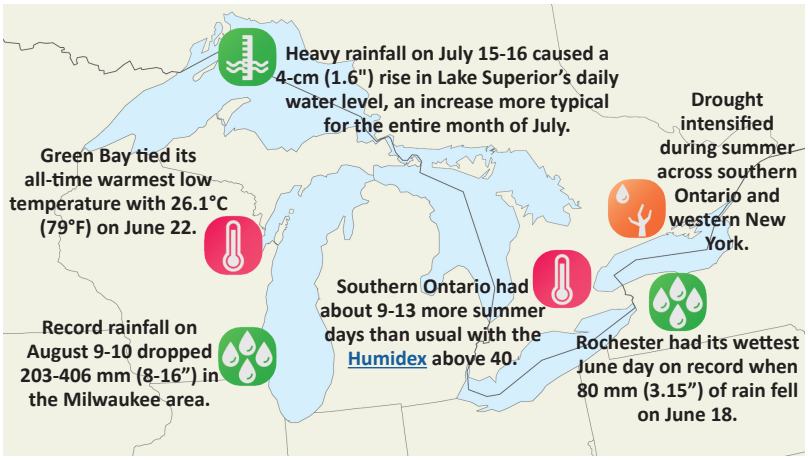
Quarterly Climate Impacts and Outlook

Great Lakes Region

September 2025

Great Lakes Significant Events – *June - August 2025*



A heat wave affected the central and eastern basin in late June. Numerous cities had multiple days of oppressive daytime heat and humidity along with record warm overnight temperatures.

Severe storms swept across the eastern basin on July 7 bringing torrential rain that washed out roads east of the Georgian Bay. Ontario County (New York) had its strongest tornado on record (an EF-2).

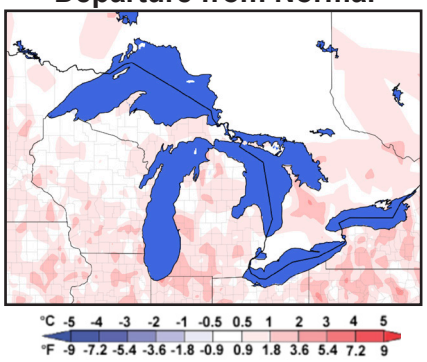
The storm track in July kept the northwestern Great Lakes region wet, with near-normal temperatures. July conditions were notably warmer and more humid with less rainfall in the east.

Historical rainfall and subsequent flooding affected the Milwaukee area in early August. In northern Michigan, Petoskey had its wettest summer on record. Towards the east, drought and dryness spread and intensified in August. Poor air quality from Canadian wildfire smoke was a concern basin-wide throughout summer. On June 3, Grand Portage in northeast Minnesota broke the state's all-time record high Air Quality Index. Barrie, Ontario (north of Toronto), had 24 consecutive days with low air quality from July 13 to August 5.

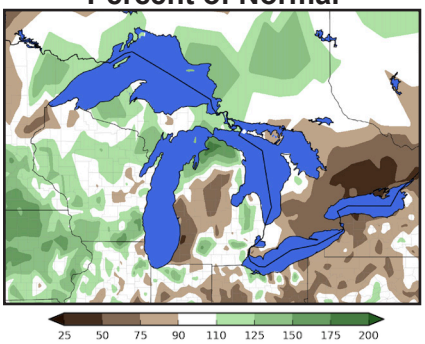
Summer lake surface temperatures had normal daily variability compared to 1995-2024 average conditions, with all lakes having slightly above-average seasonal mean temperatures, except Superior, which was near normal.

Regional Climate Overview – *June - August 2025*

Summer Temperature Departure from Normal



Summer Precipitation Percent of Normal



Precipitation and temperature normals based on 1991-2020.

Air Temperature and Precipitation

Summer air temperature was up to 2°C (4°F) warmer than normal. June and July were up to 3°C (5°F) warmer than normal, especially in the southern Michigan basin in June and Ontario basin in July. August was as much as 2°C (4°F) cooler than normal, particularly in the Erie basin. Record warm June-July low temperatures were measured in 12 U.S. counties surrounding the Great Lakes

Summer precipitation ranged from 25% of normal to 200% of normal. June precipitation ranged from 25% of normal in the Ontario basin to over 200% of normal in the Michigan-Huron basin. July precipitation ranged from 25% of normal in the Ontario basin to over 200% of normal in the western/northern Superior basin. August precipitation ranged from 25% of normal to near normal for many areas; however, parts of the Superior and Michigan-Huron basins had wetter conditions with precipitation totals that were over 200% of normal.

