



Extremely Wet Conditions Across the Region Sets the Stage for a Significant Spring Flood Season

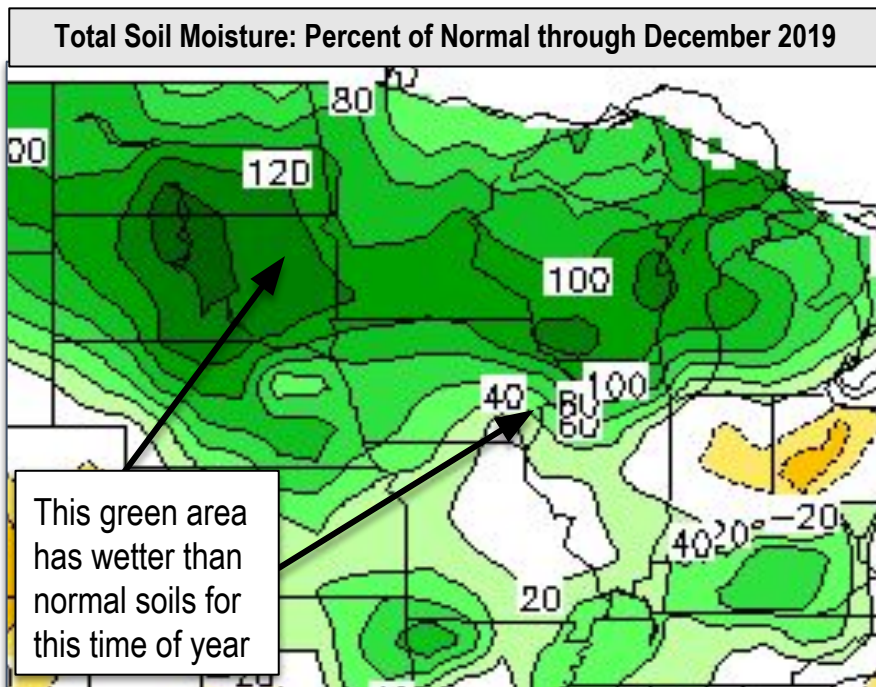
Setting the Stage:

Precipitation and Soil Moisture

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

Through the end of December 2019, the **Upper Mississippi River Basin and Red River Basin** have had their wettest year in 125 years of modern record keeping.

Across the region, Michigan, Minnesota, the Dakotas, Wisconsin and Illinois all recorded their top 5 wettest years (January 2019 – December 2019).



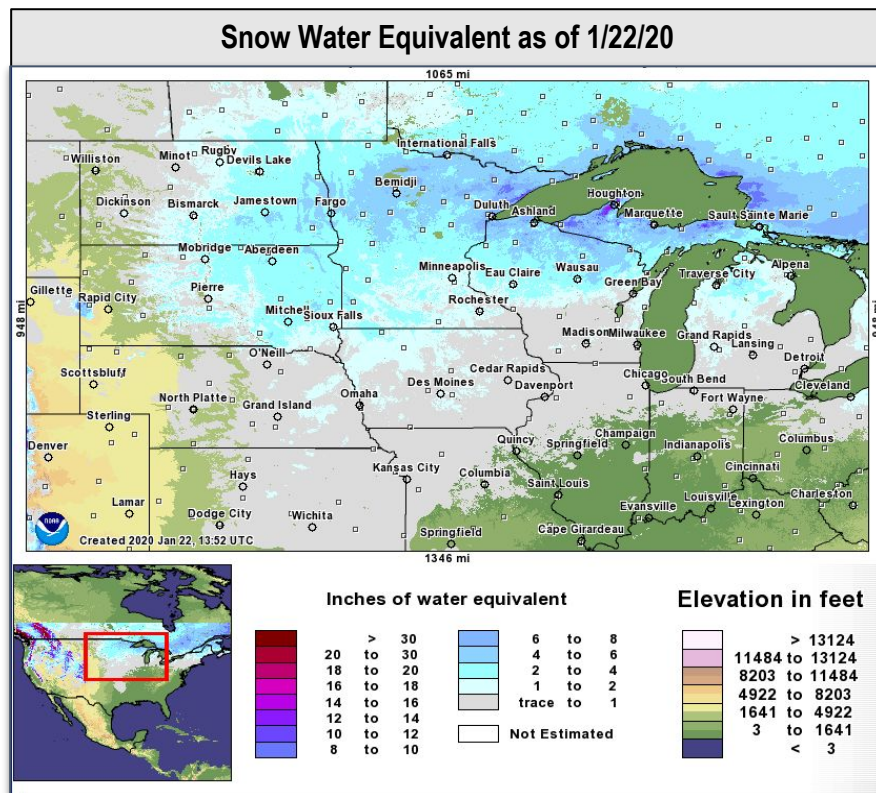
ABOVE: Wet soils (green) across most of the Upper Mississippi River Basin and Red River of the North can accept very little or no more water.
Source: NOAA/NCEP/CPC

