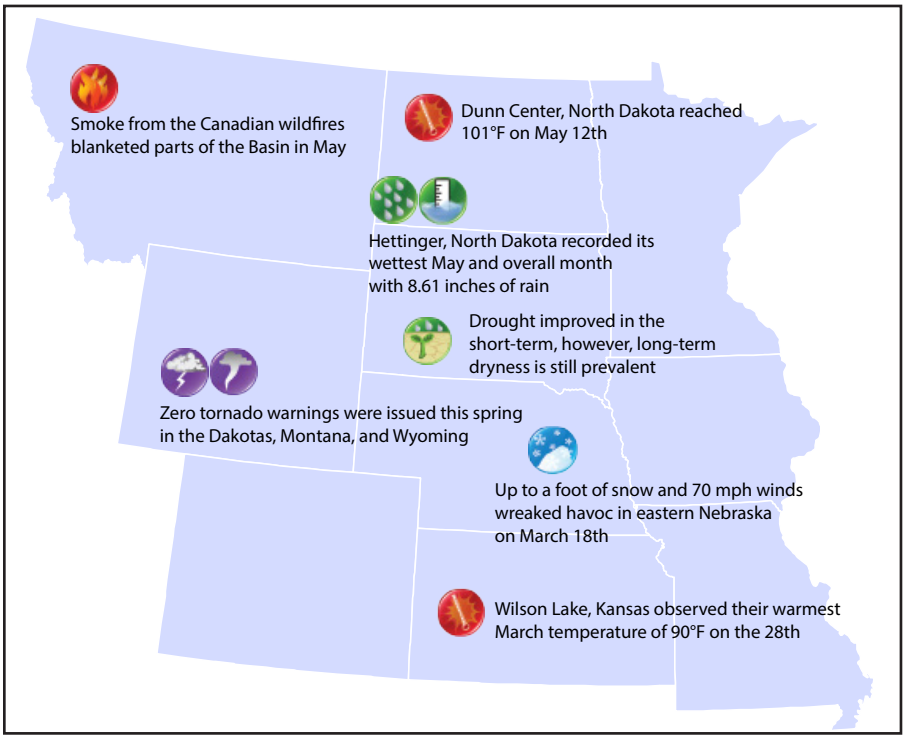
Quarterly Climate Impacts and Outlook

Missouri River Basin

June 2025

Regional – *Significant Events for March - May 2025*



Highlights for the Basin

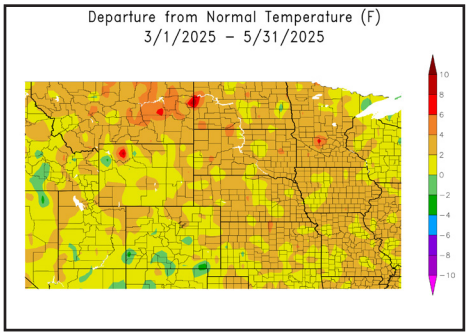
An intense severe weather outbreak impacted Kansas and Nebraska on May 18th, with over a dozen tornadoes touching down. Seven EF3s would touch down in Kansas alone, the highest total of F3/EF3 or stronger tornadoes in a single day for the state since April 26, 1991. Despite multiple tornado emergencies and several towns being struck, only a few injuries were reported.

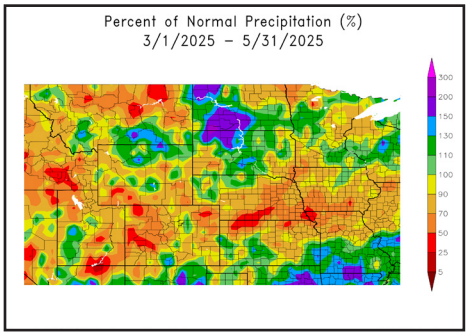
Dry soils and gusty winds in March led to one of the deadliest dust storms in Kansas in recent history. Winds reached over 50 mph on the 18th, leading to near-zero visibility between Colby and Goodland. The blinding conditions created a 71-car pileup, with eight fatalities reported. These would be the first fatalities due to dust in the area in over a decade.

Regional – *Climate Overview for March - May 2025*

Temperature and Precipitation Anomalies

Departure from Normal Temperature (°F) (left) and Percent of Normal Precipitation (right) for Spring 2025



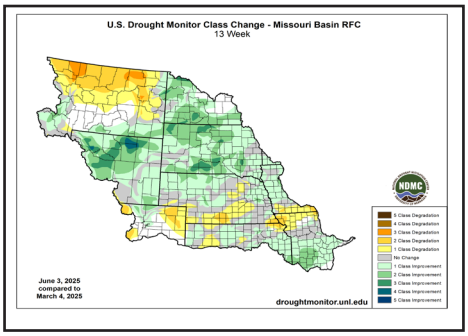


Spring began on a warm note, with dozens of counties in Kansas, Nebraska, and South Dakota ranking in the top 5 warmest. Temperatures in April were near normal, while May was above normal in the northern Missouri Basin states due to a unseasonably warm three day stretch in the early part of the month.

