Quarterly Climate Impacts and Outlook

Midwest Region

March 2023

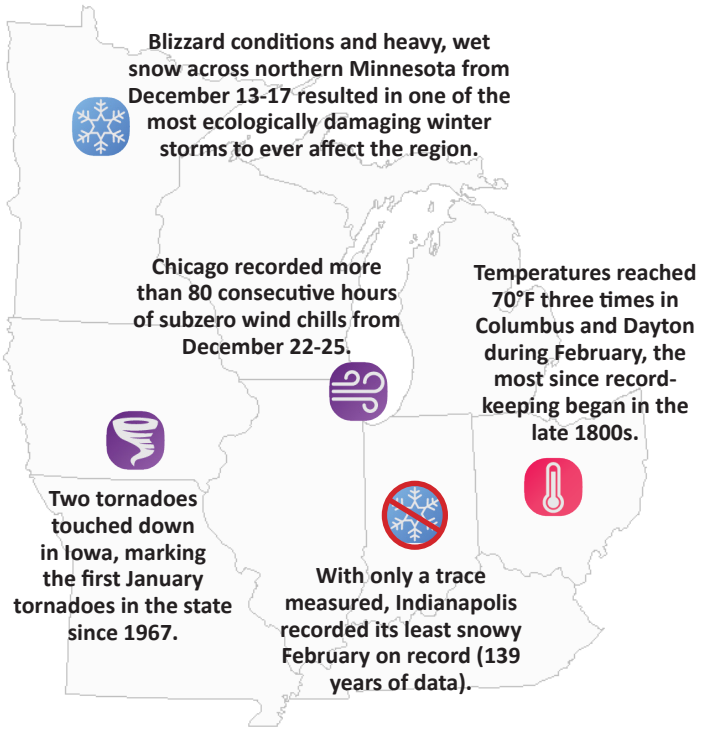
Midwest Significant Events – *December 2022 - February 2023*

Wind chill temperatures from -20°F to -40°F gripped the Midwest from December 22-25 as a powerful Arctic cold front brought 30-50 mph winds across the region.

An active weather pattern with unusually warm air throughout January resulted in tornadoes reported on five separate days during the month. There were 19 preliminary tornado reports across Illinois, Iowa, and Kentucky, which was 3 times higher than usual.

A large storm system tracked across the region from Missouri to Ohio on January 24-25 blanketing the lower Midwest with a wintry mix of heavy rain, sleet, and very wet snow. Snowfall totals ranged from 1-10 inches, with the highest totals measured in southern Missouri and southeast Michigan.

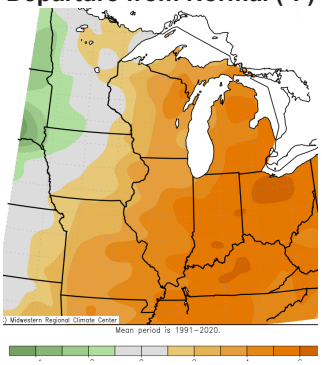
Unseasonable warmth continued into February along with a continued active weather pattern. Multiple storms brought high winds and significant precipitation (snow in the northwest and rain in the south) across the Midwest. Wind gusts topped 40-50 mph throughout the region on multiple days including February 9th, 14th, 15th, 22nd, and 27th.



Regional Climate Overview – *December 2022 - February 2023*

Winter Temperature

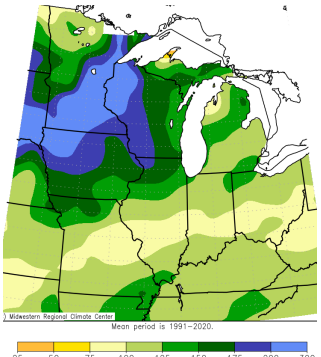
Departure from Normal (°F)



Average winter temperatures were 3-7°F above normal in the eastern and southern portions of the Midwest and near to slightly below normal in the far northwest. This winter was the 9th warmest on record for the Midwest as a whole. Six states had a top 10 warmest winter: Ohio (2nd), Kentucky (2nd), Indiana (3rd), Michigan (6th), Illinois (8th), and Missouri (10th). December was slightly cooler than normal but unremarkable in the historical rankings. Conversely, the Midwest had its 4th warmest January and its 15th warmest February. Kentucky tied for the warmest January-February period on record.

