USDA Midwest Climate Hub
U.S. DEPARTMENT OF AGRICULTURE

North Central US Climate-Drought Outlook
18 April 2024

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AASC AMERICAN ASSOCIATION OF STATE CLIMATOLOGISTS

NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION U.S. DEPARTMENT OF COMMERCE

NDMC NATIONAL DROUGHT MITIGATION CENTER UNIVERSITY OF NEBRASKA

REGIONAL CLIMATE CENTERS

USDA United States Department of Agriculture Midwest Climate Hub

General Information

- **Providing climate services to the North Central US**
  - Collaboration Activity Among:
    - NOAA NCEI/NWS/OAR/NIDIS/
    - USDA Climate Hubs
    - American Association of State Climatologists
    - Midwest and High Plains Regional Climate Centers
    - National Drought Mitigation Center
    - National Integrated Drought Information System/DEWS

- **Next Regular Climate/Drought Outlook Webinar**
  - May 16, 2024 (1 PM CDT) Justin Glisan – State Climatologist for Iowa (Iowa Department of Agriculture and Land Stewardship)

- **Access to Future Climate Webinars and Information**
- http://www.drought.gov/drought/content/regional-programs/regional-drought-webinars

  - https://mrcc.purdue.edu/multimedia/webinars.jsp
  - https://hprcc.unl.edu/webinars.php
- **Open for questions at the end (enter them along the way).**

Agenda

- **Current Conditions**
- **Impacts**
  - **Issues/Events**
  - **Hydro**
  - **Ag (freeze, planting)**
  - **Fire**
  - **Other**
- **Outlooks**
  - **El Niño ends - La Niña ahead?**
  - **Summer**

