



Initial Spring Flood Outlook – Below Normal to Normal Threat

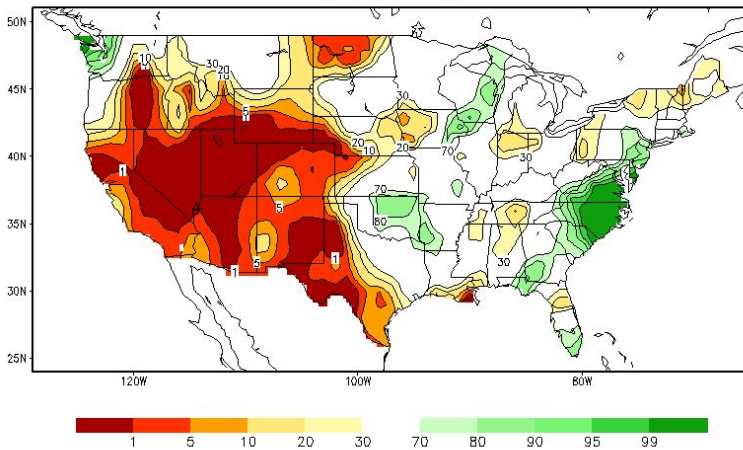
- Current conditions suggest that the threat of major spring flooding is **lower** than we've seen for a few years, and is **close to or below normal**. Much will be determined by spring temperatures and precipitation, however.

What Do We Know So Far?

Soil Moisture is...Normal!

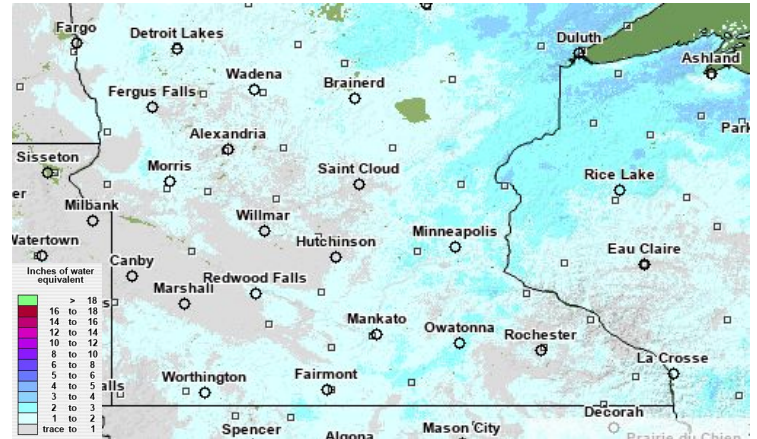
After two years of record high soil moisture, 2021 starts with near to a little below normal soil moisture over the entire area, thanks to a dry autumn. This will allow for the soil to absorb more snowmelt once the thaw occurs.

Calculated Soil Moisture Ranking Percentile
FEB 10, 2021



Snowpack / Snow Water is Lower

We've had near to below normal snowfall over the area this winter, so far. Generally, only around 2 inches of water currently exists in the snowpack, with even less in the upper Minnesota and lower Chippewa (WI) basins.



Feb 11, 2021 Modeled Snow Water Equivalent (SWE)

What does this mean?

It would take a major increase in snowpack through the rest of the winter, and/or a very quick warmup with heavy rainfall, to create widespread major flooding in the Minnesota/St. Croix/Chippewa/Upper Mississippi Rivers this season.

Recall that we had nearly ideal spring melts in 2019 and 2020 (no extreme temperatures, and extended periods of no rain/snow in March). What will 2021 bring us?



