2023 Spring Flood Outlook

February 23, 2023
2:30 PM

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Spring Flood Outlook - Overview

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Flood Risk This Spring Across South Central Nebraska and North Central Kansas is Generally Below Normal

- Local area snowpack contains negligible moisture.
- Mountain snowpack in the Platte River Basin is near to above normal, but with lower than normal reservoir levels, spring flooding in the plains due to mountain snow melt is currently not expected.
- We still have river ice and the ground remains frozen. *Note: Watch for possible ice jams as ice breaks up probably over the next 2 weeks.* Sunday evening-Mon AM (Feb. 26-27) rain and possible thunderstorms are also a concern given frozen ground enhancing runoff.
- Soil moisture is much drier than normal and the soil is capable of absorbing plenty of moisture thus limiting spring flood potential.
- Current streamflow on our biggest rivers is averaging near normal to below normal.
- The long range precipitation outlook of equal chances indicates no strong indicators one way or the other.
- Isolated flooding is still possible even in dry years and when the overall risk of flooding is low.

Spring Flood Outlook

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South Central Nebraska and North Central Kansas

Overall Spring Flood Risk	** *Below Normal* **

Contributing Factors	Short Term: February	Long Term: March - May
Local Snowpack	Normal	Below Normal
Mountain Snowpack	Normal to Above Normal	Normal To Above Normal
River Ice/Frozen Ground	Above Normal	Normal
Soil Moisture	Below Normal	Below Normal
Stream Flow	Below Normal	Below Normal
Precipitation Outlook	Normal	Normal

Impact Level	Below Normal	Normal	Above Normal

Bottom Line Up Front

- ***Below Normal:*** *Biggest Contributing factors are the drought/dry soil.*
- ***Snowpack:*** *Very minimal moisture in this week's local snowfall. Mountain snowpack that feeds the Platte River is near to above normal, but reservoirs have plenty of storage space.*
- ***River Ice/Frozen Ground:*** *We still have river ice and the ground remains frozen. Note: Watch for possible ice jams as ice breaks up probably over the next 2 weeks. Sun evening-Mon AM (Feb. 26-27) rain and possible thunderstorms are also a concern given frozen ground enhancing runoff (near normal to above normal threat for ice jams/frozen ground induced flooding).*
- ***Soil Moisture:*** *Abnormally dry given ongoing moderate to extreme drought conditions.*
- ***Stream Flow:*** *Our biggest rivers are generally running with below to near normal flow.*
- ***Precipitation Outlook:*** *The Climate Prediction Center indicates "equal chances" for below/above normal precip, no strong indicators.*

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Regional Snow Water Equivalent

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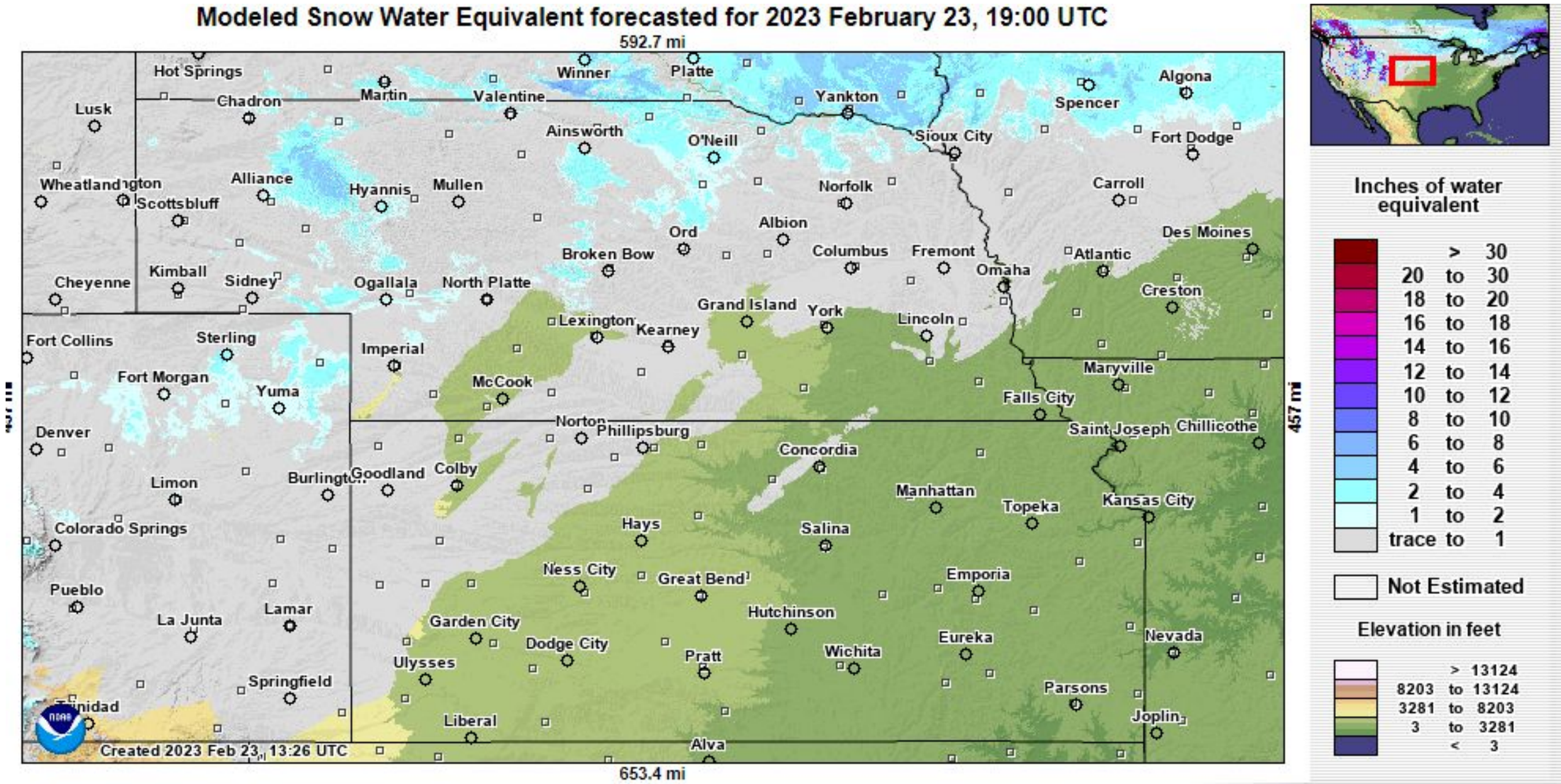

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Seasonal Snowfall So Far

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Above Normal Northwestern Areas - Below Normal Eastern Areas

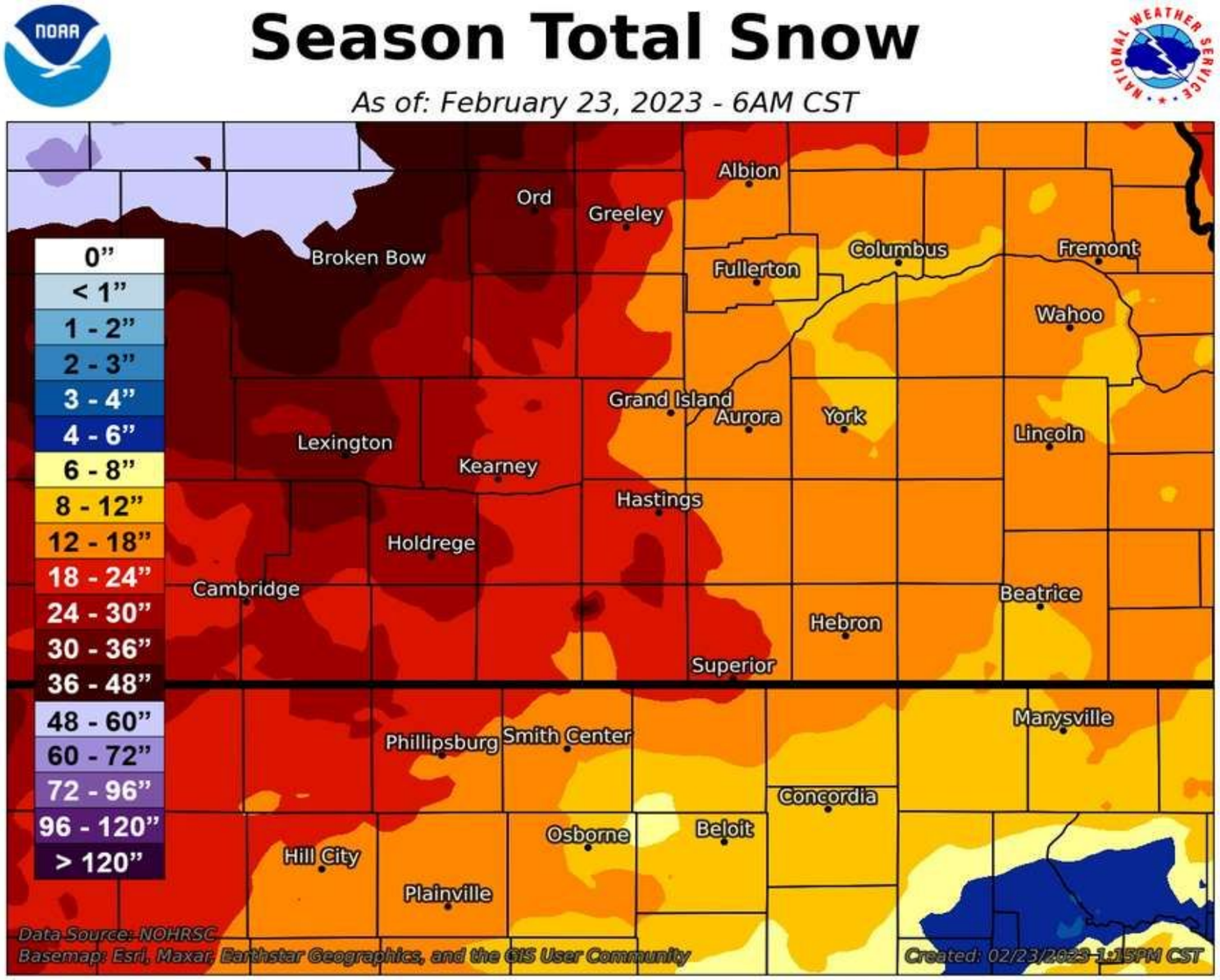
As of Feb 22, 2023:

Grand Island
Seasonal Snow:
Current 17.3”
Normal 21.1”
Short -3.8”

Grand Island
Liquid Equivalent Precipitation:
Since January 1, 2023
Liquid +0.63”

Since Jan 1, 2022 (start of *LAST* year)
Liquid -10.78”

2023 precipitation so far has been slightly above normal, but we are not really cutting into that huge 2022 precipitation deficit.



