



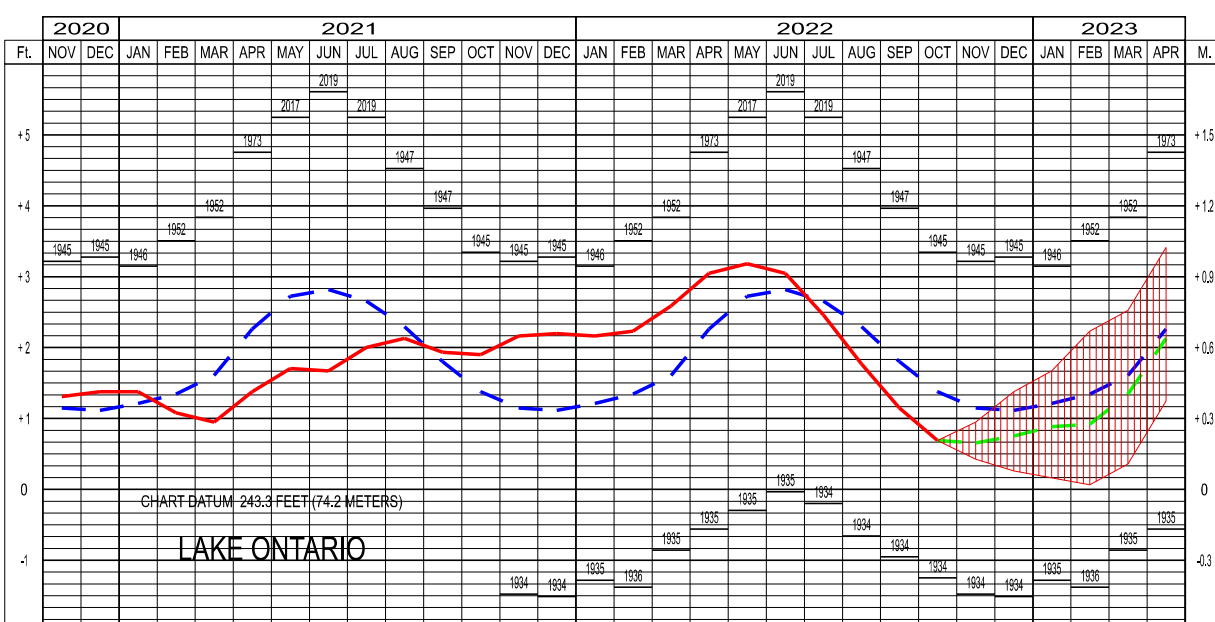
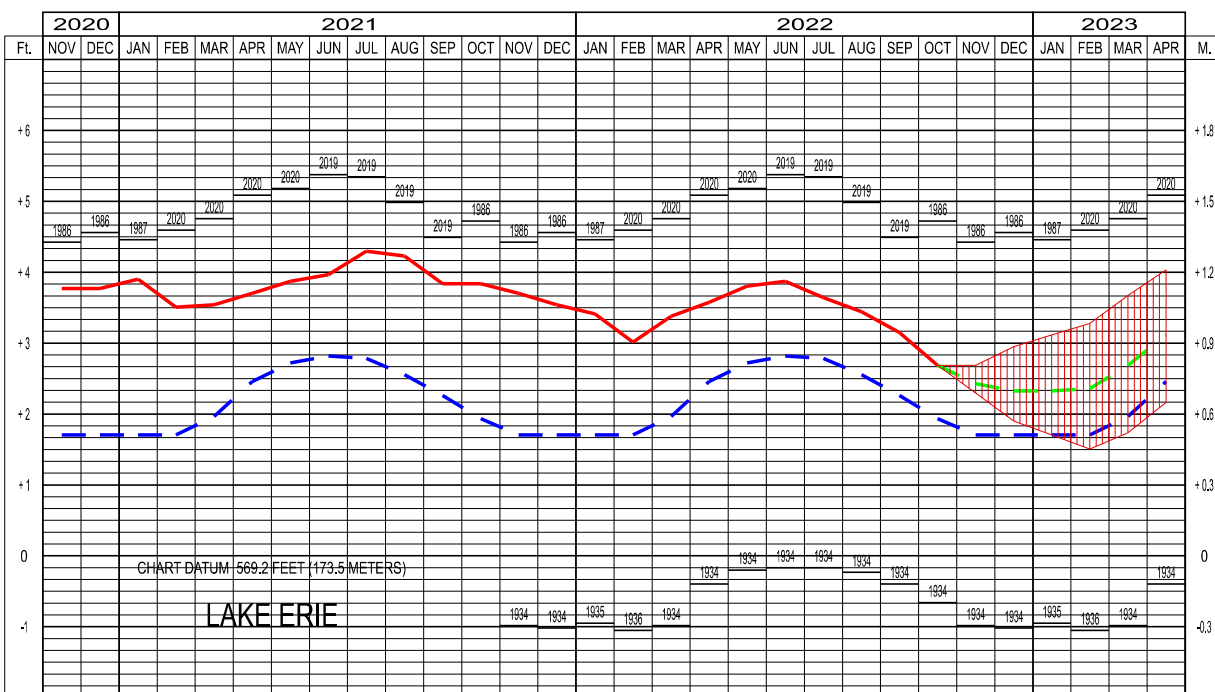
