



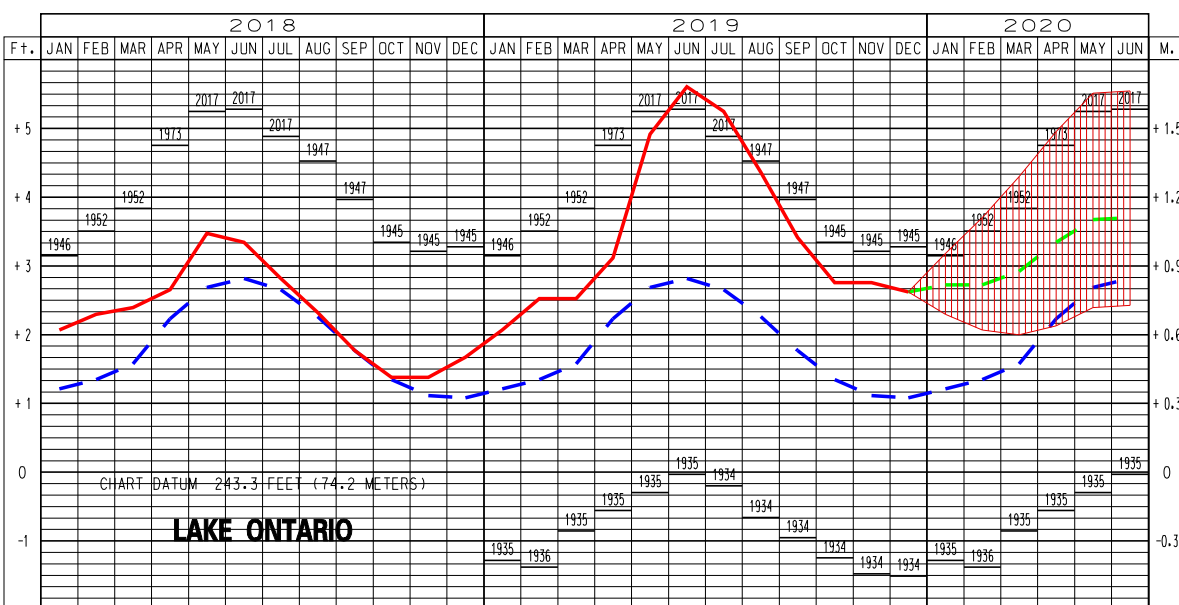
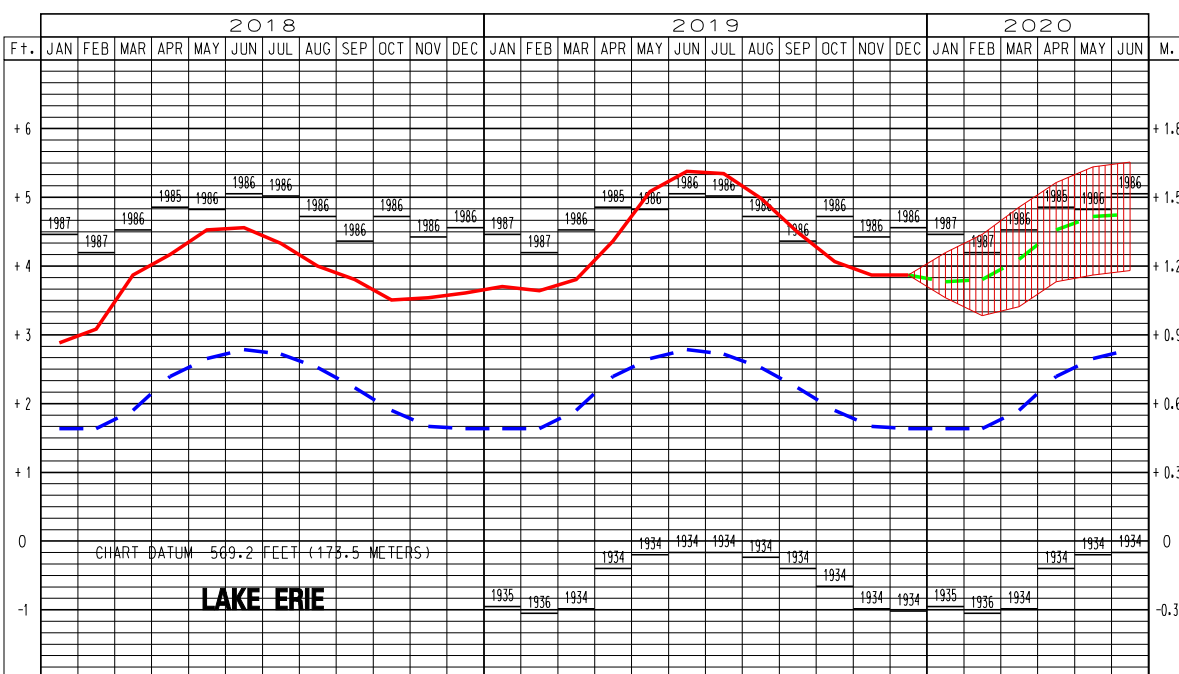
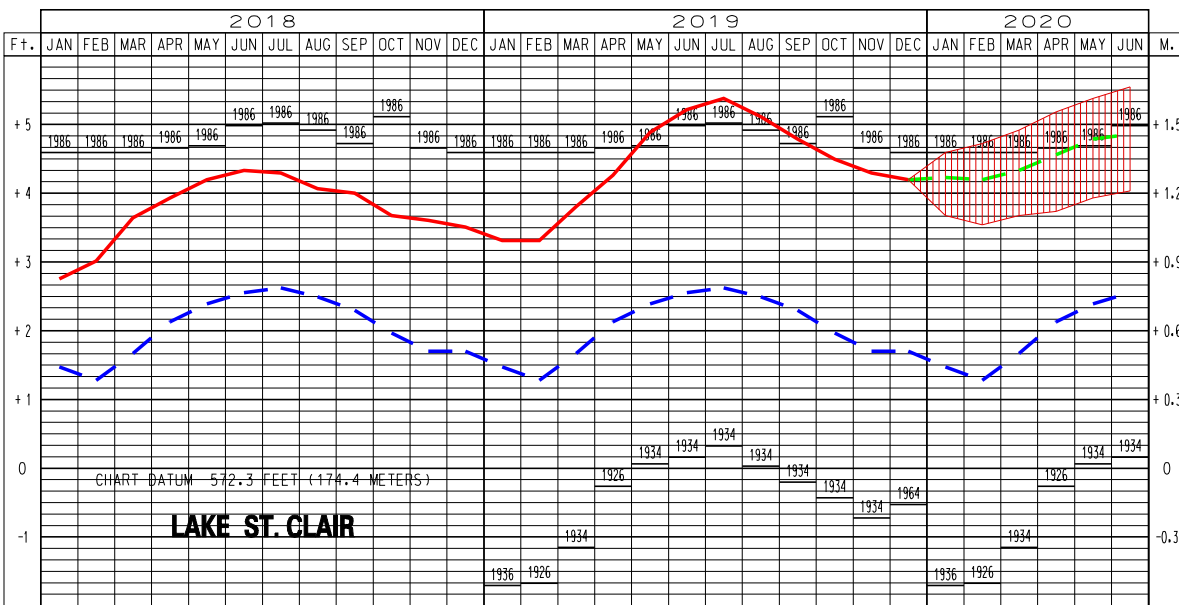