Setting the Stage:

Snowpack

The seasonal snowpack continues to build across the Upper Mississippi River and Red River Basins. As of January 22, there is between 10-25 inches of snow depth across portions of North and South Dakota and into northern Minnesota and northern Wisconsin. Isolated snow depth of 30 inches or higher have also been observed in northern Minnesota.

This snow is holding anywhere from 2-8 inches of water within it - waiting to be released. The highest amounts can be found from eastern North Dakota to the arrowhead of Minnesota and Upper Peninsula of Michigan.



ABOVE: Snow Water Equivalent Map as of January 22, 2020.
Source OWP/NOHRSC

NOAA's Spring Flood Outlook
Release: March 19, 2020

Precipitation Outlook and Potential Impacts this Spring

Late Winter/Spring 2020:

Outlook

We could be heading into the spring with wetter than normal soils and a healthy snowpack. Recent observations shows that several rivers and streams are running higher than normal.

The latest 2020 Winter Outlook suggests that odds favor a normal to **wetter than normal February through April** across much of the Upper Mississippi River and Red River basins, with higher odds farther north. We are also expecting **cooler than normal temperatures** as you head farther north, which could hold onto the snowpack longer into the spring. This increases the risk for a sudden and high-impact thaw in the spring.

What are the ingredients of a significant spring flood season?

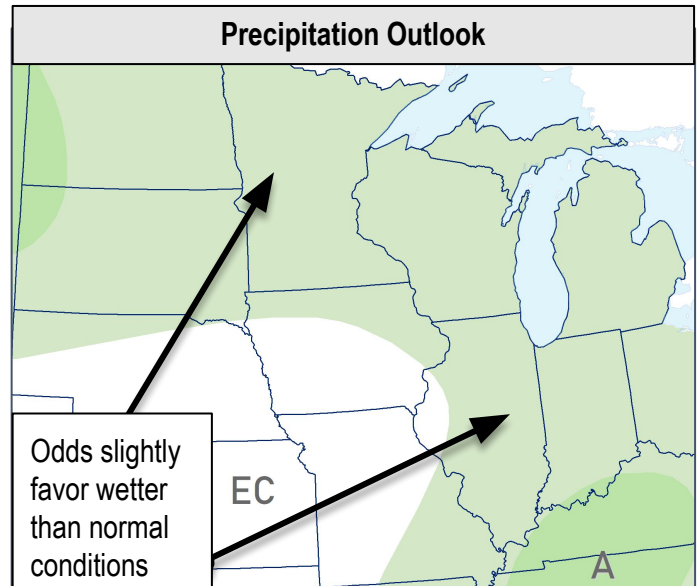
A repeat of 2019 is not a guarantee. There is still a lot of time and factors that would need to come together before we will know just how bad, or how uneventful it will be.

Factors that would improve the flood situation:

- A period of dry, warm weather allowing soil to drain and evaporate existing moisture
- Little to no additional snowfall with no extreme cold snaps
- Gradual transition out of winter into spring with mild daytime temperatures and night time low temperatures below freezing - this will allow snow to ripen and melt off a little bit at a time

Factors that would lead to spring flooding:

- Above normal snowpack across the basin
- A long-lived, widespread cold snap on bare ground that freezes the soil deep below the surface and builds a thick layer of river ice
- Sudden transition from winter to spring that melts the snowpack rapidly and increases the chance for ice jams on the rivers
- A significant rain event on top of snow pack that releases the water in the snow rapidly



ABOVE: The outlook indicates odds favor higher than normal precipitation from February through April across areas that already have wet soil and high river levels.
(Get the latest outlook: www.cpc.ncep.noaa.gov)

Potential Impacts

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

- **Widespread ice jams, including on some rivers that are not usually affected by ice jams**
- **Widespread major flooding again this spring**
- **Delay or prevention of crop planting**
- **Long-term soil damage**
- **Travel impacts due to road, dam, levee, and bridge damage**

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