Second Southern Wisconsin Spring Flood Outlook

Issued Feb 24, 2023

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Flood Outlook Summary

- Spring flood risk is close average across most of southern Wisconsin
  - Risk is slightly above average west of Madison
  - Risk is near average east of Madison
  - Risk is above average for the lower Wisconsin River
  - Additional snowpack could increase this risk
- Break up ice jam risk is low
- Flooding is still possible, the underlying risk is not elevated much at this time. The spring flood risk pertains to the spring season as a whole, the risk with individual events may be different.
  - Flood risk next week (late Feb / early March)
  - Greatest risk of flooding occurs with snow melt and moderate to heavy rain

River	Flood Risk
Lower Wisconsin	Above Average
Baraboo	Average to Above Average
Pecatonica	Average to Above Average
Sugar	Average
Rock	Average to Above Average
Crawfish and Turtle Creek	Average
Upper Fox	Average
Sheboygan, Cedar Creek, Milwaukee	Average
Lower Fox	Average
Root	Average

Individual river forecast points may be slightly higher or lower

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What Has Changed

- Spring flood risk over the past two weeks went from slightly below average to near average.
  - Rivers are running higher and the snowpack is greater
- Break up ice jam risk lowered because now there are many areas of open water

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Flood Risk Factor	Status	Risk
Snowpack	Average	Average Risk
Soil Moisture	Average to Slightly Above	Slightly Increases Risk
Frost Depth	Lower than Average	Decreases Risk
River Levels	Average to Above Average	Slightly Increases Risk
Spring Precipitation	Wet ?	Increases Risk
Spring Temperatures	?	?

Factors Limiting Flood Risk	Factors Increasing Flood Risk
Little additional snowfall	Deeper snowpack
Dry, warm weather promoting evaporation	Significant rain on top of snow or frozen ground
Gradually warming temperatures in spring	A rapid snowmelt
No extreme cold snaps without snow cover	Very cold temperatures increasing frost depth and building river ice

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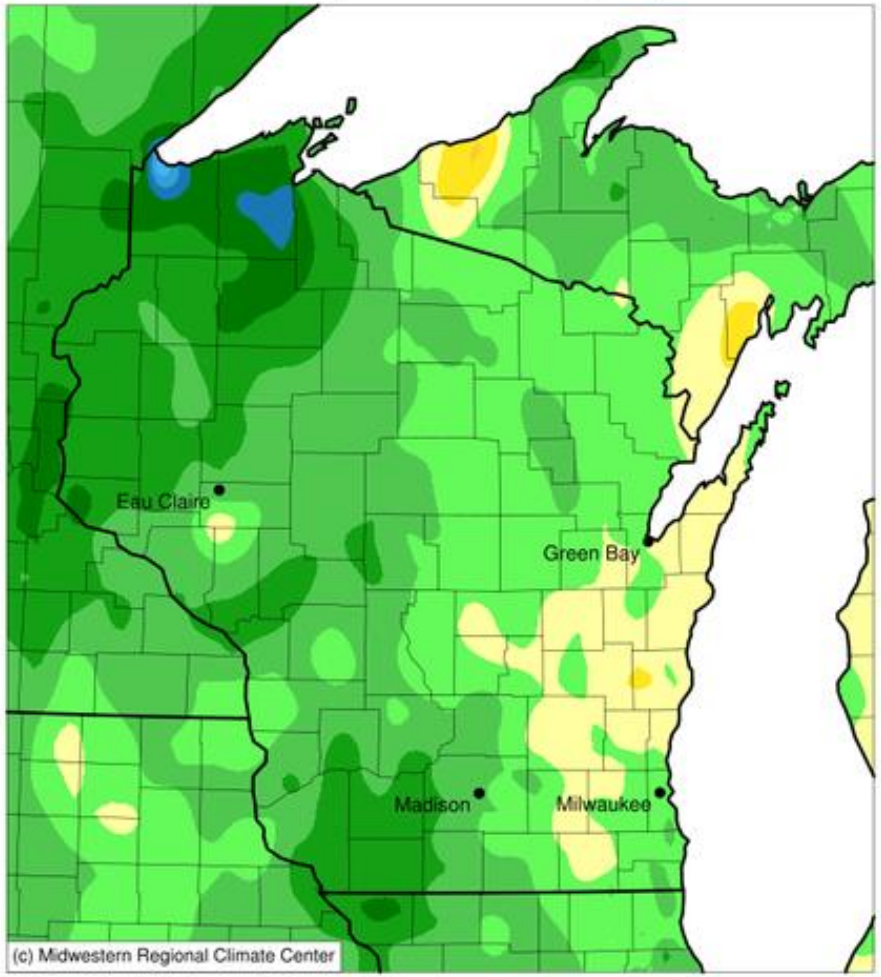
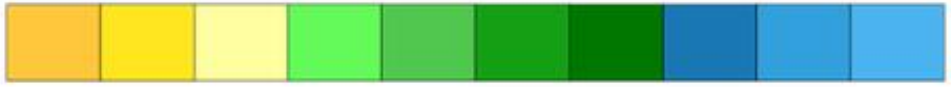
Accumulated Precipitation (in): Departure from 1991-2020 Normals

December 01, 2022 to February 23, 2023

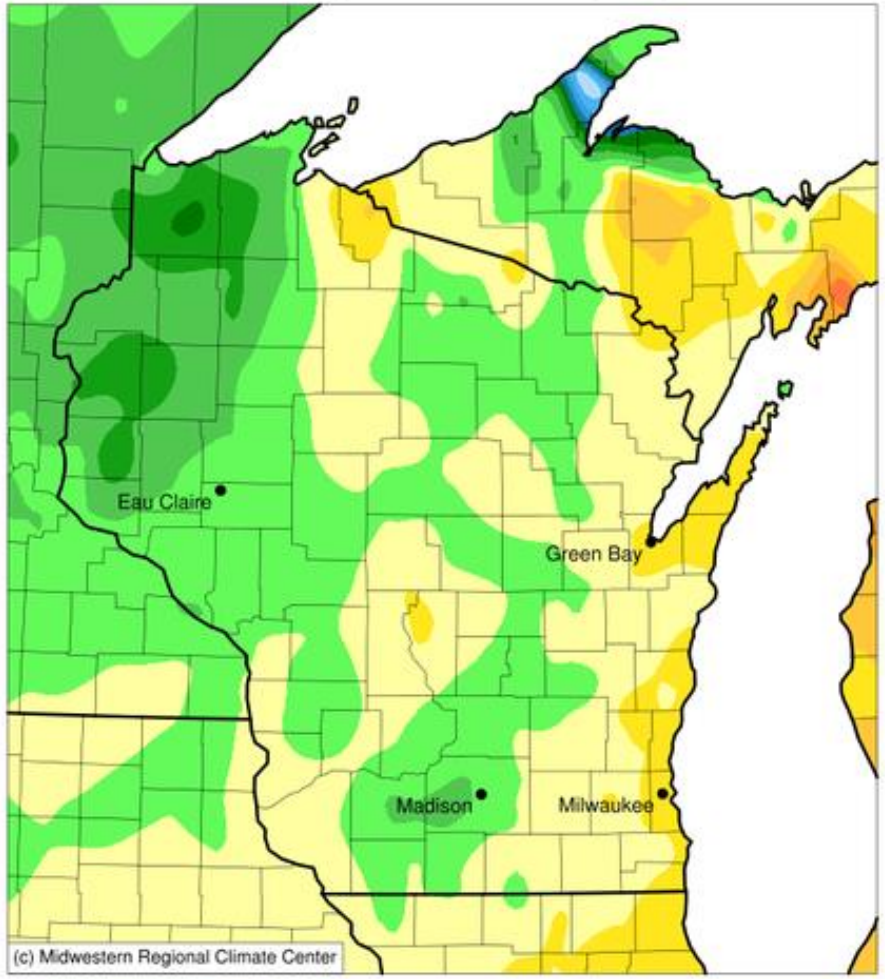


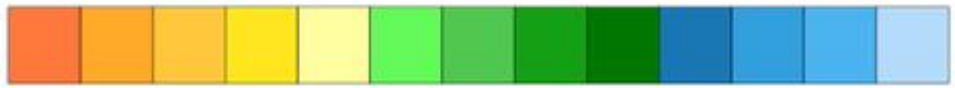


Stations from the following networks used: WBAN, COOP, FAA, GHCN, ThreadEx, CoCoRaHS, WMO, ICAO, NWSLI,
Midwestern Regional Climate Center
cli-MATE: MRCC Application Tools Environment
Generated at: 2/23/2023 10:03:02 AM CST

Accumulated Snowfall (in): Departure from 1991-2020 Normals

December 01, 2022 to February 23, 2023





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Midwestern Regional Climate Center
cli-MATE: MRCC Application Tools Environment
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Despite consistent precipitation, there is a lack of snow for the season in the east