Precipitation Trends Last 90 Days

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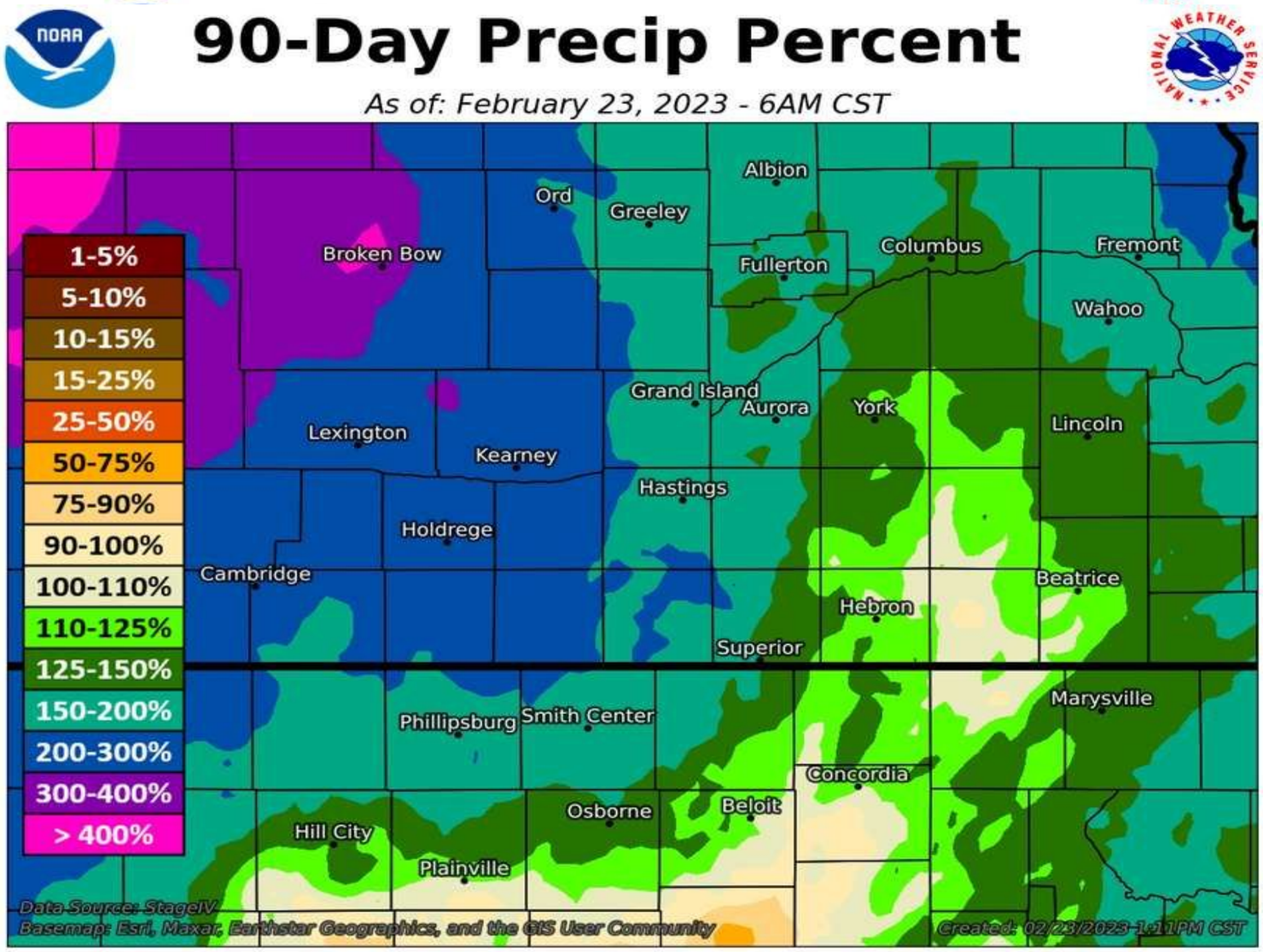
Above Normal All Areas

Key Messages

- ➔ Precipitation Last 90 days
- ➔ At least slightly above normal most areas (especially west)
- ➔ Slightly below normal far south-southeast *(but still FAR more winter precip than last year!)*



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Platte River Basin Snowpack

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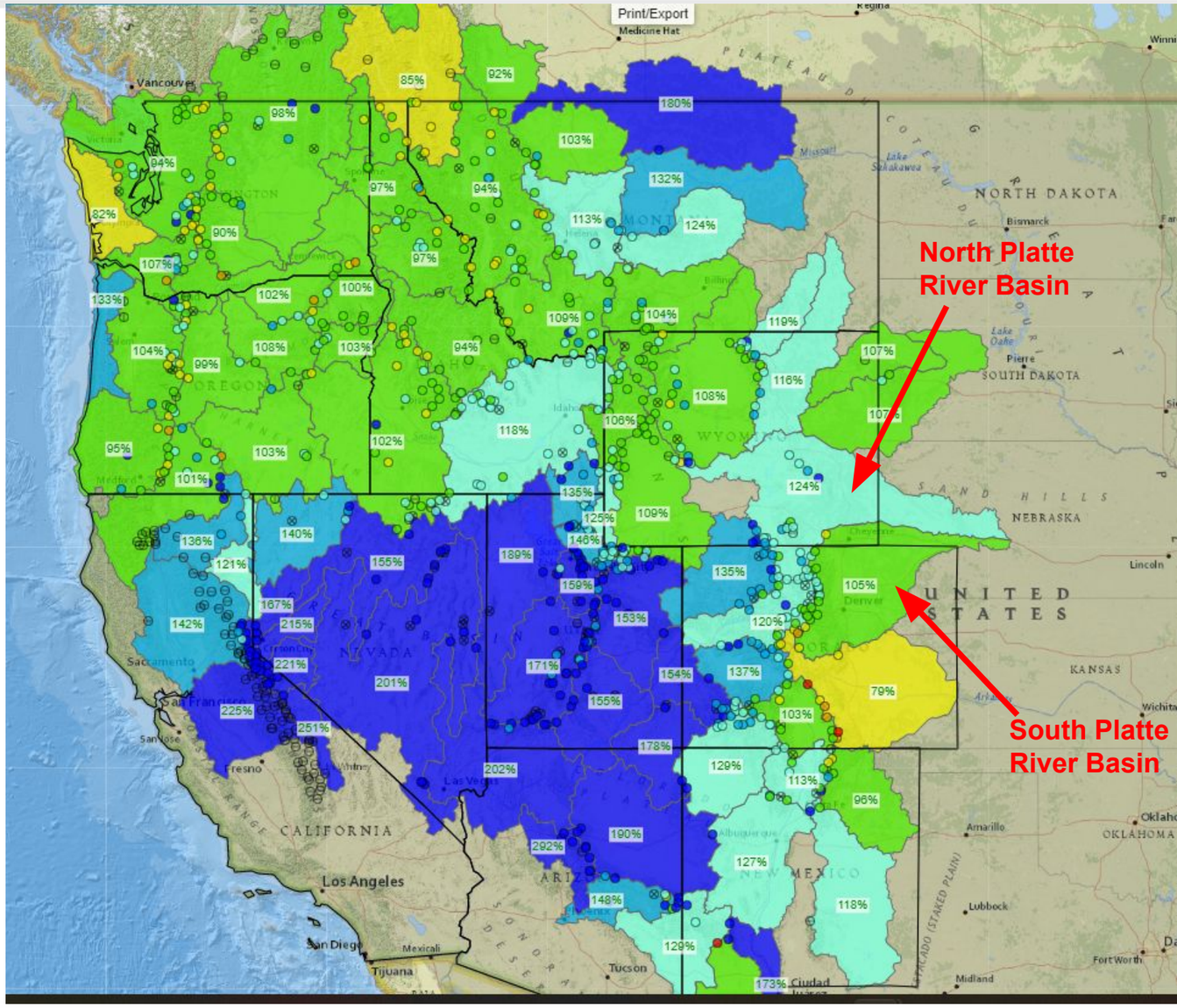
Near Normal South Platte River Basin - Above Normal North Platte River Basin

Key Messages

- As of late February the mountain snowpack was near normal over the South Platte River Basin and above normal over the North Platte River Basin.

