Third Southern Wisconsin Spring Flood Outlook

Issued March 9, 2023

National Weather Service Milwaukee

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Flood Outlook Summary

- Spring flood risk:
  - Slightly above average southwest and south central WI
  - Near average in southeast WI
  - Above average for the lower Wisconsin River
  - Additional snowpack could increase this risk – Snow tonight is included in this outlook
- Break up ice jam risk is low
- Flooding is still possible, the underlying risk is not elevated much at this time
  - Greatest risk of flooding occurs with snow melt and moderate to heavy rain

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What Has Changed

- Increased risk for the Lower Wisconsin River
  - Snowpack increased upstream
- Little change elsewhere
  - Rivers are running higher but the snowpack is lower
  - Additional snow this week, but water content closer to normal
  - Ground continues to thaw
- Break up ice jam risk lowered further – amount of open water continues to increase

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Flood Risk Factor	Status	Risk
Snowpack	Average to Below Average	Average to Below Average Risk
Soil Moisture	Above Average	Increases Risk
Frost Depth	Lower than Average	Decreases Risk
River Levels	Above Average	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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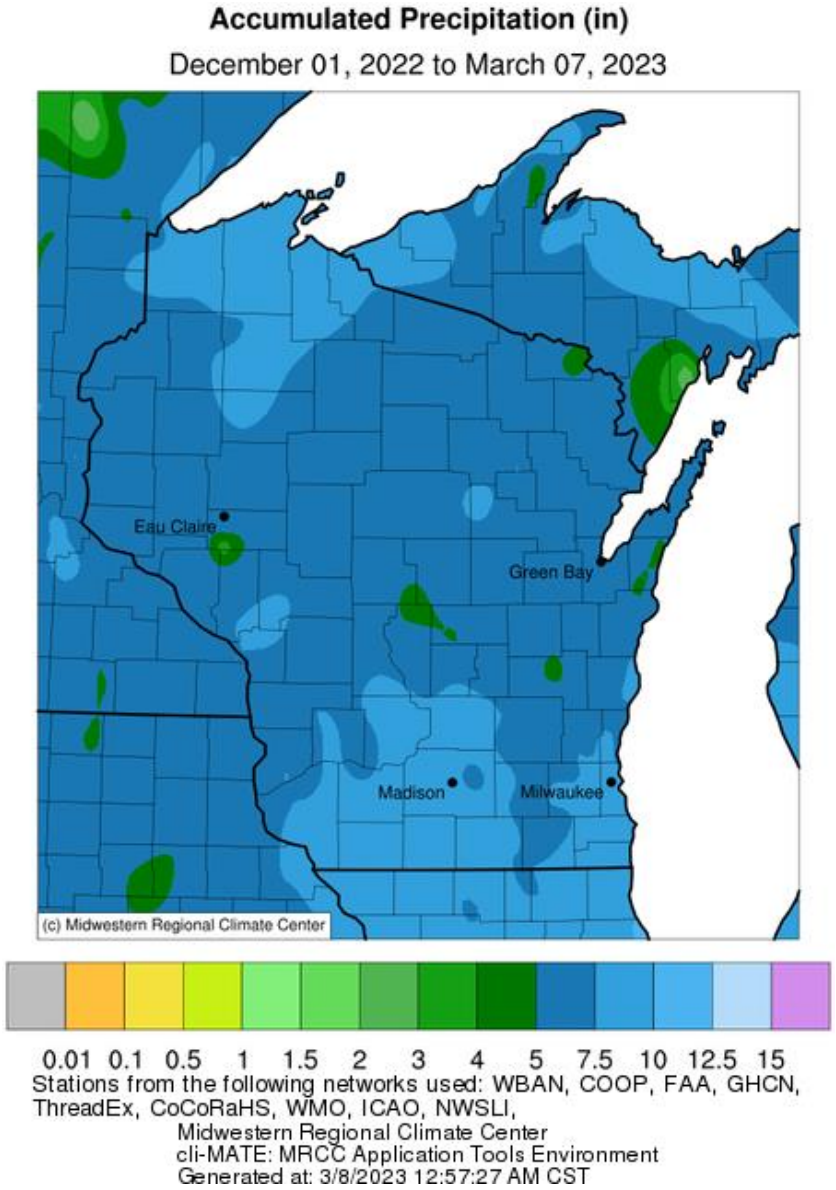

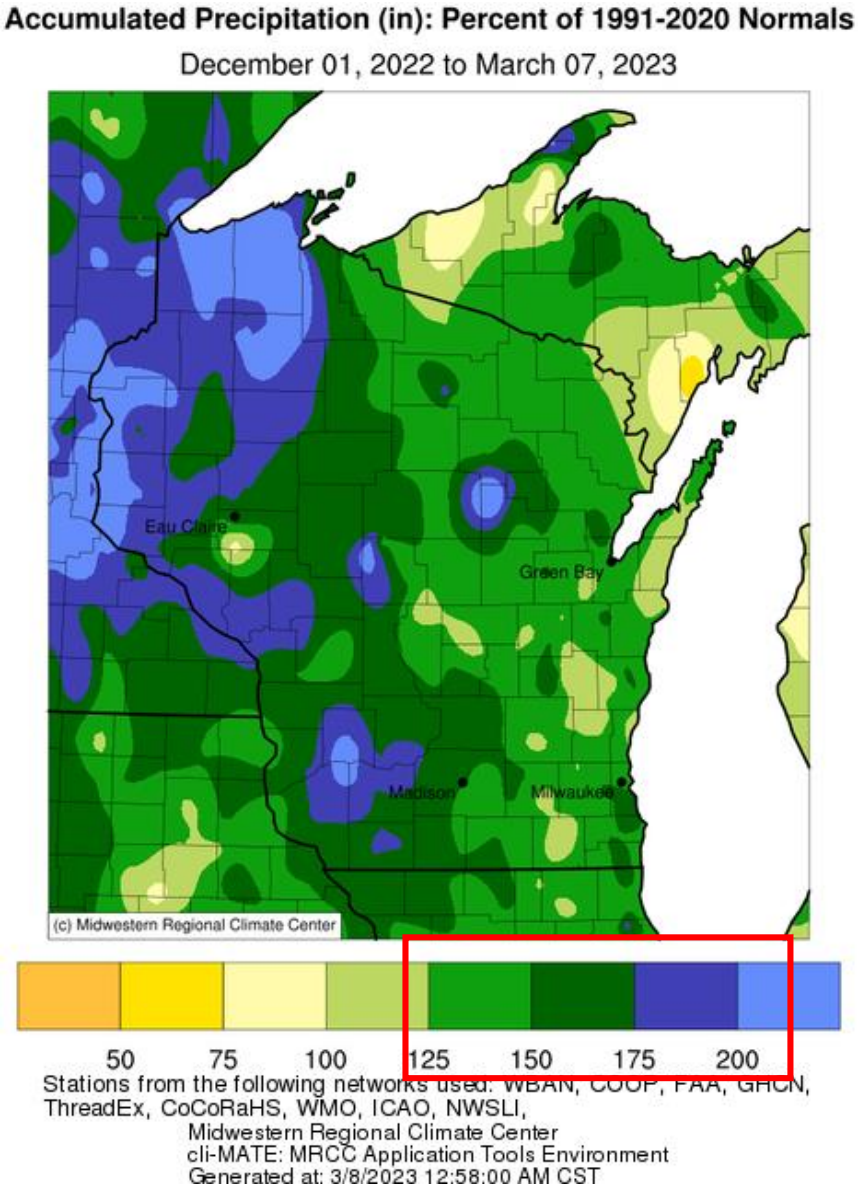

Winter was wetter than normal. Despite the lack of snow there is still a lot of water in the system.