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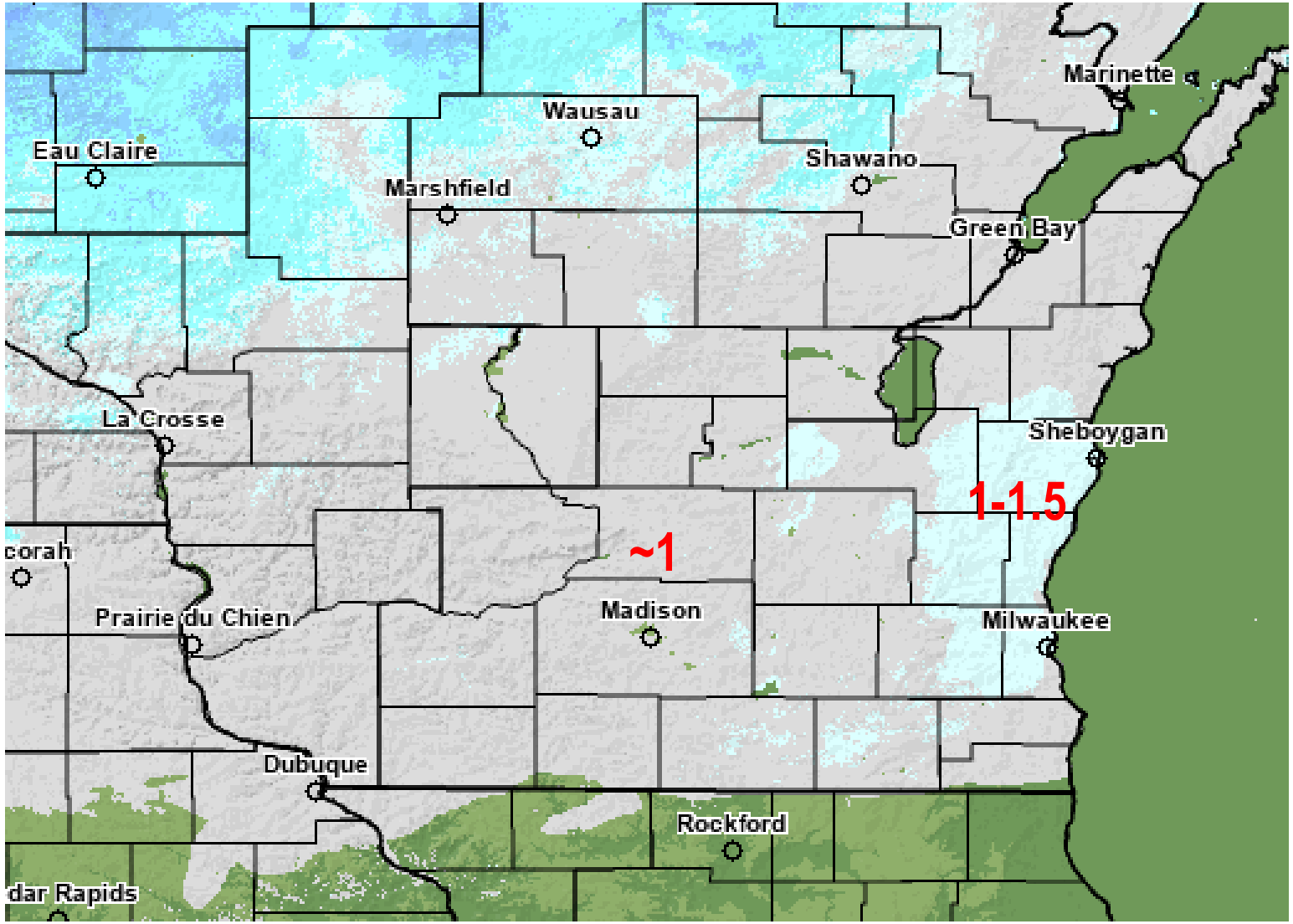
Snow Water Equivalent 2/23/23



Close to normal

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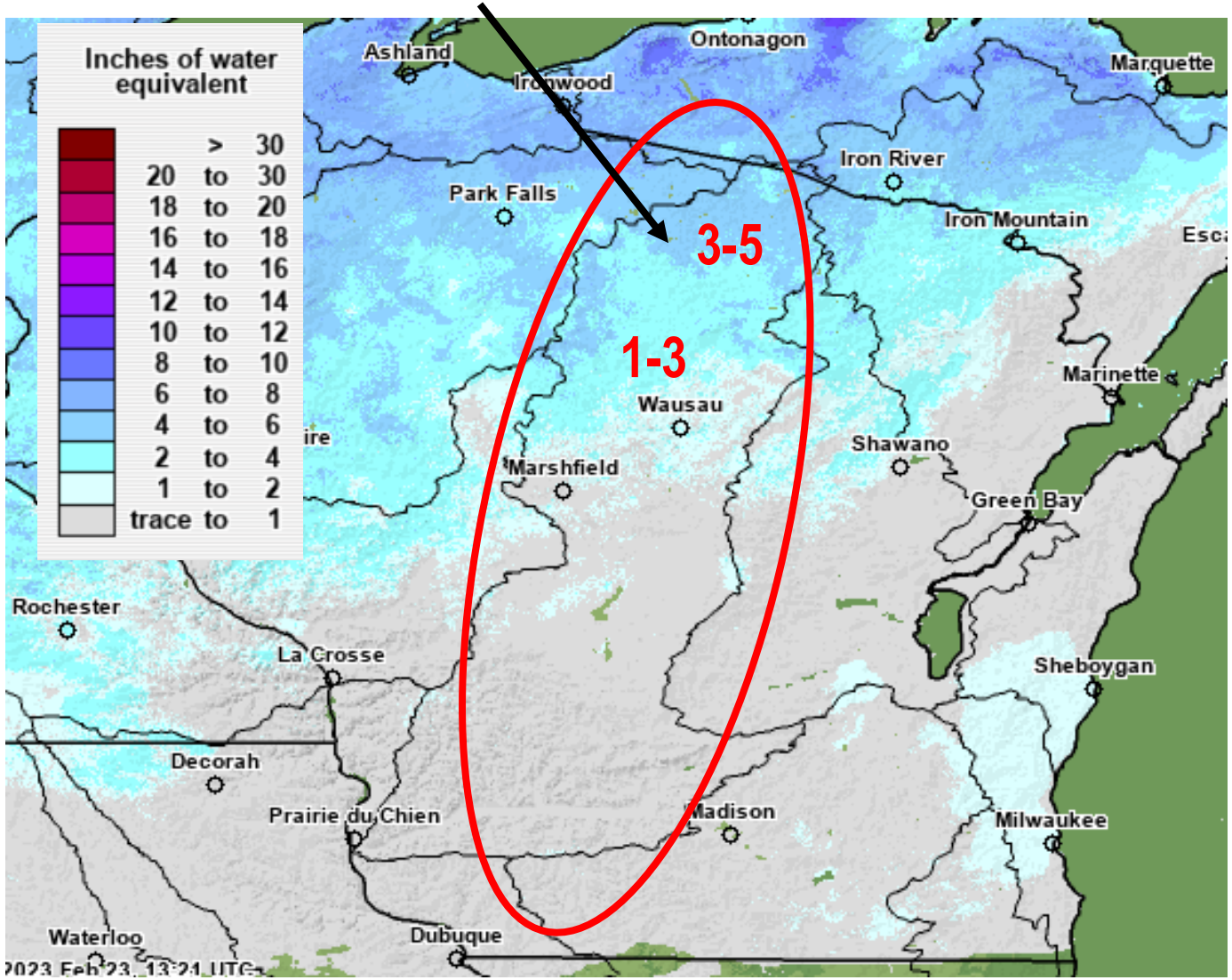
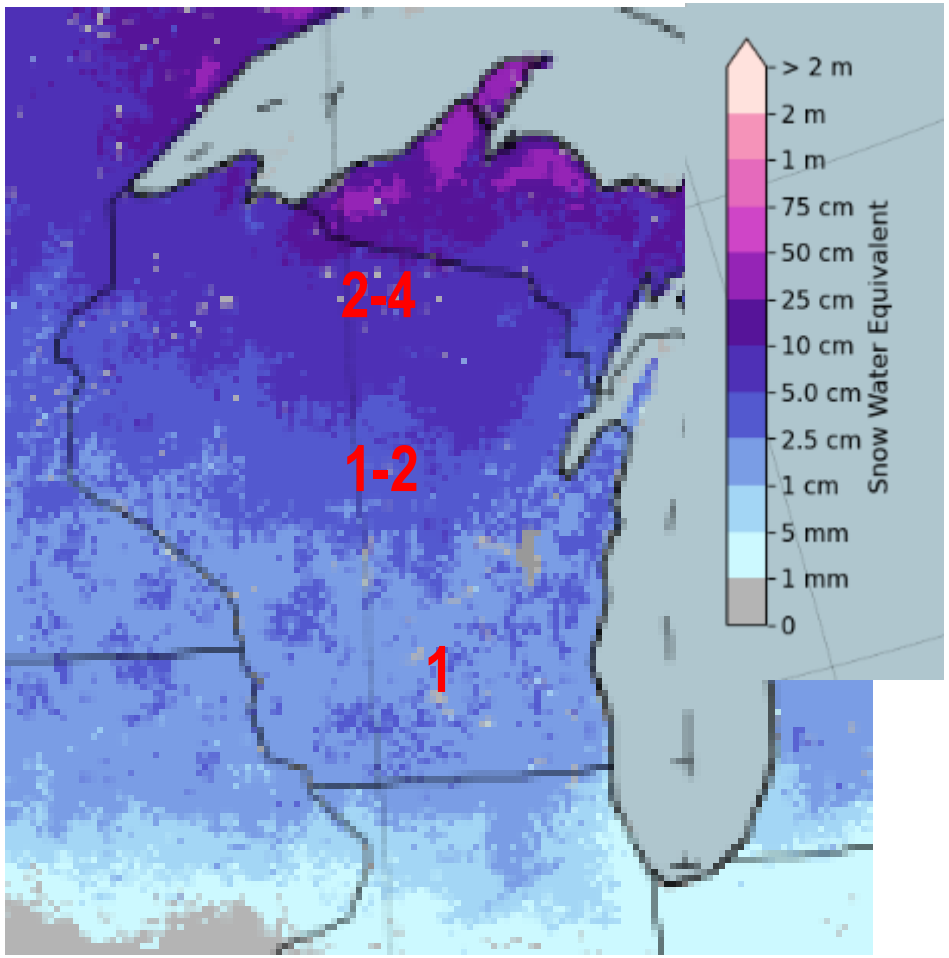
Snow Water Equivalent 2/23/23