- Mountain snowmelt-induced flooding is not expected across Central Nebraska



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Platte River Basin Snowpack

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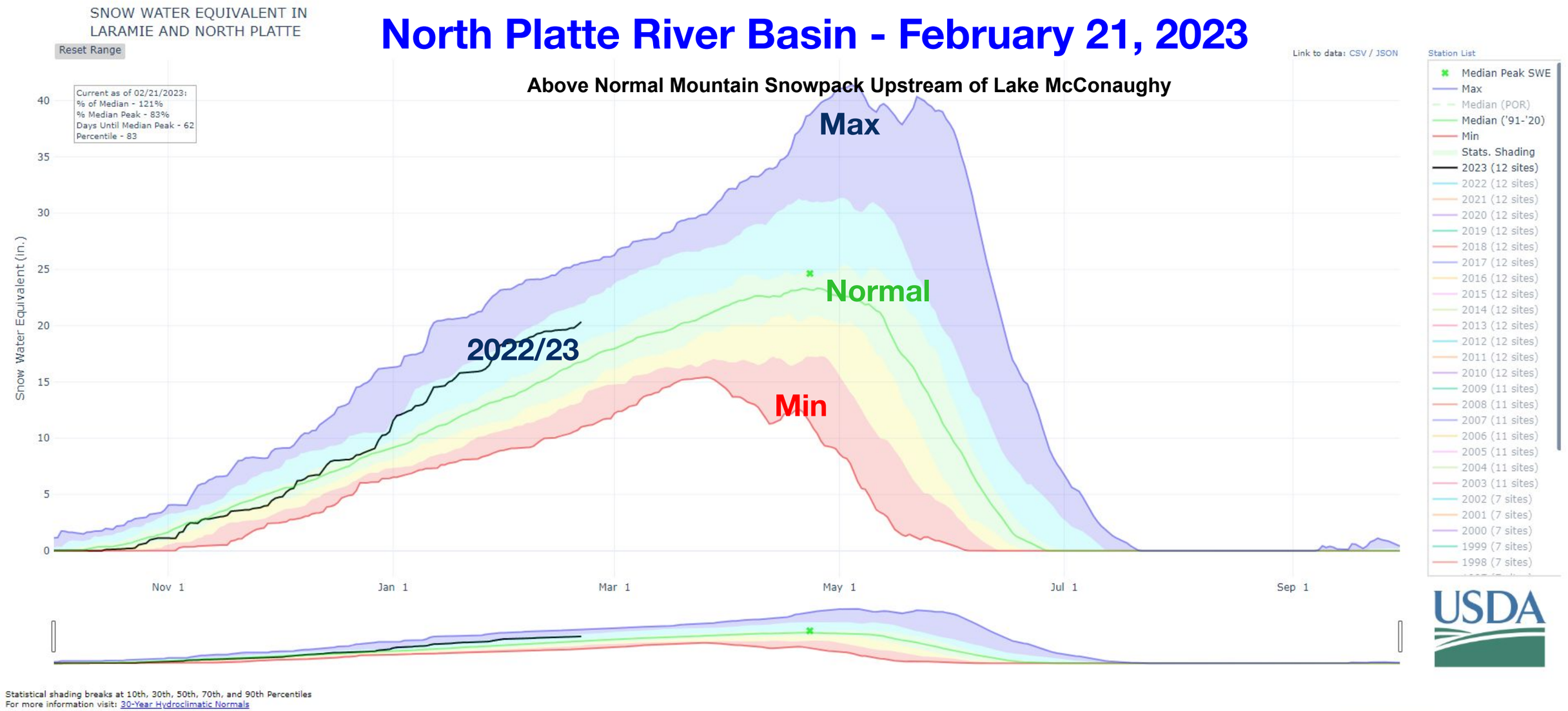
Above Normal Snowpack

https://secure.training.weather.gov/wdtd/secure/woc/severe/forecast-challenge/forecast/



Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th Percentiles
For more information visit: 30-Year Hydroclimatic Normals

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Platte River Basin Snowpack

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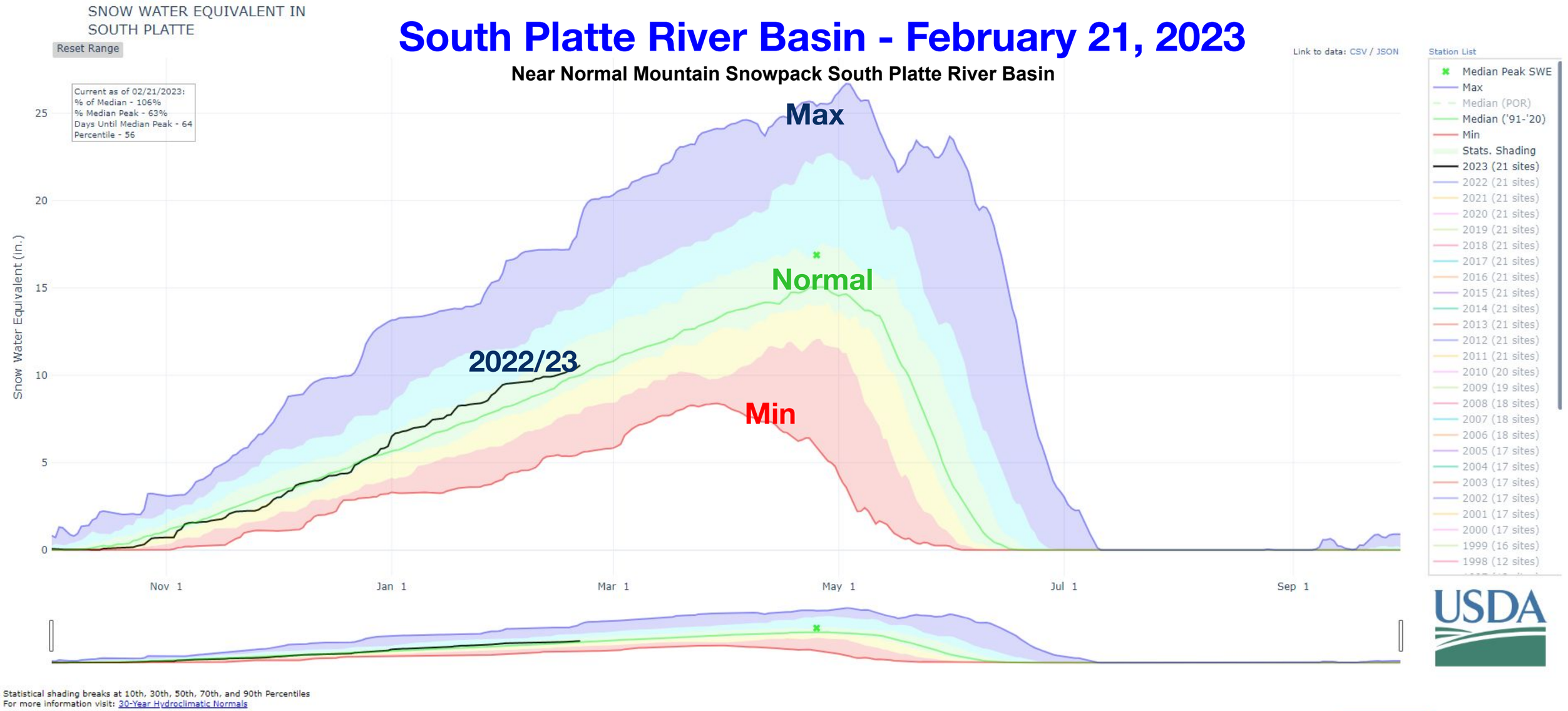
Near Normal Snowpack



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Western Reservoir Storage

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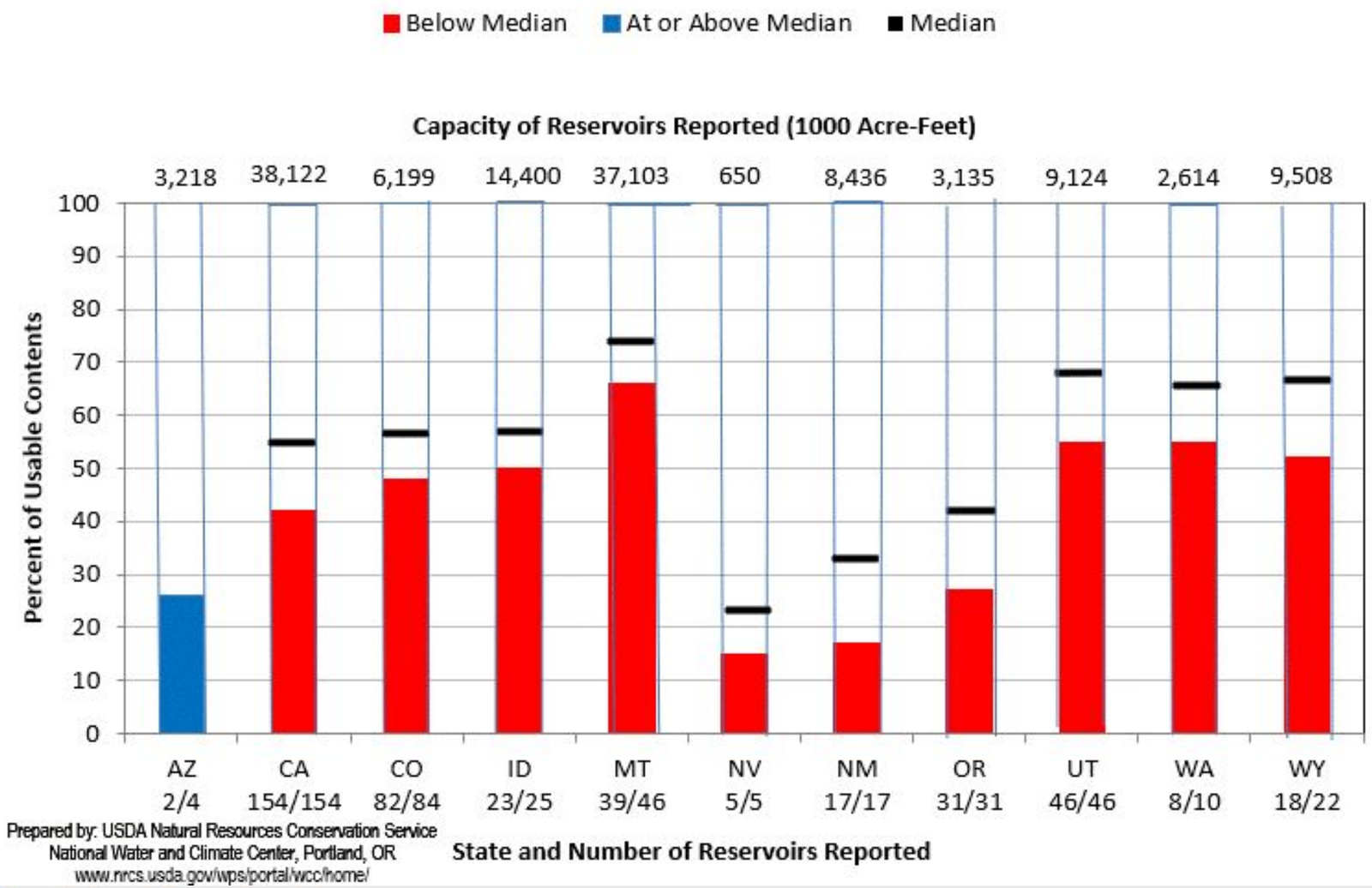
Below Normal Reservoir Levels

