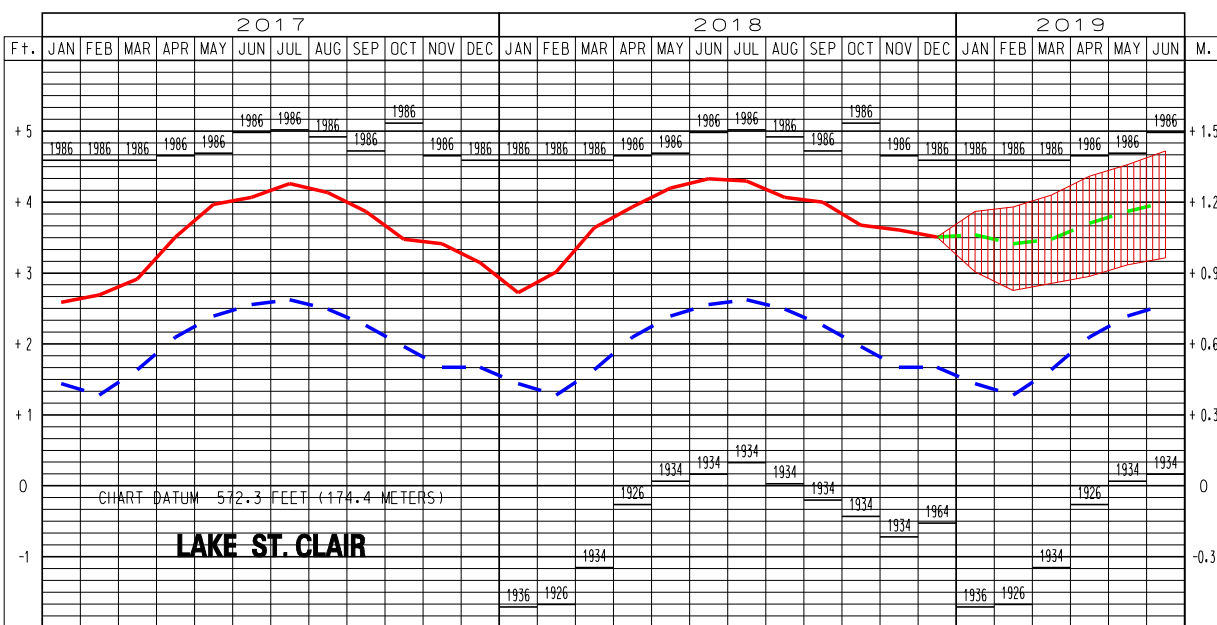
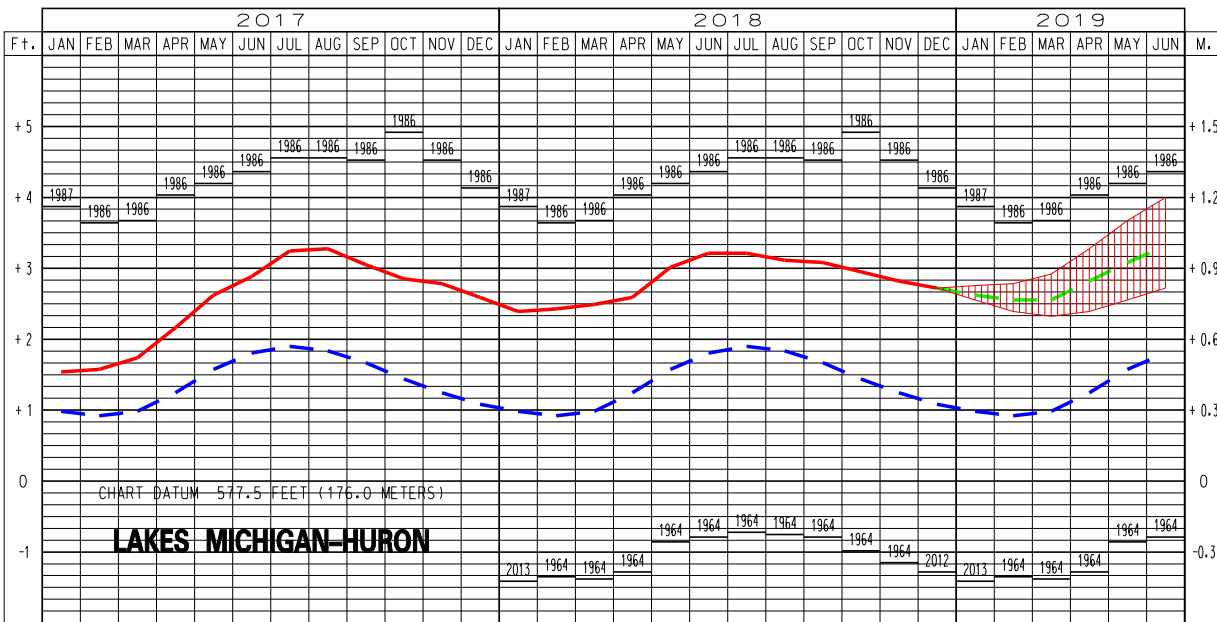
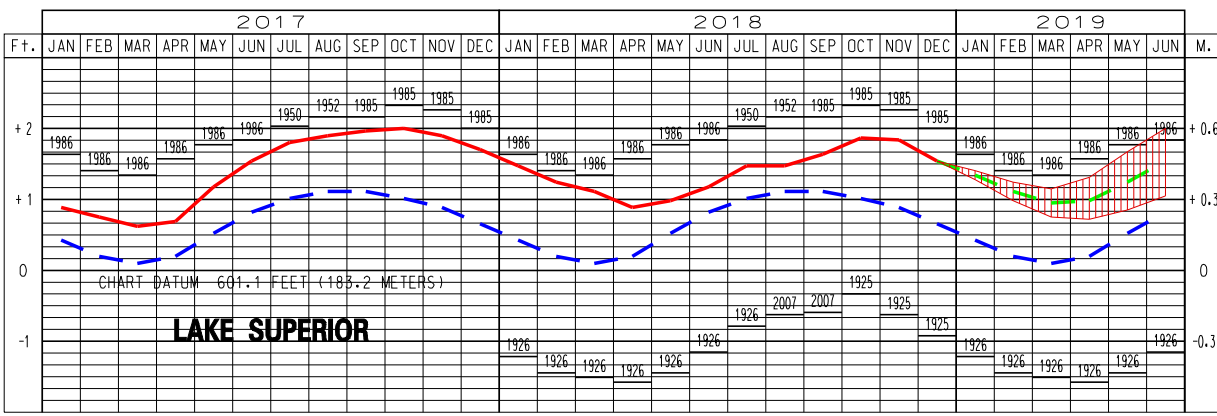
**US Army Corps
of Engineers**
Detroit District