Above average, helping to elevate flood risk for lower WI River



Snow Water Equivalent Normal



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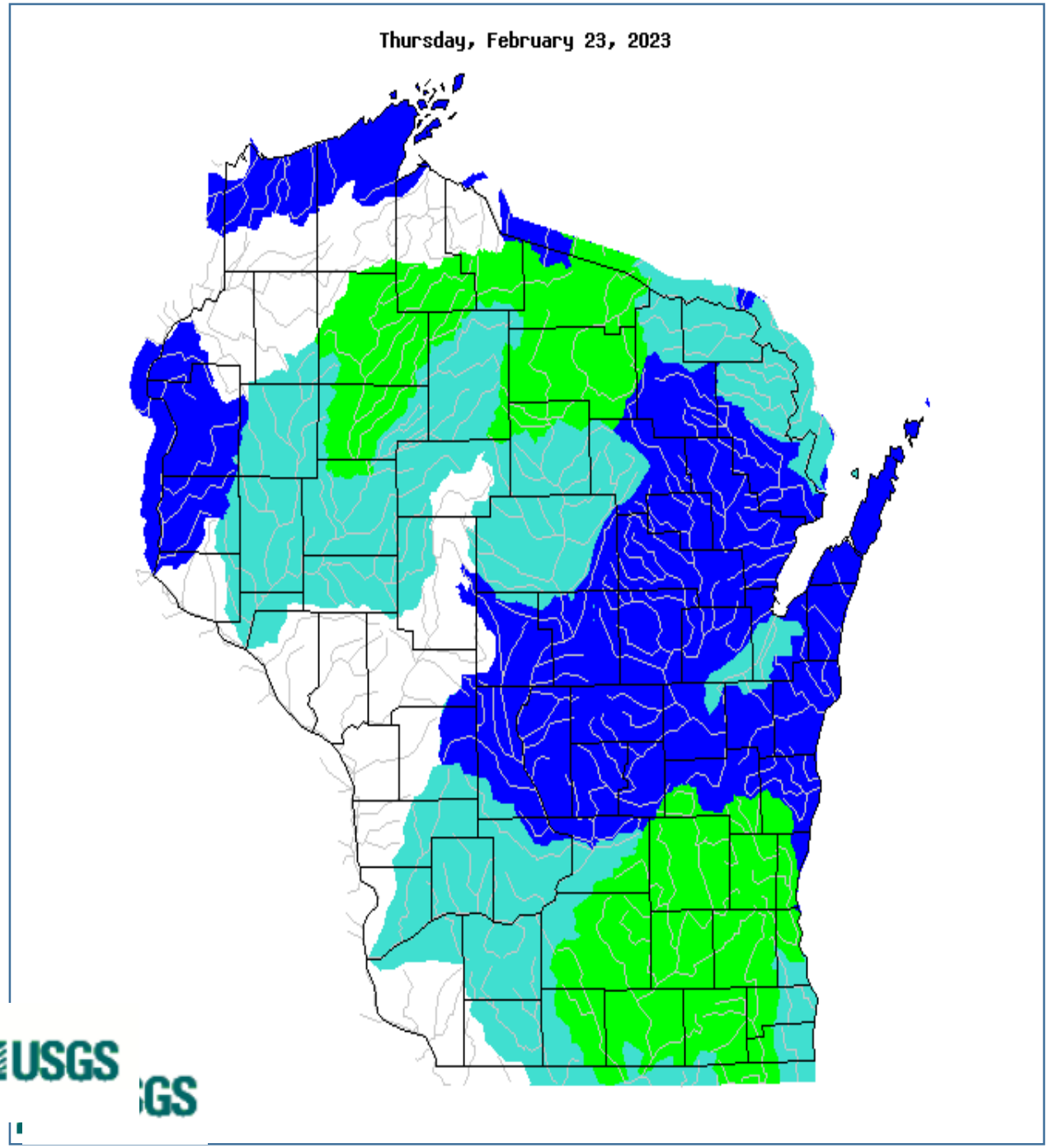
14 day Mean Streamflow Percentile

Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	No Data
	Much below normal	Below normal	Normal	Above normal	Much above normal		

Higher values in the south west help to elevate the risk somewhat. However, rivers are currently below their banks so they can hold some water helping to mitigate the flood risk somewhat.



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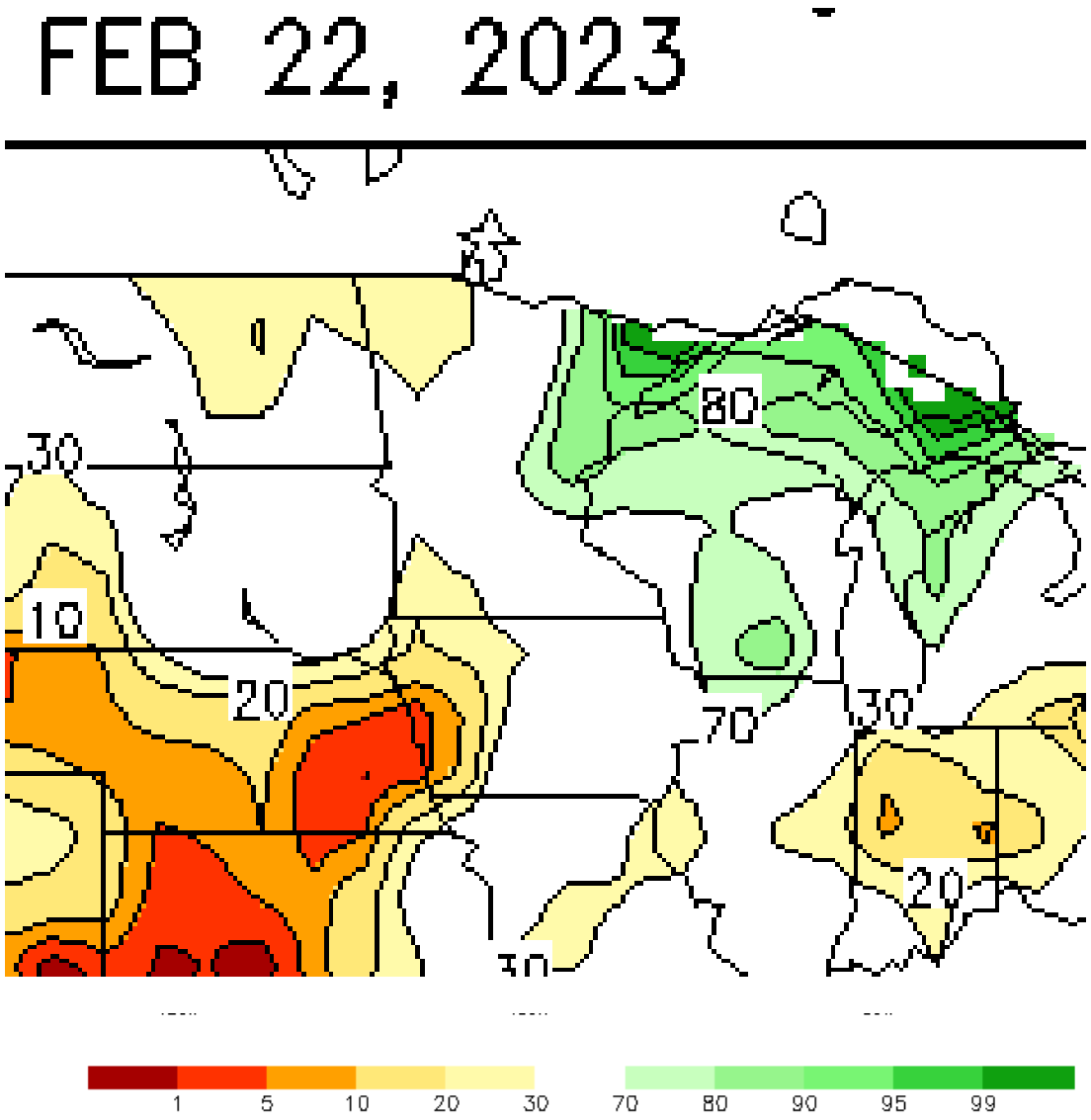
Soil Moisture Percentile



Higher values in the southwest and south-central help to elevate the risk somewhat. Closer to average value in the east help contribute to the closer to average risk.

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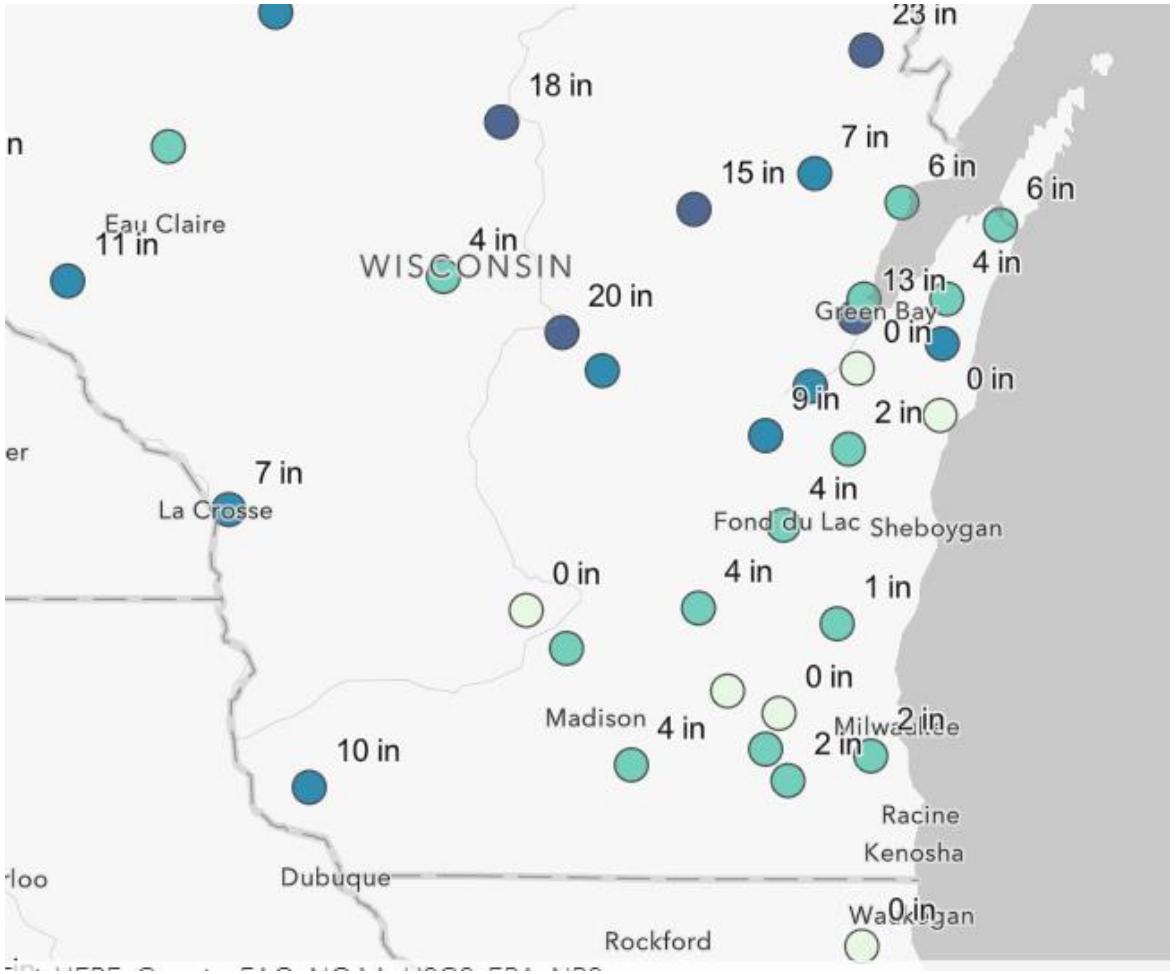
Frost Depth 2/20/2023

Very shallow frost depth helps reduce the flood risk.
Soils could thaw sooner and help absorb moisture.