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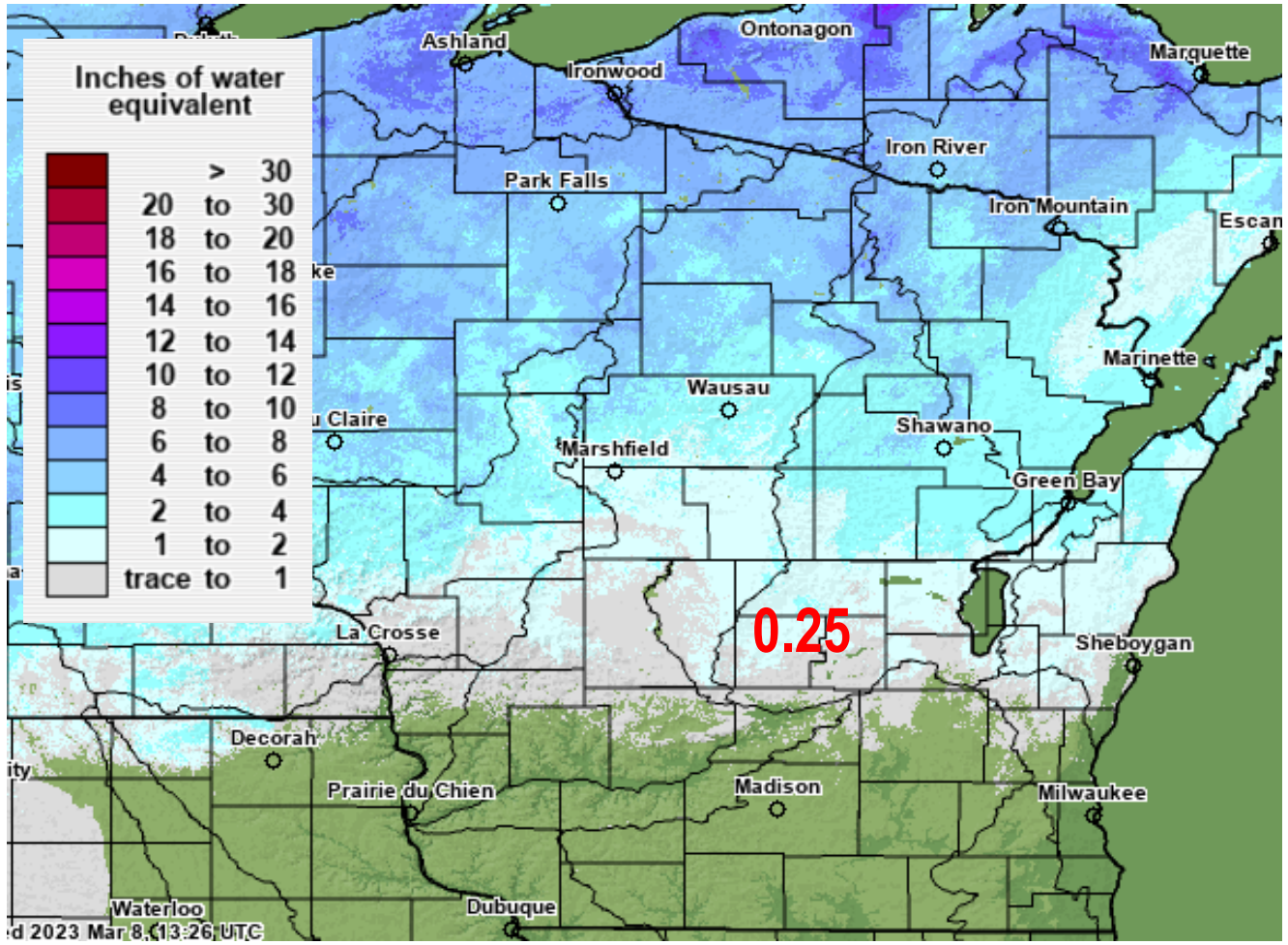
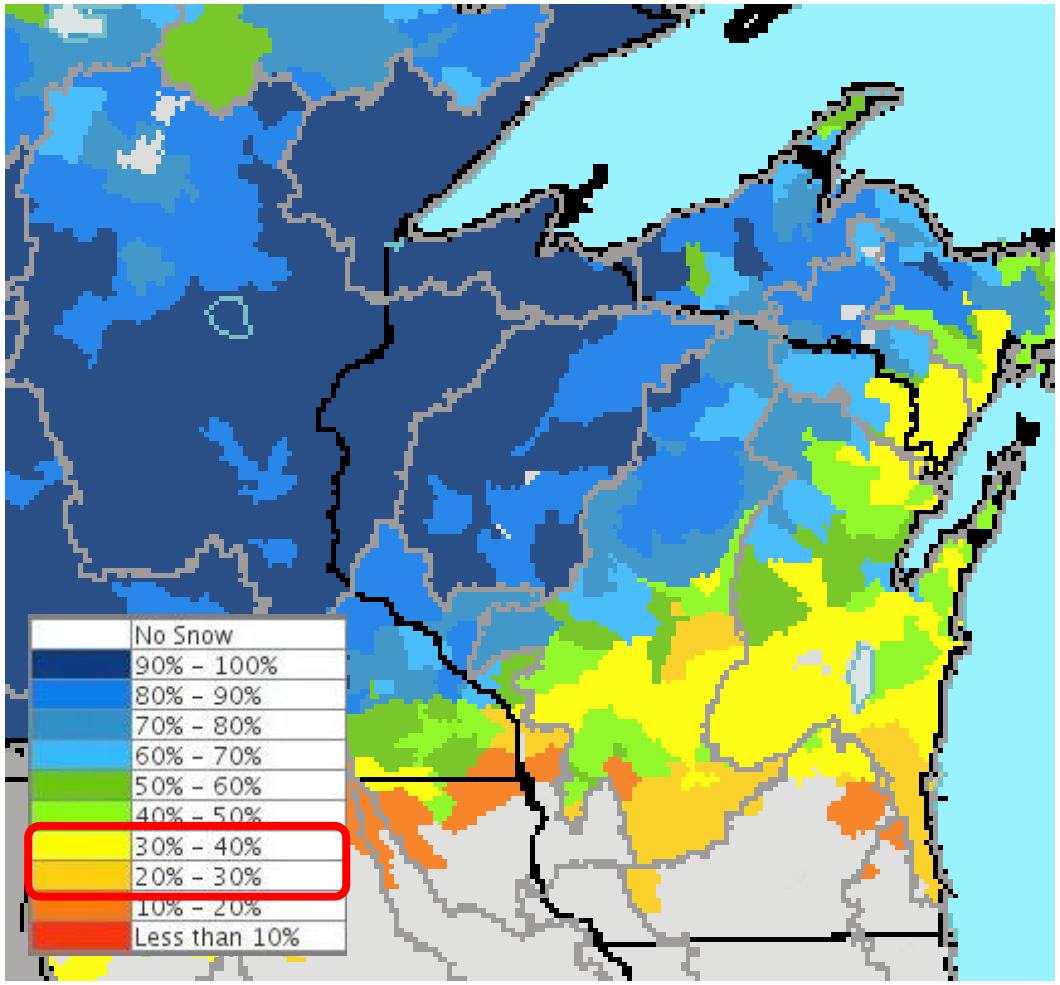
Snow Water Equivalent 3/8/23



Snow Water Equivalent Percentile 3/6/2023



Snow water content is below normal.
New snow 3/9-3/10 would bring it closer to normal.

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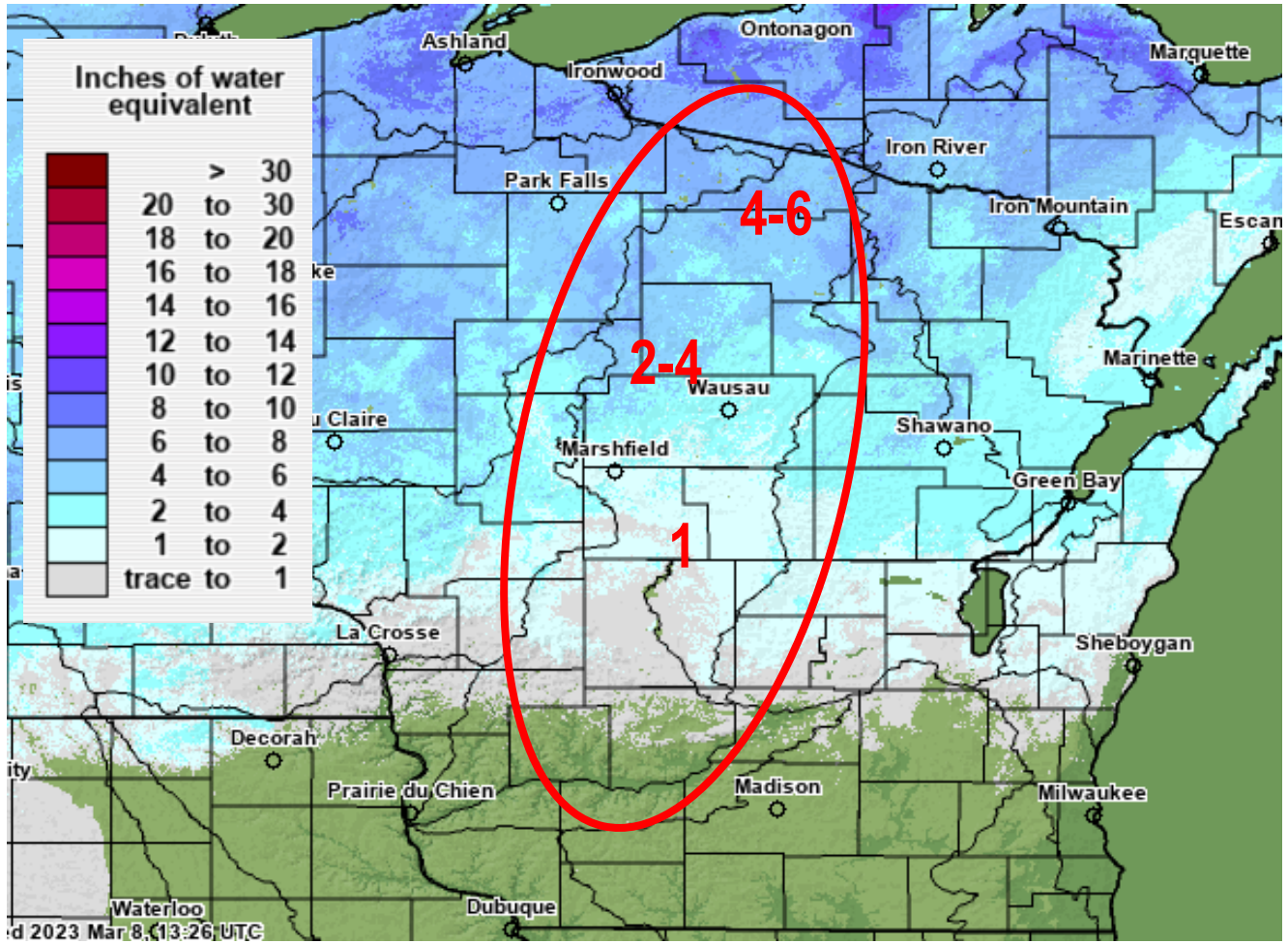
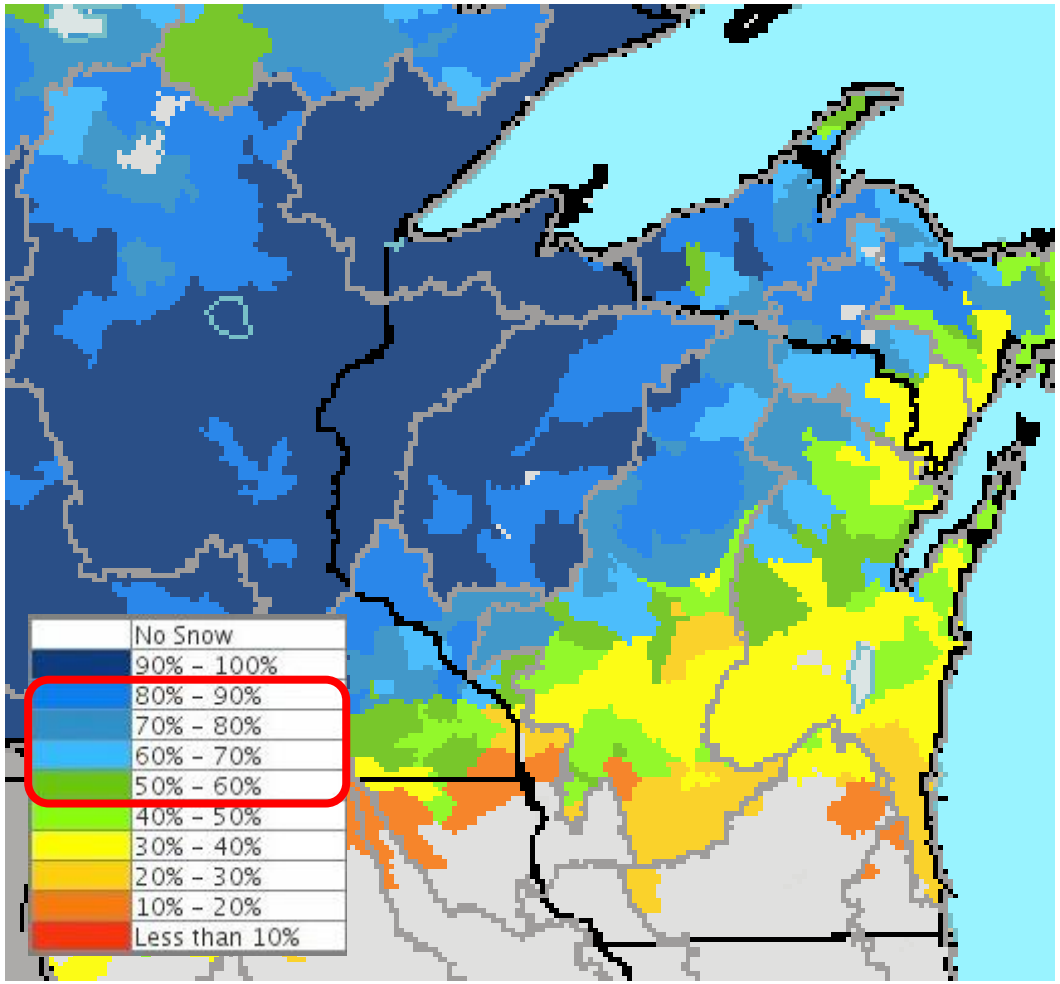
Snow Water Equivalent 3/8/23



Snow Water Equivalent Percentile 3/6/2023



Snow water content in the upper half of the Wisconsin River valley is unusually high, contributing to the elevated risk.

