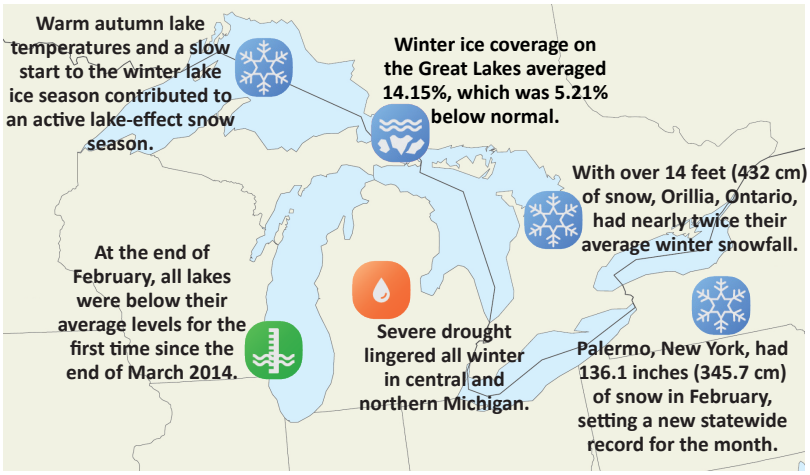
Quarterly Climate Impacts and Outlook

Great Lakes Region

March 2025

Great Lakes Significant Events – *December 2024 - February 2025*



December had wide temperature swings, with a late-month warm-up. Temperatures surged to near-record highs December 25-31. Then two rounds of storms brought heavy rain, freezing rain, and damaging winds across Ontario December 27-29.

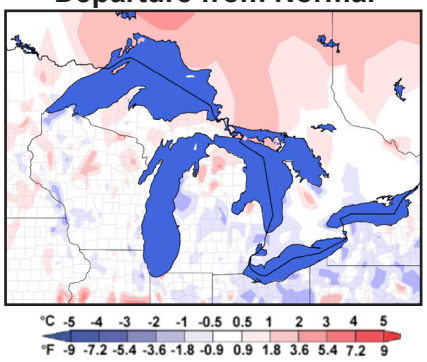
An active winter weather pattern persisted in January and February, especially in lake-effect regions. Winter snowfall totals exceeded 200 inches (508 cm) at several sites in New York, ranking among their five snowiest winters. Northern Michigan also had record to near-record high winter snowfall totals. Conversely, seasonal snow totals in the western and southern portions of the basin were lacking.

A late-January thaw overspread the western half of the basin with temperatures 10-17°F (5.5-9.5°C) above normal.

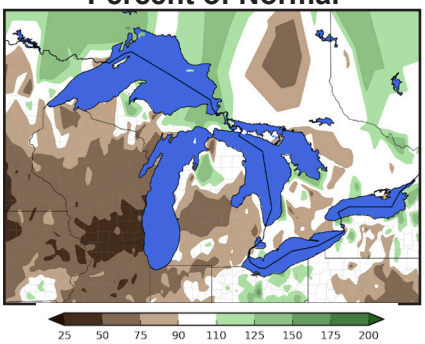
While Arctic air repeatedly traversed the basin throughout winter, the lack of persistent snow cover in northern Wisconsin helped buffer temperatures. Wisconsin's lowest winter temperature occurred January 20 when the Ashland area in northern Wisconsin hit -32°F (-35.6°C), which was warmer than 89% of years since 1885 in terms of annual minimum temperatures.

Regional Climate Overview – *December 2024 - February 2025*

Winter Temperature Departure from Normal



Winter Precipitation Percent of Normal



Precipitation and temperature normals based on 1991-2020.

Air Temperature and Precipitation

December was up to 7°F (4°C) warmer than normal. However, January was as much as 7°F (4°C) colder than normal, while February was as much as 5°F (3°C) colder than normal. Winter temperatures ranged from 4°F (2°C) colder than normal to 4°F (2°C) warmer than normal.

A wet December, with the overall basin at 126% of average, was balanced by a dry January, with the basin at 72% of average. The individual basins were also wet in December but drier in January. February precipitation ranged from 79% of average in the Erie basin to 112% in the Superior basin, with the overall basin at 97% of average. Winter precipitation was near average for all basins, with the overall basin at 99% of average.