Winter Precipitation

% of Normal



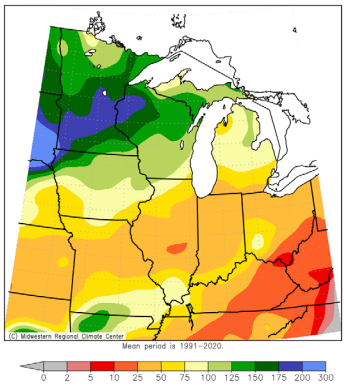
Winter precipitation was 119 percent of normal for the Midwest. The entire region had near- or above-normal precipitation, with the greatest deviations in the northwest where precipitation ranged from 150-300 percent of normal. Overall, the Midwest had its 13th wettest winter on record. At the state level, Wisconsin had its wettest winter on record while Minnesota and Iowa had the 2nd and 4th wettest, respectively. December precipitation was near normal for the region while January and February were both above normal.

Winter began with 70 percent of the region abnormally dry or in drought and ended with about 22 percent affected (western Iowa, western Minnesota, and southeast Michigan).

Despite near- to above-normal precipitation in the lower Midwest, warm temperatures resulted in most locations having less than 50 percent of normal winter snowfall.

Winter Snowfall

% of Normal



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Regional Impacts – *December 2022 - February 2023*

Agriculture

Extremely windy and cold conditions in late December caused significant bud thinning on southern Illinois peaches and damaged some Kentucky peaches, grapes, and blackberries. Wet conditions helped to replenish soil moisture levels in the eastern Midwest where warm temperatures kept soils unfrozen, but limited recovery occurred in the northwest due to frozen soils. Chilling hour accumulations and growing degree day accumulations were well ahead of average across the central Midwest by winter's end. Plants and pests in the far southern Midwest broke dormancy a few weeks ahead of schedule.

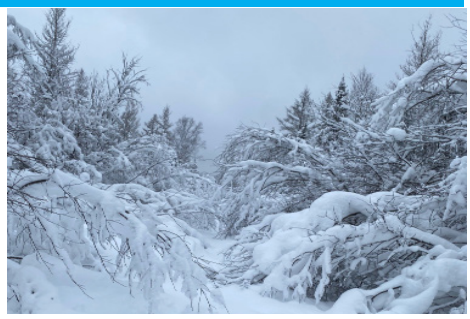
Flowers in bloom (credit: M. Widhalm)

Forestry

Heavy, wet snow on top of freezing rain fell across a large portion of northern Minnesota and Wisconsin from December 13-17, resulting in extensive tree injury and loss across a remarkably large area. Downed trees lead to numerous power outages and closures of roadways and trails.

Recreation

Above-normal snowfall made great conditions for skiing, snowshoeing, and snowmobiling in Minnesota and northern Wisconsin. Conversely, ski resorts in Indiana opened late and closed early due to warm conditions and excessive rain this winter.



Trees bow after mid-December storm in Minnesota (credit: P. Goff)

Transportation

High winds during the December 22-25 winter storm caused extensive blowing and drifting snow that halted ground and air transportation for days. Whiteout conditions caused a 50-vehicle crash on the Ohio Turnpike on December 23 that killed four and injured over 70 people. Ten additional weather-related traffic fatalities across four Midwestern states were reported by the media during this storm.

Regional Outlook – *April - June 2023*

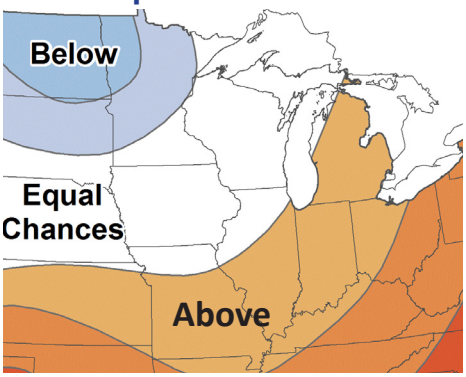
NOAA forecasters are predicting slightly increased chances of above-normal temperatures in the eastern and southern portions of the Midwest and below-normal temperatures in the far northwest. Iowa, Wisconsin, and Michigan's Upper Peninsula have equal chances of above-, below-, and near-normal temperatures.

The precipitation outlook leans slightly towards above-normal precipitation for the majority of the Midwest. Only the far western portion of the Midwest has equal chances of above-, below-, or near-normal precipitation.

La Niña conditions have subsided and ENSO-neutral conditions are expected to continue through early summer.

There is a significantly above-normal flood risk for the mainstem of the Upper Mississippi River. Moderate to major flooding is possible on the Red River of the North.

Temperature Outlook



Precipitation Outlook

Midwest Region Partners

- Midwestern Regional Climate Center
- American Association of State Climatologists
- National Oceanic and Atmospheric Administration
- NWS Climate Prediction Center
- National Centers for Environmental Information
- National Weather Service Central Region
- North Central River Forecast Center
- Ohio River Forecast Center
- National Drought Mitigation Center
- National Integrated Drought Information System
- USDA Midwest Climate Hub

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