Quarterly Climate Impacts and Outlook

Missouri River Basin

June 2022

Regional – Significant Events for March - May 2022



Highlights for the Basin

It was the 4th wettest January through May and spring (March-May) in North Dakota. Major flooding was recorded along the Red River of the North and the James River.

It was an active severe weather spring in South Dakota, with an above-normal number of tornadoes this year. A derecho on May 12th brought significant wind gusts over a broad area across the region.

Runoff continues to be well below normal for the upper Missouri River Basin. The area has experienced below-normal precipitation for over two years. Water conservation in the major reservoirs will likely continue into the future.

Winds this spring were well above normal for all three months (March-May) in most of the area.

Regional – Climate Overview for March - May 2022

Temperature and Precipitation Anomalies

Departure from Normal Temperature (°F) (left) and Percent of Normal Precipitation (right) for Spring 2022



Temperatures were below-normal for the majority of the Missouri River Basin. The greatest departures were in North Dakota and northwestern Wyoming. April was extremely cold in the northern part of the Basin, with departures of 6-10 degrees below normal. Temperatures in March and May were closer to normal throughout the basin.

Precipitation was well above-normal in North Dakota and near normal over the Rockies and eastern Kansas. Over southwestern South Dakota, western Kansas, and eastern Colorado, precipitation was well below-normal this spring. As a result, drought conditions intensified in those areas.

Changes in Drought Conditions March 1 - May 31, 2022



While drought conditions improved in many portions of the basin, it persisted in most areas and worsened in portions of Nebraska, Kansas, South Dakota, and Colorado. In western Kansas, drought increased to D4 according to the Drought Monitor. The map above shows the areas of increasing and decreasing categories of drought.

Regional – Impacts for March - May 2022

Agriculture

Above-normal precipitation and cooler temperatures in North Dakota and northeastern South Dakota have led to delays in planting. This is most noticeable in spring wheat and other small grains, which have had the slowest planting since 2000. Both spring blizzards in North Dakota occurred during calving, which led to livestock losses. Opposite to this wetness, areas in severe drought have stopped planting due to a lack of moisture. Winter wheat is in poor shape across southwestern Nebraska and western Kansas. Yields are expected to be 25 percent lower than last year in Colorado and Kansas. Pasture conditions were also in poor shape across Colorado and Nebraska.

Struggling Kansas winter wheat, credit Gerry Tally (left); Flooding along the James River near Aberdeen, South Dakota, credit Diane Mann-Klager (right).

Wildfires

The continued dryness and high winds this spring led to several destructive wildfires. Two separate fires broke out in southwestern Nebraska during the month of April, burning nearly 80,000 acres. Two people perished and numerous injuries were reported. Other fires also occurred in Colorado, Kansas, and South Dakota. A record number of fire warnings were issued in Colorado.



Flooding

Major flooding has occurred along the Red River of the North and James River in eastern North Dakota and northeastern South Dakota. Across southern Manitoba, at least 26 municipalities were in a state of emergency from the high waters. Numerous roads have flooded on both sides of the border, with some towns isolated by water. Flood conditions will likely continue along the James River for the next several months.



Regional - Outlook for July - September 2022



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 much of the Missouri River Basin. Equal chances of above, below, and near-normal temperatures are favored in North Dakota and northeastern Montana. Increased chances of below-normal precipitation are present throughout the basin.

Based on the outlooks, there is an enhanced risk of drought intensification and wildfires this summer. According to the National Interagency Fire Center, the majority of the Missouri River Basin has an above-normal risk of wildfires from July to September.

MO River Basin Partners

High Plains Regional Climate Center www.hprcc.unl.edu

National Drought Mitigation Center http://drought.unl.edu/

National Integrated Drought Information System https://www.drought.gov/

NOAA NCEI www.ncdc.noaa.gov

NOAA NWS- Central Region www.weather.gov/crh

NOAA NWS Climate Prediction Center www.cpc.ncep.noaa.gov

NOAA NWS Missouri Basin River Forecast Center www.weather.gov/mbrfc

American Association of State Climatologists https://www.stateclimate.org/

U.S. Army Corps of Engineers www.nwd-mr.usace.army.mil/rcc/

U.S. Bureau of Reclamation https://www.usbr.gov/

USDA Natural Resources Conservation Service www.nrcs.usda.gov

USDA Northern Plains Climate Hub www.climatehubs.oce.usda.gov

Bureau of Indian Affairs – Great Plains Region www.bia.gov/regional-offices/great-plains

