



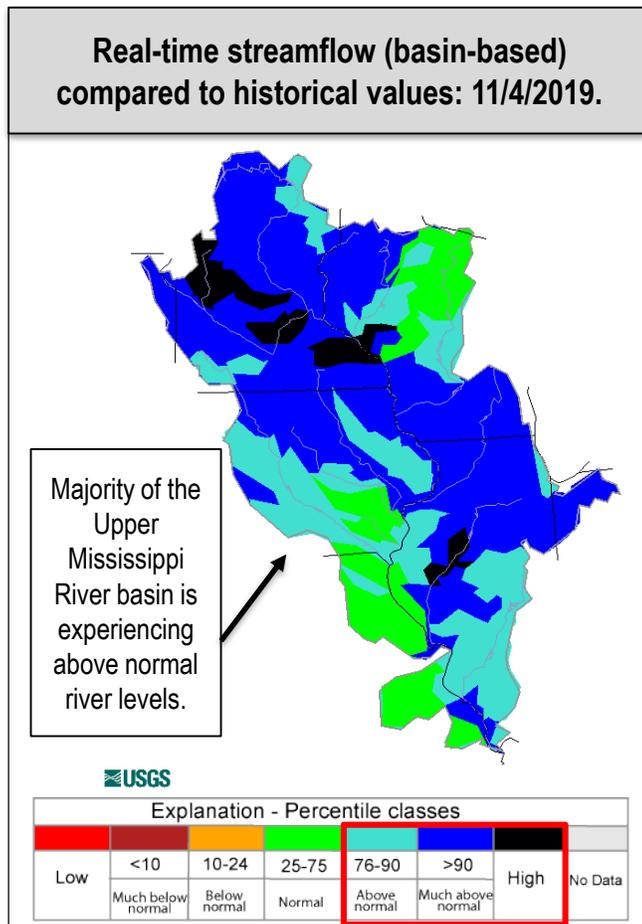
Wet Fall Conditions Leading into Winter

What will increase or decrease the Spring flood threat?

High river levels and wet soils across the region this fall have brought on concerns for an elevated risk for flooding this coming spring.

Below lists the factors that contribute to spring flooding. Two items have already occurred, with the remaining factors still in question going into winter. These factors will be measured over the coming months to determine if the flood threat this spring will be increased or reduced.

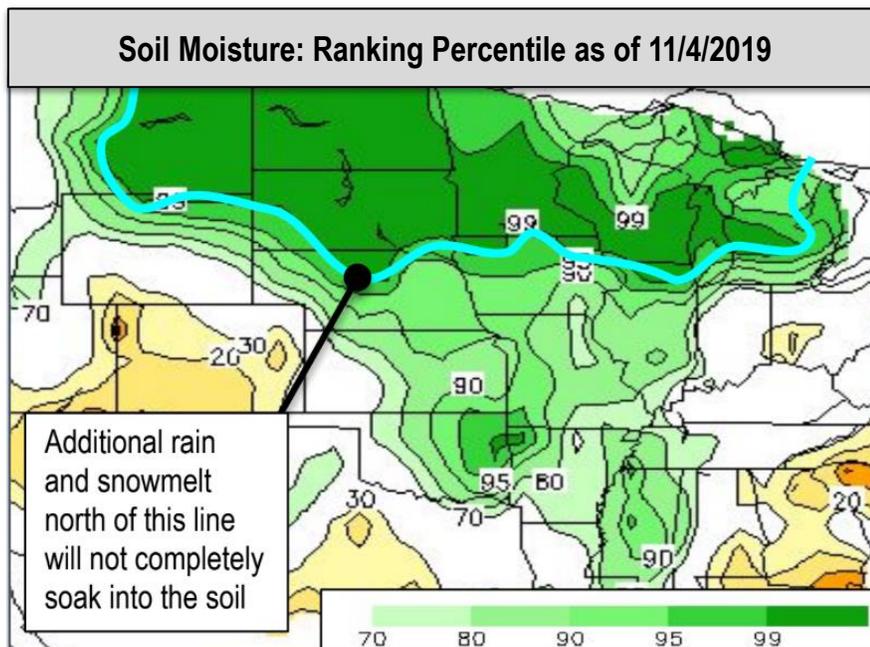
- ✓ **High river levels going into winter**
- ✓ **High soil moisture going into winter**
- Winter Precipitation
- Snowpack and liquid water equivalent
- Rate of snowmelt
- Frost depth
- Spring Precipitation



