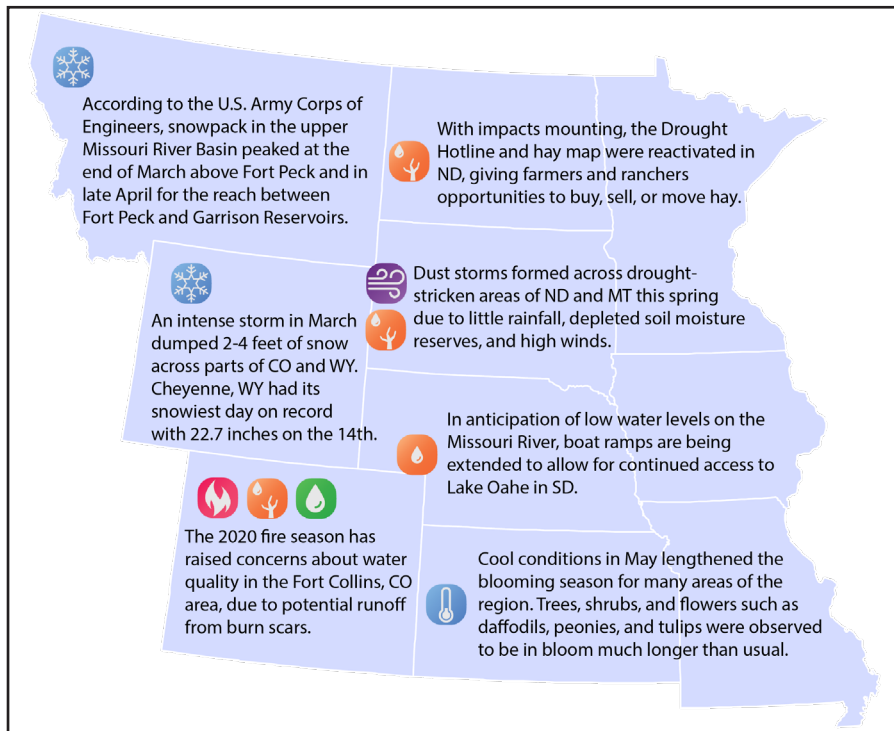




Regional – Significant Events for March - May 2021



Highlights for the Basin

With large differences in precipitation across the region, many locations ranked in the top 10 wettest or driest springs on record. For instance, Denver, CO had its 9th wettest spring on record, while Fargo, ND had its 5th driest.

The severe weather season got off to a slow start this year, with relatively few thunderstorm and tornado warnings. The main exception was eastern CO.

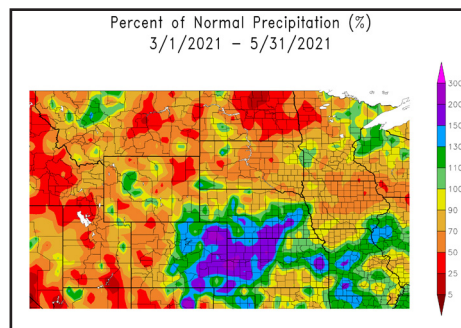
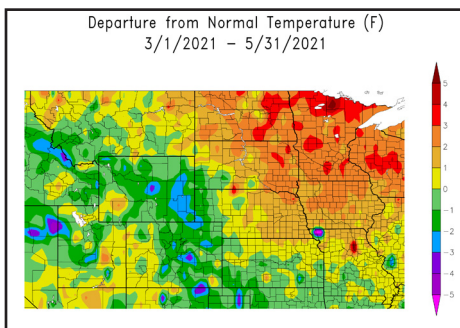
Record or near-record low streamflows were evident this spring, particularly across portions of the Northern Plains and western Colorado.

According to the U.S. Army Corps of Engineers, the runoff forecast for the upper Missouri Basin is 17.9 MAF, which is 69 percent of average. This forecast would put 2021 as the 22nd lowest runoff on record, since 1898.