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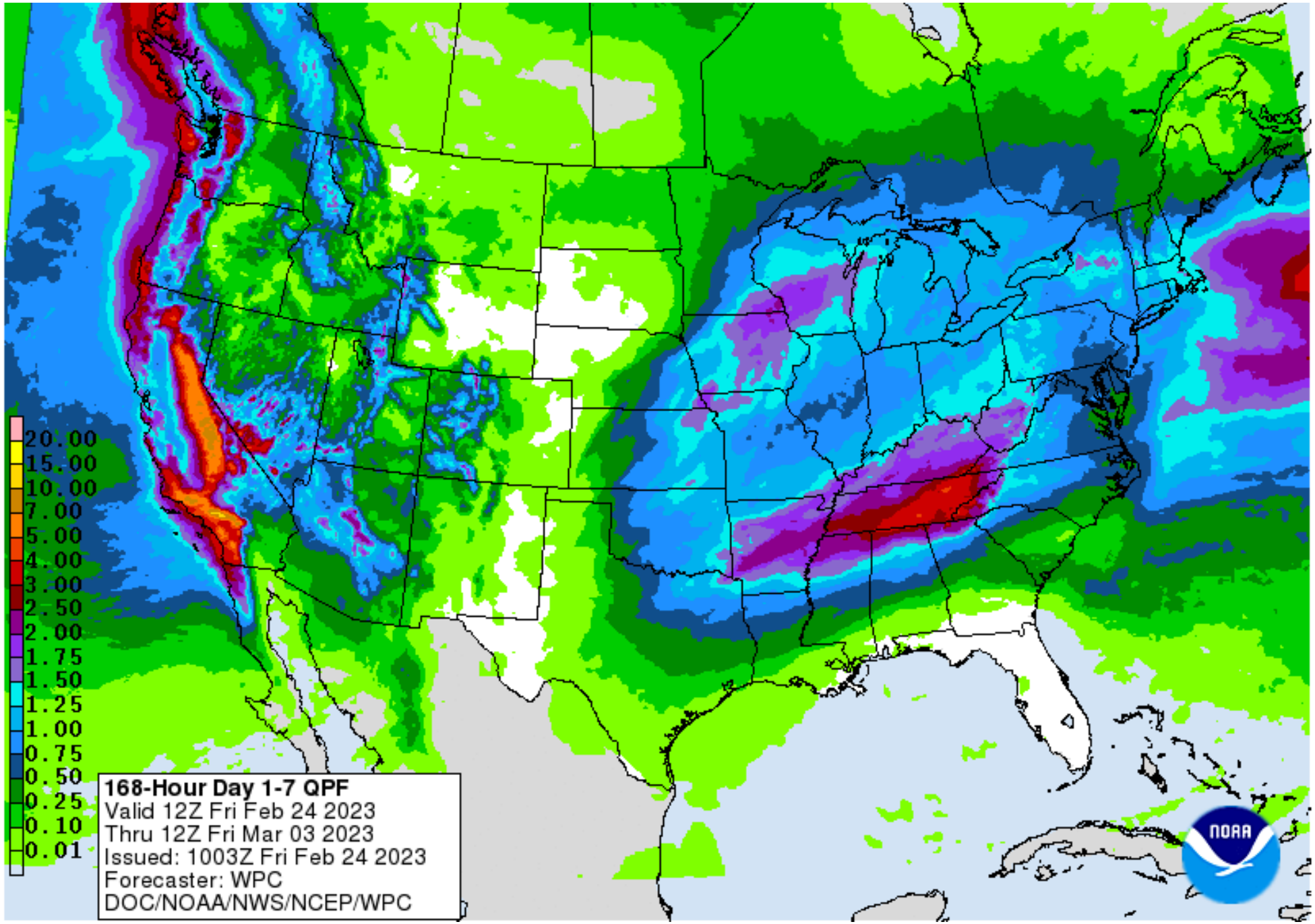

Rain expected Monday, Feb 26, creates flood potential.

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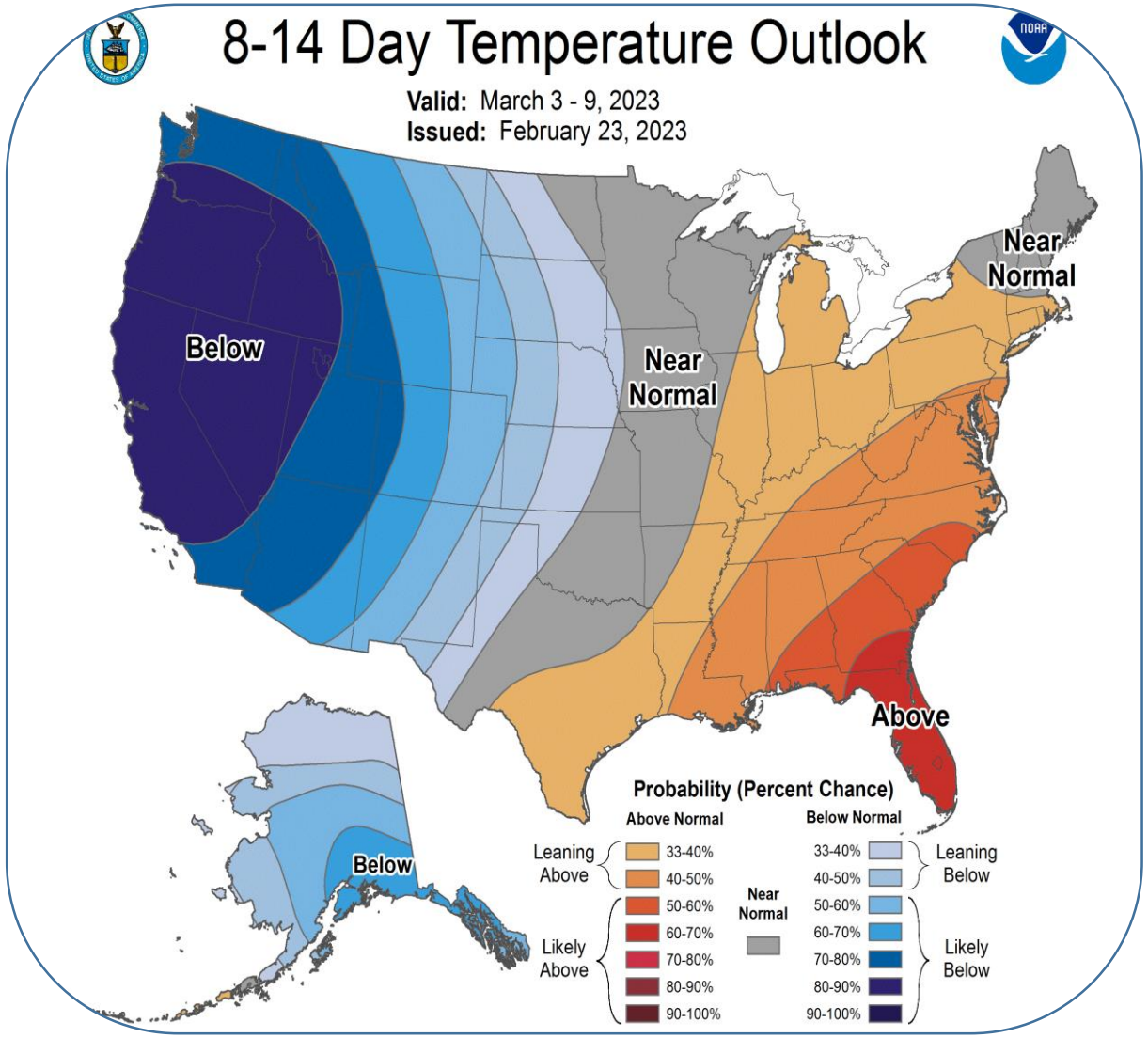

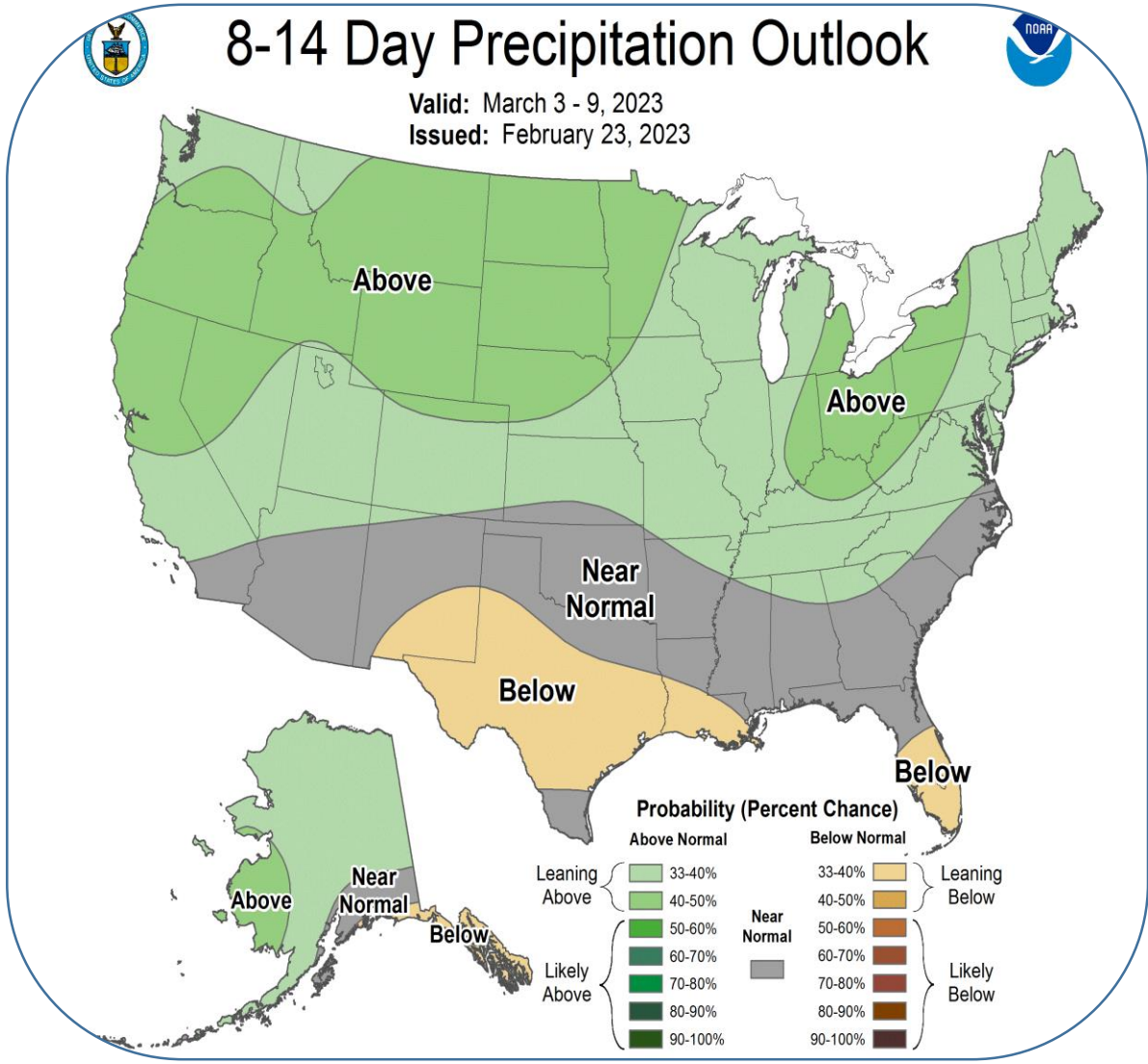

Mild temperatures and wet pattern – melting snow and rain – could contribute to flood risk.