Photo:
Becky Bolinger
Colorado Climate Office

Photo:
Pete Boulay
MN State Climate Office

Quick look back – climate context

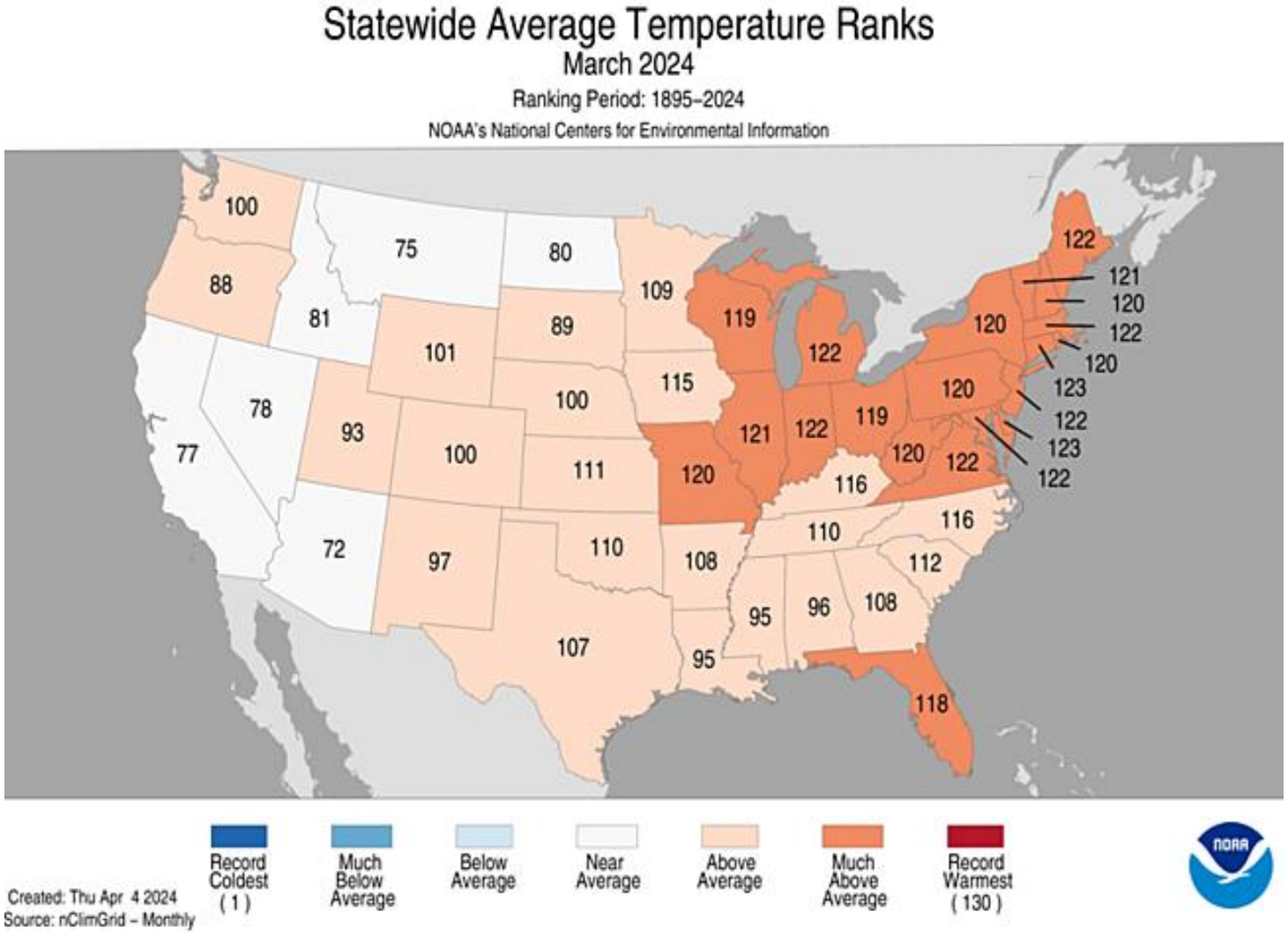
REVIEW OF CURRENT CONDITIONS

March Temperature Recap

Continuation of general winter pattern: warm south/east, less warm northwest.

Top 10 warmest March most of the eastern states

World-wide 10th month in a row warmer than average.



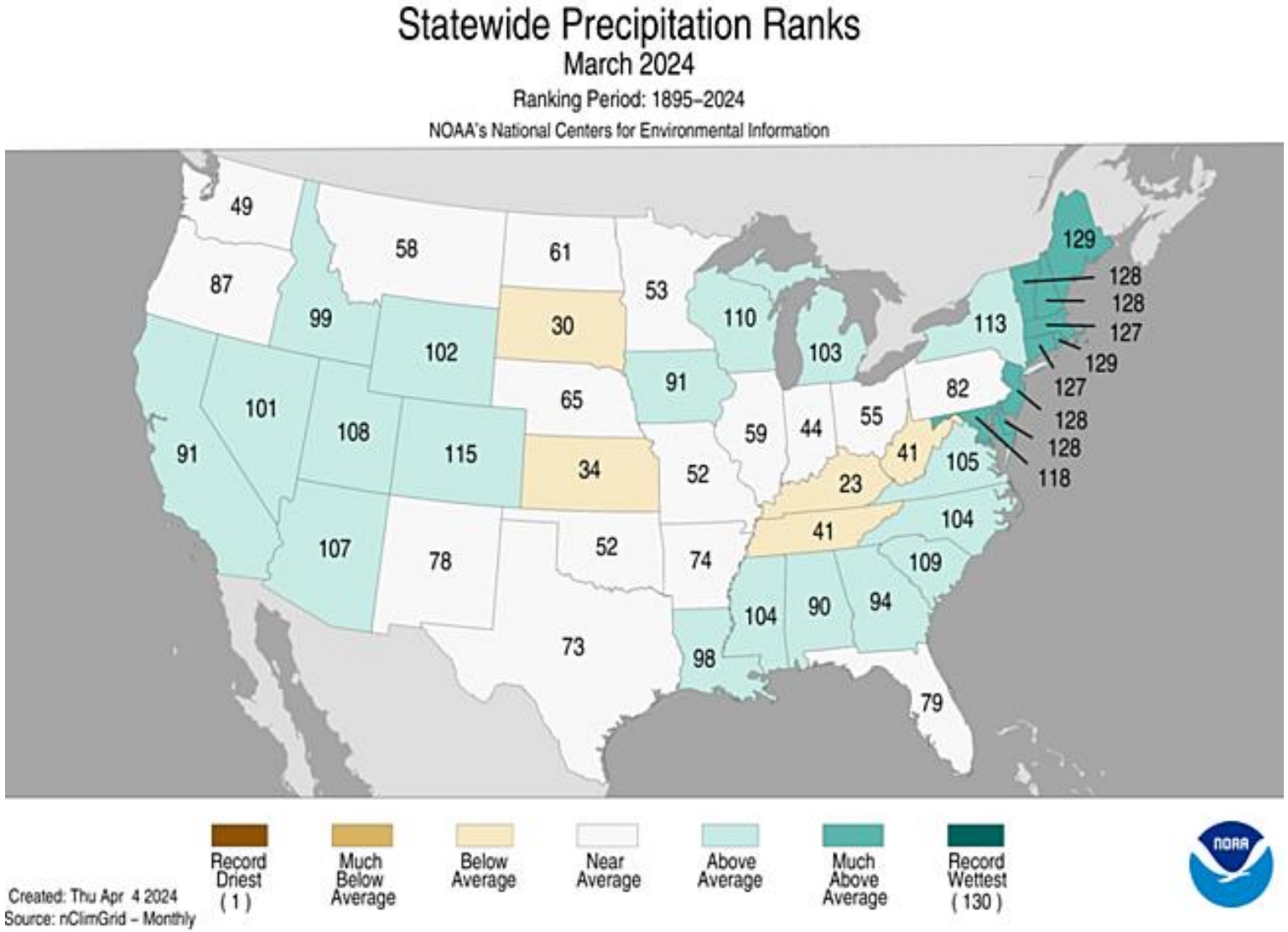
http://www.ncdc.noaa.gov/temp-and-precip/us-maps/