**MONTHLY BULLETIN OF
LAKE LEVELS FOR THE
GREAT LAKES**

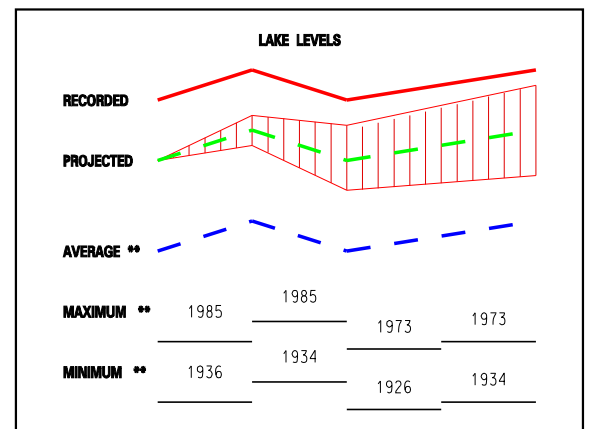
JANUARY 2019

Water levels for the previous year and the current year to date are shown as a solid line on the hydrographs. A projection for the next six months is given as a dashed line. This projection is based on the present condition of the lake basin and anticipated future weather. The shaded area shows a range of possible levels over the next six months dependent upon weather variations. Current and projected levels (solid and dashed lines) can be compared with the 1918–2017 average levels (dotted line) and extreme levels (shown as bars with their year of occurrence). The legend below further identifies the information on the hydrographs.

