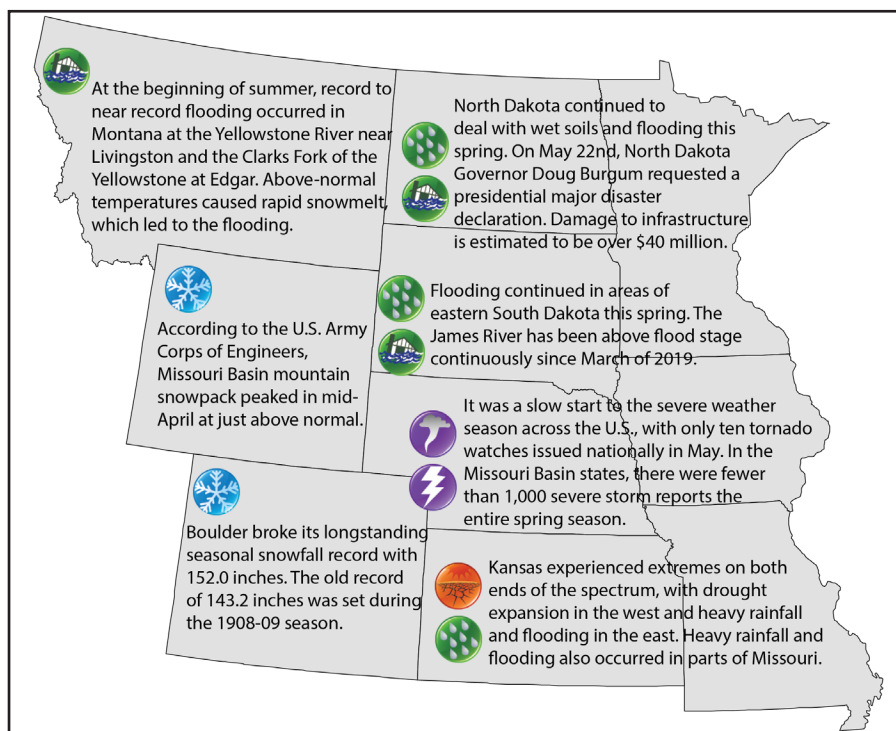


Regional – Significant Events for March - May 2020



Highlights for the Basin

Temperatures were largely near normal across the region this spring, with the exception of Colorado, which had its 12th warmest spring since records began in 1895.

Colorado and North Dakota had their 9th driest spring on record. This was the first time in over two years that any state in the region ranked among the top 10 driest (on a seasonal basis).

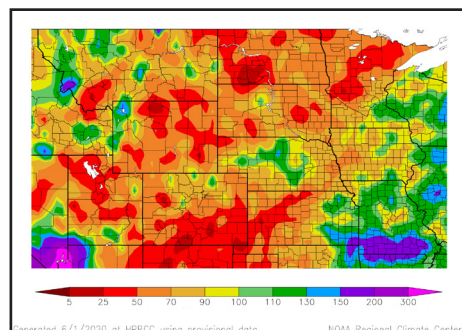
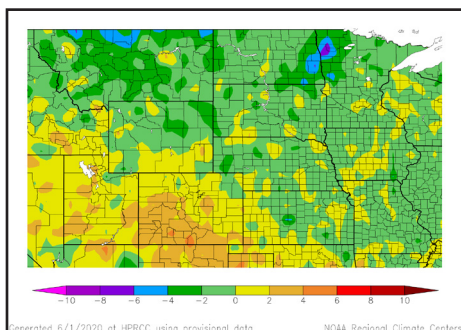
Although flooding impacted parts of the region this spring, warm and dry conditions early in the season reduced the flood risk and subsequent impacts.

According to the U.S. Army Corps of Engineers, the 2020 runoff forecast as of June 1 for the upper Missouri River Basin (above Sioux City) is 32.3 MAF. This would be considered above average, but well below recent years.