March Precipitation Recap

Mixed situation but only a few extremes.

IA, WI, MI, WY, CO on the wetter side

SD, KS, KY on the drier side



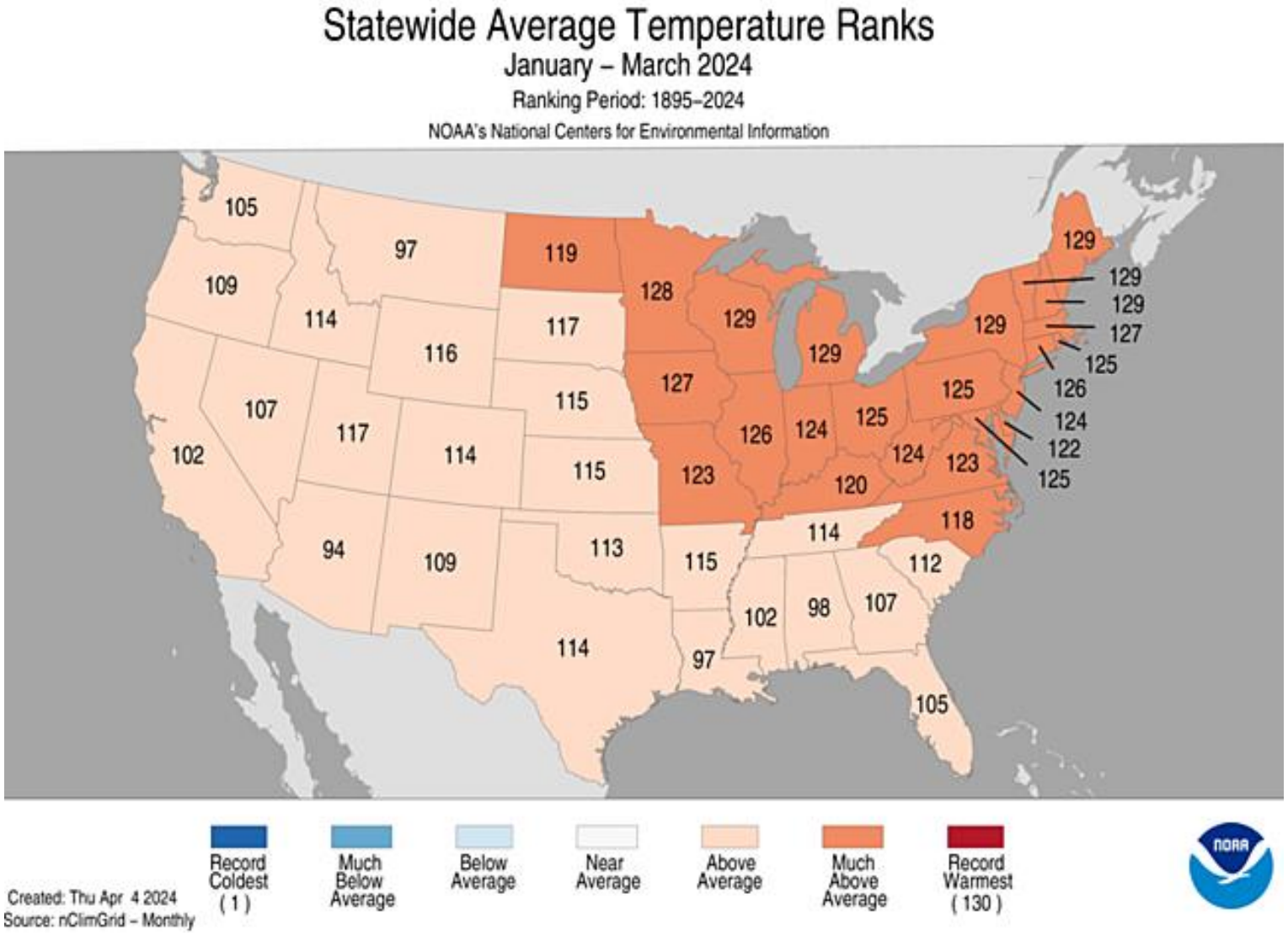
http://www.ncdc.noaa.gov/temp-and-precip/us-maps/

January - March Temperature Recap

Late winter early spring very warm – just less warm west.