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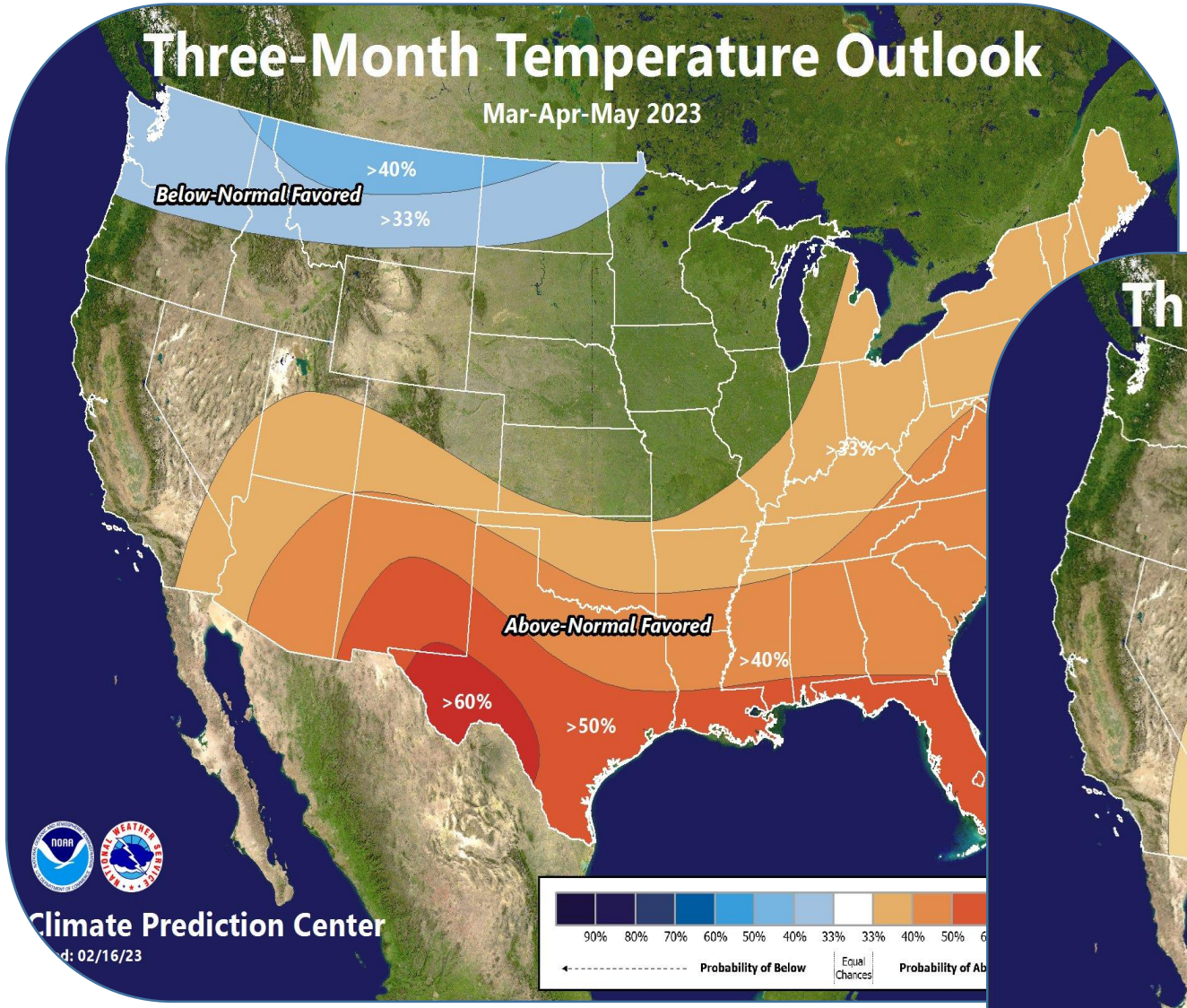

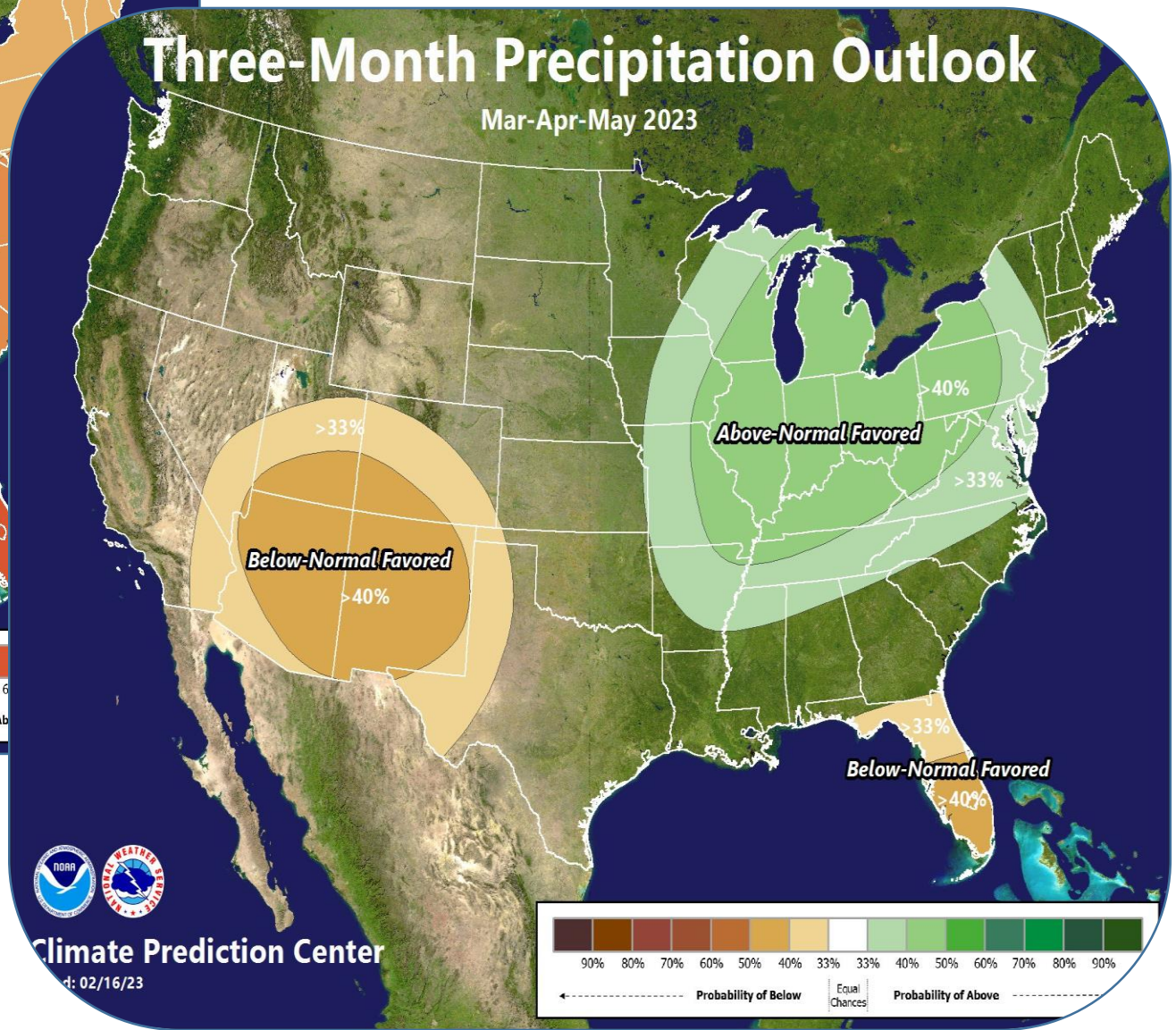

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Probabilities of Exceedance valid 2/27/23 to 5/28/23
Southwest WI

Location	Outlook Minor	Historical Minor	Outlook Moderate	Historical Moderate	Outlook Major	Historical Major
Fox – Princeton	19	20	<5	<5	<5	<5
Fox-Berlin	26	26	6	<5	<5	<5
WI - Dells	35	25	18	12	12	5
WI - Portage	92	71	75	52	31	26
Baraboo – Rock Springs	52	34	31	27	10	8
West Baraboo	14	13	6	<5	<5	<5
Baraboo	64	40	6	<5	<5	<5
Black Earth Creek	<5	<5	<5	<5	<5	<5
Pecatonica – Darlington	<5	<5	<5	<5	<5	<5
Blanchardville	25	15	<5	<5	<5	<5
Martintown	37	22	<5	<5	<5	<5
Sugar – Albany	<5	<5	<5	<5	<5	<5
Brodhead	38	28	7	5	<5	<5

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Probabilities of Exceedance valid 2/27/23 to 5/28/23
South – Central WI

Location	Outlook Minor	Historical Minor	Outlook Moderate	Historical Moderate	Outlook Major	Historical Major
Rock – Watertown	15	14	6	10	<5	5
Jefferson	45	37	30	26	<5	6
Fort Atkinson	18	19	9	8	<5	<5
Lake Koshkonong	52	43	32	31	25	24
Afton	50	43	13	17	7	8
Crawfish - Milford	39	36	11	9	<5	6
Turtle Creek – Clinton	8	13	<5	<5	<5	<5
Beloit	8	13	<5	<5	<5	<5
Fox – Waukesha	12	18	7	8	<5	<5
Burlington	21	25	7	16	<5	<5
New Munster	61	55	17	23	7	16

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Probabilities of Exceedance valid 2/27/23 to 5/28/23
Southeast WI