Reservoir Storage as of January 1, 2023



Prepared by: USDA Natural Resources Conservation Service
National Water and Climate Center, Portland, OR
www.nrcs.usda.gov/wps/portal/wcc/home/

** Below Normal Reservoir Levels **

Western Reservoir Storage

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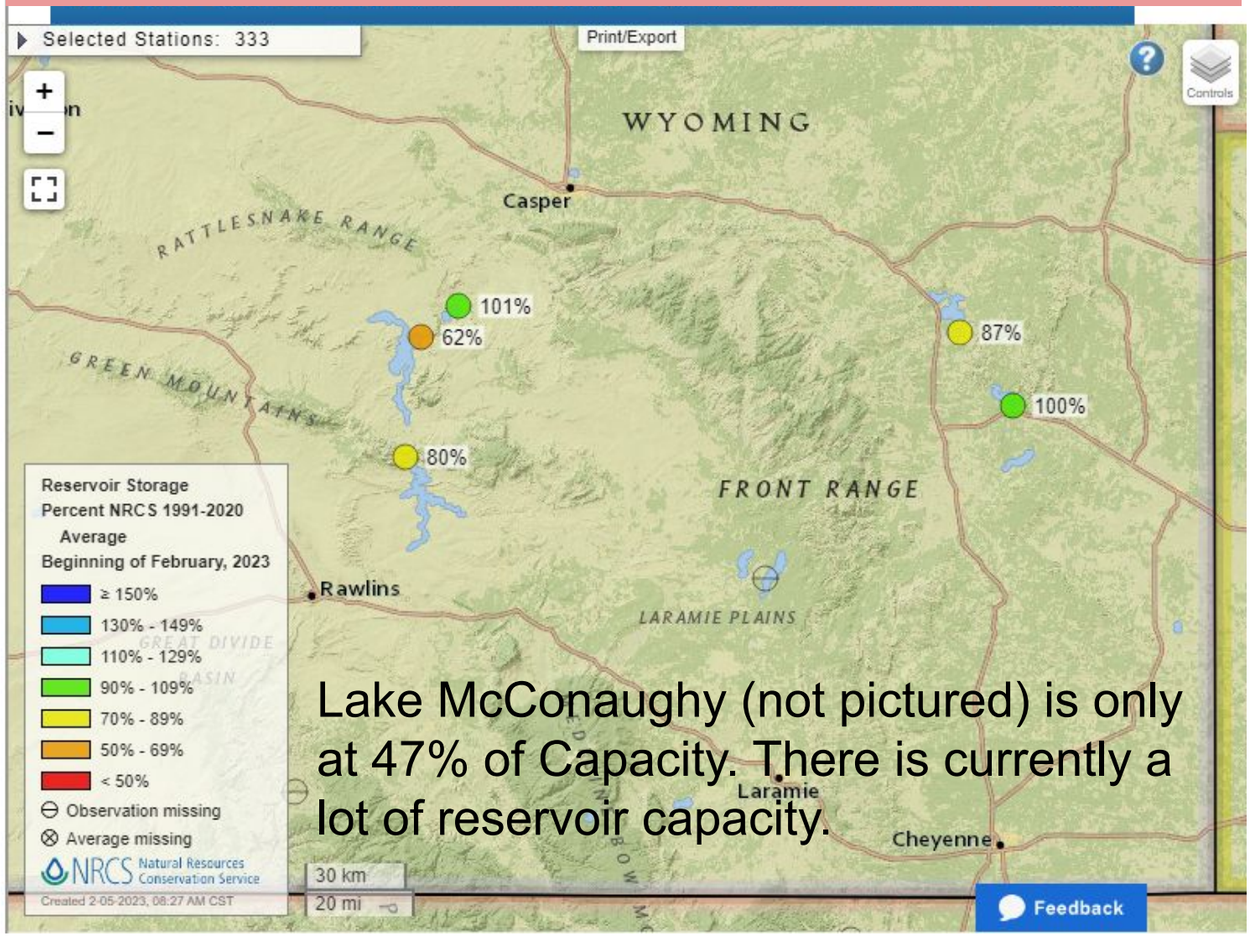
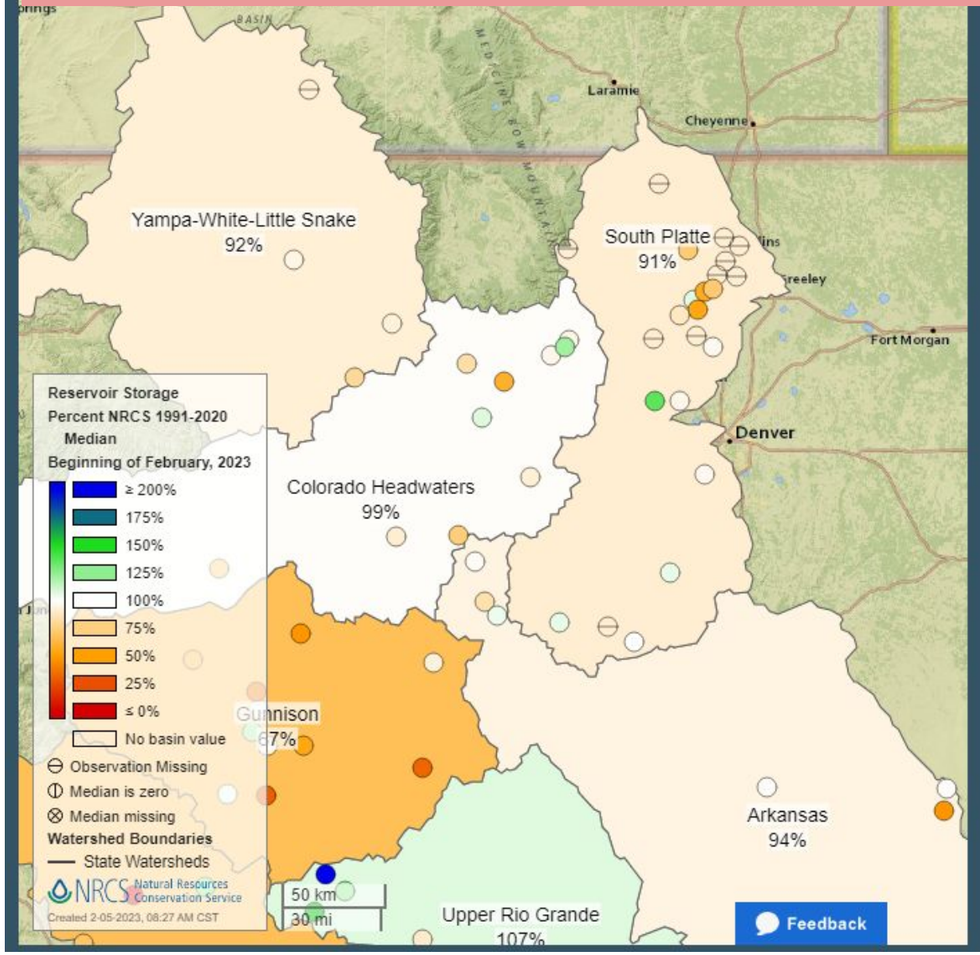
Below Normal Reservoir Levels

North Platte Basin: Below Average Reservoir Levels
Biggest Reservoirs 62-87% (Feb 1st 2023)



Lake McConaughy (not pictured) is only at 47% of Capacity. There is currently a lot of reservoir capacity.

South Platte Basin: Below Average Reservoir Levels (Feb 1st 2023)



Freezing Degree Days (FDD)

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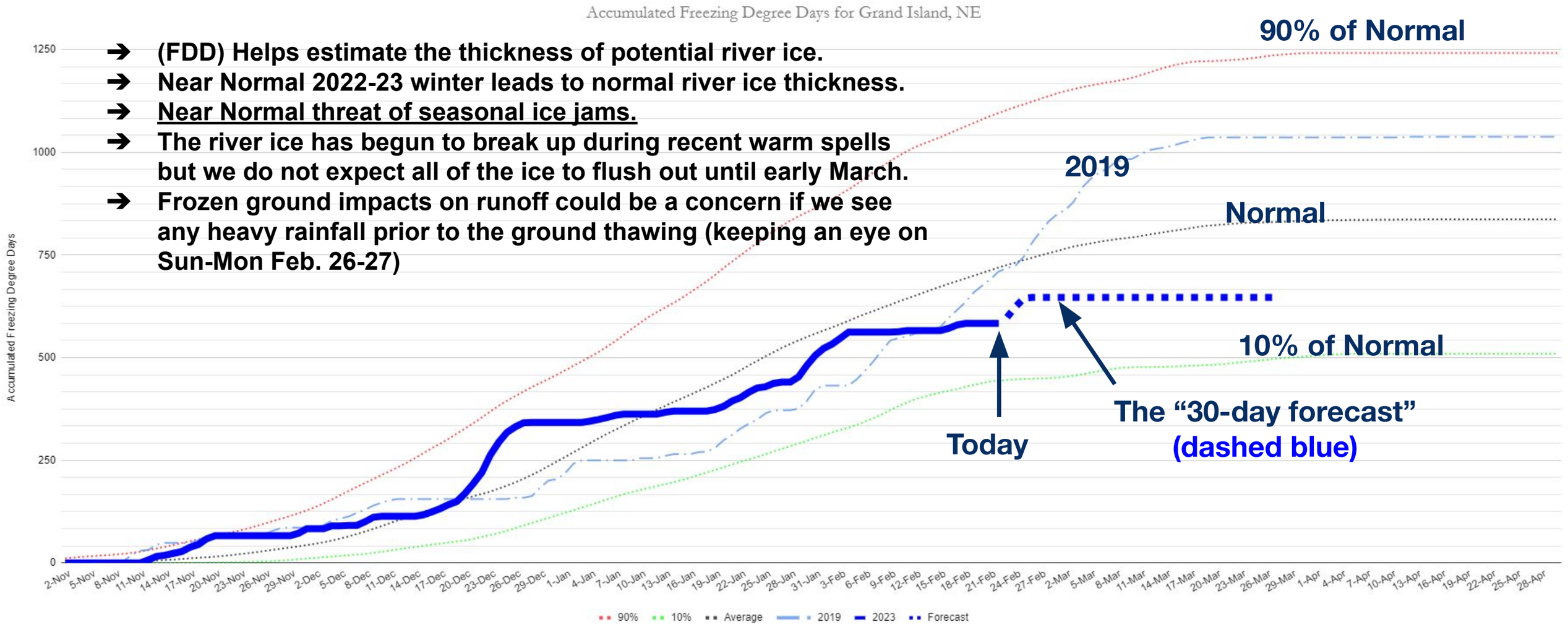
Grand Island - Near Normal FDD Indicates Winter With Close To Normal Temperatures