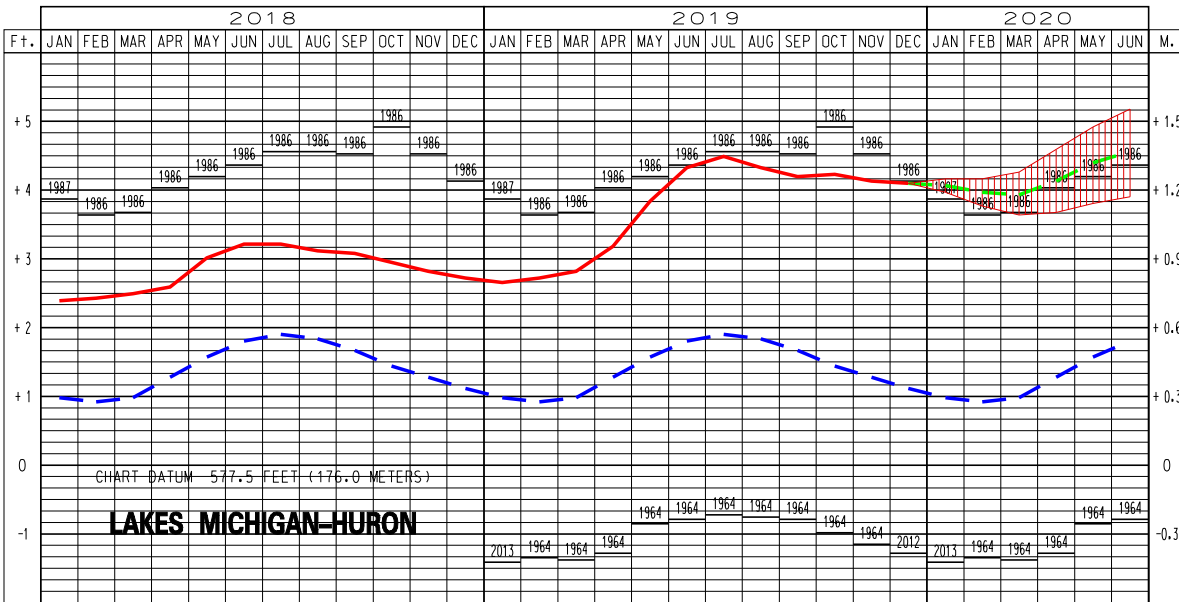
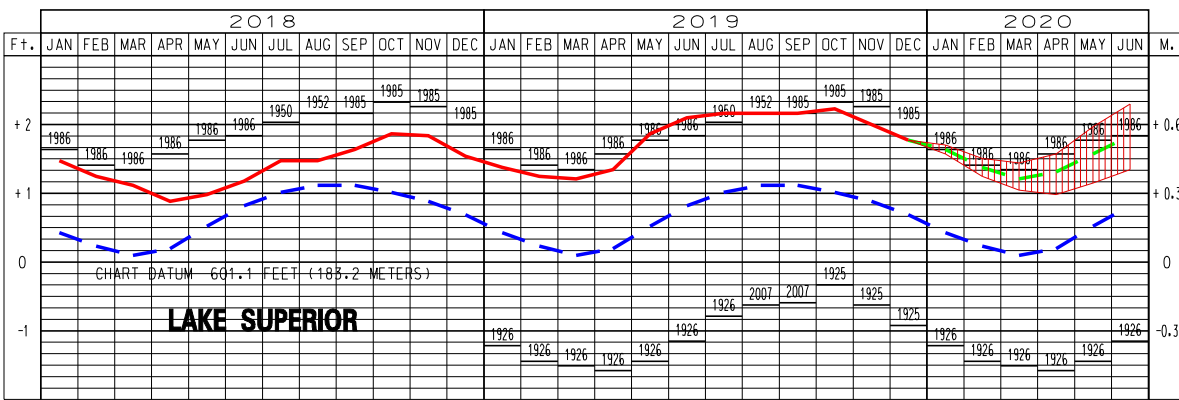
**US Army Corps
of Engineers**
Detroit District