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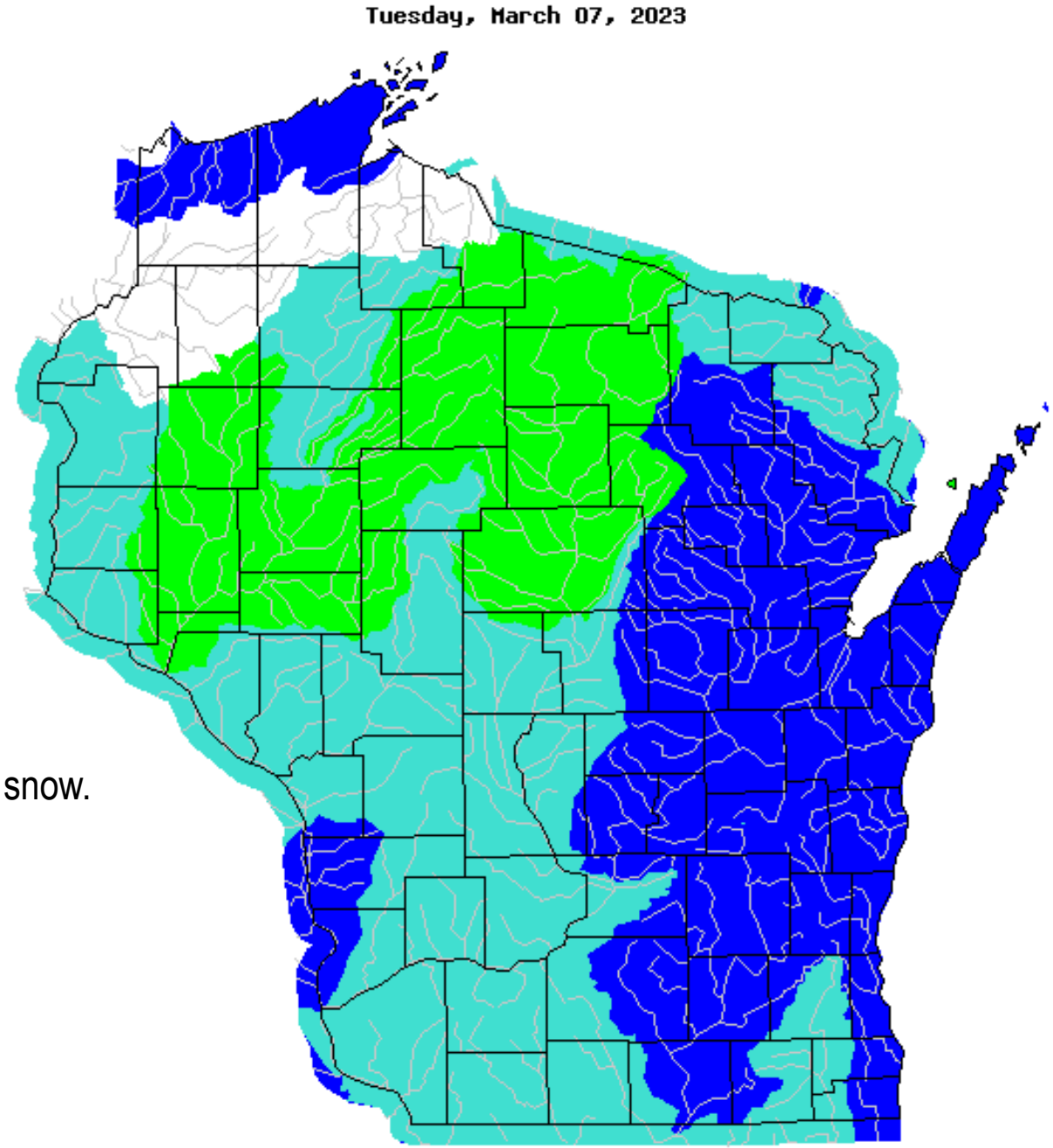
14 day Mean Streamflow Percentile

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		



Rivers are running high due to recent rain and melting snow.
There is less room to hold additional water.

USGS

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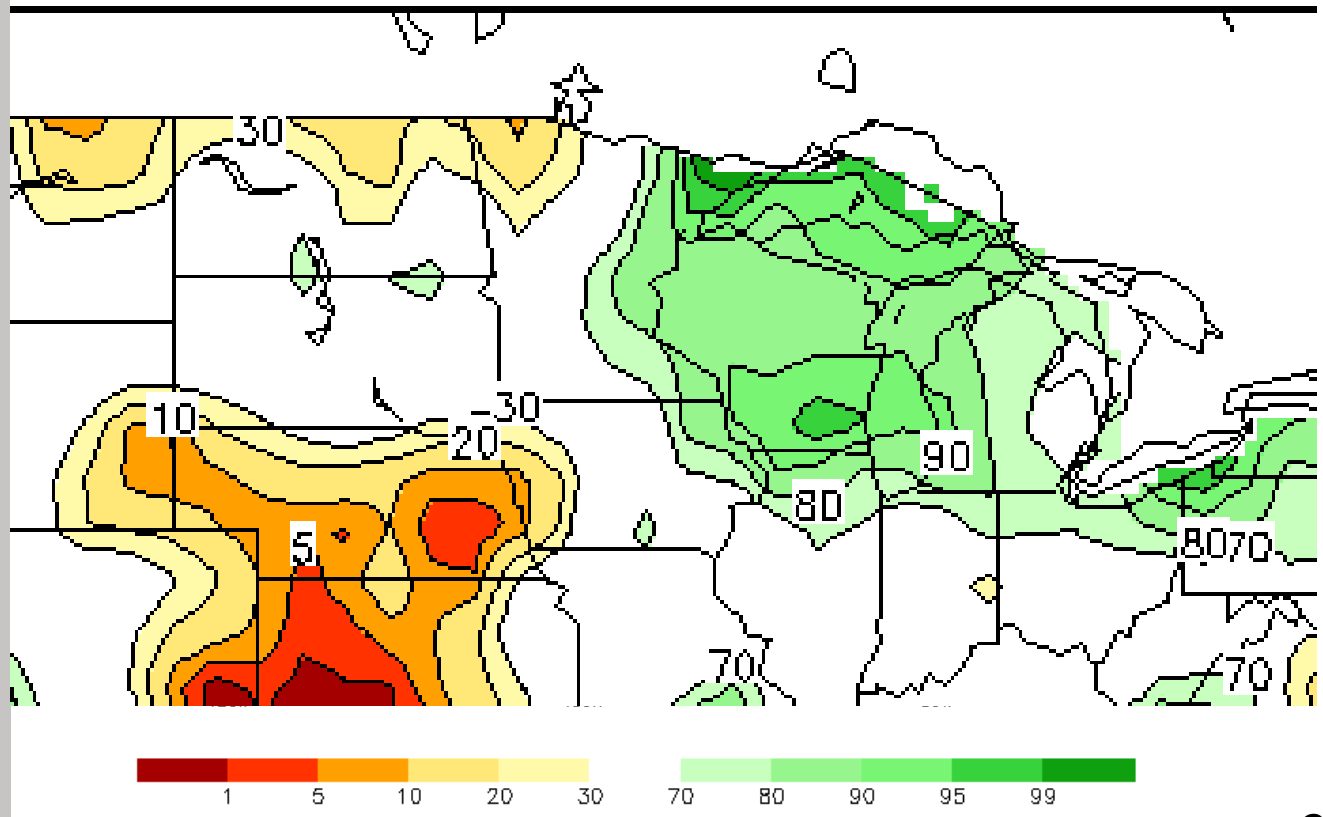
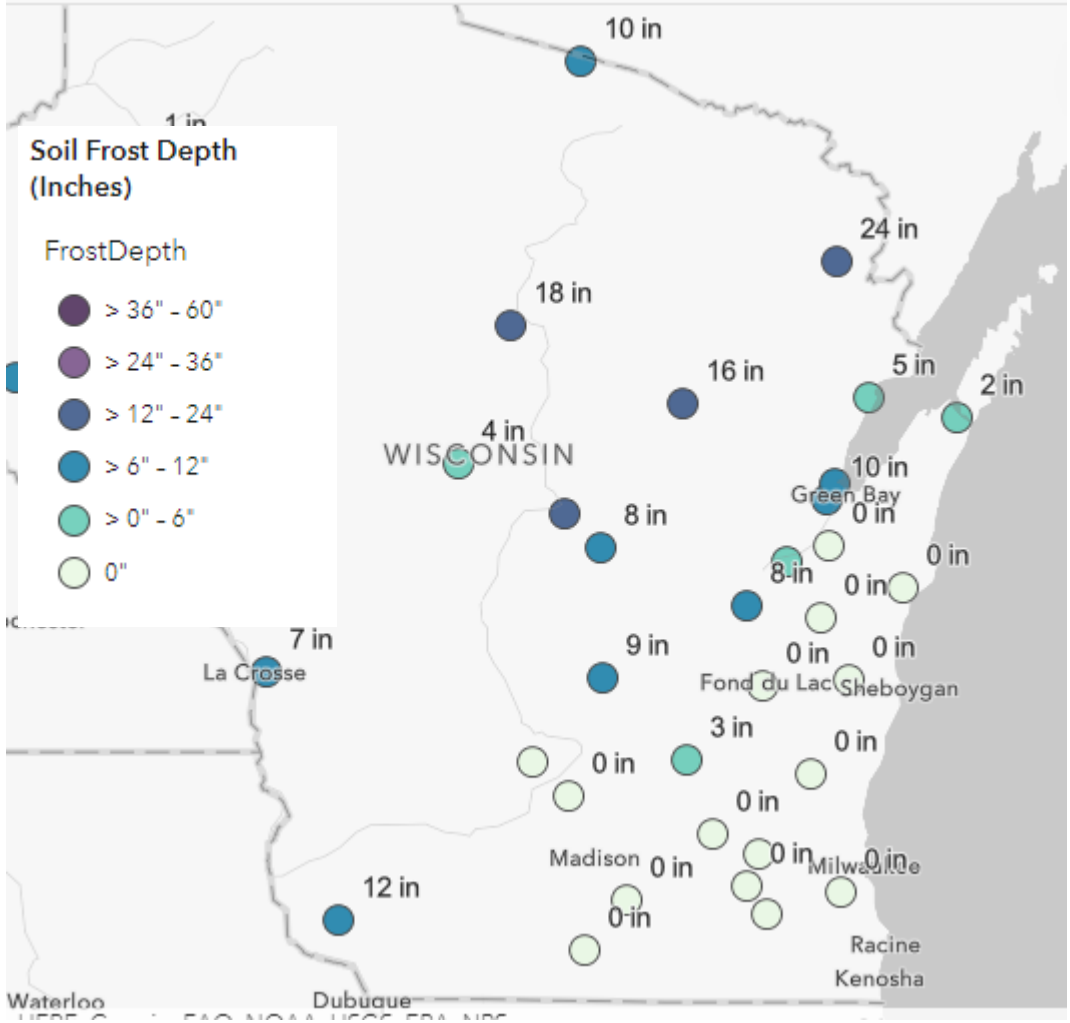
Soil Moisture Ranking Percentile
MAR 07, 2023



Soils are somewhat saturated from recent rain and melting snow.
Less storage available to absorb additional water.

