

# Extremely Wet Conditions Heading into the late Fall and Winter Sets the Stage for a Significant Spring Flood Season

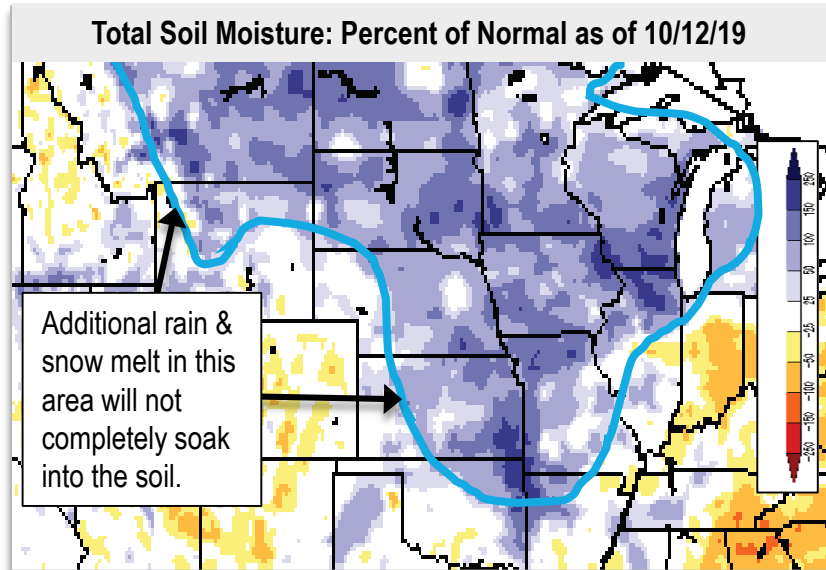
## Setting the Stage:

### Precipitation and Soil Moisture

Well above normal rain and snowfall throughout 2019 has led to unprecedented flooding, record high river levels, and abnormally wet ground for the fall season across the region.

Through the end of September, the Missouri River Basin has had its 2<sup>nd</sup> wettest 9 months in 124 years of modern record keeping this year.

Across the Missouri River Basin ND, SD, NE, KS, and MO recorded their top 5 wettest years (October 2018 – September 2019).



ABOVE: Wet soils across most of the Missouri River Basin can accept very little or no more water. Source: NOAA/NCEP/EMC

## Setting the Stage:

### River Conditions

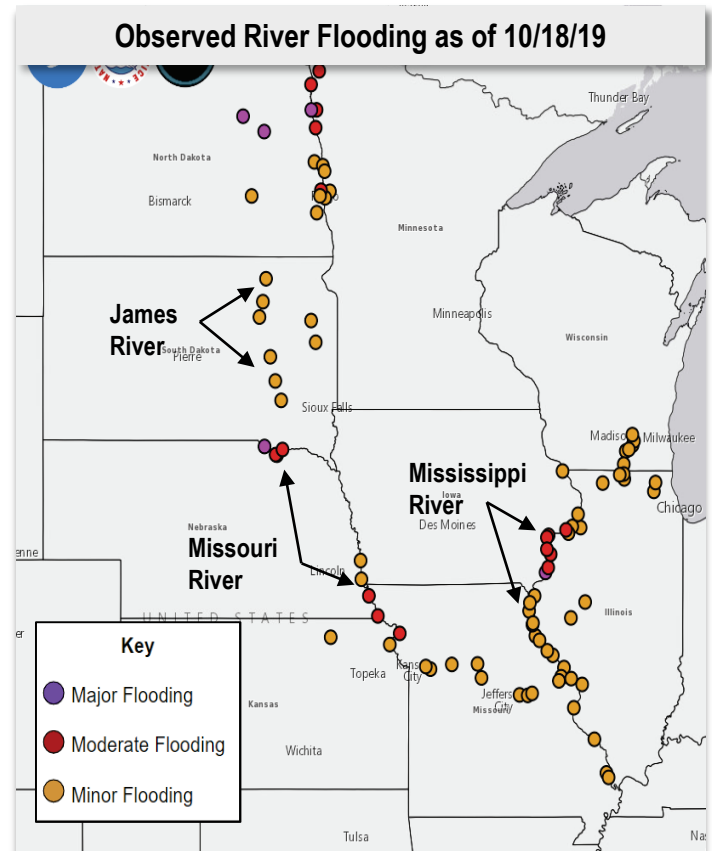
Many regional rivers are seeing higher water levels than any on record *for the fall season*.