Current Water Levels

Lake	End of Feb 2025 Level Compared to:		Change in Level from beg. of Dec. to end of Feb.	
	Average for Feb	Feb 2024	2024-25 Change in Level	Average Change in Level
Sup.	-18 cm	-14 cm	-21 cm	-19 cm
Mich.-Huron	-20 cm	-29 cm	-18 cm	-8 cm
Erie	-1 cm	-36 cm	-8 cm	+4 cm
Ont.	-19 cm	-25 cm	+7 cm	+10 cm

End of February water levels were well below last year's levels and below average on all lakes. This is the first time since the end of March 2014 that all lakes were below their average levels (Period of record: 1918-2023). Drier winter conditions led to greater than average declines from the beginning of Dec to the end of Feb on Lakes Superior and Michigan-Huron. Lake levels on Erie and Ontario typically rise from Dec through Feb. However, Lake Erie experienced a decline in level and Lake Ontario rose less than average.

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Regional Impacts – *December 2024 - February 2025*

Lake-Effect Snow (LES): Multiple significant LES events affected the central and eastern portions of the basin. One notable storm from February 17-19 dropped 36 to 60 inches of snow on central New York. The weight of the added snowpack caused roofs and/or buildings to collapse, including more than 50 in Oswego County and at least 34 in Oneida County. A collapsed barn killed at least 50 cows, many of which were pregnant, with an estimated loss of at least $150,000.

Ontario Winter Storms: Deadly snow squalls, whiteout conditions, and extremely high snowfall totals created dangerous road conditions throughout Ontario in January and February. In early January, multiple collisions and jackknifed trucks forced repeated closures of Highways 400 and 11. Canada Post suspended deliveries in the Barrie-Orillia area. Storms in late January suspended school bus services in the northeast, and over 20,000 customers lost power. Twelve-foot tall snowbanks lined Highway 21 between Port Elgin and Goderich after a mid-February storm closed the roadway for 8 days.

Recreation: Conditions were favorable across most of the basin for outdoor recreation, including snowmobiling, ice fishing, skiing, and sledding. In areas lacking natural snow, temperatures supported artificial snow making. The Rideau Canal Skateway in Ottawa, Canada, attracted nearly 1.2 million visitors over 52 consecutive skating days this season.

Satellite images of Lake Erie on Feb. 18, 2025 (Credit: NOAA CoastWatch)

Cows and calves in northeast Illinois (Credit:Bridgette Mason)

Snowmobile trail in northern Wisconsin (Credit: Bridgette Mason)

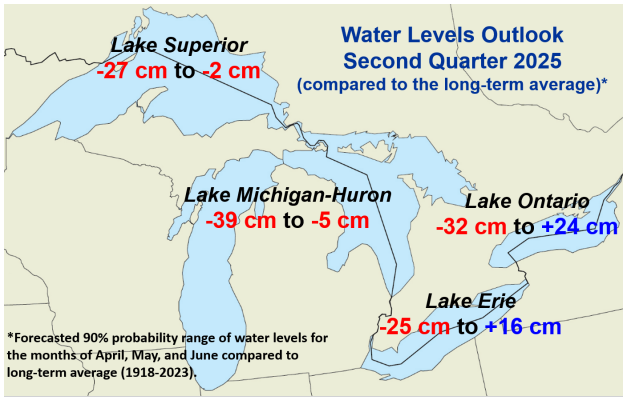
Regional Outlook – *April - June 2025*

Temperature and Precipitation

Canadian and American forecasts show a chance of above-normal temperatures, with greater confidence in the eastern portion of the Great Lakes basin. Canadian forecasts are not favoring wetter or drier conditions, while American forecasts show a chance of above-normal precipitation across the southern reach of the basin.

Great Lakes Water Level Outlook

The March forecast indicates that during the second quarter of 2025 (April, May, June) all lakes will be in their period of seasonal rise, which is typical in the spring and early summer due to increased precipitation and enhanced runoff from snowmelt. However, water levels on Lakes Superior and Michigan-Huron are likely to remain below their long-term average levels. Lakes Erie and Ontario could experience water levels above or below long-term average levels depending on if wetter or drier water supply conditions are received.



Wildfire Risk

Wildfire potential will remain enhanced especially in drier areas until green-up (spring growth) occurs.

Partners

- Midwestern Regional Climate Center
- Environment and Climate Change Canada
- Agriculture and Agri-Food Canada
- Northeast Regional Climate Center
- Great Lakes Region State Climatologists
- NOAA
  - NCEI
  - GLERL
  - CoastWatch Great Lakes Node
  - Great Lakes and IL-IN Sea Grant Networks
  - North Central River Forecast Center
  - Ohio River Forecast Center
  - Climate Prediction Center
  - Office for Coastal Management
- GLISA
- US Army Corps of Engineers, Detroit District
- NIDIS
- USDA Midwest Climate Hub

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