Frost Depth 3/6/2023



Ground continues to thaw. Still somewhat frozen, especially in shaded and north facing slopes.
Still runoff and ponding potential (especially since grass and vegetation is still dormant) but this is improving as ground thaws.

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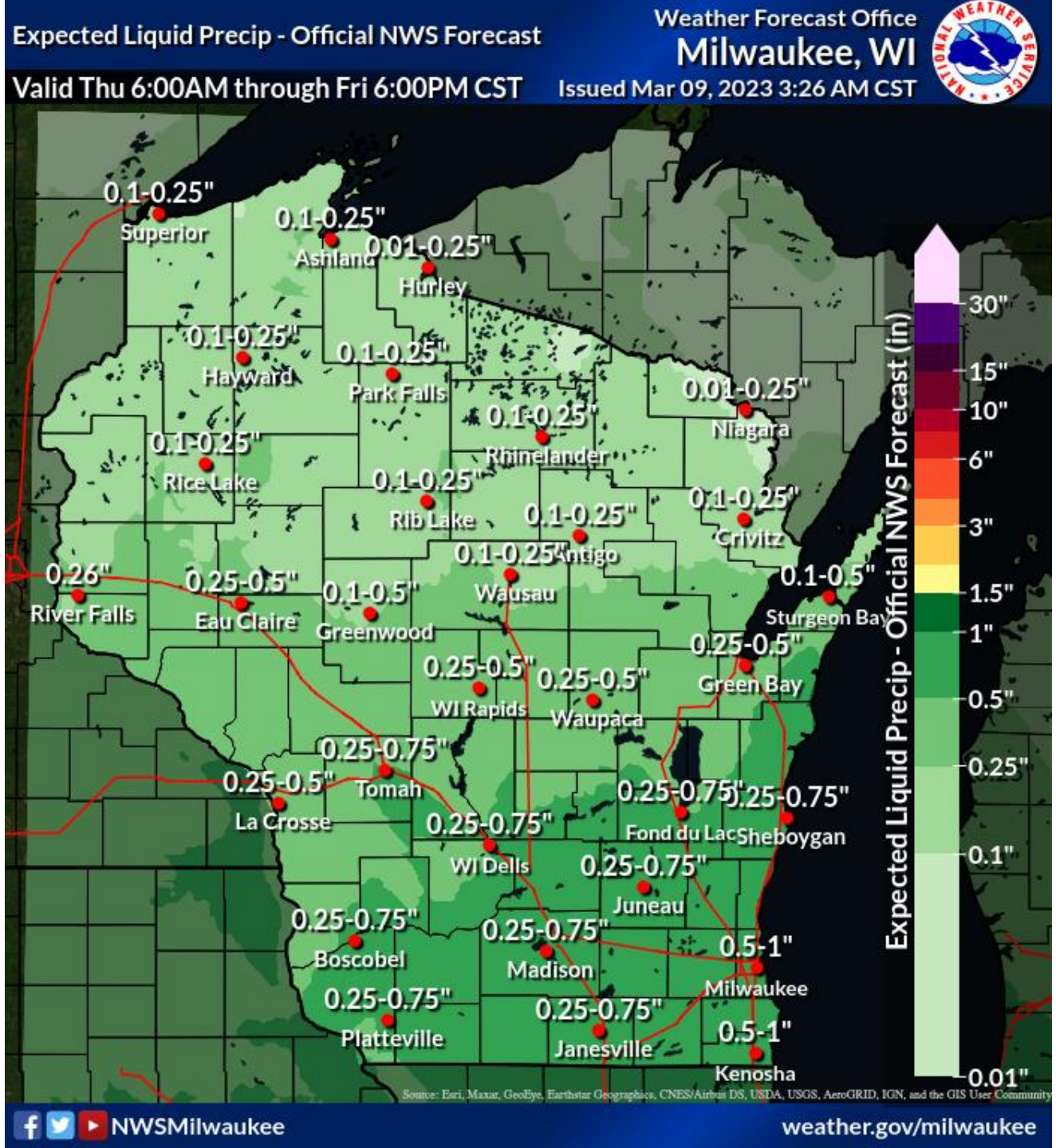

Precipitation included in this outlook (as snow).

If amounts end up higher the flood risk could increase.

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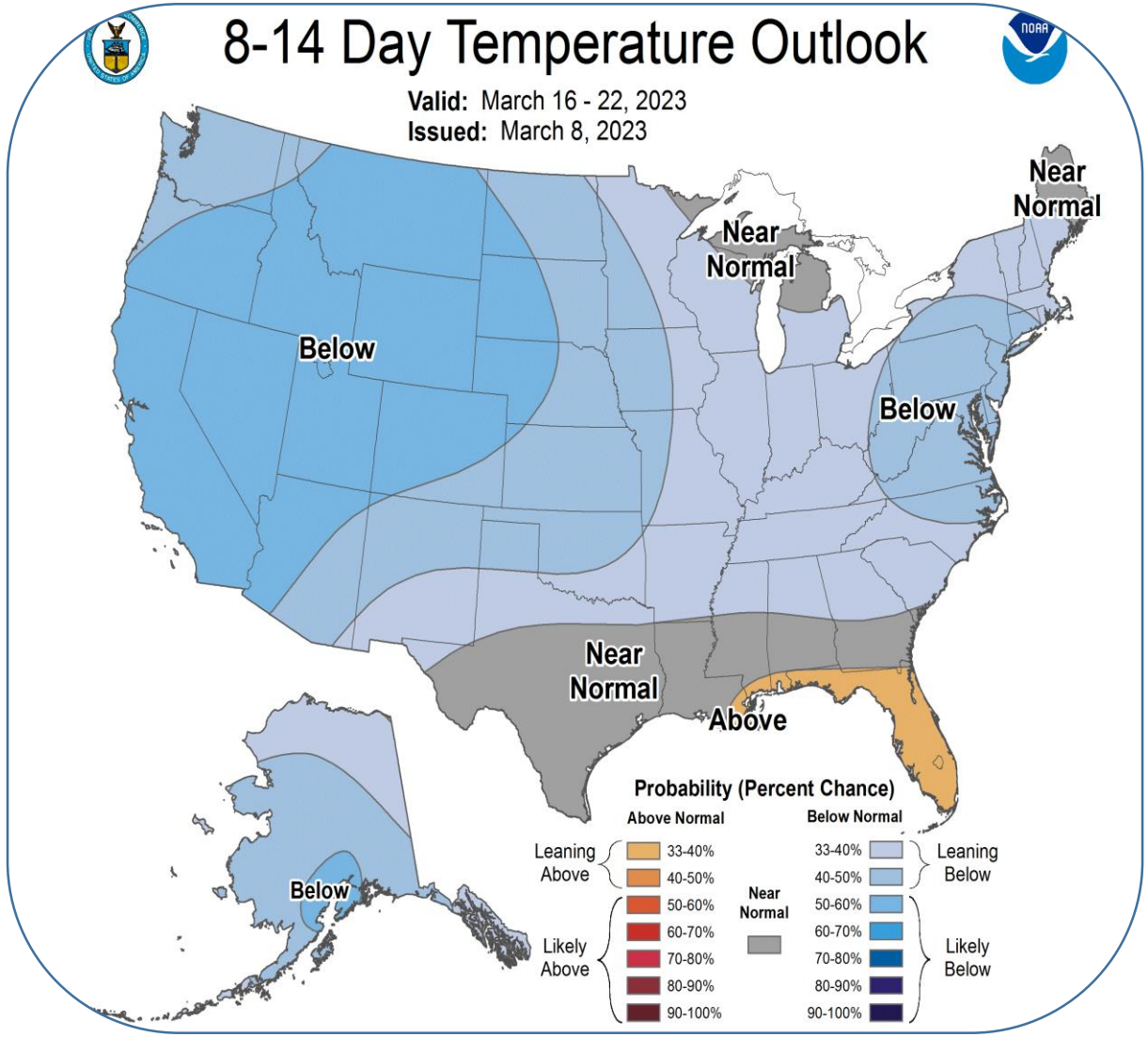

