



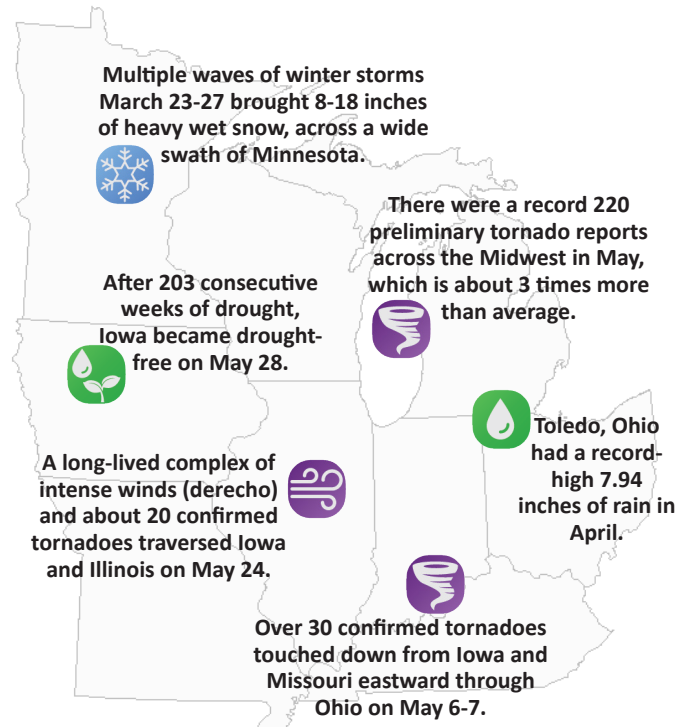
Midwest Significant Events – March - May 2024

Spring kicked off much like winter ended, with widespread warmth. Kansas City, Missouri, had its 5th earliest 80°F day on March 3. That same day, the Twin Cities (Minnesota) had the earliest 74°F day on record. While the extreme warmth briefly moderated later in March, temperatures were generally warm all spring, quickly advancing plant phenology across the lower half of the region.

Large-scale weather patterns flipped in mid-March, ushering in extremely active weather during spring, including numerous deadly severe weather outbreaks across the Lower Midwest and regionwide rain. Storms brought baseball-sized hail across Missouri and Illinois March 13-14. At least eight days in April had widespread reports of tornadoes, wind, and hail. Active weather persisted during May, with too many events to list here.

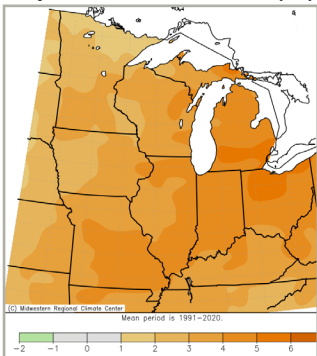
The lack of winter snowpack paired with warm soils helped keep flooding minimal across the Upper Mississippi River Valley despite repeated spring rainfall events. The region had remarkable drought recovery throughout spring.

Canadian wildfires brought smoky skies and poor visibility to the Upper Midwest during mid-May.



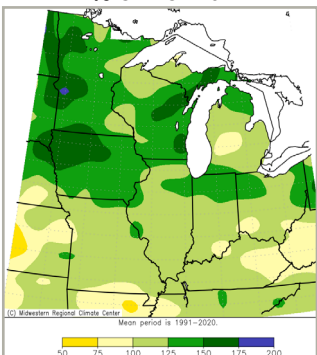
Regional Climate Overview – March - May 2024

Spring Temperature Departure from Normal (°F)



Spring temperatures were 1-4°F above normal across the northwestern Midwest and up to 6°F above normal in the eastern half of the region. The Midwest tied for its 4th warmest spring on record, with temperatures 2.3-4.4°F above normal for each of the three spring months. Ohio and Kentucky had the 2nd warmest spring, while Illinois, Indiana, and Missouri had the 3rd warmest.

Spring Precipitation % of Normal

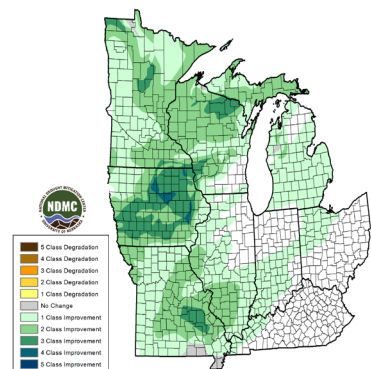


Spring precipitation was above normal for the Midwest. Iowa, Minnesota, and Wisconsin had their 4th wettest spring on record. March precipitation was wet to the north and dry to the south. April was normal to above normal region wide, and Indiana had their 5th wettest April on record. May precipitation was near to slightly below normal in the central Midwest and wet elsewhere.