Floods of record along the mainstem Missouri River typically occur in the months of March through July. **Current river levels are within a few inches of the top 5 record springtime flood crests in some locations.**

To illustrate just how much more water there is in the rivers this fall, the amount of water entering into the Missouri River system between Gavins Point Dam and Sioux City, Iowa was at a record high in September. It was **16 times higher than average** and twice the previous record.

“Imagine putting a soaking wet sponge in the freezer, taking it out, and then trying to pour water on it. The water is going to immediately run off. This accurately describes our soils heading into winter and what we can expect in the spring.”

- Laura Edwards  
South Dakota State Climatologist



ABOVE: Many forecast points along the James, Missouri, and Mississippi Rivers remain in Moderate Flood Stage.



# Precipitation Outlook and Potential Impacts this Winter and Spring

Winter 2019:

## Precipitation Outlook

We have established that we are going into the winter with wetter than normal soils, higher than normal river and reservoir levels. The 2019 Winter Outlook suggests that odds favor a normal to wetter than normal December through February across much of the Upper Missouri River basin as well, with higher odds farther north.

While wintertime precipitation makes up a relatively small amount of the overall yearly precipitation for many locations, the amount of snow that falls over the span of a winter has a significant impact on spring flood potential. This is because the water held in that snow tends to be released over a relatively short period of time during the spring thaw.

## Winter 2019: Outlook Confidence

Confidence in the Winter Outlook is considered to be “**low to moderate**.” Often you will hear climate forecasters talk about the presence of an “El Niño” or “La Niña” – these are names of common conditions that change the weather pattern one way or another.

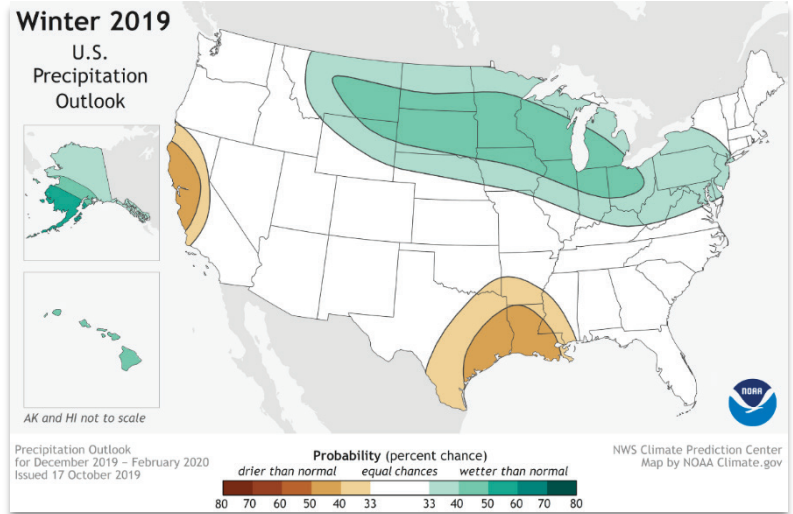


Low to Moderate

This year, those conditions do not exist and are not factors into the current outlooks. Thus, we will be subject to less predictable weather patterns this year, which will likely include large swings in temperature and precipitation.

## For more information visit:

- [Local Forecast](http://weather.gov) – weather.gov
- [Long-Range Outlooks](http://cpc.ncep.noaa.gov) – cpc.ncep.noaa.gov
- [River Forecasts](http://water.weather.gov/ahps/forecasts.php) – water.weather.gov/ahps/forecasts.php
- [Weather & Climate Data](http://ncei.noaa.gov) – ncei.noaa.gov



**ABOVE: The Winter 2019 Outlook indicates odds favor wetter than normal precipitation from December through February across areas that already have wet soil and high river levels. (Get the latest outlook: [www.cpc.ncep.noaa.gov](http://www.cpc.ncep.noaa.gov))**

## Potential Impacts This Winter and Spring

Unusually high streamflow, water levels, and abnormally wet soil suggest the **following potential impacts** for the upcoming winter and spring seasons:

- **Rivers freezing above flood stage**
- **Freezing of overland flooding**
- **Long-term soil damage**
- **Widespread ice jams, including on some rivers that are not usually affected by ice jams**
- **Widespread record flooding again next spring**
- **Delay or prevention of crop planting**