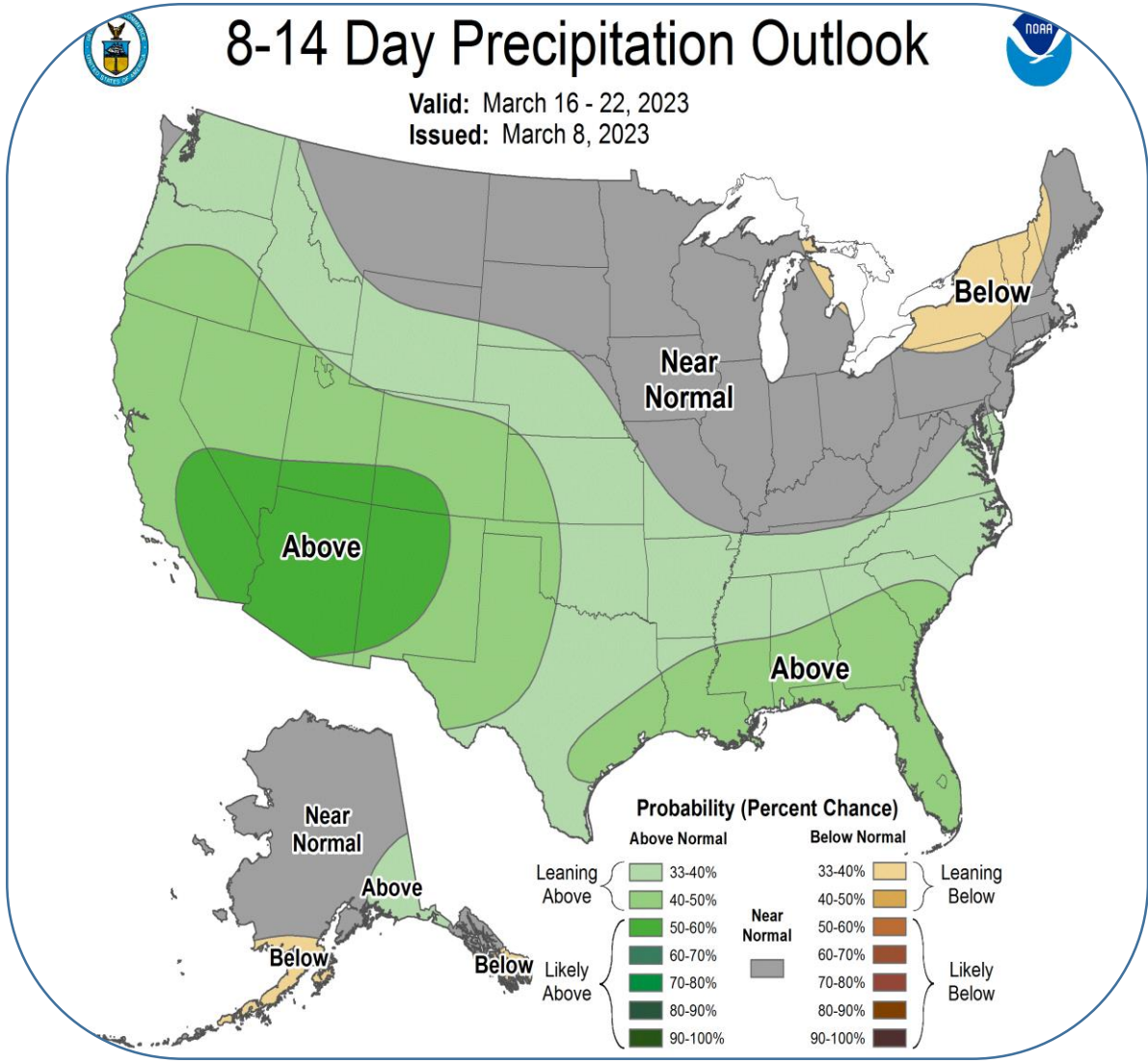

Cool temperatures could cause the snowpack to linger later in March. Holding onto snow further into spring increases the chance of a rapid snowmelt with rainfall. This could result in larger runoff, meaning flooding or ponding of water.

No big rain events in the forecast, but it only takes one event to cause problems.

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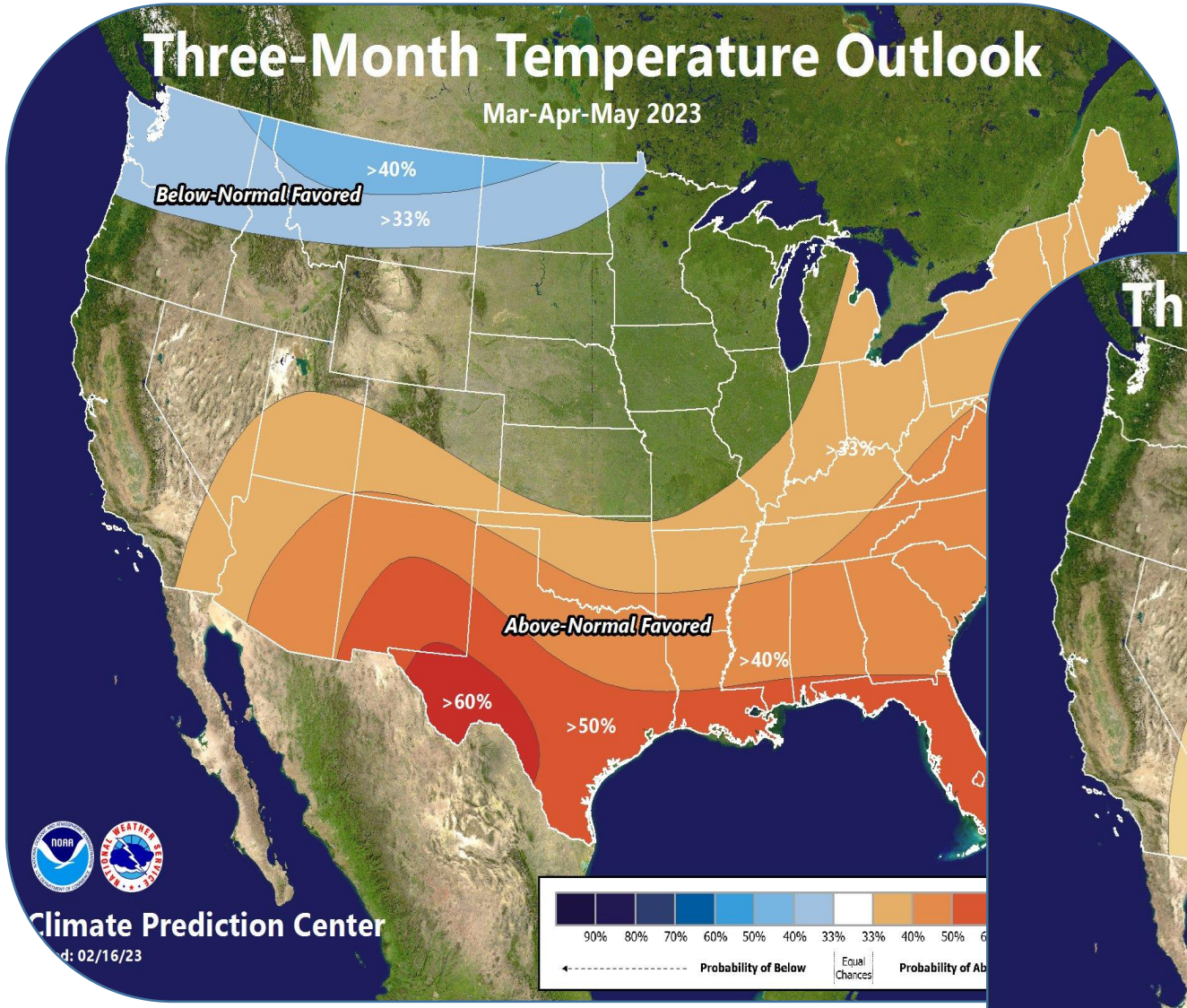

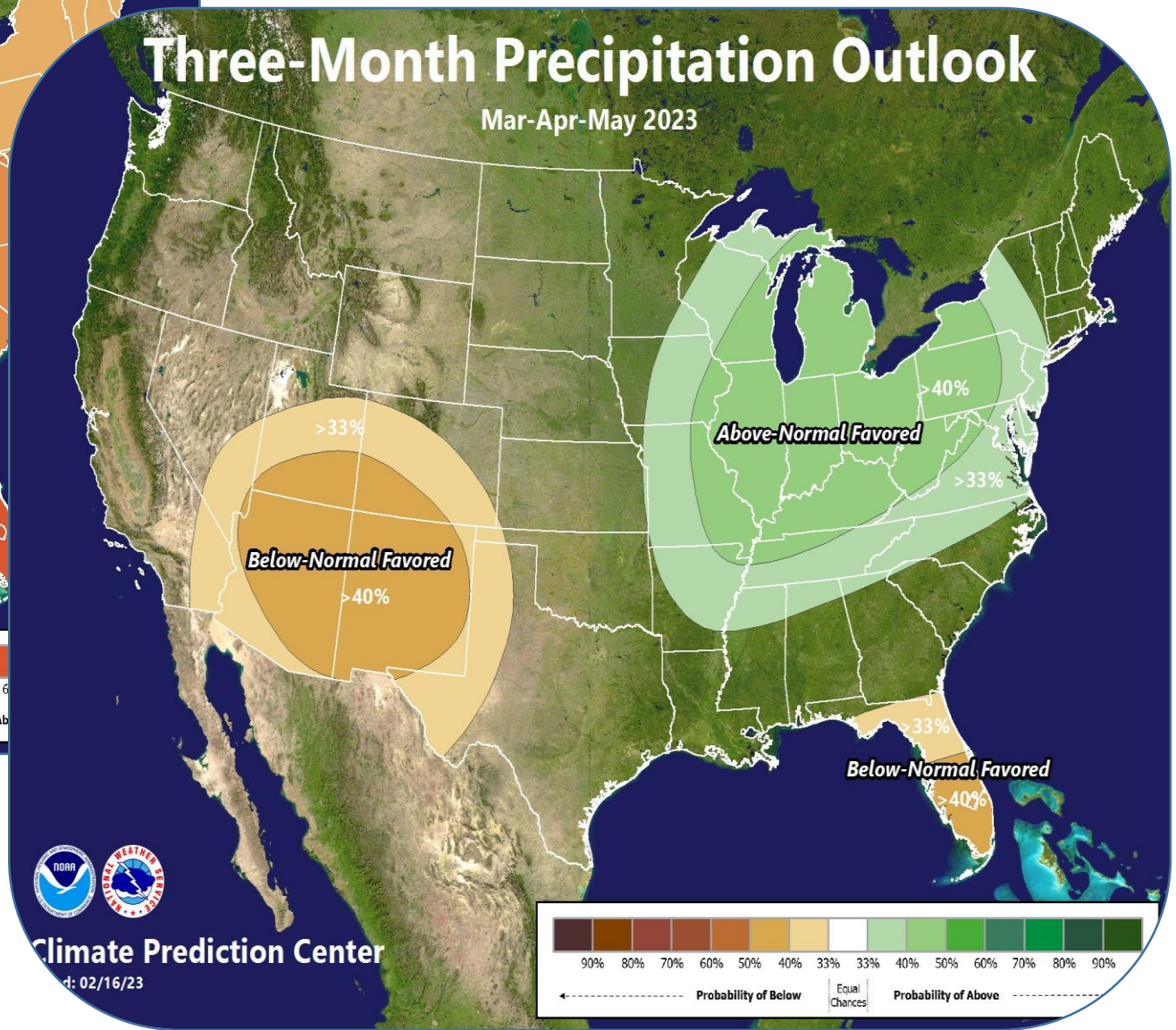

- The following tables show the specific flood outlook probabilities for each NWS river forecast location.
- This is the underlying risk for the spring season as a whole based on the current conditions and forecast.
- The risk of flooding may be higher for a specific rain or snow melt event.

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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	20	20	<5	<5	<5	<5
Fox-Berlin	35	26	<5	<5	<5	<5
WI - Dells	46	25	23	12	10	5
WI - Portage	94	70	82	52	43	24
Baraboo – Rock Springs	47	35	28	28	13	8
West Baraboo	16	14	8	<5	<5	<5
Baraboo	55	41	7	<5	<5	<5
Black Earth Creek	10	<5	<5	<5	<5	<5
Pecatonica – Darlington	6	<5	<5	<5	<5	<5
Blanchardville	32	21	<5	<5	<5	<5
Martintown	38	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	16	6	11	<5	7
Jefferson	44	39	26	28	<5	7
Fort Atkinson	14	20	9	9	<5	<5
Lake Koshkonong	>95	45	31	33	21	26
Afton	>95	44	18	18	10	10
Crawfish - Milford	32	38	7	11	<5	7
Turtle Creek – Clinton	12	14	<5	<6	<5	<5
Beloit	11	13	<5	<5	<5	<5

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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	20	32	8	10	6	68
Cedar Creek - Cedarburg	<5	6	<5	<5	<5	<5
Milwaukee R - Cedarburg	22	39	7	10	<5	6
Root R- Franklin	19	25	<5	<5	<5	<5
Raymond	22	26	5	7	<5	<5
Racine	6	9	<5	<5	<5	<5
Fox – Waukesha	11	17	7	9	<5	<5
Burlington	13	25	8	14	<5	<5
New Munster	63	55	10	23	9	15

Forecast precipitation has increased slightly in far southeast Wisconsin due to lake enhanced snow potential, so historical probabilities may better reflect the current risk.