Top 10 warmest January-March most of the eastern states.

- **MI, WI #2**
- **MN #3**
- **IA #4**
- **IL #5**



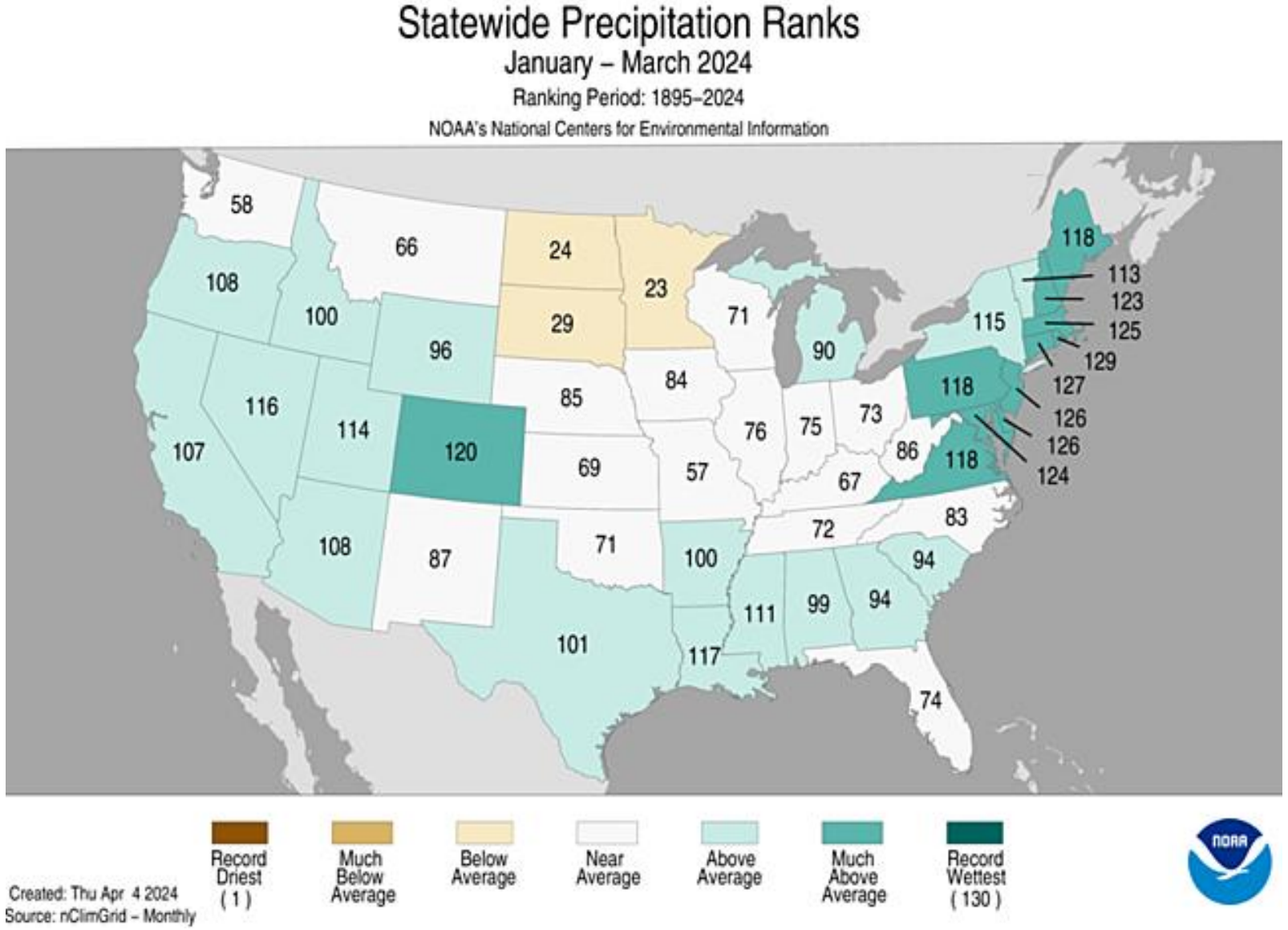
http://www.ncdc.noaa.gov/temp-and-precip/us-maps/

January-March Precipitation Recap

Mostly moderate with some dryness north. Wetter far west.