Location	Outlook Minor	Historical Minor	Outlook Moderate	Historical Moderate	Outlook Major	Historical Major
Sheboygan	24	30	6	8	<5	6
Cedar Creek - Cedarburg	<5	<5	<5	<5	<5	<5
Milwaukee R - Cedarburg	37	39	8	9	<5	<5
Root R- Franklin	23	26	<5	<5	<5	<5
Raymond	19	22	<5	5	<5	<5
Racine	<5	9	<5	<5	<5	<5

How to Interpret the Probability Graphics

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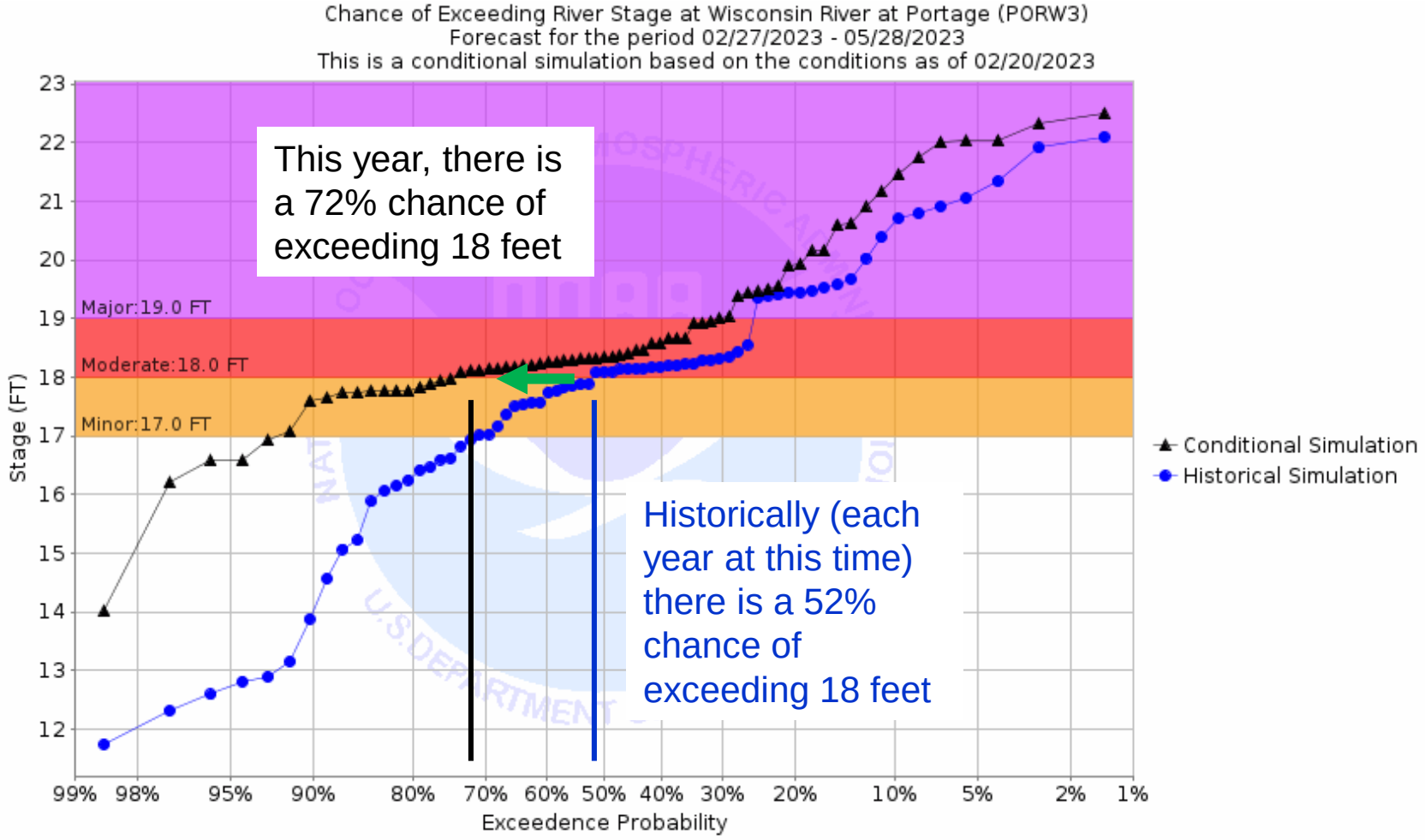
The outlook is for a 3 Month time period.

Black line is the **current forecast**, based on current environmental conditions and forecast temperature and precipitation

Blue line is the **historical (average)** probabilities

When the black line is above, or to the left of the blue line, the chances are greater. When the black line is below, or to the right of the blue line, the chances are lower.



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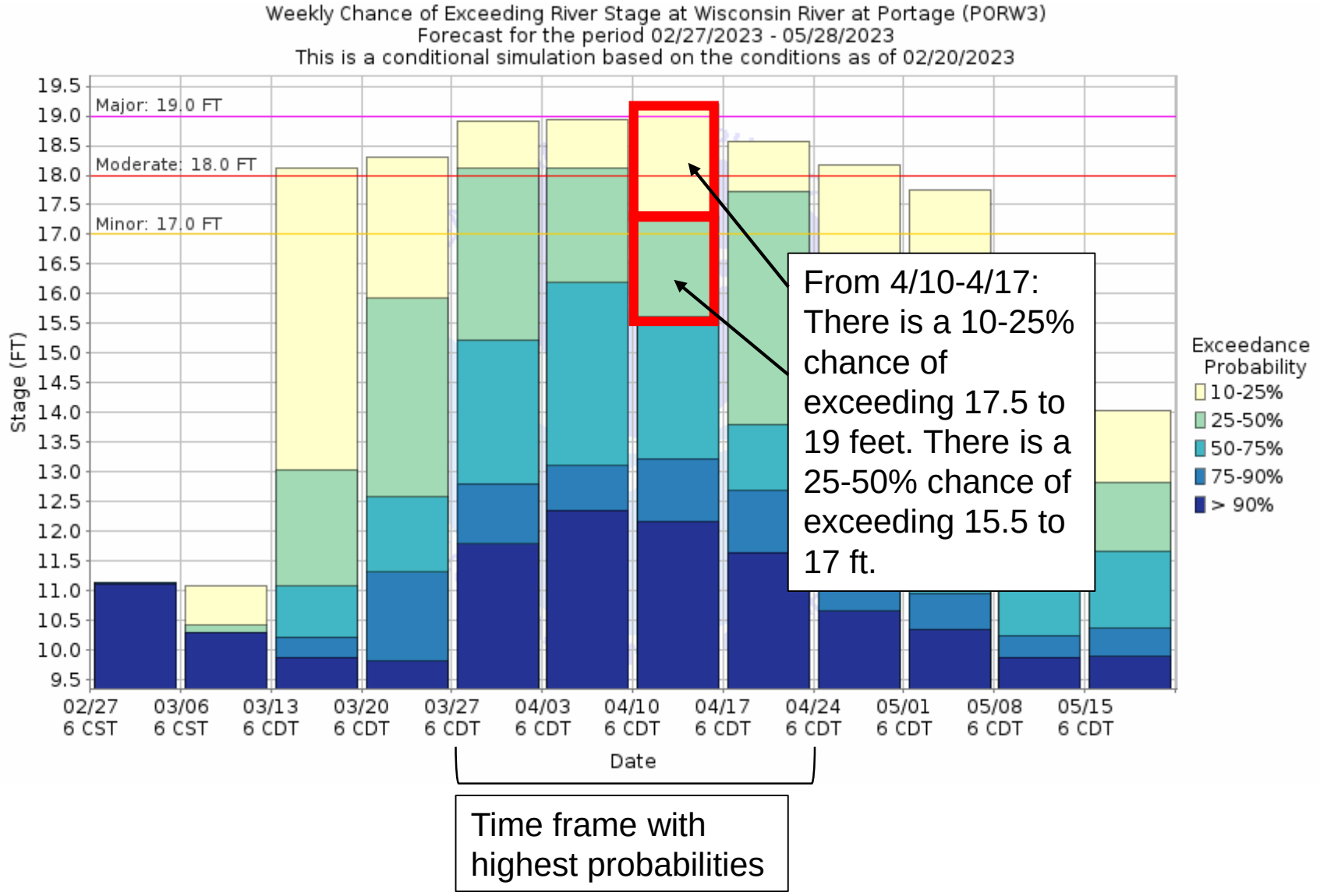
How to Interpret the Probability Graphics

Outlook is for weekly time periods.

Colored boxes show the probability of exceeding each threshold.

Probability increases as colors become more blue.

Tallest boxes show the time frame with the highest probability of exceeding higher river levels.