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

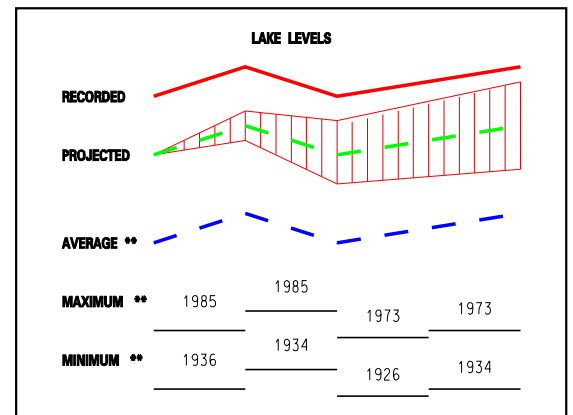
JANUARY 2020

Monthly mean 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 1918–2018 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
* 2019	Ft. 602.82	581.53	576.38	573.10	246.06
	M. 183.74	177.25	175.68	174.68	75.00
2018	Ft. 602.59	580.15	575.69	572.83	245.11
	M. 183.67	176.83	175.47	174.60	74.71
	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
** MIN.	Ft. 600.13	576.15	571.65	568.21	241.93
	M. 182.92	175.61	174.24	173.19	73.74
	Yr. 1925	2012	1964	1934	1934
** AVG.	Ft. 601.74	578.54	573.88	570.87	244.52
	M. 183.41	176.34	174.92	174.00	74.53

* provisional
** Average, Maximum and Minimum for period 1918-2018

Provisional record high water levels reached in 2019 will be coordinated and reflected on the Monthly Bulletin in early 2020.

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. 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 2019

Preliminary estimates indicate that precipitation was average across all of the Great Lakes in December, at 103% of average. Lake Superior basin observed precipitation that was 116% of average, where the snowfall in the last week contributed to a majority of the month's precipitation. December temperatures were above normal across all of the Great Lakes, which contributed to enhanced runoff in the Lake Superior and Lake Michigan-Huron basins. Preliminary water supplies estimates were near record highs, ranking 5th highest on Lake Superior and 4th highest on record on Lake Michigan-Huron. Ontario observed above normal water supplies, approximately double its average for December, while Erie observed considerably below average water supplies. Outflows for all of the connecting channels were above average.

Monthly mean water levels for December continued to be below their monthly record highs. Lake Superior, Michigan-Huron, St. Clair, and Ontario continued their seasonal declines into December, by approximately 3, 0.5, 1 and 2 inches. Lake Erie maintained its monthly average level from November to December. Lake Michigan-Huron was within an inch of its monthly record December high from 1986. Over the next month, seasonal declines are forecasted on all the Great Lakes, except for Lake St. Clair and Lake Ontario, which are forecasted to rise by about a third of an inch and an inch, respectively.

PRECIPITATION (INCHES)								
BASIN	December				12-Month Comparison			
	2019	Average (1900-2017)	Diff.	% of Average	Last 12 months	Average (1900-2017)	Diff.	% of Average
Superior	2.37	2.05	0.32	116	30.60	30.58	0.02	100
Michigan-Huron	2.32	2.35	-0.03	99	34.98	32.52	2.46	108
Erie	2.56	2.67	-0.11	96	36.88	35.53	1.35	104
Ontario	3.00	2.96	1.80	101	37.26	35.84	1.42	104
Great Lakes	2.44	2.38	0.06	103	34.16	32.74	1.42	104

LAKE	December WATER SUPPLIES ¹ (cfs)		December OUTFLOW ² (cfs)	
	2019	Average (1900-2008)	2019	Average ³ (1900-2008)
Superior	39,000	-22,000	89,000	72,000
Michigan-Huron	165,000	34,000	251,000	183,000
Erie	-8,000	21,000	254,000	201,000
Ontario	56,000	27,000	311,000	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