Dakotas and Minnesota on the dry side (more snow drought).

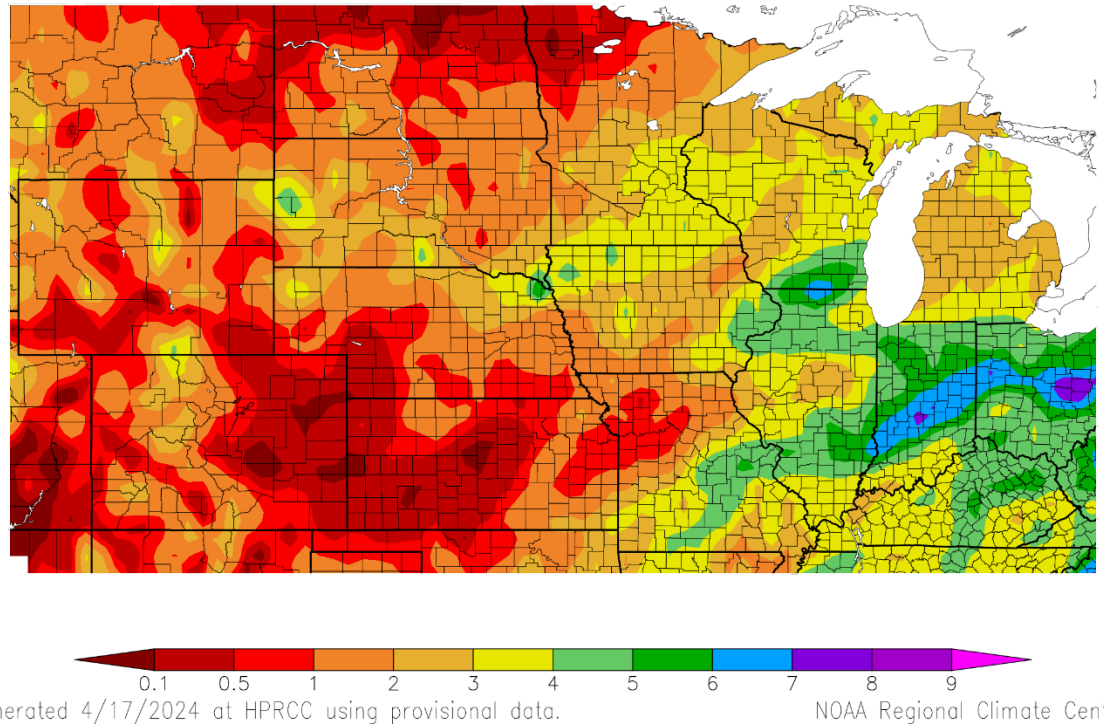
CO 11th wettest.



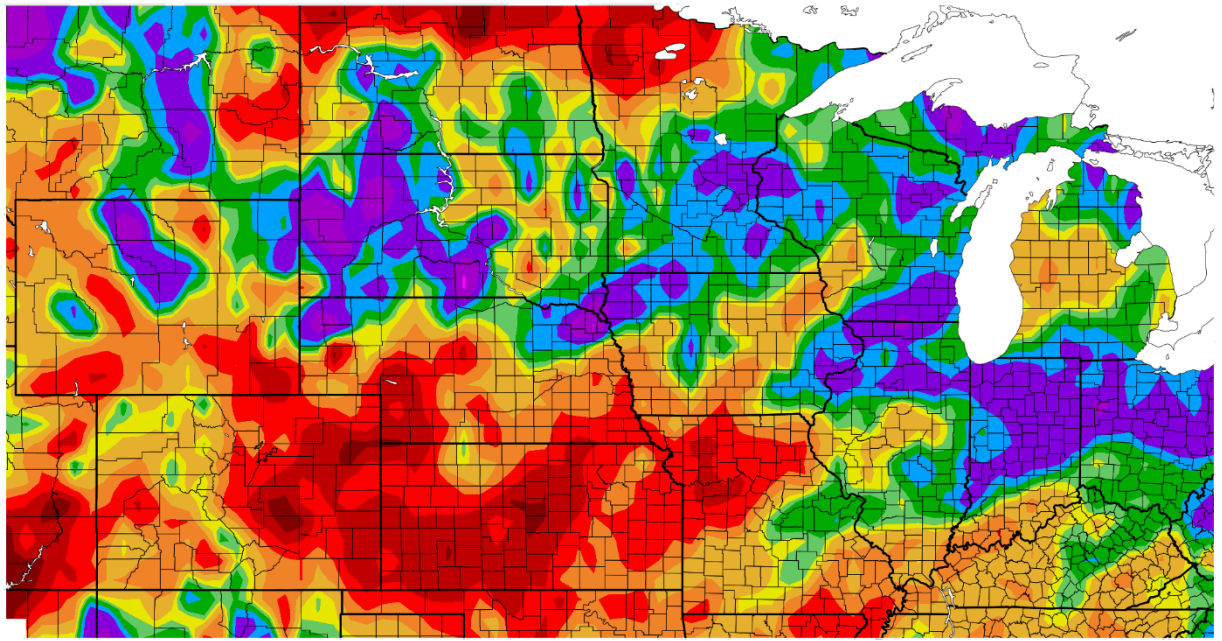
http://www.ncdc.noaa.gov/temp-and-precip/us-maps/