- ➔ (FDD) Helps estimate the thickness of potential river ice.
- ➔ Near Normal 2022-23 winter leads to normal river ice thickness.
- ➔ <u>Near Normal threat of seasonal ice jams.</u>
- ➔ The river ice has begun to break up during recent warm spells but we do not expect all of the ice to flush out until early March.
- ➔ Frozen ground impacts on runoff could be a concern if we see any heavy rainfall prior to the ground thawing (keeping an eye on Sun-Mon Feb. 26-27)



Soil Moisture

Below Normal

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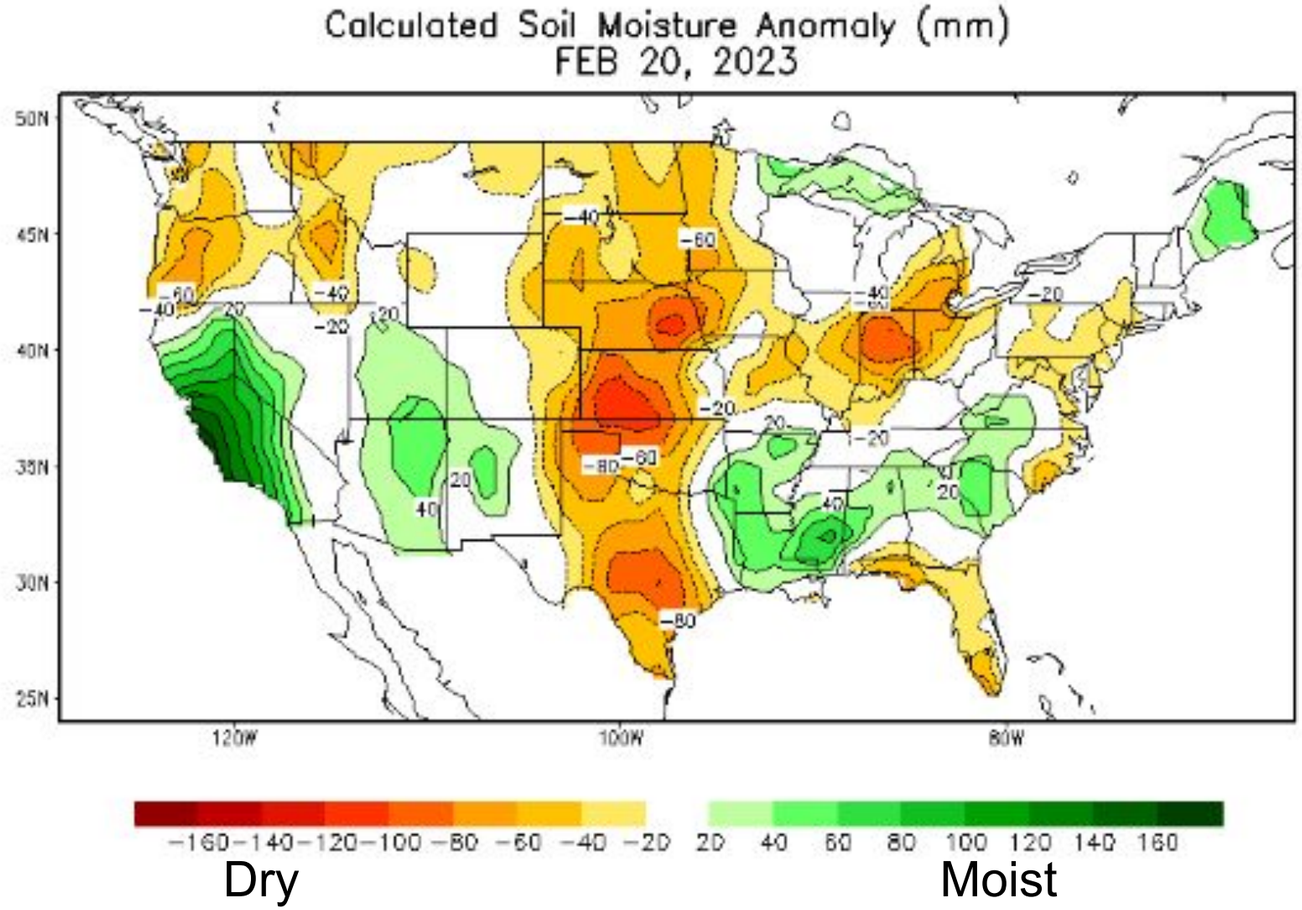
Key Messages

- ➔ Below normal soil moisture
- ➔ Ground should easily be able to absorb a good deal of moisture once it thaws



Drought Monitor

Moderate to Extreme Drought

February 23, 2023
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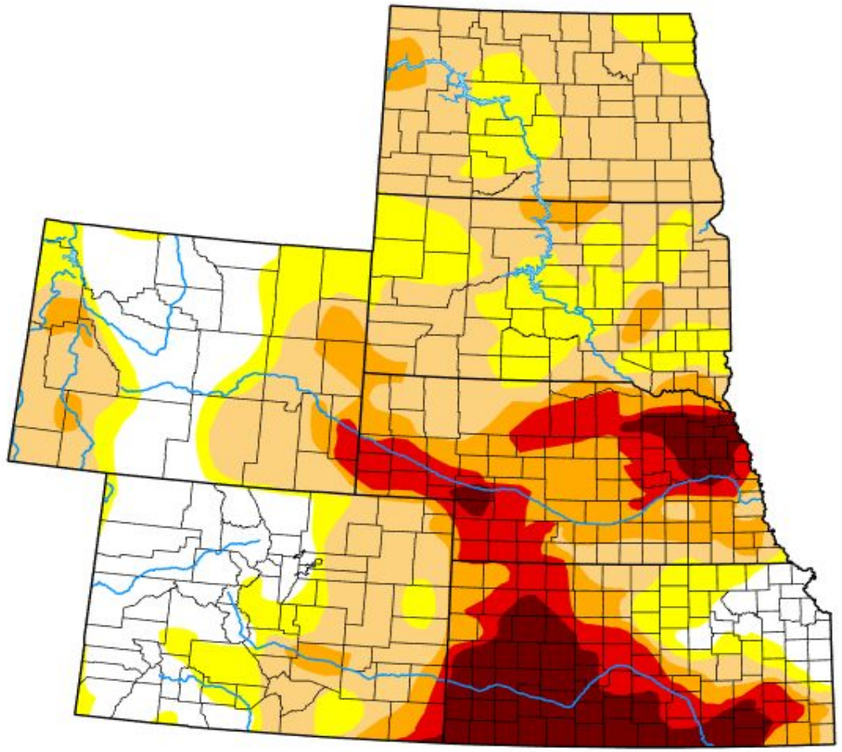
Home > High Plains

High Plains

Key Messages

- ➔ Moderate to extreme drought conditions persist
- ➔ Ground should easily be able to absorb a good deal of spring moisture



Map released: Thurs. February 23, 2023

Data valid: February 21, 2023 at 7 a.m. EST

Intensity

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
- No Data

Authors

United States and Puerto Rico Author(s):
Richard Heim, NOAA/NCEI

Pacific Islands and Virgin Islands Author(s):
Rocky Bilotta, NOAA/NCEI

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying **text summary** for forecast statements.*

