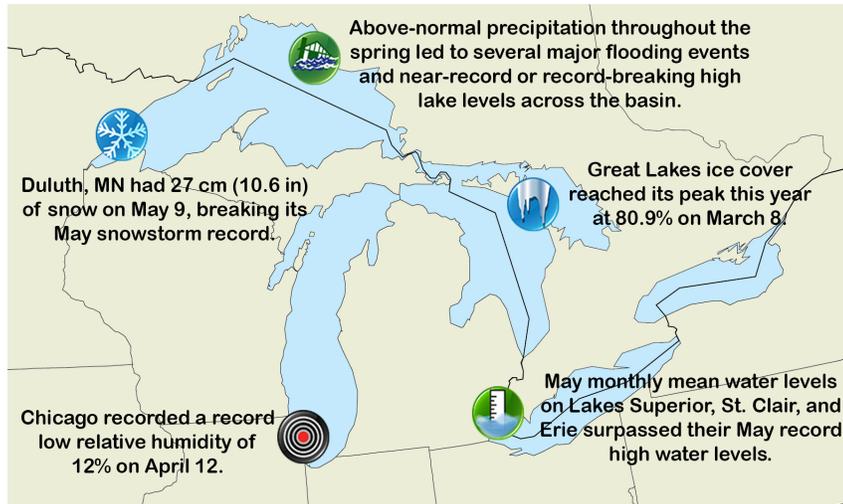


Great Lakes Significant Events – for March - May 2019

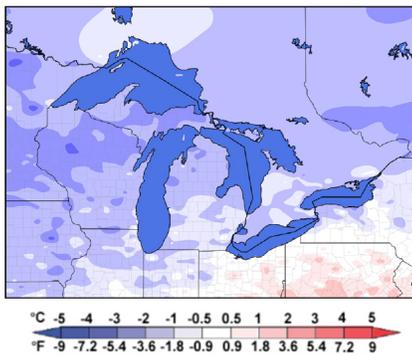


Currently, all of the Great Lakes are at near or record high water levels as a result of a very wet spring. March conditions were uneventful while a more active season began in April. High wind events, coupled with high lake levels, resulted in lakeshore flooding in Monroe County, MI on April 11. Chicago had its wettest May on record with 21 cm (8.25 in) of rain. The city also tied a record for May with 21 days of measurable precipitation recorded while Ithaca and Watertown, NY set new records for the most days in May with precipitation at 23 days and 21 days, respectively. On May 23, strong thunderstorms with gusts up to 80 km/h (50 mph) led to large waves breaching sandbagging efforts on parts of Toronto Island.

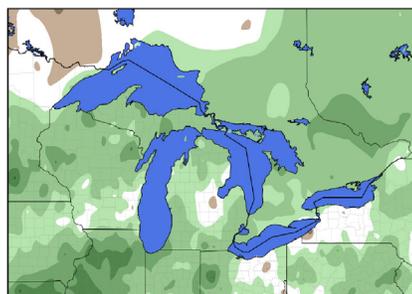
A relatively cool spring resulted in delayed snowmelt, further contributing to wet conditions in April and May. On March 9, 46 ice fishermen were rescued by the Coast Guard after an ice floe broke off on Lake Erie near Catawba Island, OH. Duluth, MN received more than 20 cm (8 in) of snow from a late-season storm on May 8-9. As a result of the cool and wet weather, snow resorts in Ontario had a good snow season in terms of both total snowfall and total snowfall days.

Regional Climate Overview – for March - May 2019

Spring 2019 Temperature Departure from Normal



Spring 2019 Precipitation Percent of Normal



U.S. normals based on 1981-2010.
Canadian normals based on 2002-2018.

Temperature and Precipitation

March was cold, with temperatures as much as 4°C (7°F) below normal. April and May temperatures ranged from 3°C (5°F) below normal to 2°C (4°F) above normal. Across much of the basin, spring averaged out to be colder than normal, with temperatures as much as 3°C (5°F) below normal while the far southeastern areas were near normal for the spring.

March precipitation ranged from 75% to 101% of average. April was wet with precipitation ranging from 123% to 137% of average while May precipitation was 98% to 144% of average. Spring precipitation ranged from 101% to 118% of average.

Current Water Levels

Provisional data show that new record high water levels (relative to 1918 to 2018) were set for the month of May on Lakes Superior, St. Clair, and Erie. Beginning-of-month levels in June for Lakes Erie and Ontario were the highest beginning-of-month levels ever recorded

Lake	Begin of June 2019 Compared to:		Change since March 1st	
	Average	2018	2019	Average
Sup.	+41 cm	+28 cm	+24 cm	+16 cm
Mich.-Huron	+75 cm	+29 cm	+42 cm	+23 cm
Erie	+75 cm	+18 cm	+44 cm	+31 cm
Ont.	+83 cm	+63 cm	+89 cm	+43 cm

at any time of the year on these lakes. Lake Superior's beginning-of-June water level is a record high for this time of year, but higher beginning-of-month water levels have been recorded at other times of the year. The current near- to above-record high water levels on all the Great Lakes are especially remarkable considering the long stretch of below average water levels that included record low water levels in 2007 (Lake Superior) and 2012 and 2013 (Lake Michigan-Huron). Due to above average water supplies over the quarter, all of the Great Lakes rose considerably more than average.