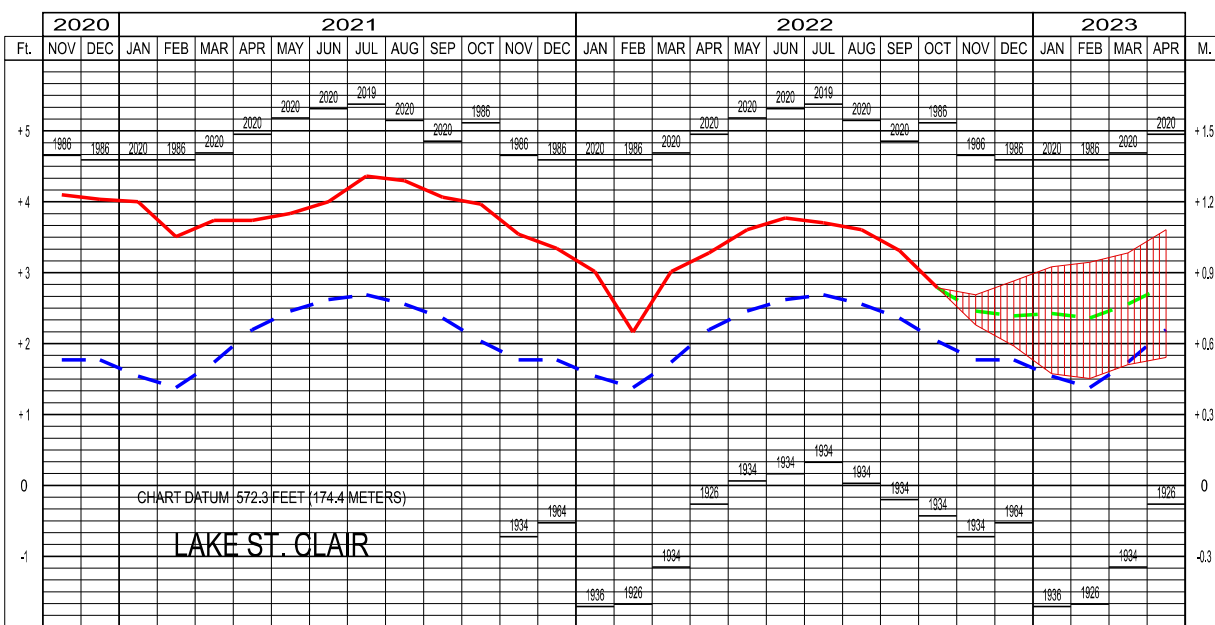
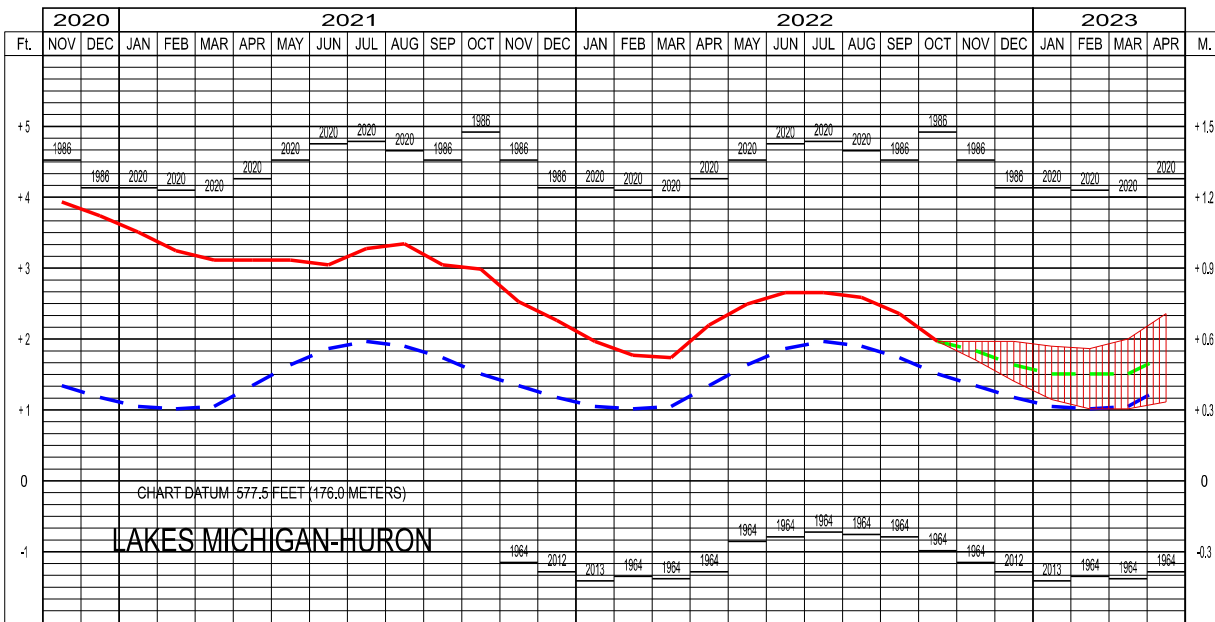