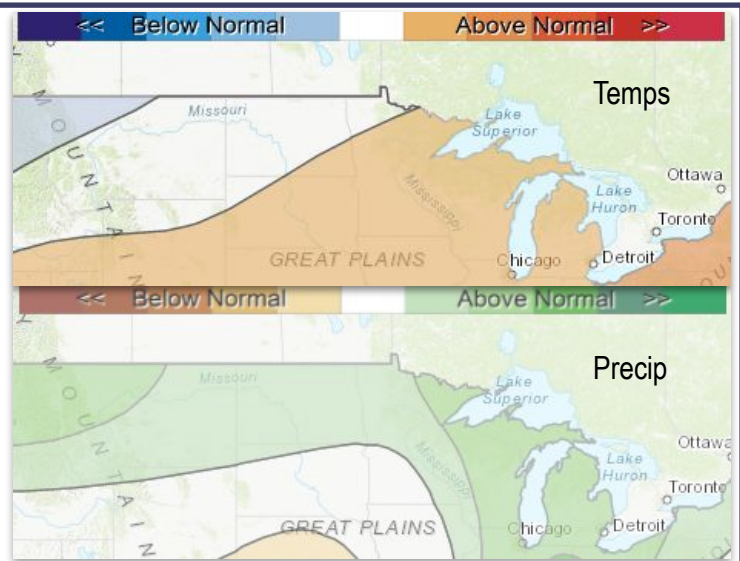
Spring Flood Threat Checklist (as of mid February)

Threat	Impact to Potential Spring Flooding	Link to Image
Current River Levels	Low/Decreased Threat	USGS WaterWatch
Soil Moisture	Low/Decreased Threat	CPC Soil Moisture
Winter Precipitation	Below Normal, so far	Winter Outlook
Snowpack/Liquid Equivalent	Below Normal, so far	Snow Analysis
Frost Depth	Shallow, so far	Frost Depth Map
Spring Temperatures	To Be Determined	Temperature/Wind fcst graph
Spring Precipitation	To Be Determined	Precip Forecast

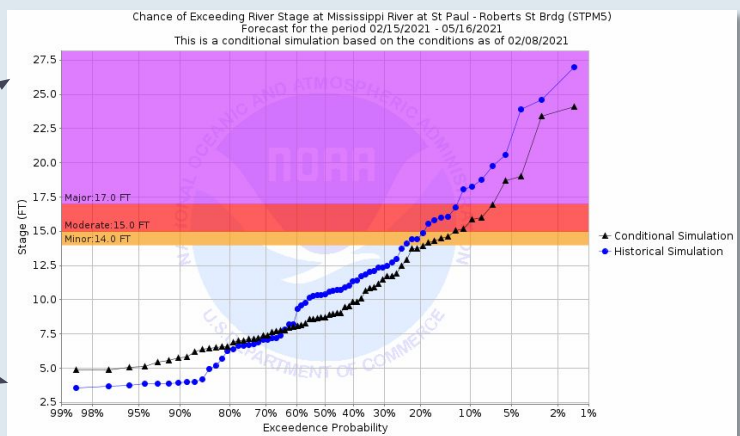
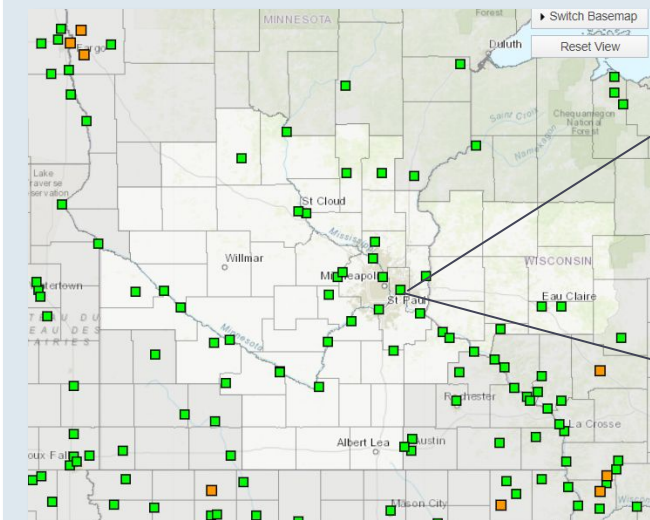
Spring 2021: *Weather Outlook*

CPC outlooks indicate a slight probability of near to above normal temperatures and near to above normal precipitation. This is not a very strong signal either way.

Keep in mind, even in a Normal or Below Normal snowmelt season, some ponding or minor flooding of low areas, fields, tributaries can be expected. The threat of ice jam flooding is present as well, with lower potential severity due to lower base river levels.



Spring Streamflow Probabilities available here: https://water.weather.gov/ahps2/long_range.php?wfo=mpx



Black Line represents the newest forecast – Blue Line represents historical average. Probability of reaching major flood stage (purple) this spring is about 7 percent, which is below the 12% historical average.

Next Updates: February 25 and March 11, 2021