How to Interpret the 10 Day River Level Outlook

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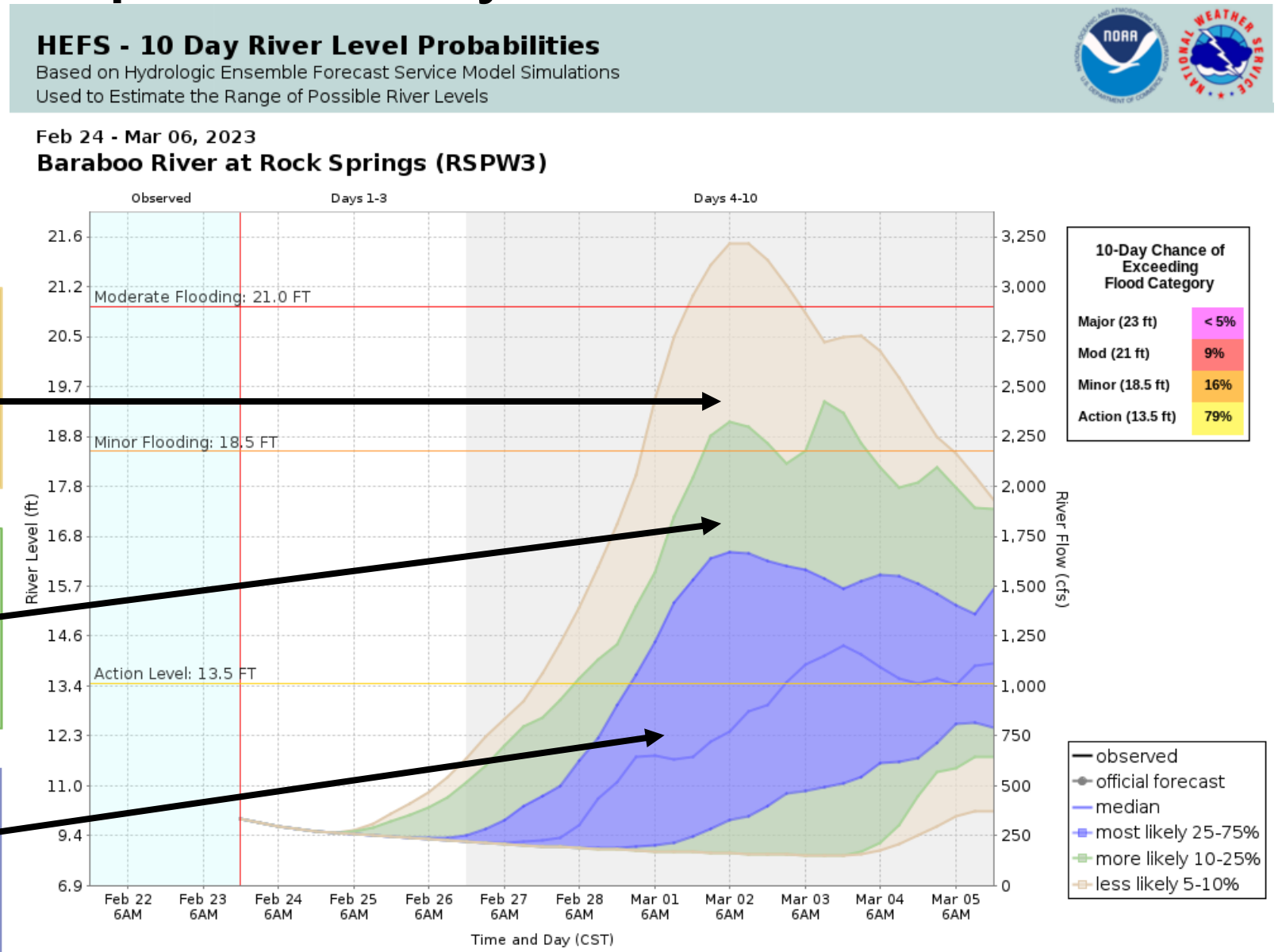
Shaded area shows the range of possible river levels. There is a small chance the level could end up outside this range.

~90% of forecasts are within the blue, green, and tan ranges. ~5% forecasts are above and ~5% are below the tan range.

~80% of forecasts are within the blue and green ranges. ~10% of forecasts are above and ~10% are below the green range.

~50% of forecasts are within the blue shaded range. ~25% of forecasts are above and ~25% are below the blue range.



Includes 10 days of precipitation and temperature forecasts (including snow melt) applied to river forecast models. The official forecast includes 24-48 hours of precipitation.

Model runtime: 06:00 PM CST Feb 23 2023
North Central River Forecast Center

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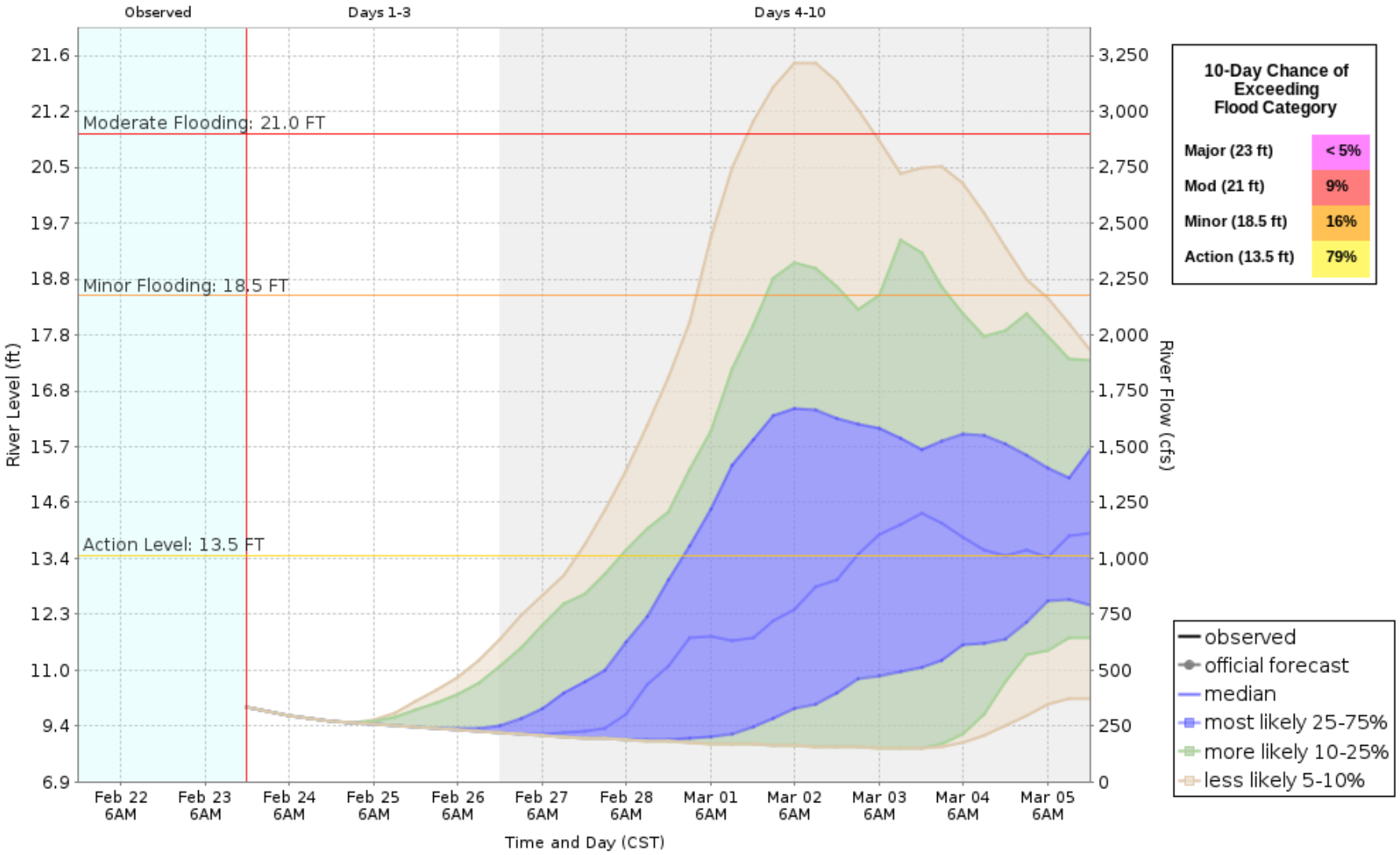
HEFS - 10 Day River Level Probabilities

Based on Hydrologic Ensemble Forecast Service Model Simulations
Used to Estimate the Range of Possible River Levels

Feb 24 - Mar 06, 2023

Baraboo River at Rock Springs (RSPW3)



Model runtime: 06:00 PM CST Feb 23 2023
North Central River Forecast Center

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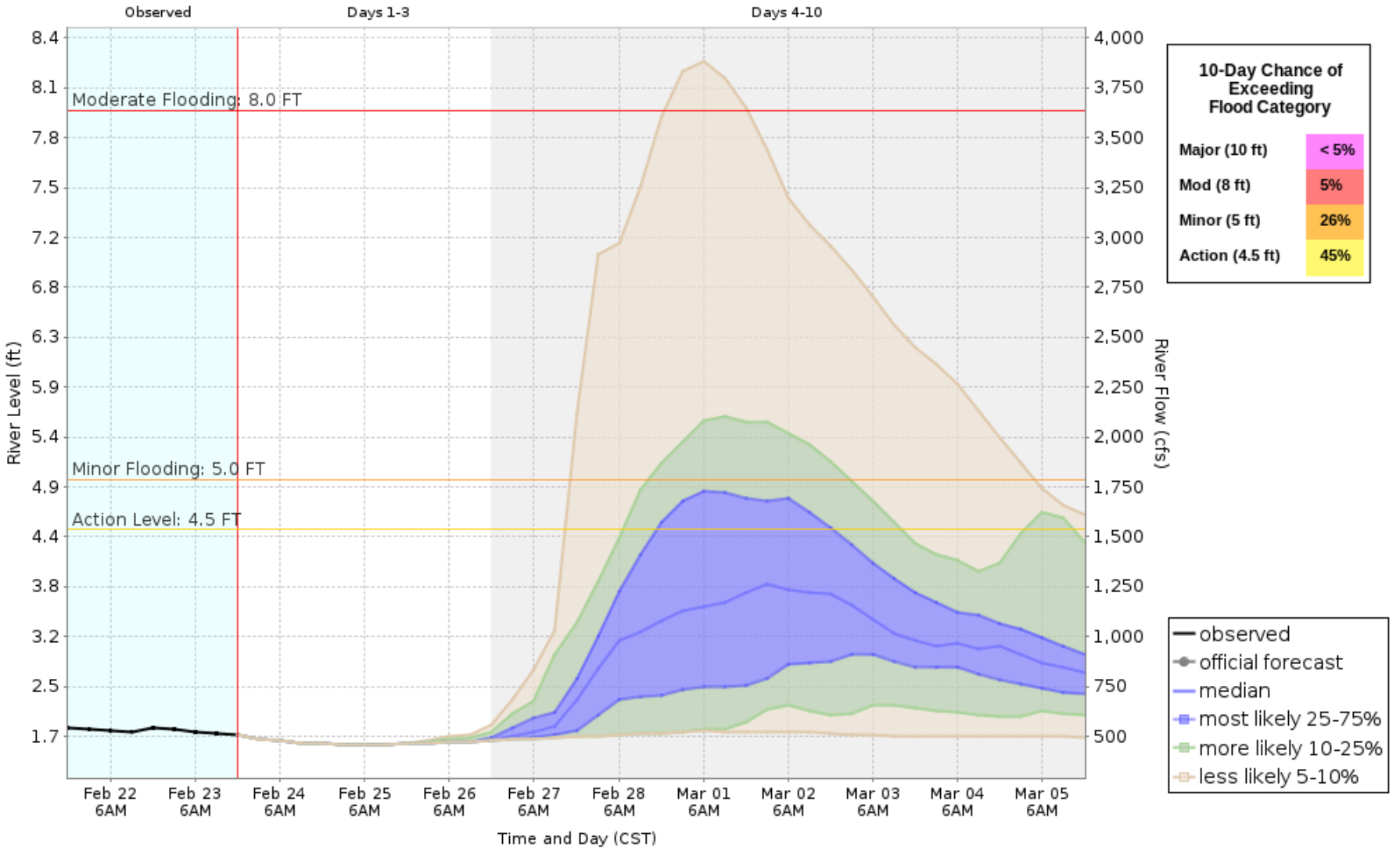
HEFS - 10 Day River Level Probabilities

