2022 Spring Flood Outlook
Covering the Upper Mississippi, Minnesota, and Chippewa (WI) basins and tributaries

Key Messages

➔ The latest spring flood outlook for the Twin Cities service area is still **Average/Normal**.
➔ Nearly every spring flood parameter is near what we’d expect for early March.
➔ The headwaters of the Mississippi have a robust snowpack, but there is also plenty of room to intercept runoff due to the recent drought.

Important Updates

➔ There has been little change to the probability for flooding throughout the region
➔ The CPC Drought Outlook flipped again, and now shows improvement for central/southern MN and WI (pg 4).

Next Scheduled Briefing

➔ This is the final scheduled spring outlook
We’ll start with modeled Snow Water Equivalent (SWE) (above) around 2-5 inches north and 0.5-2 inches south. These are now slightly above normal for much of the Mississippi and Minnesota headwaters, but not significantly.
The increased precipitation last autumn resulted in improved soil moisture conditions before freeze-up this year; while there is still a small deficit over most of the area, it has improved greatly since mid summer.

Frost Depth (not shown) is also very much near normal for mid March over the entire area, with most readings showing from 18 to 30 inches of frost in the soil.
While the drought has improved since summer, there remains minor to moderate drought from eastern Minnesota into much of Wisconsin. These areas of drought have decreased in the last month.

The Climate Prediction Center outlook changed again...now forecasts improvement over the entire area through the spring.
After a cold end to this week, temperatures rebound to above normal next week. With nighttime lows dropping near to below freezing and no significant precipitation, we may have a favorable start our snowmelt.
CPC and models show potentially cooler than normal temperatures move back in, though by late March this may be above freezing. Barring a major arctic outbreak or snowstorm, this would be a favorable melting pattern too.
CPC indicates a slight increase in probabilities for warmer than normal temperature, while the highest likelihood of above normal precipitation remains to the southeast.
Looking at all the current/known factors we evaluate for the flood threat, all are fairly close to normal so far for 2022.

Much will be determined by what happens with our temperatures and rainfall/snowfall in March and early April (as we say every year!). A major warm rain event at the wrong time can always produce flooding.

Overall, our flood threat outlook for this season is currently Average for the Minnesota, Upper Mississippi, and Chippewa (WI) basins and tributaries.

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<th>Threat</th>
<th>Impact to Potential Spring Flooding</th>
<th>Link to Image</th>
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<tr>
<td>Current River levels</td>
<td>Little Impact / Normal</td>
<td>USGS WaterWatch</td>
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<td>Soil moisture</td>
<td>Near to Just Below Normal</td>
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<td>Frost Depth</td>
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<td>Snowpack/Liquid Equivalent</td>
<td>Near to Slightly Above Normal</td>
<td>Snow Analysis</td>
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<td>March Precipitation</td>
<td>Not a strong signal either way</td>
<td>March CPC Outlook</td>
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<td>Rate of Spring Snowmelt</td>
<td>To Be Determined</td>
<td>Choose Snowmelt from list here</td>
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<tr>
<td>Spring Precipitation</td>
<td>To Be Determined</td>
<td>Precip Forecast (in season)</td>
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Continue on to find out more about particular locations…
Going back to our Long Range Flood Threat map, only a few locations in the Mississippi basin have a 50 percent chance of reaching minor Flood Stage. There has been little change since the previous outlook.

This is very much in the “normal/average” category of flood threat for our area.

There are other areas, particularly the Red River of the North, with a higher threat; see the North Central River Forecast Center outlook page for more info there.
2022 Spring Flood Outlook

Find your Long Range Outlook Graph

Long range flood risk graphs are available at: https://water.weather.gov/ahps2/long_range.php?wfo=MPX

River forecasters run long range river models, including current soil moisture profiles, snowpack info, and 45-day model precipitation forecasts. The result is a graph of probability of reaching various stages.

The Black Line represents the current forecast – Blue Line represents historical average. When the black line is to the left/above of the blue line, the flood threat is above normal.
Let’s look at the St. Croix River at Stillwater, for example.

The black line intersects Minor Flood Stage right about 25 percent (orange arrow), meaning there is about a 25 percent chance of reaching minor flood stage. This is exactly normal. (blue line). When we look at Major Flood Stage, the black line shows about a 14 percent probability (purple arrow), also very close to the normal value.

These numbers have come down a little since the previous update.

The Black Line represents the current forecast – Blue Line represents historical average. When the black line is to the left/above of the blue line, the flood threat is above normal.
For the Mississippi at St. Paul:

The black line intersects Minor Flood Stage right about 32 percent (orange arrow), meaning there is about a 32 percent chance of reaching minor flood stage. This just above the normal of 27 percent. (blue line). When we look at Major Flood Stage, the black line shows about a 17 percent probability (purple arrow), also just above normal.

The Black Line represents the current forecast – Blue Line represents historical average. When the black line is to the left/above of the blue line, the flood threat is above normal.
Here is a look at a higher threat location, such as the Minnesota River at Montevideo.

The black line intersects Minor Flood Stage around 75 percent, meaning there is about a 75 percent chance of reaching minor flood stage. The normal value is about 33 percent (blue line).

When we look at Major Flood Stage, the black line shows about a 10 percent probability, which is also normal for the March update.

The Black Line represents the current forecast – Blue Line represents historical average. When the black line is to the left/above of the blue line, the flood threat is above normal.
Overall, our flood threat outlook for this season is currently Average, or close to normal, for the Minnesota, Upper Mississippi, and Chippewa (WI) basins and tributaries.

The next week or so should start the melt, and with no major storms on the horizon, we should get a nice start to the snowmelt season.

Be on the lookout for ice jams during at vulnerable locations, as the rivers have a strong ice cover this year.

Watch for event specific updates, and... Be safe and enjoy your spring!

Questions or need more info? Email us at nws.twincities@noaa.gov