Spring started with long-term drought conditions centered over Iowa and lingering throughout the Upper Mississippi River Basin. An active weather pattern brought repeated and timely precipitation that eradicated drought by late May. The region had one to four classes of improvement (right map, green shades) on the U.S. Drought Monitor over 12 weeks.

Several storms brought snow across the Upper Midwest in late March. Minneapolis had 15.2 inches in March, which was more snow than they received from Oct 2023 to Feb 2024 combined. Overall, spring snowfall was at or slightly above normal in central Minnesota and central Wisconsin, with below-normal snowfall across the rest of the Upper Midwest.

Midwest Drought Change from March 5 to May 28



Regional Impacts – March - May 2024

Agriculture and Natural Resources

Mild conditions put winter wheat far ahead of schedule in the Lower Midwest. Row crops planted early before the onset of spring rains were in good condition, but later planted crops were delayed due to excessive field wetness in April and May.

An abundance of nitrates accumulated in soils during last year's drought and



Heavy rain in southern Indiana filled water control basins, breached dams, and delayed planting (credit: Hans Schmitz)

were being flushed into local waterways due to repeated heavy rainfall events. This created an increased risk of larger dead zones in local lakes and waterways.

Mild winter and wet spring conditions led to increased insect and weed pressure across the Midwest.

Severe Weather

Portions of the Midwest were affected by at least [four billion-dollar disasters](#) during spring. Baseball-sized hail in Missouri and dozens of tornadoes from Illinois to Ohio contributed to nearly \$6 billion in losses March 12-14. Over 35 confirmed tornadoes stretched from Missouri to Ohio on April 1-2, contributing to \$1.8 billion in losses. Over two dozen tornadoes were confirmed in western Iowa and Missouri on April 26-27, which was part of a larger outbreak that affected the Great Plains for combined losses of \$1.2 billion. Over 30 confirmed tornadoes touched down across the Lower Midwest on May 6-7, along with softball-sized hail in Michigan, which contributed to \$4.7 billion in losses.

Six tornadoes caused 12 fatalities this spring in five states (Iowa, Missouri, Kentucky, Indiana, and Ohio), with one tornado in [Greenfield](#), Iowa on May 21 accounting for 5 of those deaths.



Wind turbine destroyed by the Greenfield tornado in Iowa on May 21 (credit: Colt Forney)

Regional Outlook – July - September 2024

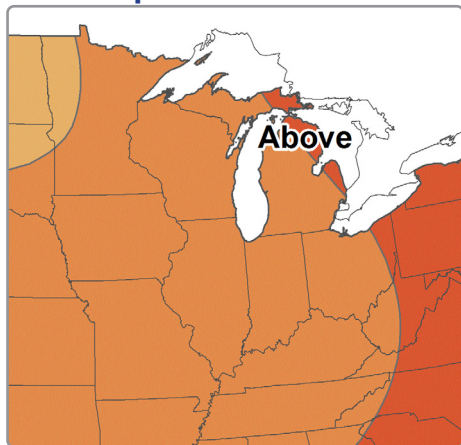
NOAA forecasters [are predicting](#) increased chances of above-normal temperatures for the entire Midwest. The precipitation outlook indicates equal chances of above-, below-, or near-normal precipitation for the region.

The strong El Niño that developed last year has ended. ENSO-neutral conditions are now present in the equatorial Pacific Ocean, with [La Niña conditions likely](#) by late summer.

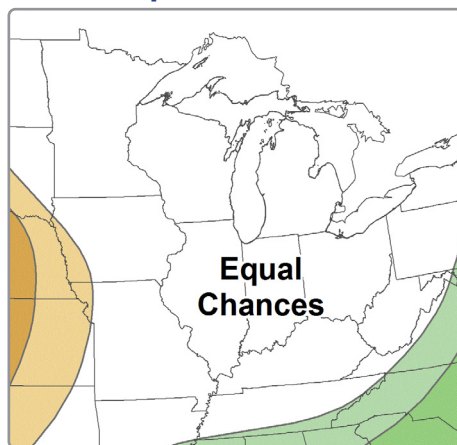
The [U.S. Seasonal Drought Outlook](#) suggests drought development is likely across the central Midwest, from the Iowa-Missouri border eastward through Ohio.

Forecasters are monitoring river flows in the Ohio River and Mississippi River as the potential for low flows increase across the central and lower Midwest through summer. While the Upper Mississippi River is currently running above normal, the seasonal flow outlook for the Ohio River is low and being monitored for potential downstream impacts.

Temperature Outlook



Precipitation Outlook



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