Snowfall in March was exceptionally high across northern Wyoming, with over 5 feet falling in some areas. April was very dry in Nebraska and eastern Wyoming, with less than half an inch of precipitation in some areas. Precipitation was above normal in the western parts of the Dakotas this spring due to abundant rainfall in the latter half of May.

Changes in Drought Conditions

March 4 to June 3, 2025



The map above shows the areas of increasing (yellow shading) and decreasing (green shading) categories of drought. Up to 4 classes of improvement occurred across northern Wyoming, with drought nearly removed in the area. Northern Montana was the opposite this spring, with up to 3 classes of degradation.

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Regional – *Impacts for March - May 2025*

Agriculture

Soil moisture in North Dakota drastically improved after the heavy rains in May. The same cannot be said for Montana, where 61 percent of topsoil moisture was rated poor to very poor. Spring wheat across the northern plains had a historically poor start, with one of its worst initial ratings. Winter wheat yields are projected to be down over 15 bushels an acre in Nebraska and South Dakota.

Wildfires

The dryness plaguing the region since last fall led to thousands of acres burned across the Basin. Nearly 34,000 acres were burned in the Cheyenne River fire in March, while numerous smaller wildfires were reported on a daily basis. Also, towards the end of May, smoke from the wildfires in Canada blanketed most of the Basin.

Water Resources

Warmer temperatures in the west led to a rapid snowpack melt-off in the Rockies this spring. According to the U.S. Army Corps of Engineers, runoff in the Upper Missouri Basin above Sioux City, IA is projected to be 77 percent of normal in 2025. Lower releases will continue from Gavins Point Dam to the Missouri River this summer. Despite the heavy May rainfall in North Dakota, there was no flooding reported.

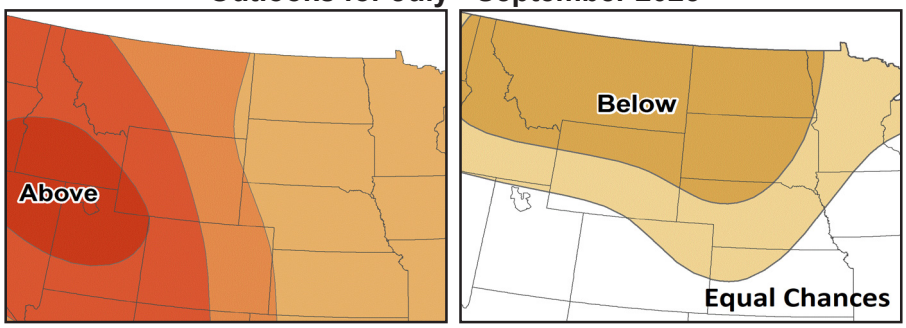
Above: Condition Monitoring Observer Report (CMOR) in late May near Kimball, Nebraska, credit National Drought Mitigation Center (left); Aftermath of the Cheyenne River Fire in South Dakota, credit InciWeb (center); Platte River near Duncan, Nebraska, credit United States Geological Survey (right)

Regional – *Outlook for July - September 2025*

Temperature

Precipitation

Outlooks for July - September 2025



EC: Equal chances of above, near, or below normal

A: Above normal, B: Below normal

According to NOAA's Climate Prediction Center, the outlook for the upcoming season indicates increased chances of above-normal temperatures across the Basin. Increased chances of below-normal precipitation are present in the Dakotas, Nebraska, Montana, and Wyoming. The rest of the Basin has equal chances of above, below, and near-normal precipitation.

The combination of warmer temperatures and below normal precipitation could lead to the redevelopment of drought conditions. Chances for wildfires are elevated this summer, particularly in the northern portions of the Basin. Smoke drifting down from the Canadian wildfires is likely to continue causing air quality issues.

MO River Basin Partners

- High Plains Regional Climate Center
- National Drought Mitigation Center
- National Integrated Drought Information System
- National Centers for Environmental Information
- National Weather Service- Central Region
- NOAA Climate Prediction Center
- NWS Missouri Basin River Forecast Center
- American Association of State Climatologists
- U.S. Army Corps of Engineers
- U.S. Bureau of Reclamation
- USDA Northern Plains Climate Hub
- Bureau of Indian Affairs – Great Plains Region

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