6-10 Day Outlook

February 23, 2023
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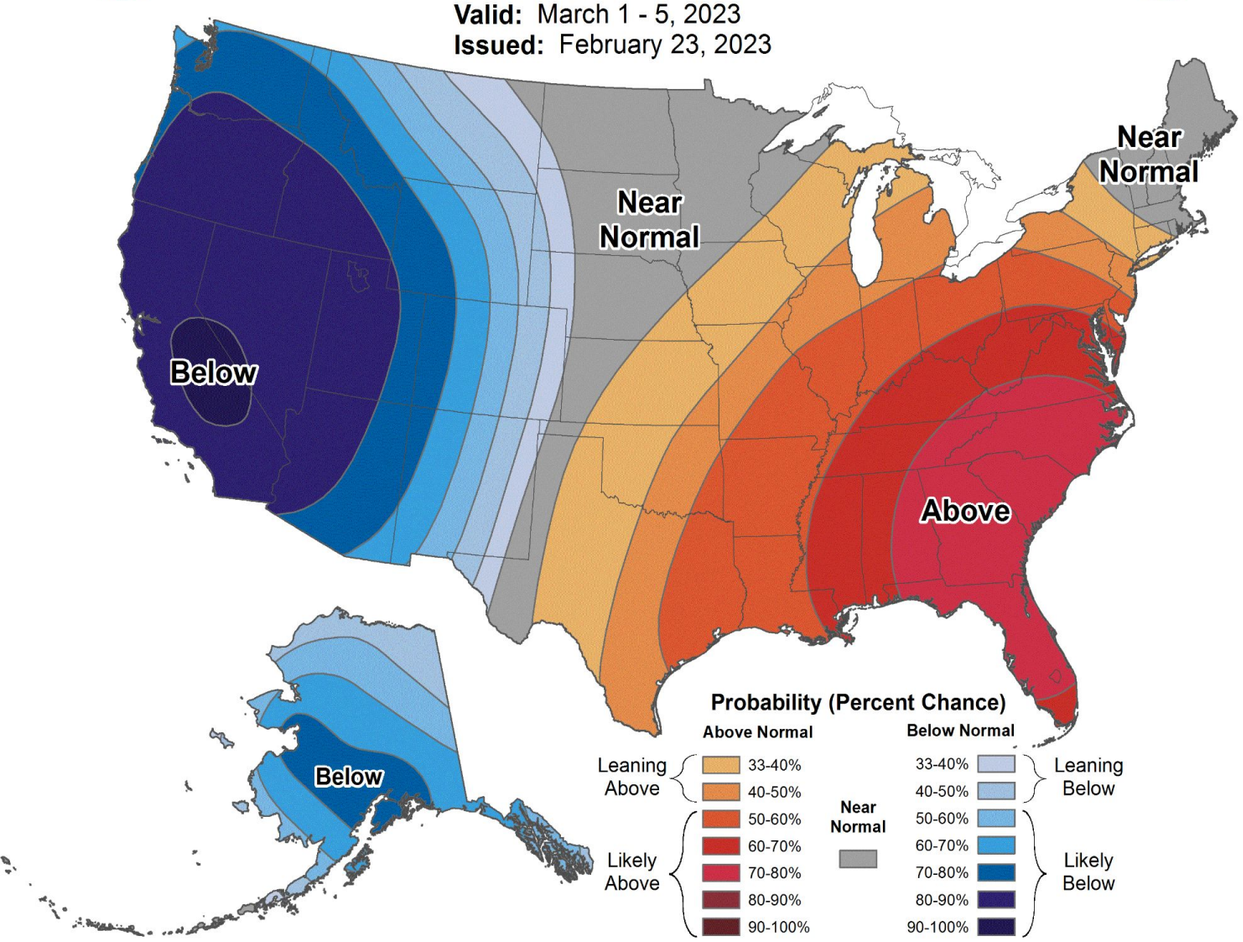
Temperature and Precipitation