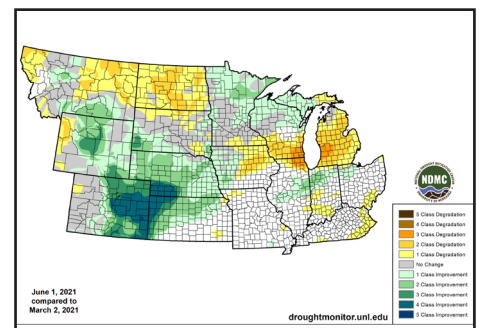
Regional – Climate Overview for March - May 2021

Temperature and Precipitation Anomalies

Departure from Normal Temperature (°F) (left) and Percent of Normal Precipitation (right) for Spring 2021



Change in Drought Conditions March 2 - June 1, 2021



Overall, there were stark differences in both temperature and precipitation across the region this spring. Temperatures were, for the most part, near to below normal across much of the west and south, and near to above normal across the east. After an extremely cold February, conditions across the region flipped, with many states ranking among the top 10 warmest Marches on record (ND - 4th, IA - 7th, SD - 7th, and NE - 10th). Temperatures were largely near normal for April and May, however. Meanwhile, heavy precipitation fell across southern areas and little to none fell across the north. Again, March was extreme with several states ranking in the top 10 wettest or driest Marches on record (wettest: NE - 2nd, KS - 4th; driest: MT - 2nd, ND - 2nd).

This spring, ample precipitation improved or removed drought conditions across portions of eastern Colorado, central Wyoming, western Kansas, and western Nebraska. However, drought expanded and intensified across much of the Northern Plains. Nearly 18 percent of North Dakota was in exceptional drought (D4) at the end of spring, a new record.



Regional – Impacts for March - May 2021

Row Crops

Dry conditions advanced corn and soybean plantings, which were generally ahead of average. In Colorado and Kansas, corn was slightly behind. Most of the winter wheat in the region was only in fair or good condition, largely due to drought. However, recent hail and heavy rains also damaged some fields in the south. Late-season frosts were an issue in some areas, with damage to newly emerged crops in North Dakota.



Pasture and Rangeland

Drought has taken a toll on pasture and rangeland conditions. At the end of spring, at least 40 percent of pastures were in poor or very poor condition in North Dakota (67 percent), Montana (56 percent), and South Dakota (40 percent). In the Dakotas, the lack of forage production, along with low stock pond levels, led to an increase in cattle sales. Some cattle deaths were also reported due to poor water quality in stock ponds.



Fires

Dry conditions fueled fires across the region this spring, from Kansas through the Dakotas. In early April, fire emergencies were declared in North Dakota and South Dakota. As of early June, nearly 100,000 acres had burned in North Dakota, including parts of Theodore Roosevelt National Park. An above-normal wildland fire potential exists for parts of the region each month this summer, with the most widespread potential in August.



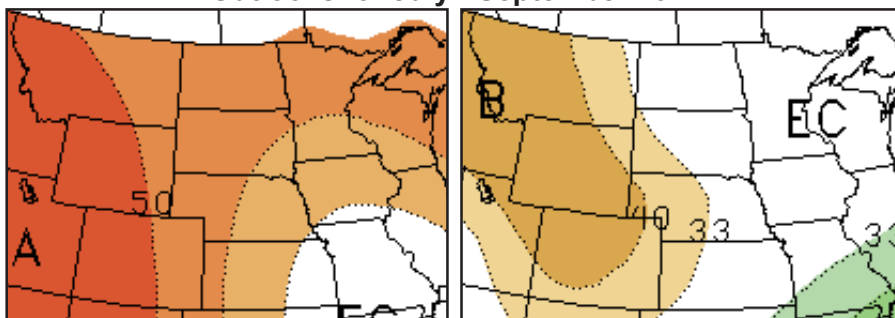
Above: Dry grass in eastern MT, credit Tanja Fransen, NWS Glasgow (left); Dry golf course pond in Aberdeen, SD, credit Laura Edwards, SD State (center); Fire near KS/NE border, credit Mark Junker, Sac and Fox Nation of Missouri in Kansas and Nebraska (right).

Regional – Outlook for July - September 2021

Temperature

Precipitation

Outlooks for July - September 2021



According to NOAA's Climate Prediction Center, La Niña conditions ended in May. ENSO-neutral conditions are now present and likely to continue through summer. Over the next three months, above-normal temperatures are favored for the majority of the region, with the highest chances in Montana, Wyoming, and Colorado. Below-normal precipitation is favored across Montana, Wyoming, and Colorado, along with western portions of South Dakota, Nebraska, and Kansas. Above-normal precipitation is favored in southern Missouri and a very small portion of southeastern Kansas. With warm, dry conditions possible, current drought is expected to persist, with development likely in parts of Montana, Wyoming, South Dakota, Nebraska, and Colorado. No improvements are expected at this time.

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.ocs.usda.gov

USGS, Water Mission Area
www.usgs.gov/water

Western Governors' Association
<http://westgov.org>