ELEVATIONS REFERENCED TO THE CHART DATUM OF EACH RESPECTIVE LAKE



LEGEND



The levels on the hydrographs are shown in both feet and meters above (+) or below (-) Chart Datum. Chart Datum, also known as Low Water Datum, is a reference plane on each lake to which water depth and Federal navigation improvement depths on navigation charts are referred.

All elevations and plots shown in this bulletin are referenced to International Great Lakes Datum 1985 (IGLD 1985). IGLD 1985 has its zero base at Rimouski, Quebec near the mouth of the St. Lawrence River (approximate sea level).

DECEMBER MEAN LAKE LEVELS

(IGLD 1985)

	Superior	Mich-Huron	St. Clair	Erie	Ontario
* 2018	Ft. 602.59	580.15	575.69	572.80	245.14
	M. 183.67	176.83	175.47	174.59	74.72
2017	Ft. 602.76	580.02	575.33	572.31	245.31
	M. 183.72	176.79	175.36	174.44	74.77
Ft.	603.05	581.56	576.77	573.79	246.72
** MAX.	M. 183.81	177.26	175.80	174.89	75.20
Yr.	1985	1986	1986	1986	1945
Ft.	600.13	576.15	571.65	568.21	241.93
** MIN.	M. 182.92	175.61	174.24	173.19	73.74
Yr.	1925	2012	1964	1934	1934
** AVG.	Ft. 601.71	578.51	573.85	570.83	244.49
	M. 183.40	176.33	174.91	173.99	74.52

* provisional
** Average, Maximum and Minimum for period 1918–2017

Information

Recorded 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. 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 December 2018

Preliminary estimates indicate that the Great Lakes basin as a whole received below average precipitation in the month of December after a slightly below average November. Lakes Superior, Michigan-Huron and Erie were below average at 64%, 83% and 91% of their respective December averages. Lake Ontario received near average precipitation at 102% of a normal December amount. Water supplies for Lake Superior, Michigan-Huron and Ontario were all well above average, seemingly in contradiction to the precipitation values. A warmer than normal December can lead to increased runoff due to precipitation falling as rain, versus snow. Higher than average outflows persisted from November to December for each of the Great Lakes.

Mean water levels for the month of December remained above their long-term average for all lakes. Lake Superior fell over the past month by approximately four inches. Levels on Michigan-Huron and St. Clair decreased by roughly an inch from November to December. On the contrary, Lake Erie and Ontario both increased from November to December, which is a season where the lakes typically decrease. The delayed decrease can be attributed to warmer temperatures and associated higher runoff. Relative to the December levels in 2017, Lake Superior and Ontario were about 2 inches below what they were, while Michigan-Huron, St. Clair and Erie were 2, 4 and 6 inches above.

PRELIMINARY PRECIPITATION (INCHES)								
BASIN	December				12-Month Comparison			
	2018	Average (1900-2016)	Diff.	% of Average	Average Last 12 Months	Average (1900-2016)	Diff.	% of Average
Superior	1.31	2.04	-0.73	64	26.90	30.58	-3.68	88
Michigan-Huron	1.97	2.36	-0.39	83	31.08	32.55	-1.47	95
Erie	2.43	2.68	-0.25	91	36.19	35.62	0.57	102
Ontario	3.02	2.97	1.80	102	35.43	35.87	-0.44	99
Great Lakes	1.99	2.39	-0.40	83	31.03	32.77	-1.74	95

LAKE	December WATER SUPPLIES ¹ (cfs)		December OUTFLOW ² (cfs)	
	2018	Average (1900-2008)	2018	Average ³ (1900-2008)
Superior	-2,000	-22,000	81,000	72,000
Michigan-Huron	105,000	34,000	214,000	183,000
Erie	21,000	21,000	245,000	201,000
Ontario	69,000	27,000	292,000	234,000

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