Precipitation (30 days)

Precipitation (in)
3/18/2024 – 4/16/2024



Percent of Normal Precipitation (%)
3/18/2024 – 4/16/2024



https://hprcc.unl.edu/maps.php?maps=ACISClimateMaps

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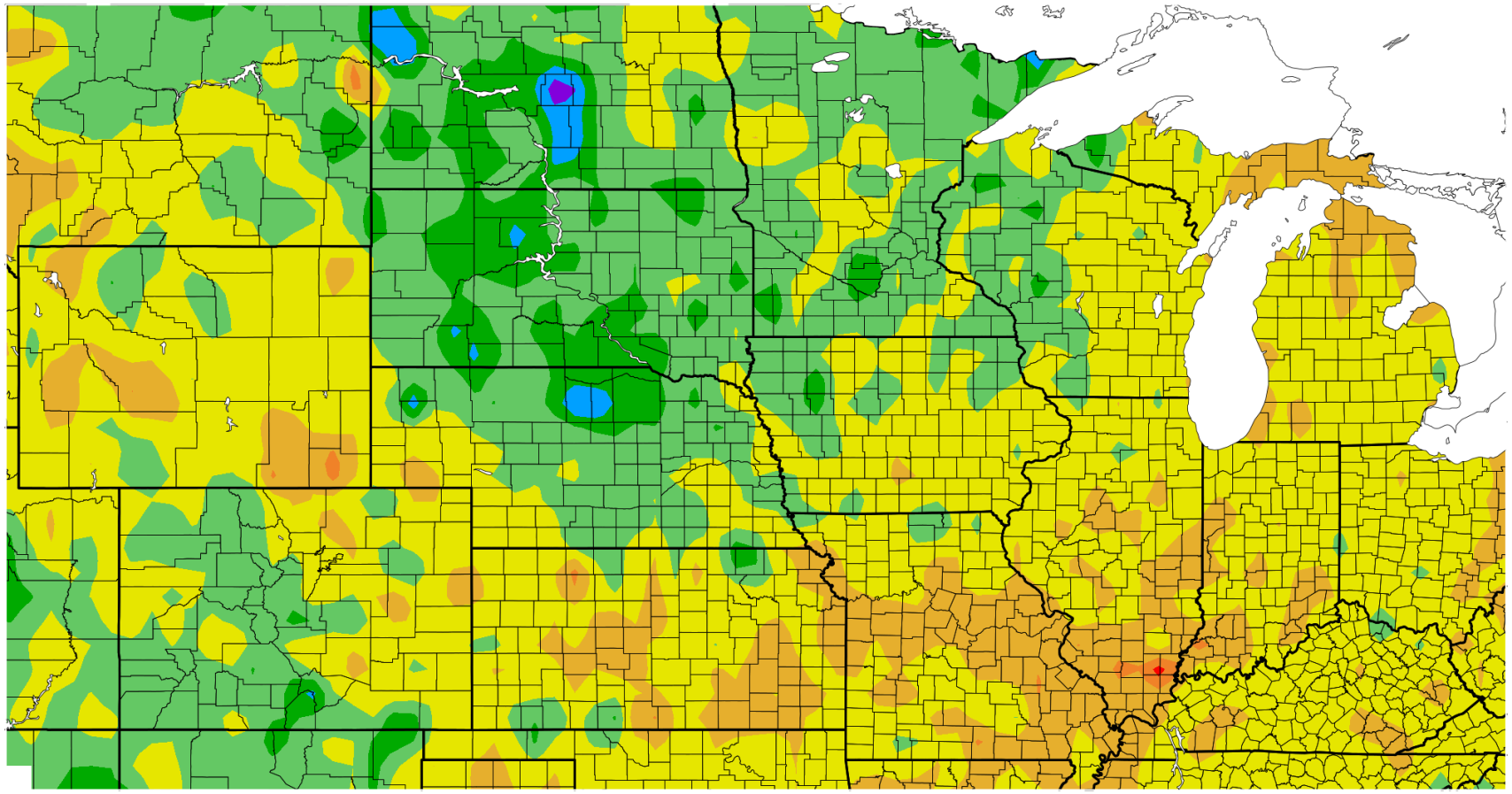
Departure from Normal Temperature (F)
3/18/2024 - 4/16/2024