Historical Flood Analysis

Since 1940 across the Upper Mississippi River basin, roughly 40% of years with above normal fall precipitation resulted in significant flooding.

This demonstrates the importance of the other factors to have significant spring flooding occur.



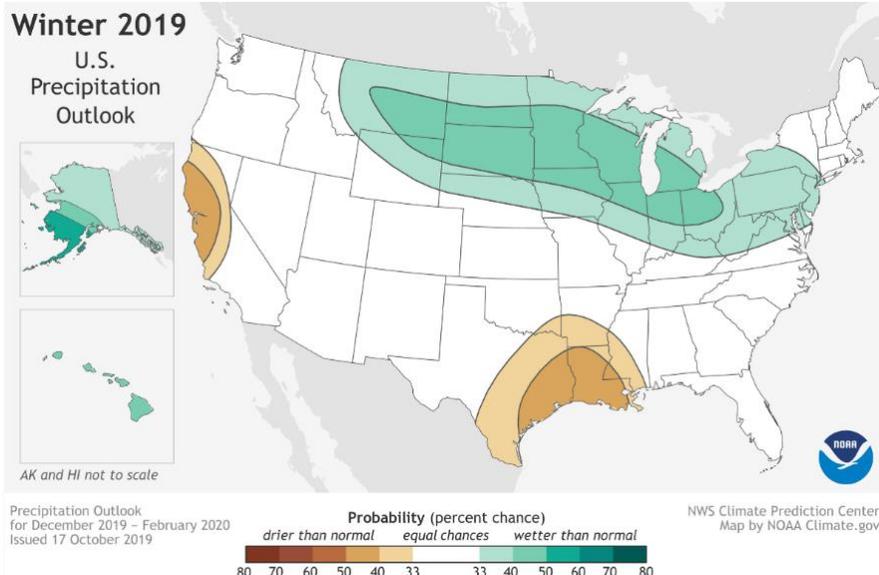
ABOVE: Wet soils across most of the region can accept very little to no more water.

Winter 2019: *Precipitation Outlook*

The Official Winter 2019 outlook suggests odds favoring a normal to wetter than normal December through February across much of the Upper Mississippi River basin.

The signal showing potential for normal to above normal precipitation across this region is of concern as these same areas are experiencing wet to nearly saturated soils along with higher than normal river levels for this time of year.

Even a normal amount of precipitation this winter season could bring an elevated risk for flooding this upcoming spring.



ABOVE: The Winter 2019 Outlook indicates favoring odds for wetter than normal precipitation from December through February for areas that are already experiencing wet soils and high river levels. (Latest Outlook: www.cpc.ncep.noaa.gov)

Winter 2019: *Outlook Confidence*



Low to Moderate

Confidence in the Winter Outlook is considered to be **low to moderate**. This season will not have El Niño or La Niña conditions in place, which would typically allow the winter to be more predictable.

This winter's weather will be driven more by short-term climate patterns, which "Could result in large swings in temperatures and precipitation" said Mike Halpert, deputy director of NOAA's Climate Prediction Center.

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 at high levels**
- **Widespread ice jams, including on some rivers that are not usually affected by ice jams**
- **Widespread flooding again next spring**
- **Agricultural impacts**

2020 Probabilistic Spring Flood Outlook Dates:

February 13, 2020

February 27, 2020

March 12, 2020

The National Weather Service urges those with interests in flooding to stay tuned to additional communications going through the winter and early spring seasons.