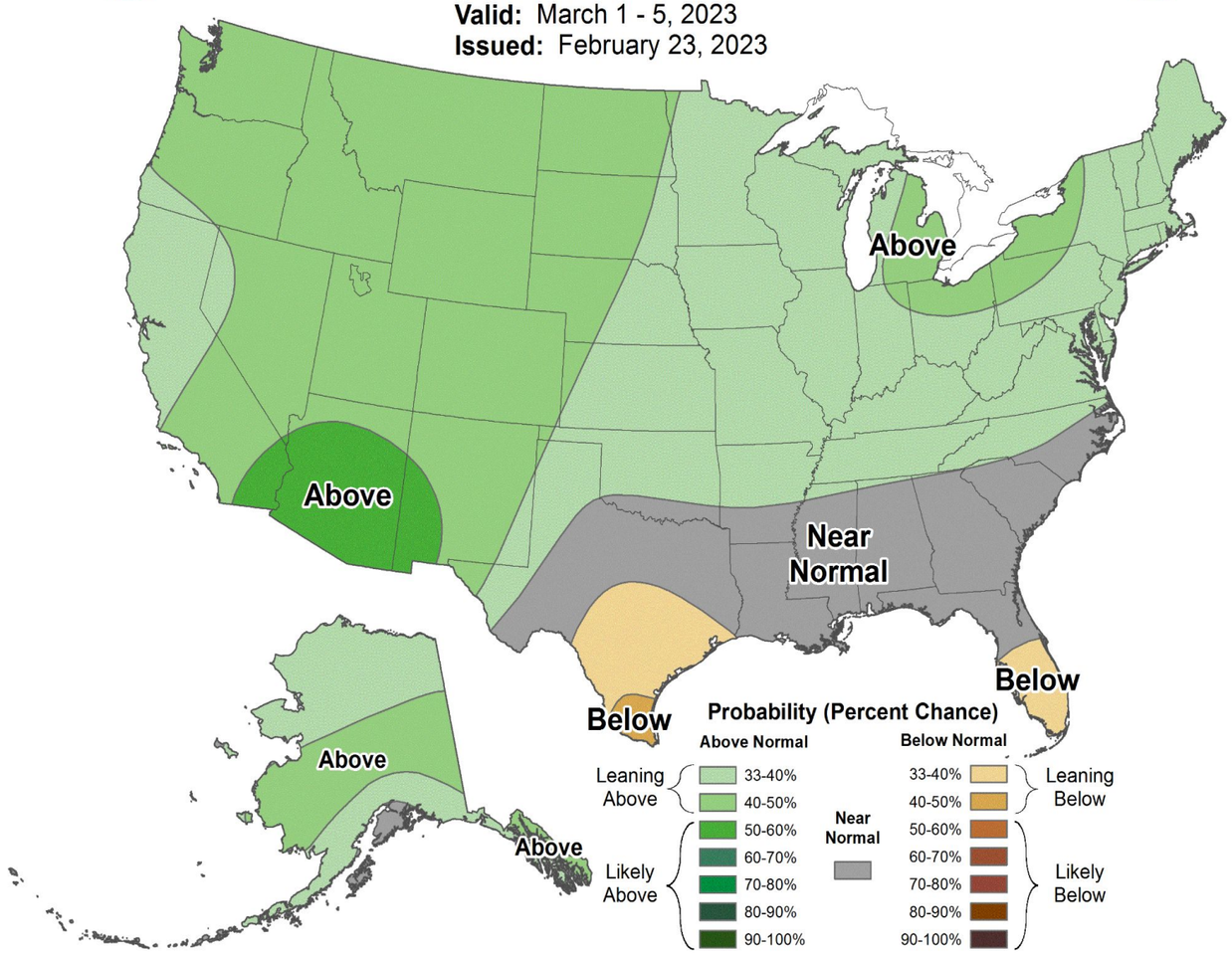
6-10 Day Temperature Outlook

Valid: March 1 - 5, 2023
Issued: February 23, 2023



6-10 Day Precipitation Outlook

Valid: March 1 - 5, 2023
Issued: February 23, 2023



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8-14 Day Outlook

Temperature and Precipitation

February 23, 2023
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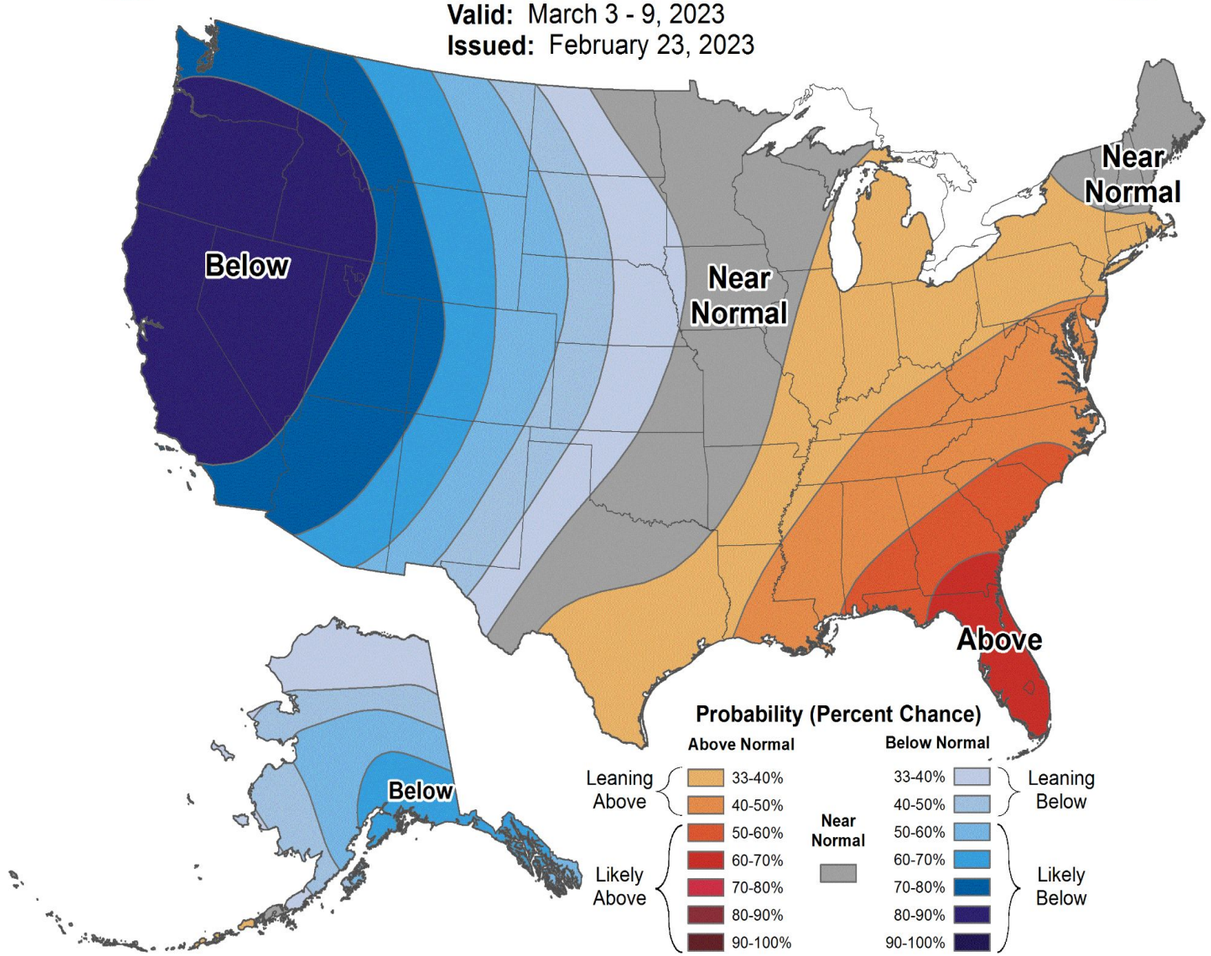
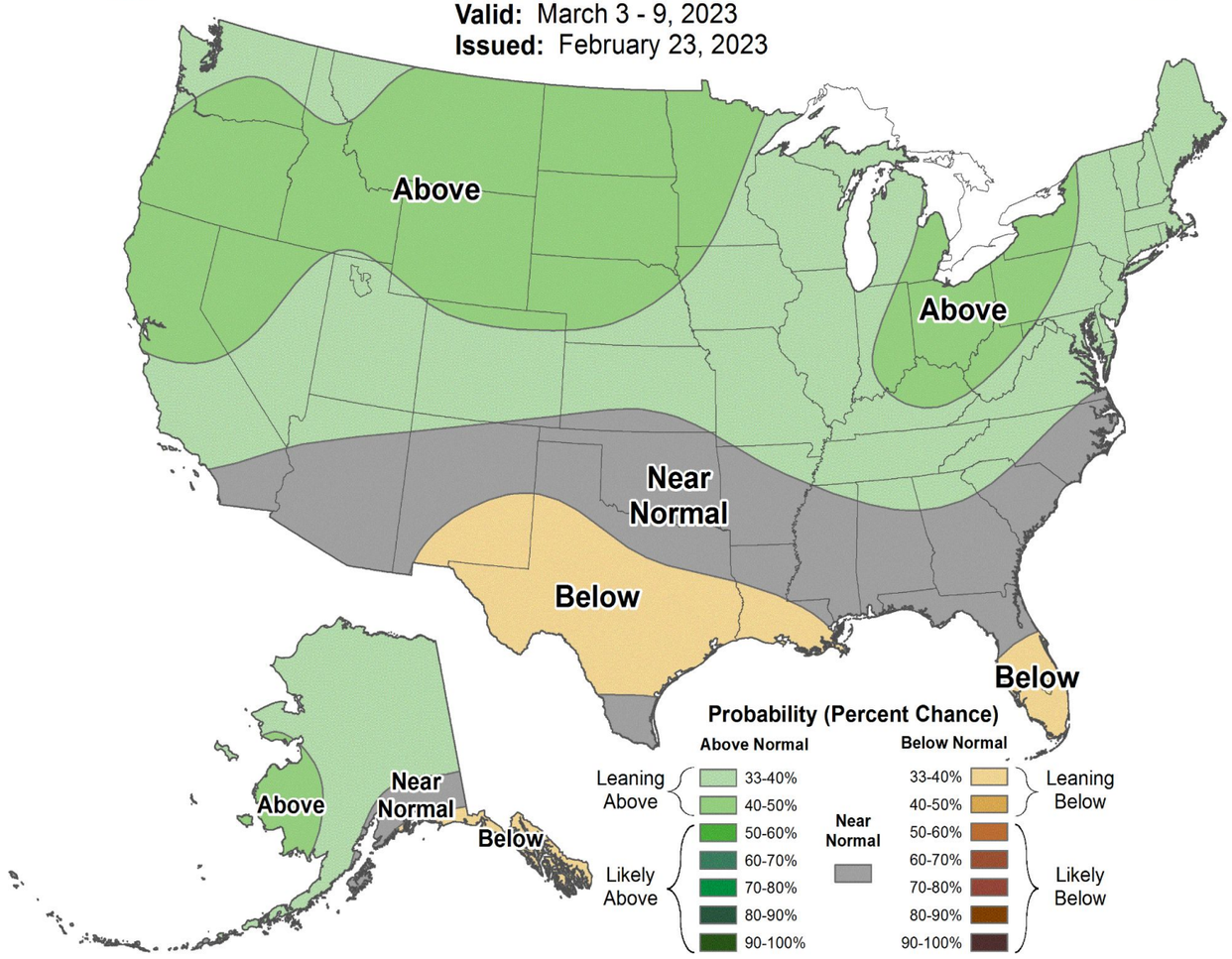
8-14 Day Temperature Outlook

Valid: March 3 - 9, 2023
Issued: February 23, 2023



8-14 Day Precipitation Outlook

Valid: March 3 - 9, 2023
Issued: February 23, 2023



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Week 3-4 Outlook

February 23, 2023
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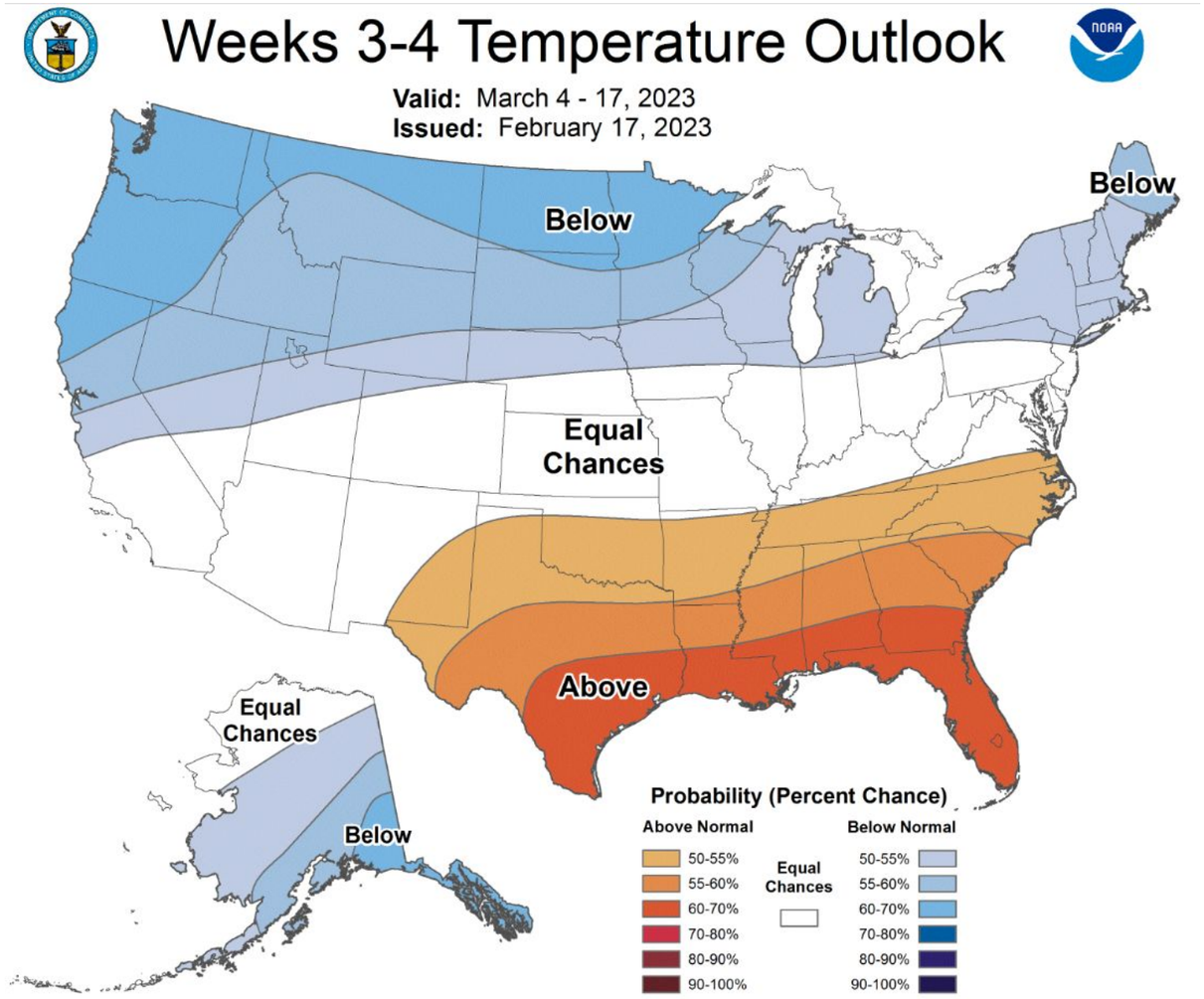
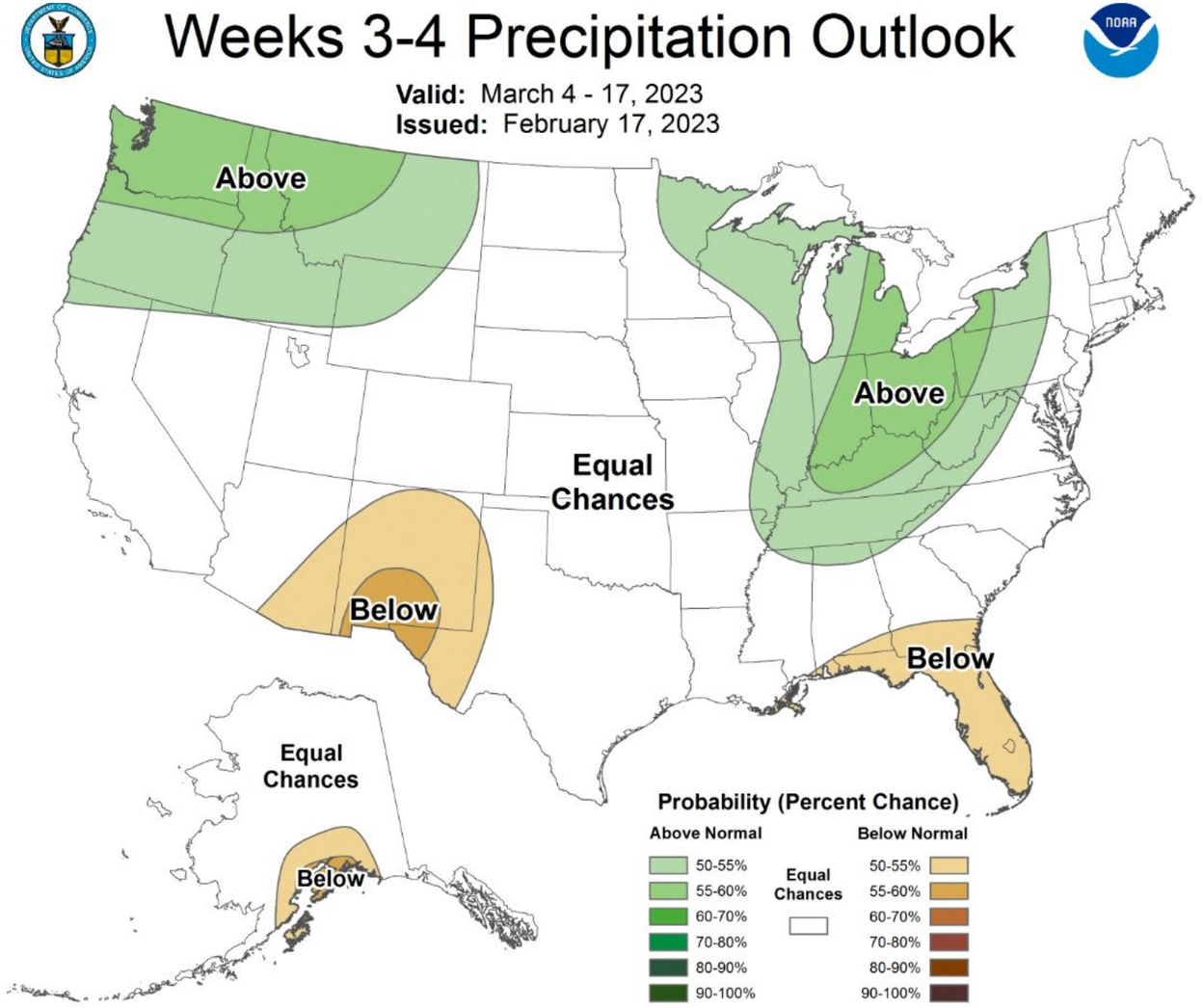
Temperature and Precipitation