Based on Hydrologic Ensemble Forecast Service Model Simulations
Used to Estimate the Range of Possible River Levels

Feb 24 - Mar 06, 2023

Sugar River at Brodhead WWTP (BROW3)



Model runtime: 06:00 PM CST Feb 23 2023
North Central River Forecast Center

How To Find River Probability Info

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NWS Forecast Office Milwaukee/Sullivan, WI

Weather.gov > Milwaukee/Sullivan, WI

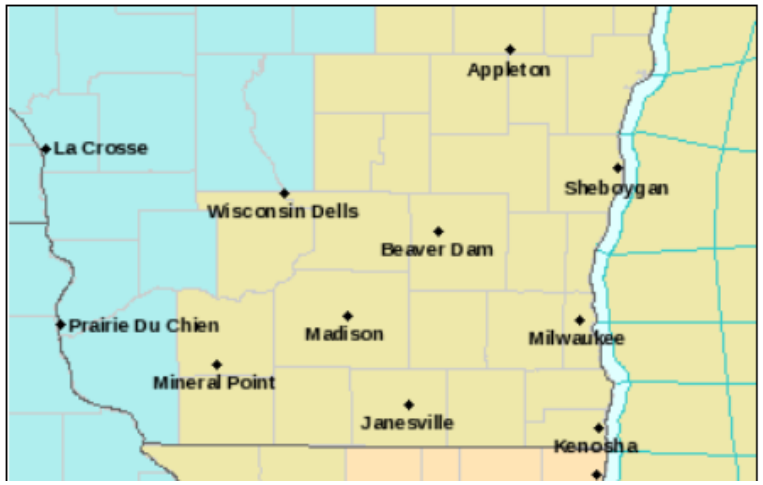
Milwaukee/Sullivan, WI
Weather Forecast Office

Current Hazards | Current Conditions | Radar | Forecasts | Rivers and Lakes | Climate and Past Weather | Local Programs

RADAR UPDATE 7:25 AM

Snow starting to end from west to east. However, roac
morning commute. Only minor additional accumulatio

Click a location below for detailed forecast.

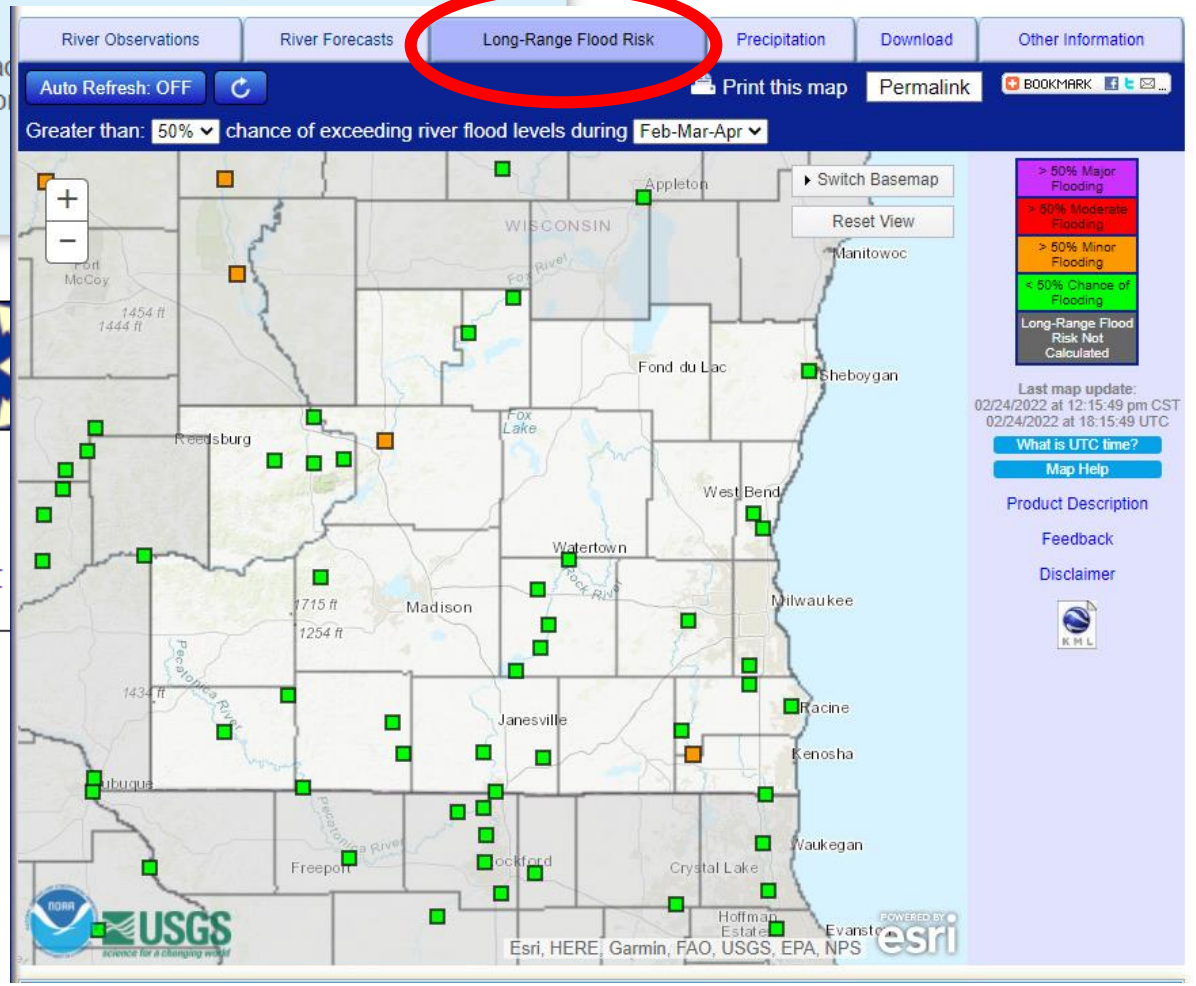


Watches, Warnings & Advisories

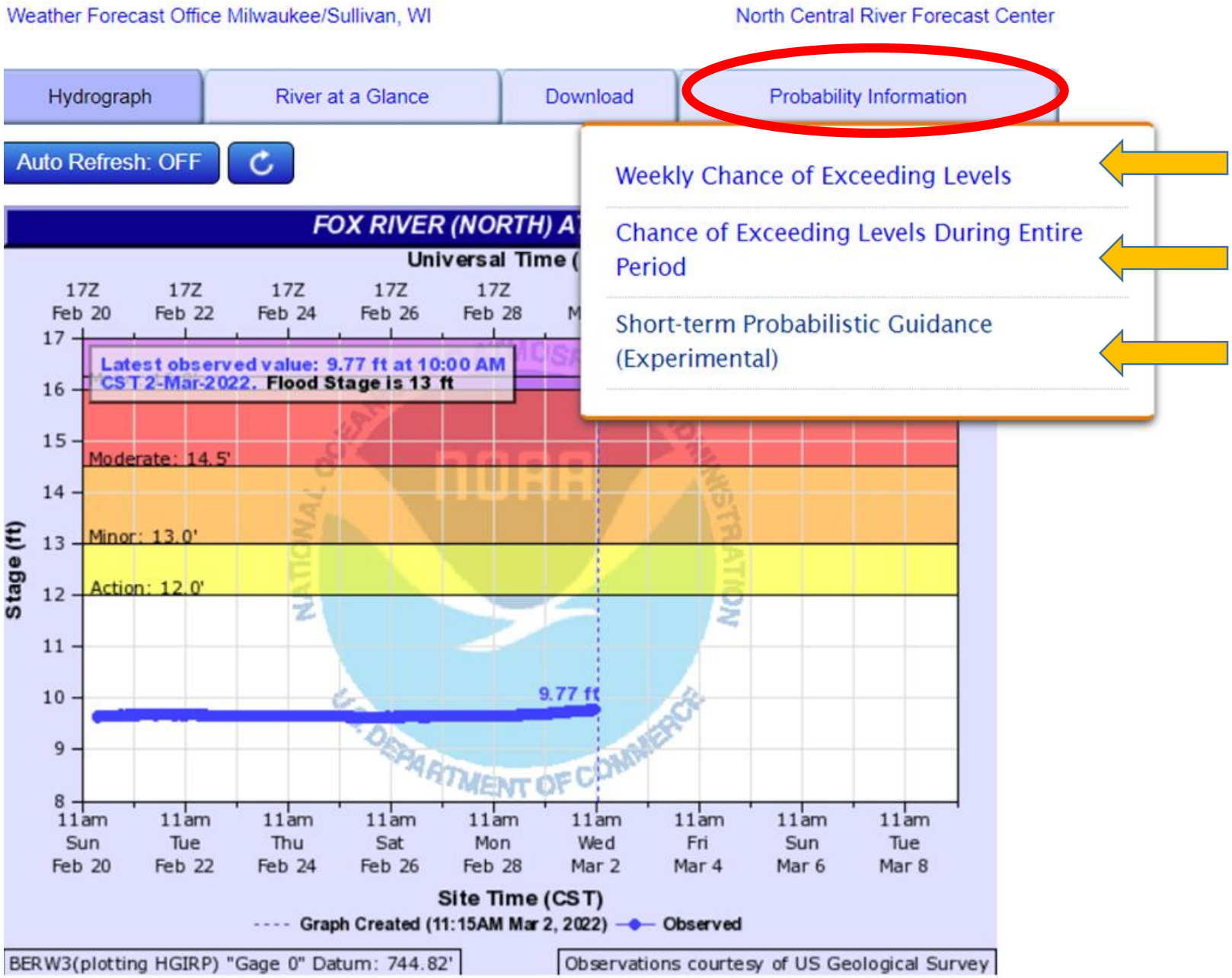
Wind Chill Advisory

Special Weather Statement

Hazardous Weather Outlook



How To Find River Probability Info



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Flood Risk Summary

- Spring flood risk is close to average across most of southern Wisconsin
  - Risk is slightly above average west of Madison
  - Risk is near average east of Madison
  - Risk is above average for the lower Wisconsin River

  - Streamflow is near to slightly above normal
  - Soil moisture is near to slightly above normal
  - Snow water content is near normal
  - Frost depth is below normal
- Break up ice jams possible but risk is low
- Flooding is still possible, the underlying risk is not elevated much at this time. The spring flood risk pertains to the spring season as a whole, the risk with individual events may be different.
  - The greatest flood threat occurs if there is a rapid snowmelt or heavy rain
  - Flood risk early next week and early March

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Next Update:
March 9-10

Questions?

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