USDA Midwest Climate Hub
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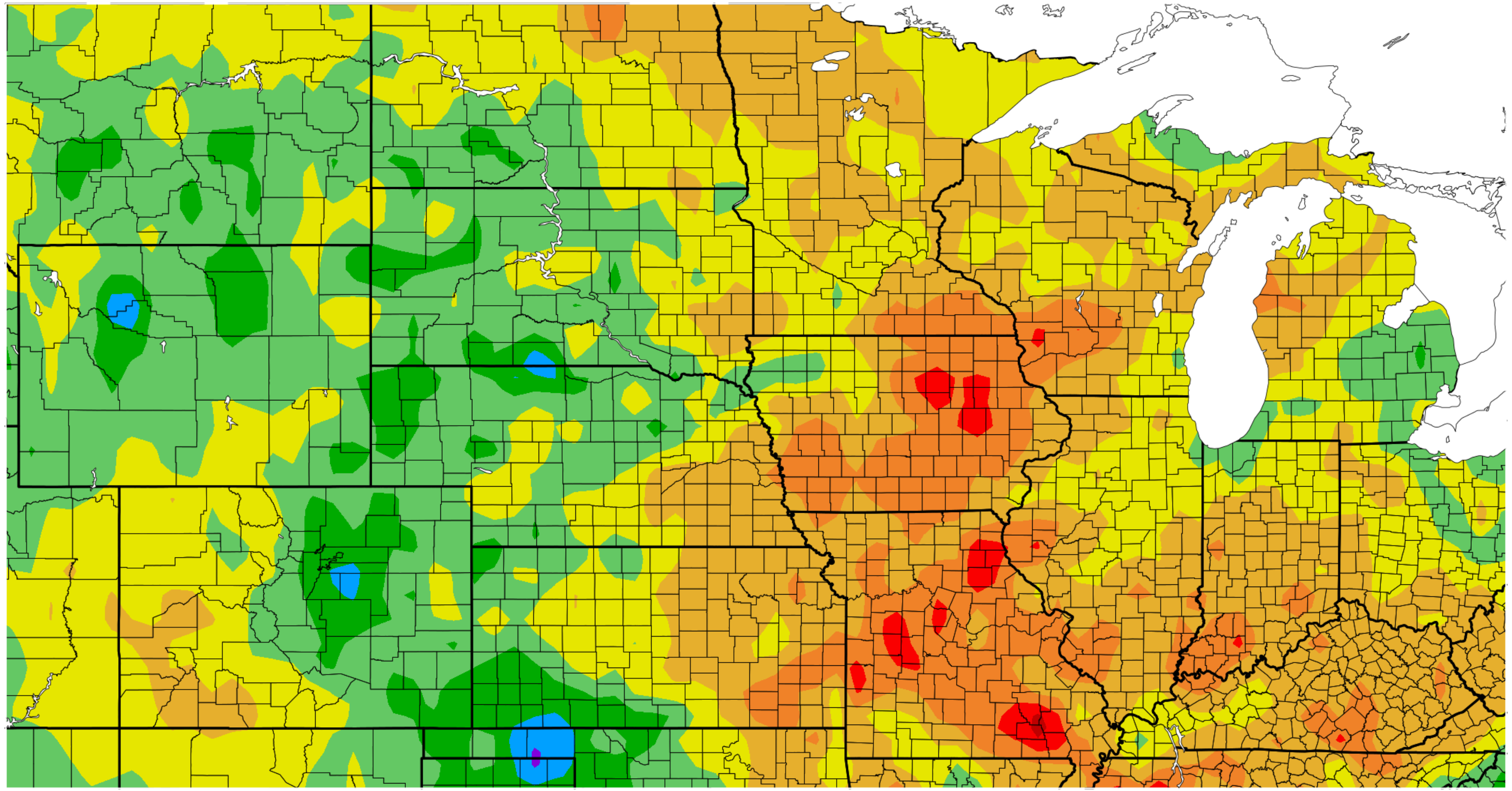
Generated 4/17/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Precipitation (in)
4/17/2023 – 4/16/2024