Current Water Levels

Lake	End of Aug 2025 Level Compared to:		Change in Level from beg. of June. to end of Aug	
	Average for Aug	Aug 2024	2024-25 Change in Level	Average Change in Level
Sup.	-8 cm	-1 cm	+17 cm	+13 cm
Mich.-Huron	-14 cm	-23 cm	+2 cm	+1 cm
Erie	+3 cm	-24 cm	-18 cm	-11 cm
Ont.	-3 cm	-7 cm	-29 cm	-24 cm

End of August water levels were below average for all lakes, except Lake Erie, and all lakes were below August 2024 levels. Over summer, Lakes Superior and Michigan-Huron had a mix of wet and dry conditions, which led to their seasonal change in level to be slightly higher than average. Lakes Erie and Ontario had generally drier conditions from the beginning to end of summer that led to larger water level declines than average. All the lakes, except Lake Ontario, were at their lowest end-of-August levels in over 10 years.

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Regional Impacts – *June - August 2025*

Agriculture: Corn in northeast Wisconsin had favorable weather during summer, and farmers expect a good harvest. Wisconsin's cherry harvest was slightly delayed due to cool temperatures in late spring and early summer. A combination of late spring frost followed by a very dry summer left some western Michigan blueberries undersized and harvest was delayed. Late frost reduced Michigan's tart cherry crop by 45% compared to last year. There were reports of wells running dry in northern New York, and crops were showing signs of drought stress. Some farmers opted for early corn harvest in western New York. Southern Ontario farmers were hit hard by the drought, requiring some to haul water for specialty crops and livestock and others seeing poor corn pollination and yields.

Milwaukee Flooding: Heavy rainfall in southeast Wisconsin on August 9-10 resulted in flash flooding that stranded and flooded vehicles at the Wisconsin State Fair, along streets, and in parking garages throughout Milwaukee and Waukesha counties. Major interstate highways were closed due to flooding, home basements filled with water, and emergency responders conducted hundreds of rescues.

June Heat: Wisconsin emergency room visits rose in late June, and there were numerous reports of buckled pavement. Western and central New York also had issues with pavement buckling, and many schools adjusted class schedules as the heat index rose to dangerous levels. Public pools closed across Toronto as outdoor conditions became too warm for lifeguards to safely work.

Cars submerged on a Milwaukee roadway on August 10 (Credit: Noah Reading)

Smoke drifts over Lake Erie on July 19 (Credit: NASA)

Ripe tart cherries (Credit: Andrew McFarlane)

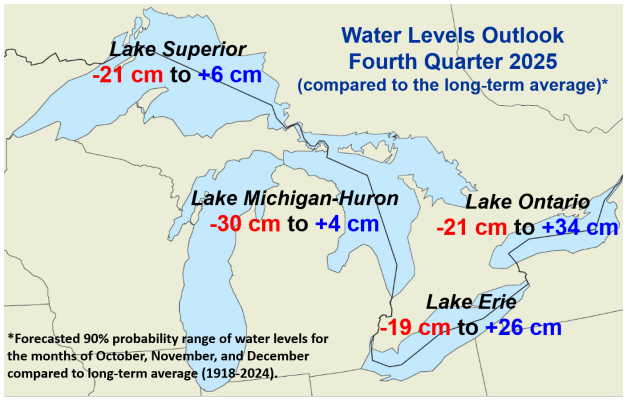
Regional Outlook – *October - December 2025*

Temperature and Precipitation

Canadian and American outlooks show equal chances of above-, below-, or near-normal precipitation across the Great Lakes basin. The Canadian outlook indicates a strong chance of above-normal temperatures basin wide. The American forecasters are predicting slightly increased chances of above-normal temperatures in the central and eastern Great Lakes, with equal chances of any temperature outcome in the western portion of the basin.

Great Lakes Water Level Outlook

The September forecast indicates that during the 4th quarter (Oct, Nov, Dec) all lakes will be in their period of seasonal decline, with Lakes Erie and Ontario potentially reaching their seasonal low level by December. During late fall and early winter, lake levels usually decline due to increased evaporation and less liquid precipitation. Lakes Erie and Ontario could experience water levels above or below average levels depending if conditions are wet or dry. Unless very wet water supplies are received, Lakes Superior and Michigan-Huron are likely to remain below long-term average levels.



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- GLISA
- US Army Corps of Engineers, Detroit District
- NIDIS
- USDA Midwest Climate Hub

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