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Seasonal Outlook (March-May)

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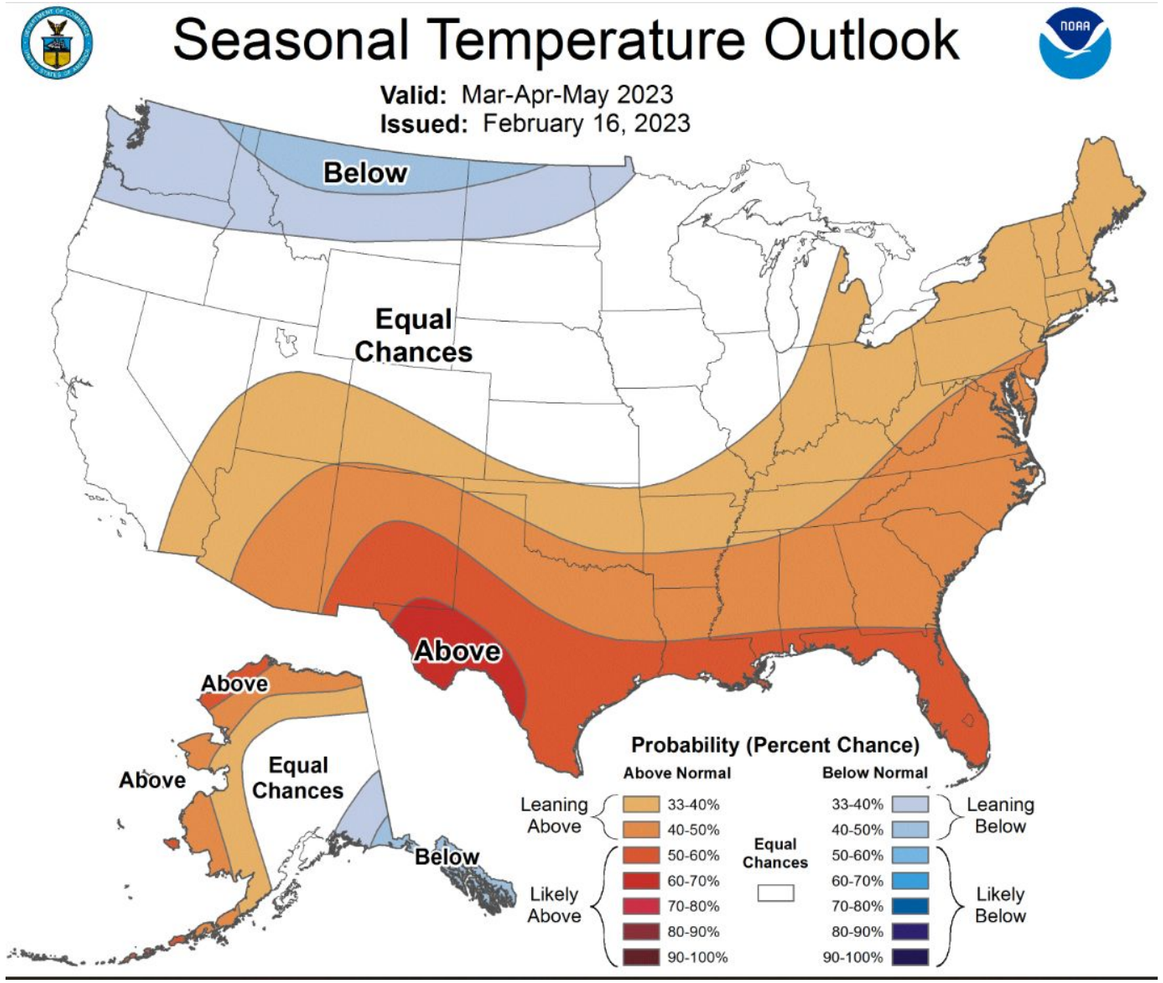
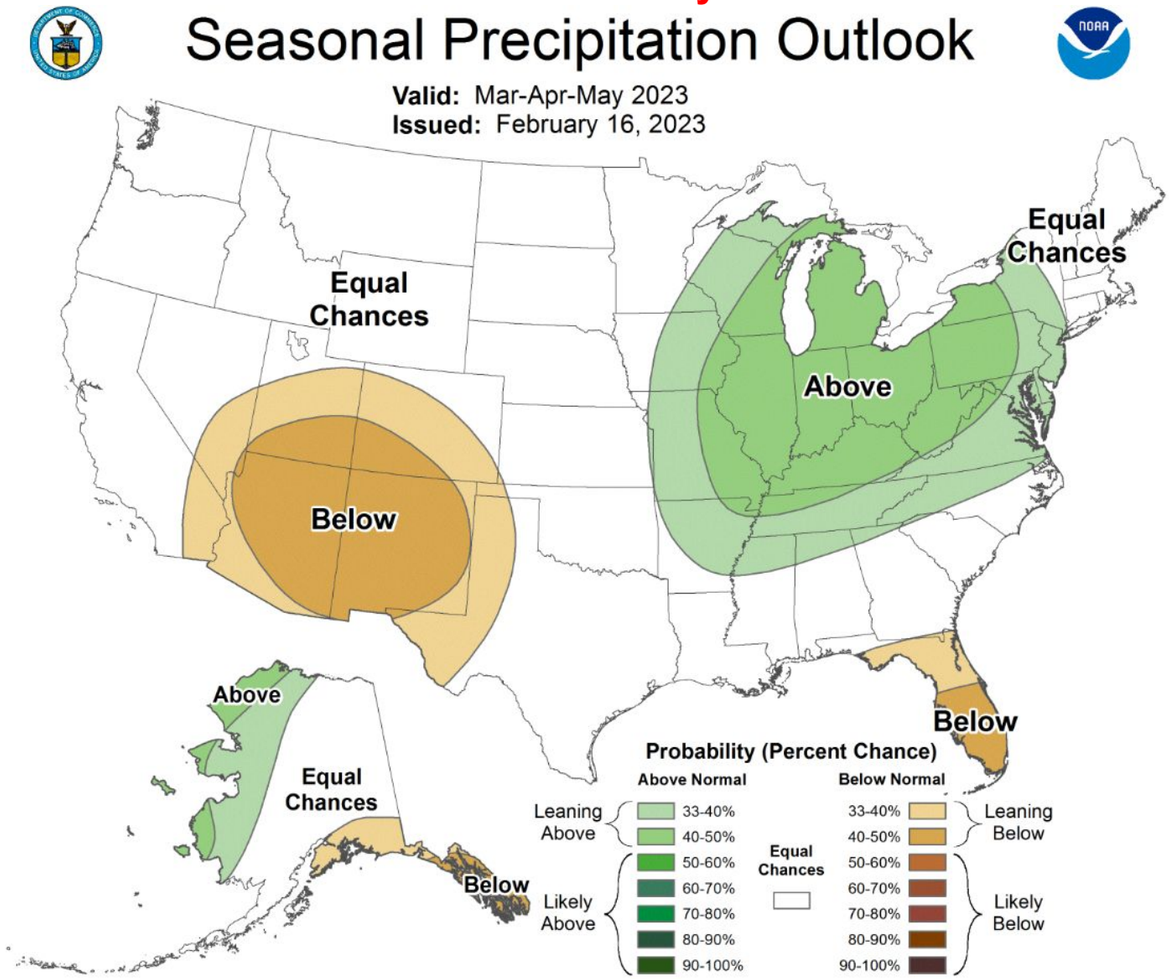
No strong indicators one way or another across the Central Plains.

March - May



March - May



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