How to Interpret the Probability Graphics

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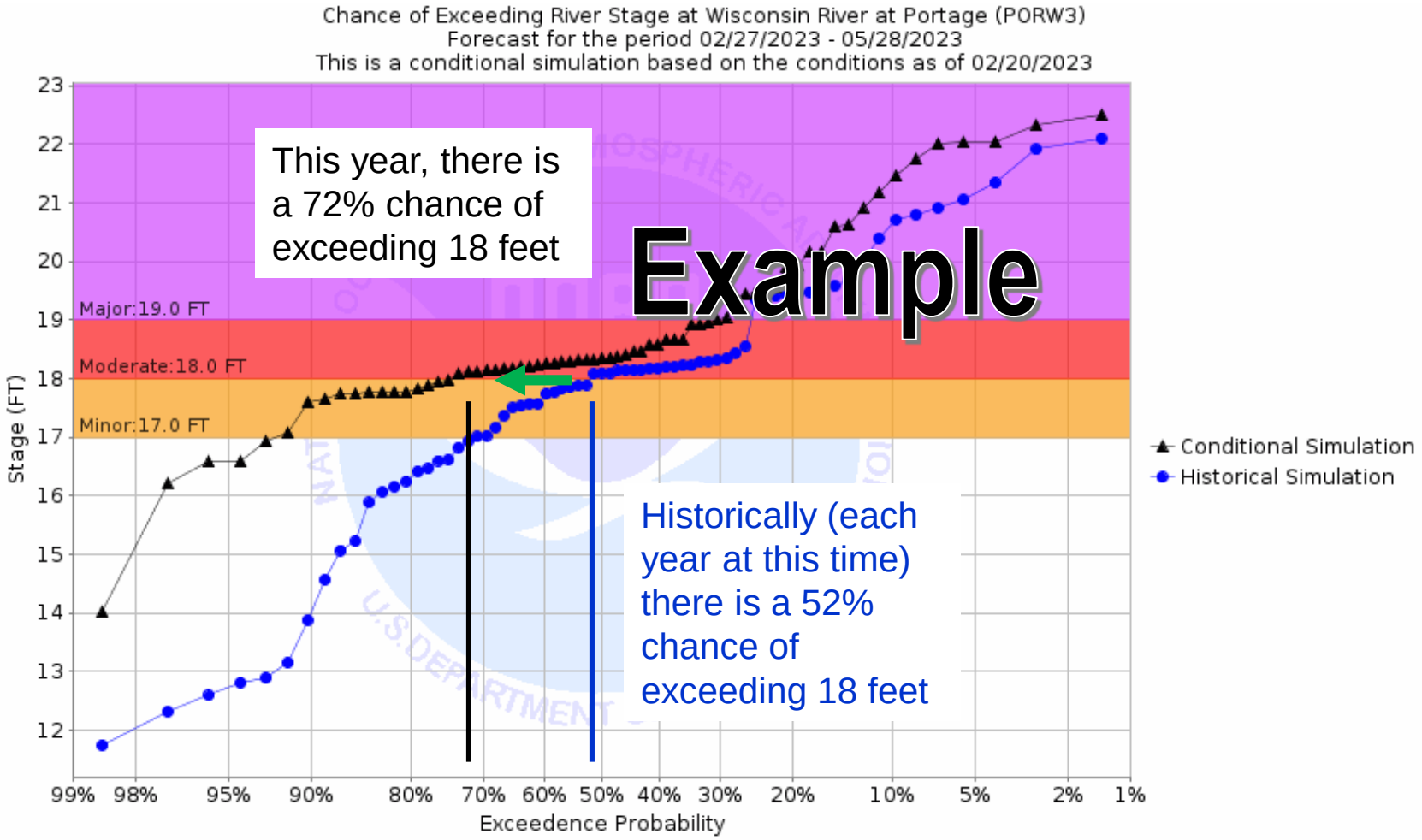
The outlook is for a 3 Month time period.

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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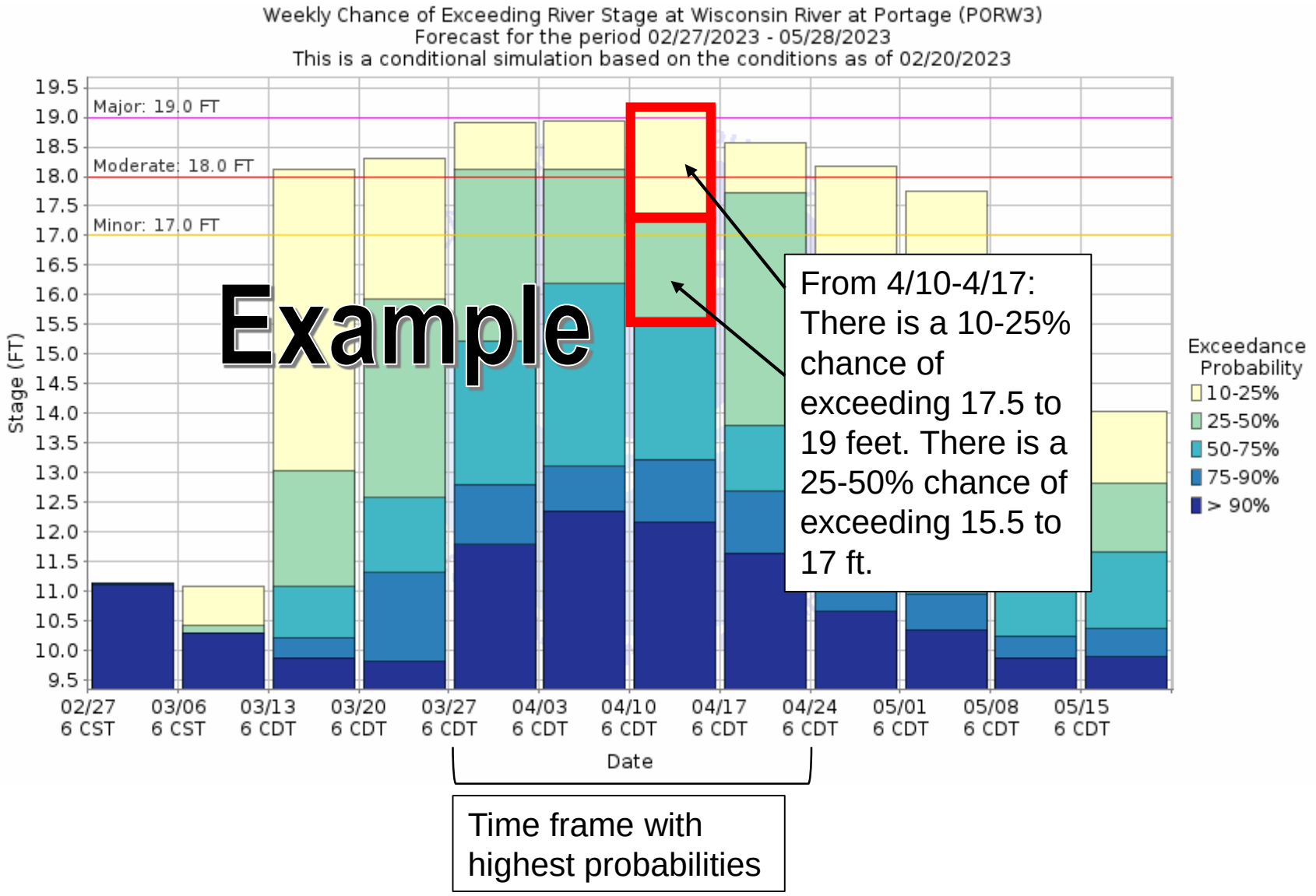
How to Interpret the Probability Graphics

Outlook is for weekly time periods.

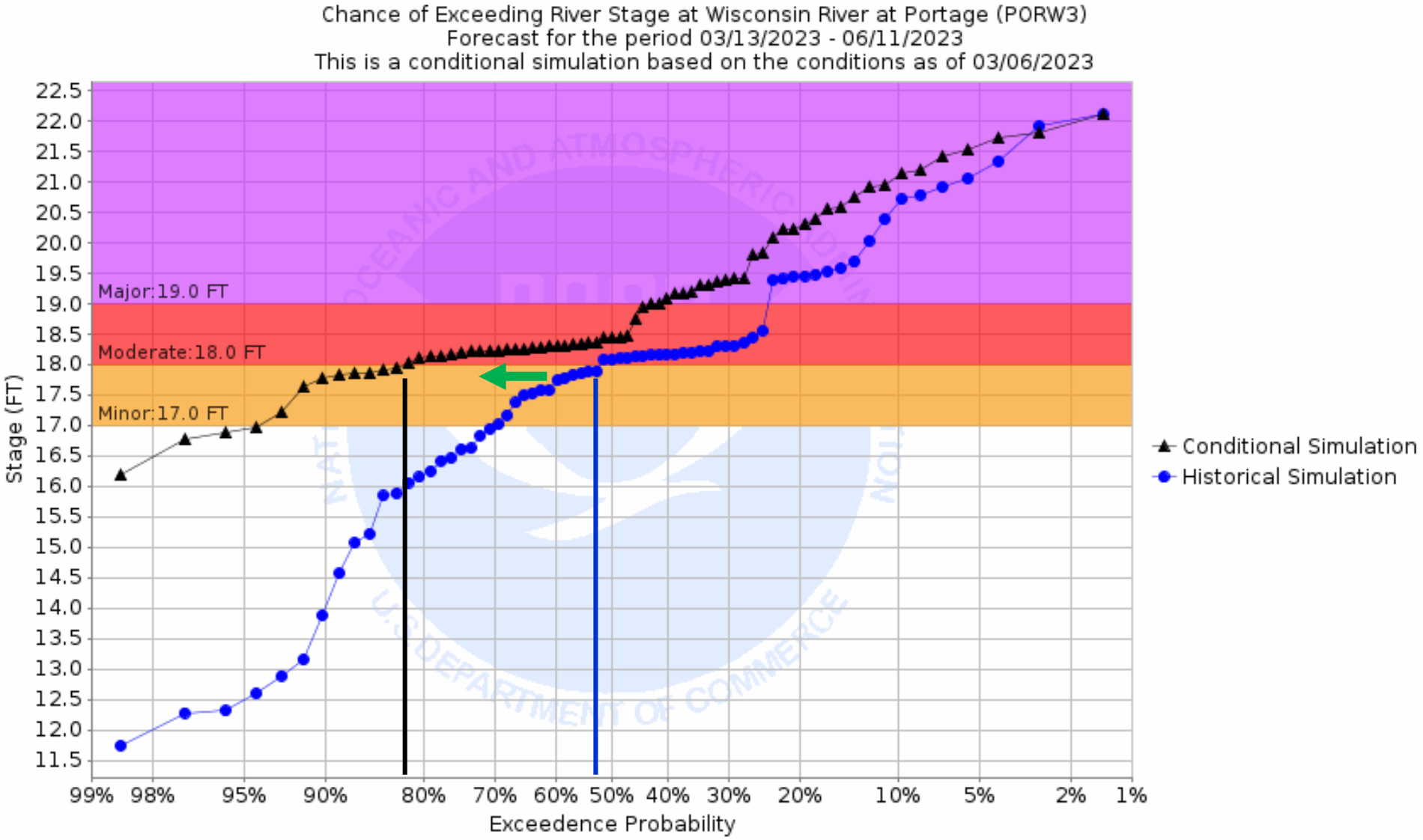
Colored boxes show the probability of exceeding each threshold.