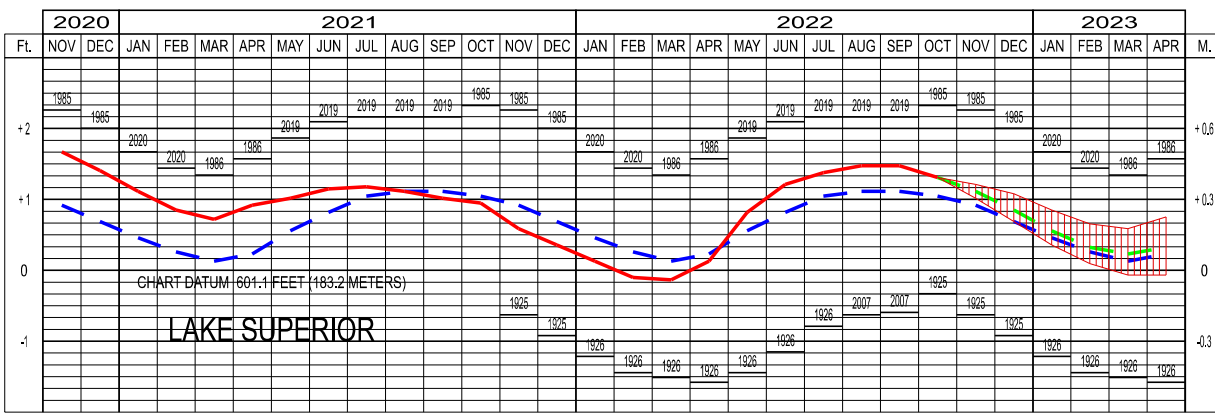
US Army Corps
of Engineers
Detroit District