Regional – Climate Overview for March - May 2020

Temperature and Precipitation Anomalies

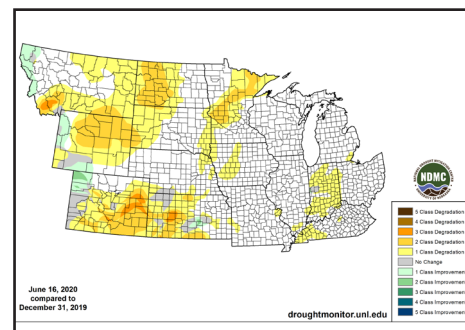
Departure from Normal Temperature (°F) (left) and Percent of Normal Precipitation (right) for Spring 2020



Overall, it was a mild and dry spring across the Missouri Basin states. Average temperatures masked many of the fluctuations, however. For instance, March temperatures were largely above normal, with minimum temperatures ranking among the top 10 warmest in Colorado, Kansas, and Nebraska. This was followed by below-normal temperatures and several hard freezes during April. Freeze damage was limited to southern areas, however, as spring leaf out and bloom was 2-3 weeks behind average across the northern tier of the Basin. Meanwhile, precipitation was largely below normal across the region. Late spring and early summer is typically the wettest part of the year for the Plains portion of the region. When rains do not materialize during this time, it can be hard to overcome deficits in the short term.

Change in Drought Conditions

Dec 31, 2019 - Jun 16, 2020



At the start of the year, drought conditions (D1-D4) were confined to areas of southwestern Kansas and southern and western Colorado. By mid-June, however, drought had developed and/or expanded to southern Montana, central and northern Wyoming, central and eastern Colorado, and an area of western North Dakota and far northern South Dakota.

Regional – Impacts for March - May 2020

Planting Progress

A reprieve from excessively wet conditions allowed producers to make significant progress this spring. As of late May, corn and soybean planting was ahead of the 5-year average in most states across the region. The exception was North Dakota, which was behind due to wet soils and unharvested crops from 2019 in eastern areas. With the planting window coming to a close, some fields may go unplanted this year.



Freeze Damage

Freeze events in mid-April took a toll on winter wheat and specialty crops in portions of the region. In Kansas, the combination of drought and multiple hard freezes damaged winter wheat, especially in central and western areas of the state. Meanwhile, a hard freeze event on the western slope of Colorado severely impacted the state's peach crop. Early estimates indicate that upwards of 95% of the crop was potentially lost.



Drought Impacts

With extreme drought (D3) developing in southern Colorado and western Kansas, impacts have mounted. Pasture and rangeland conditions have deteriorated, with cattle sell-offs being reported. Some winter wheat acres have failed and been abandoned, while in southeastern Colorado, some corn acres were not planted due to the dry conditions and limited water for irrigation. Burn bans have also been implemented in several counties.



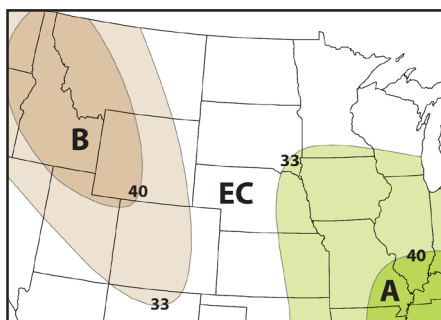
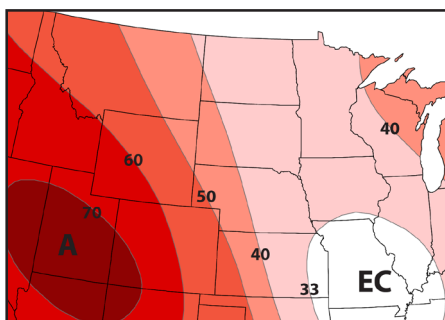
Above: Uneven germination of small grains in western ND, courtesy Craig Askim, NDSU Extension (left); Drought-impacted winter wheat in southwestern KS, courtesy Romulo Lollato, K-State Extension (center); Cattle in Loomis, NE, courtesy Tyler Williams (right).

Regional – Outlook for July - September 2020

Temperature

Precipitation

Outlooks for July - September 2020



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

A: Above normal, B: Below normal

NOAA Climate Prediction Center outlooks indicate that above-normal temperatures are favored for the majority of the Basin through September. Precipitation, on the other hand, is mixed, with slightly increased chances of below-normal precipitation for western areas and above-normal precipitation for eastern areas. Equal chances of above-, near-, or below-normal precipitation are favored for the areas in between. According to Grass-Cast, grassland production this summer could be impacted, even if near-normal precipitation is received. This is especially the case in eastern areas of MT, WY, and CO, and western areas of ND, SD, and KS. To learn more about Grass-Cast and its scenarios, see: <https://grasscast.unl.edu/>.

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>