Probability increases as colors become more blue.

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



Elevated chance of exceeding all river stage values due to the deep snowpack up north.



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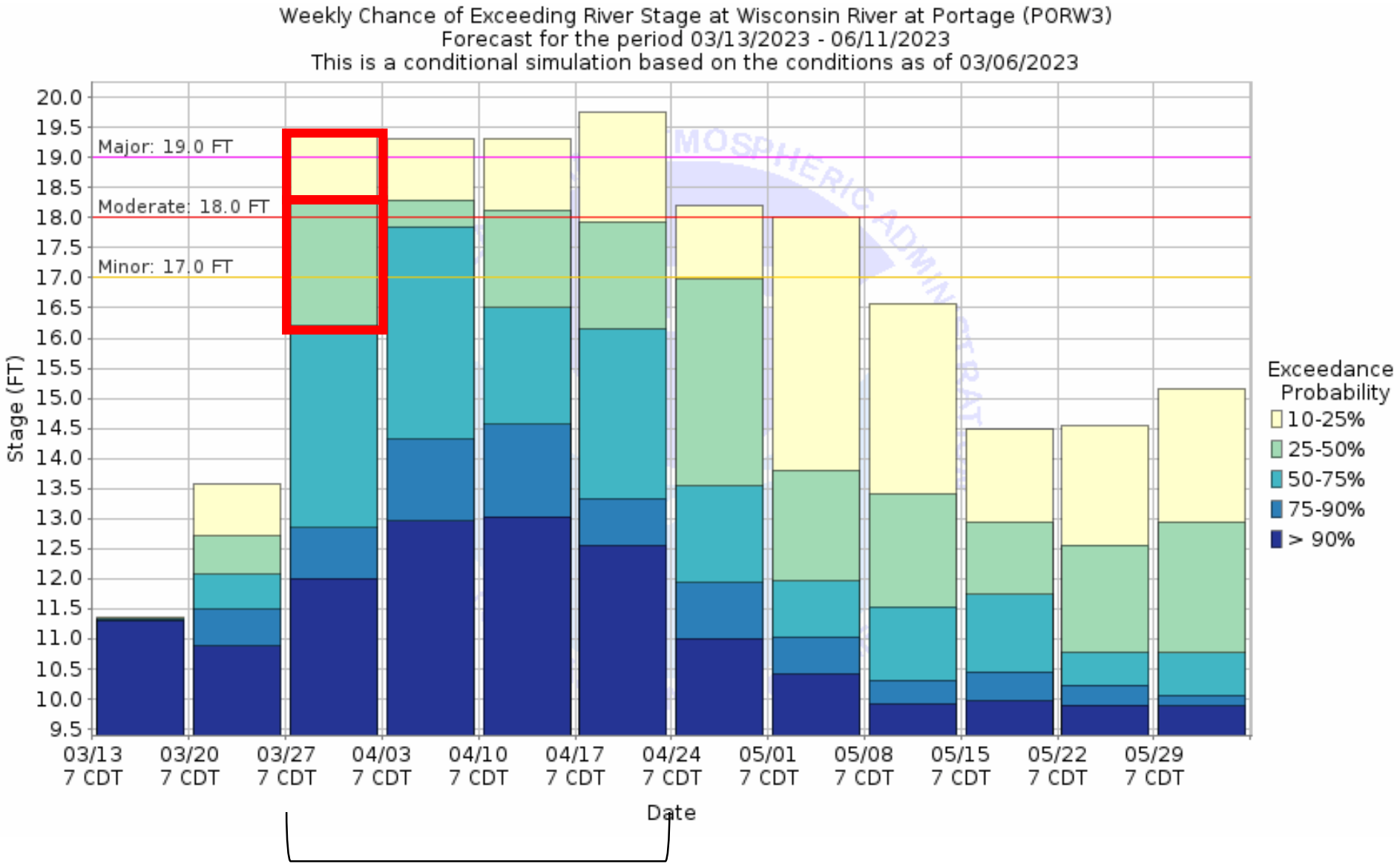

Most likely time frame of higher river stages.

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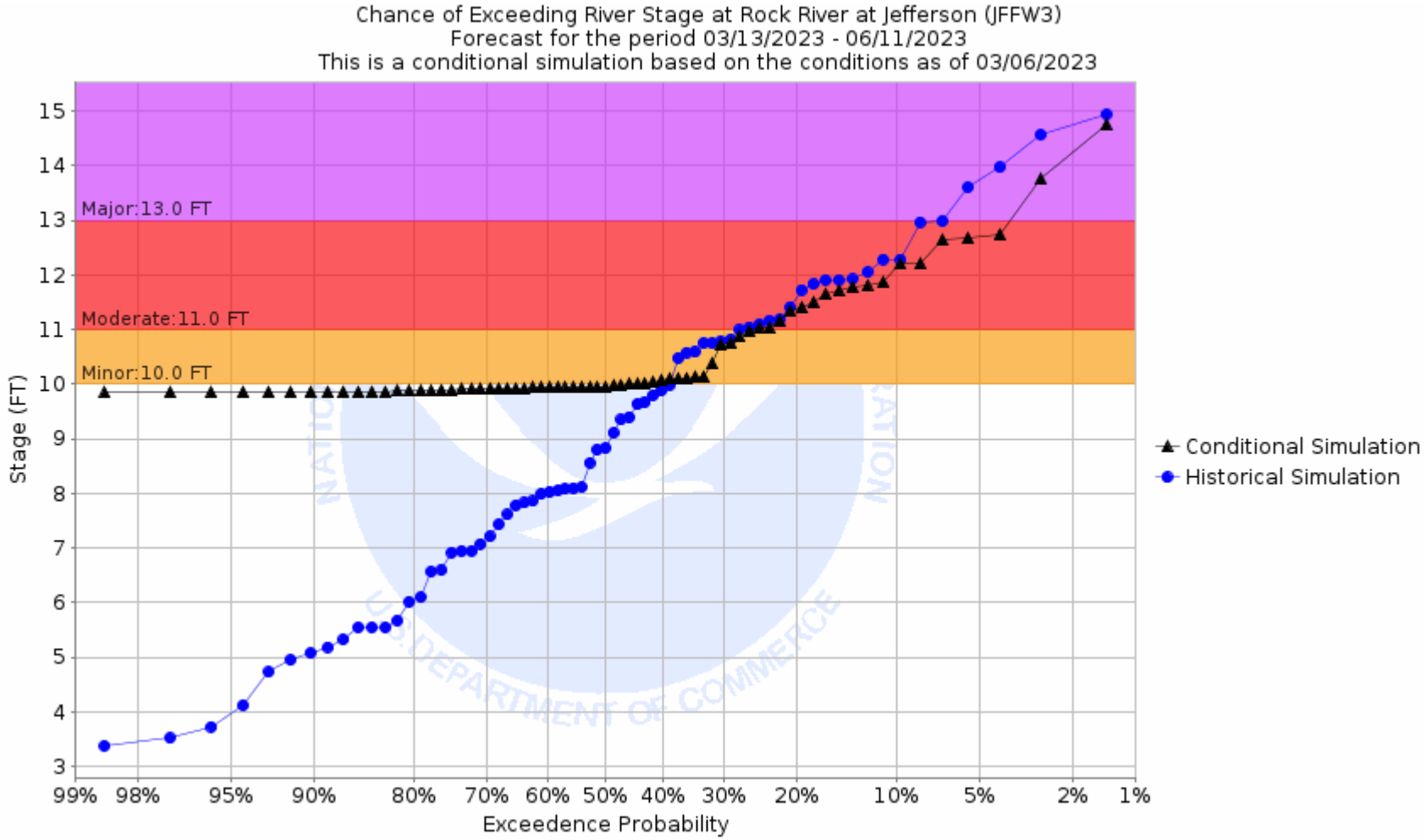

High probability of exceeding minor flood stage. River is still rising from recent rain and snow melt and there is a high chance it will reach flood stage in the 1-2 weeks.

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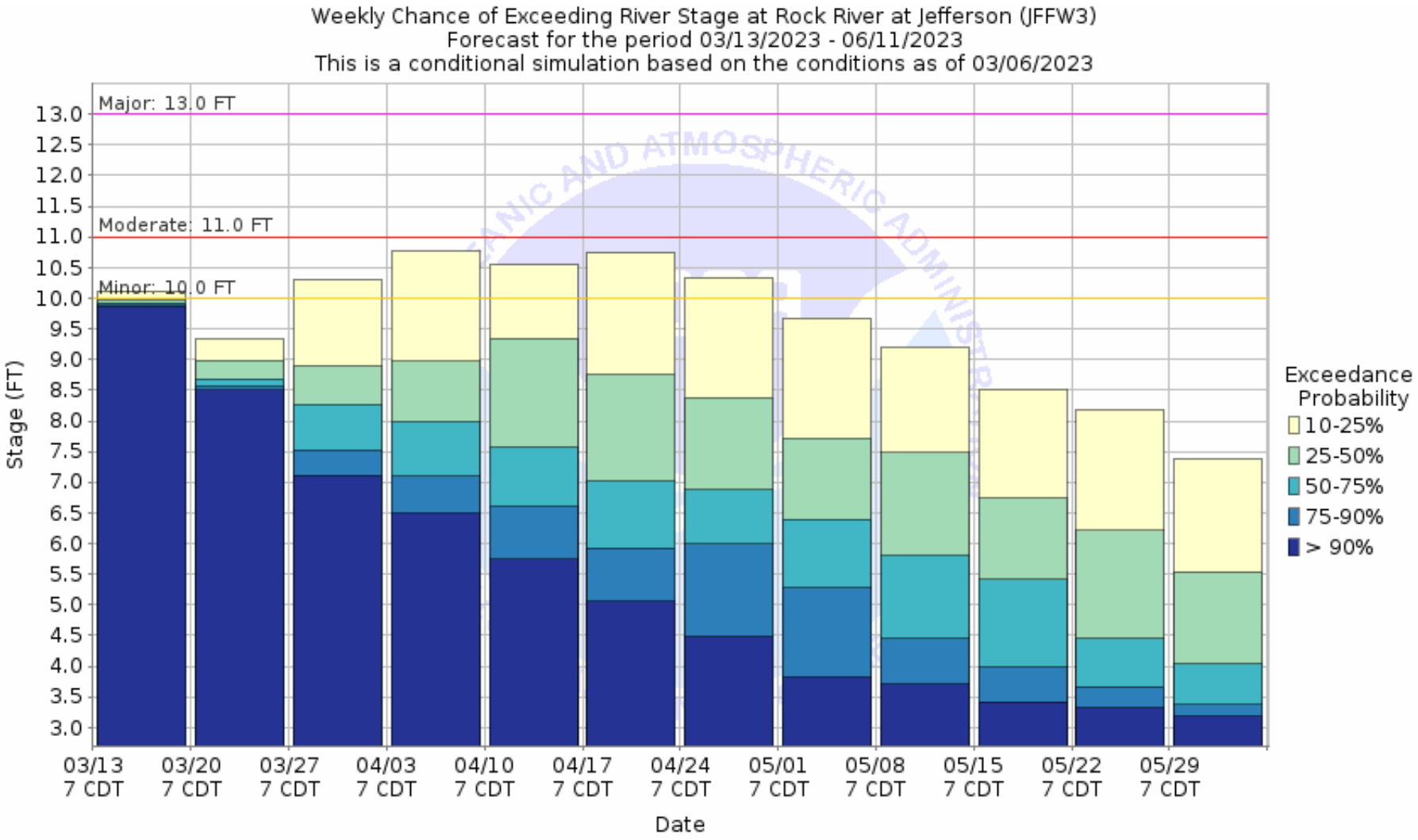