Regional Impacts – for March - May 2019

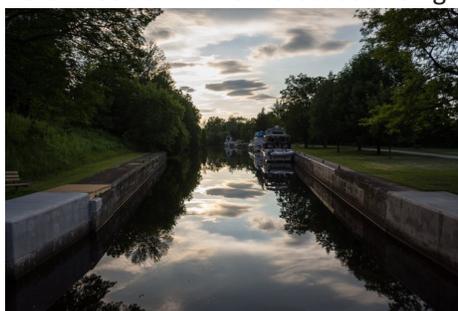
High lake levels have led to a shoreline hazard warning being in place in Toronto since late April. An [emergency shoreline fix](#) was ordered along Lake Huron in late March while in May a [state of emergency](#) was ordered in Port Clinton, OH due to the effects of high water, flooding, and wave action. In addition, in May a [state of emergency](#) was declared in all eight counties in New York that border Lake Ontario and members of the New York Coast Guard were deployed to help repair damage from flooding.

Normal operations were impacted as high lake levels also delayed the opening of the [navigation season](#) from May 17 until May 24 when Parks Canada announced that boaters would not be able to use the Trent-Severn Waterway that connects Lake Ontario to the Georgian Bay and Lake Huron. The operations and facilities of the [U.S. Coast Guard](#) were also impacted by the high waters in Lake Ontario and could delay response time for those needing assistance.

Planting of row crops has been delayed due to the continued rainfall and flooding this spring across all of the Great Lakes states and Ontario. Corn and soybeans have been planted at the [slowest rate](#) on record since 1995. For crops that have been planted, low temperatures have led to slow emergence that is well behind average. In some of the wettest places, growers have not been able to and will not be able to plant at all this year. Cooler spring temperatures, coupled with the wetness, have also led to concerns of weed and disease issues arising.



High water levels on Lake Erie on April 14.



Trent Severn Waterway (Parks Canada).



Flooded fields (credit: H. Schmitz).

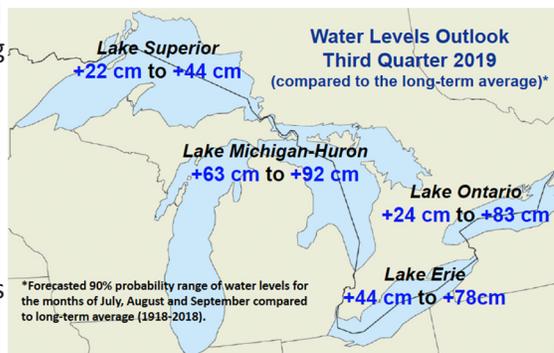
Regional Outlook – for July - September 2019

Temperature and Precipitation

According to [American](#) and [Canadian](#) forecasters, the temperature outlook shows equal chances of above, near and below normal temperatures for most of the Great Lakes region, except for areas that surround Lake Michigan where there is an enhanced chance for below-normal temperatures. There is an equal chance of above, near, and below normal precipitation for the region from July through September. Since conditions are already so wet across the region, however, even with normal or below-normal precipitation, we will continue to see a fast response to any rainfall that occurs in terms of runoff and flooding.

Great Lakes Water Levels

Relative to levels at the beginning of June and with average water supplies for this time of year, Lakes Superior and Michigan–Huron will continue to rise over the first part of the next quarter before entering their seasonal decline, while Lakes Erie and Ontario will now begin to enter their seasonal decline. Looking ahead through the summer and based on levels at the beginning of June and past conditions on the lakes, continued record-high water levels are forecasted for all lakes if they continue to receive above-average water supplies. If the wet trend changes and very dry conditions occur, all of the lake levels will still remain well above average.



Harmful Algal Bloom

The harmful algal bloom (HAB) season in the Great Lakes typically peaks in the late summer. The NOAA [Lake Erie HAB Early Season Projection](#) is updated weekly until the formal [seasonal forecast](#) is issued in early July. Because conditions can change quickly, a HAB Bulletin is distributed twice weekly from July to October.

Partners

[Midwestern Regional Climate Center](#)
[Environment and Climate Change Canada](#)
[Agriculture and Agri-Food Canada](#)
[Northeast Regional Climate Center](#)
[Great Lakes Region State Climatologists](#)
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