MONTHLY BULLETIN OF LAKE LEVELS FOR THE GREAT LAKES

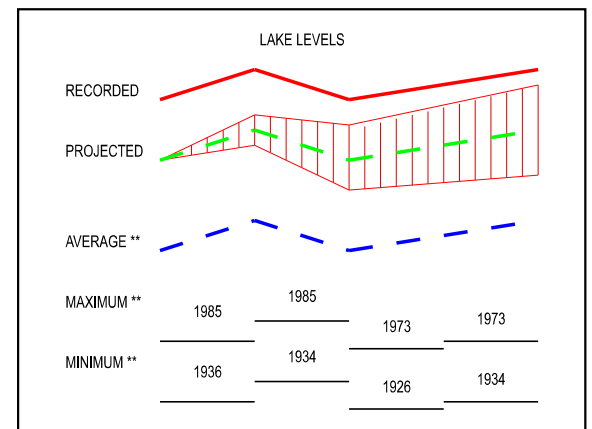
NOVEMBER 2022

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 1918-2021 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 are referenced to the 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).

Visit our website for more information:
<https://www.lre.usace.army.mil/greatlakes>

OCTOBER MEAN LAKE LEVELS

(IGLD 1985)

	Superior	Mich-Huron	St. Clair	Erie	Ontario	
* 2022	Ft.	602.36	579.40	574.97	571.92	244.13
	M.	183.60	176.60	175.25	174.32	74.41
2021	Ft.	602.00	580.41	576.15	573.06	245.34
	M.	183.49	176.91	175.61	174.67	74.78
** MAX.	Ft.	603.38	582.35	577.30	573.95	246.78
	M.	183.91	177.50	175.96	174.94	75.22
** MIN.	Ft.	600.72	576.44	571.75	568.57	242.19
	M.	183.10	175.70	174.27	173.30	73.82
** AVG.	Ft.	602.10	578.94	574.21	571.16	244.82
	M.	183.52	176.46	175.02	174.09	74.62

* provisional
** Average, Maximum and Minimum for period 1918-2021

Information

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

The Corps makes the bulletin 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 supplies a forecast of depths in connecting rivers between Great Lakes and International Section of St. Lawrence River. This *Monthly Bulletin of the Lake Levels for the Great Lakes* is available free of charge by writing to address shown on 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 October 2022

According to preliminary estimates, precipitation in the Great Lakes basin was approximately $\frac{3}{4}$ of average for the 2nd consecutive month. Moreover, all Great Lakes received below average precipitation with Lakes Erie and Ontario experiencing roughly half of their October historical averages. Over the last 12 months, precipitation estimates are below average for all lake basins. In addition, provisional estimates show October water supplies were below average for all of the Great Lakes. Outflows from Lakes Superior, Michigan-Huron, St. Clair, and Erie continued to be above average in October. Preliminary results show the outflow of Lake Ontario into the St. Lawrence River was just slightly below average in October, the first time St. Lawrence monthly flows were below average since January 2016.

From September to October, water levels declined on all of the Great Lakes. The drop in levels ranged from 2 inches for Lakes Superior to around 6 inches for Lakes St. Clair, Erie, and Ontario. The latest Great Lakes water levels 6-month forecast predicts all of the Great Lakes will continue to decline from October to November, although Ontario's monthly mean level is expected to fall less than an inch.

PRECIPITATION (INCHES)								
BASIN	October				12-Month Comparison			
	2022	Average (1900-2019)	Diff.	% of Average	Last 12 months	Average (1900-2019)	Diff.	% of Average
Superior	2.00	2.95	-0.95	68	29.19	30.67	-1.48	95
Michigan-Huron	2.49	3.03	-0.54	82	29.08	32.95	-3.87	88
Erie	1.46	2.87	-1.41	51	28.42	35.94	-7.52	79
Ontario	1.52	3.27	-1.75	46	30.28	36.42	-6.14	83
Great Lakes	2.10	2.99	-0.89	70	29.13	33.07	-3.94	88

Lake	October WATER SUPPLIES ¹ (cfs)		October OUTFLOW ² (cfs)	
	2022	Average ³ (1900-2008)	2022	Average ³ (1900-2008)
Superior	17,000	41,000	96,000	80,000
Michigan-Huron	-6,000	3,000	211,000	191,000
Erie	-38,000	-20,000	218,000	201,000
Ontario	-9,000	8,000	241,000	243,000

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