High probability of exceeding minor flood stage. River is still rising from recent rain and snow melt and there is a high chance it will reach flood stage in the 1-2 weeks.

How To Find River Probability Info

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NWS Forecast Office Milwaukee/Sullivan, WI

Weather.gov > Milwaukee/Sullivan, WI

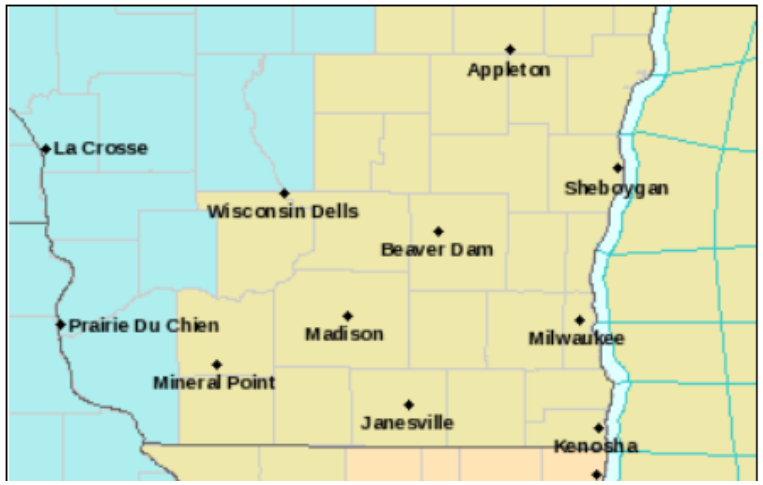
Milwaukee/Sullivan, WI
Weather Forecast Office

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.

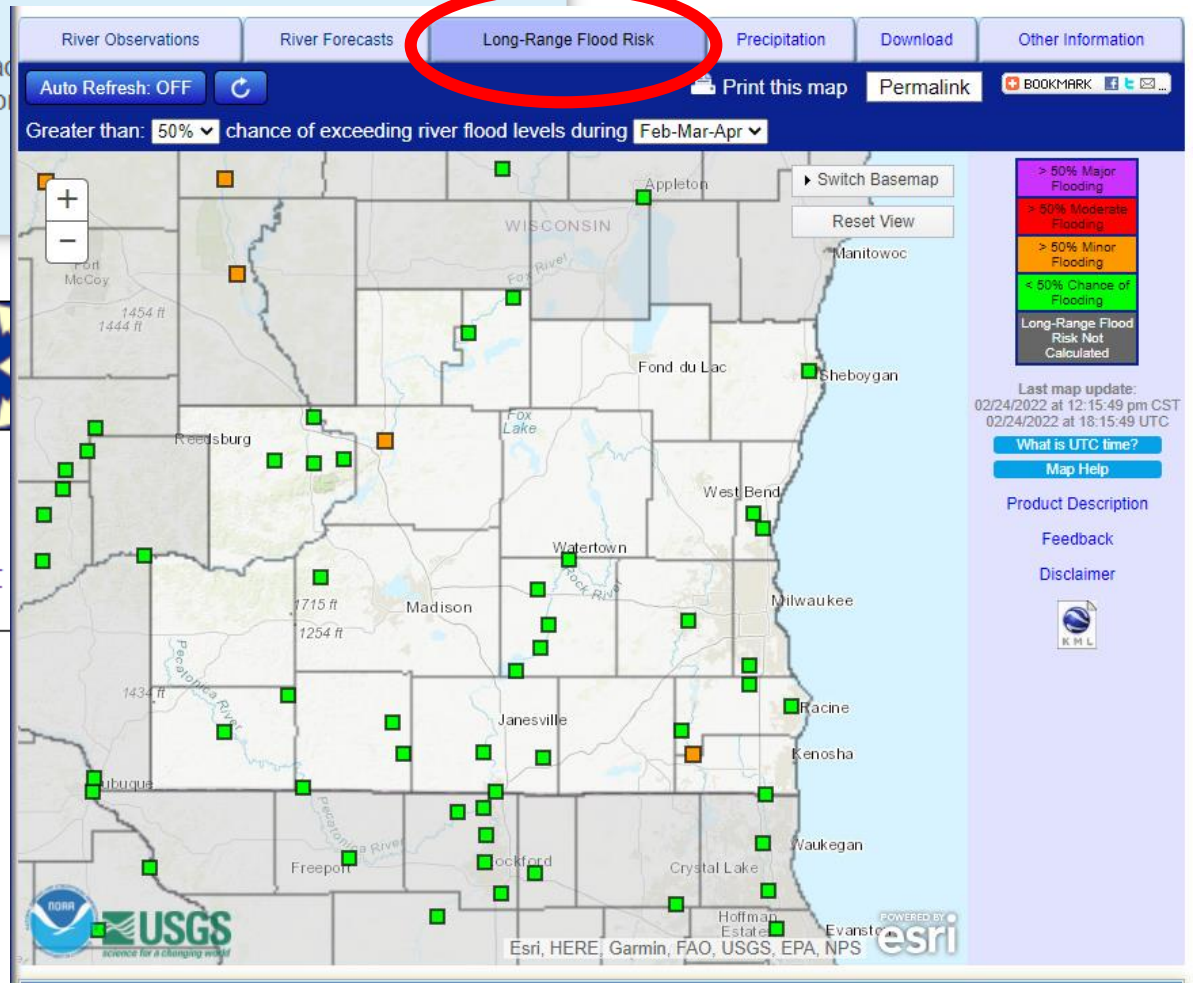


Watches, Warnings & Advisories

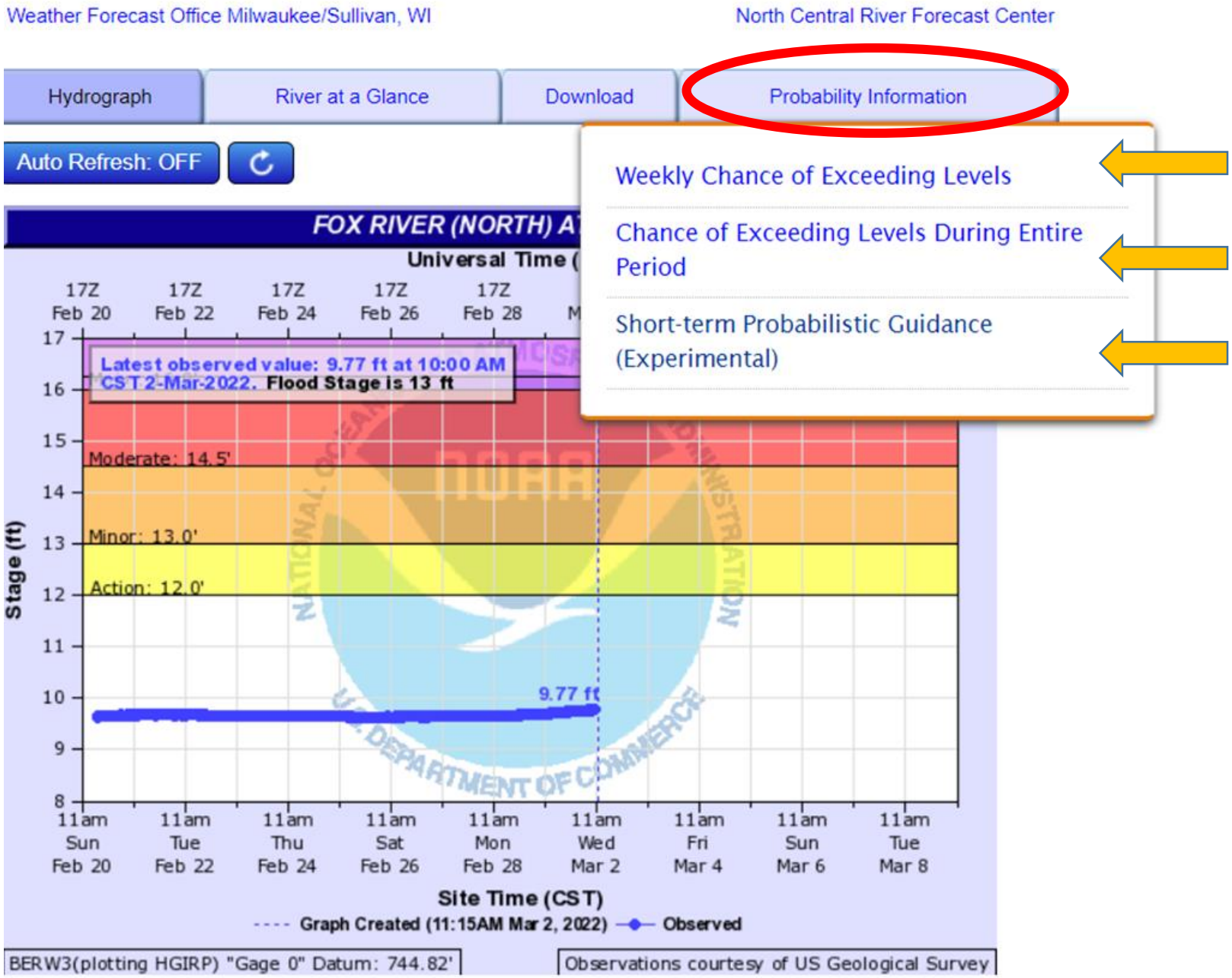
Wind Chill Advisory

Special Weather Statement

Hazardous Weather Outlook



How To Find River Probability Info



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Questions?

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