−25 −20 −15 −10 −5 0 5 10 15 20 25

USDA Midwest Climate Hub
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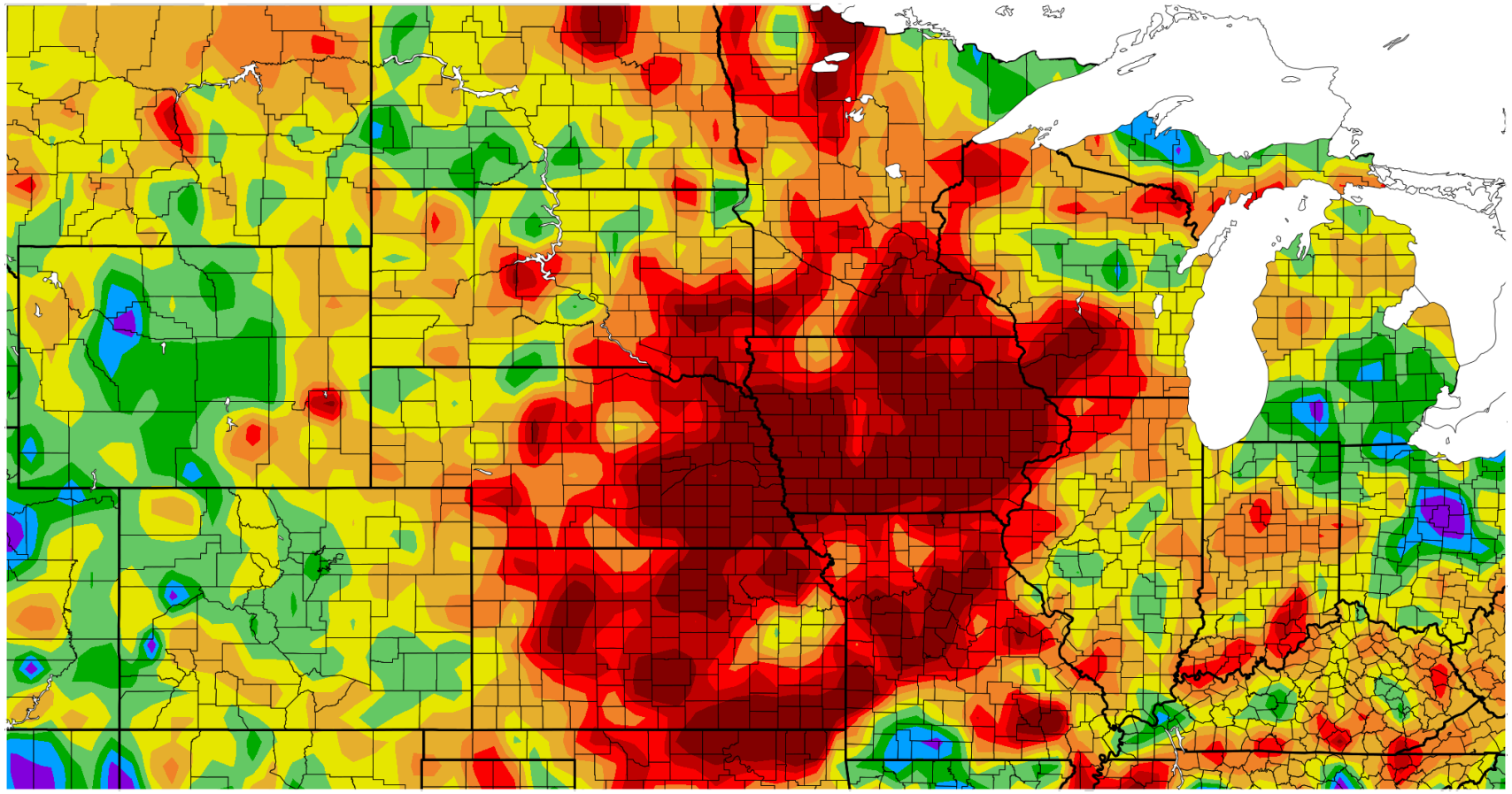
Generated 4/17/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Precipitation (in)
4/15/2021 – 4/14/2024



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−20 −16 −12 −8 −4 0 4 8 12 16 20

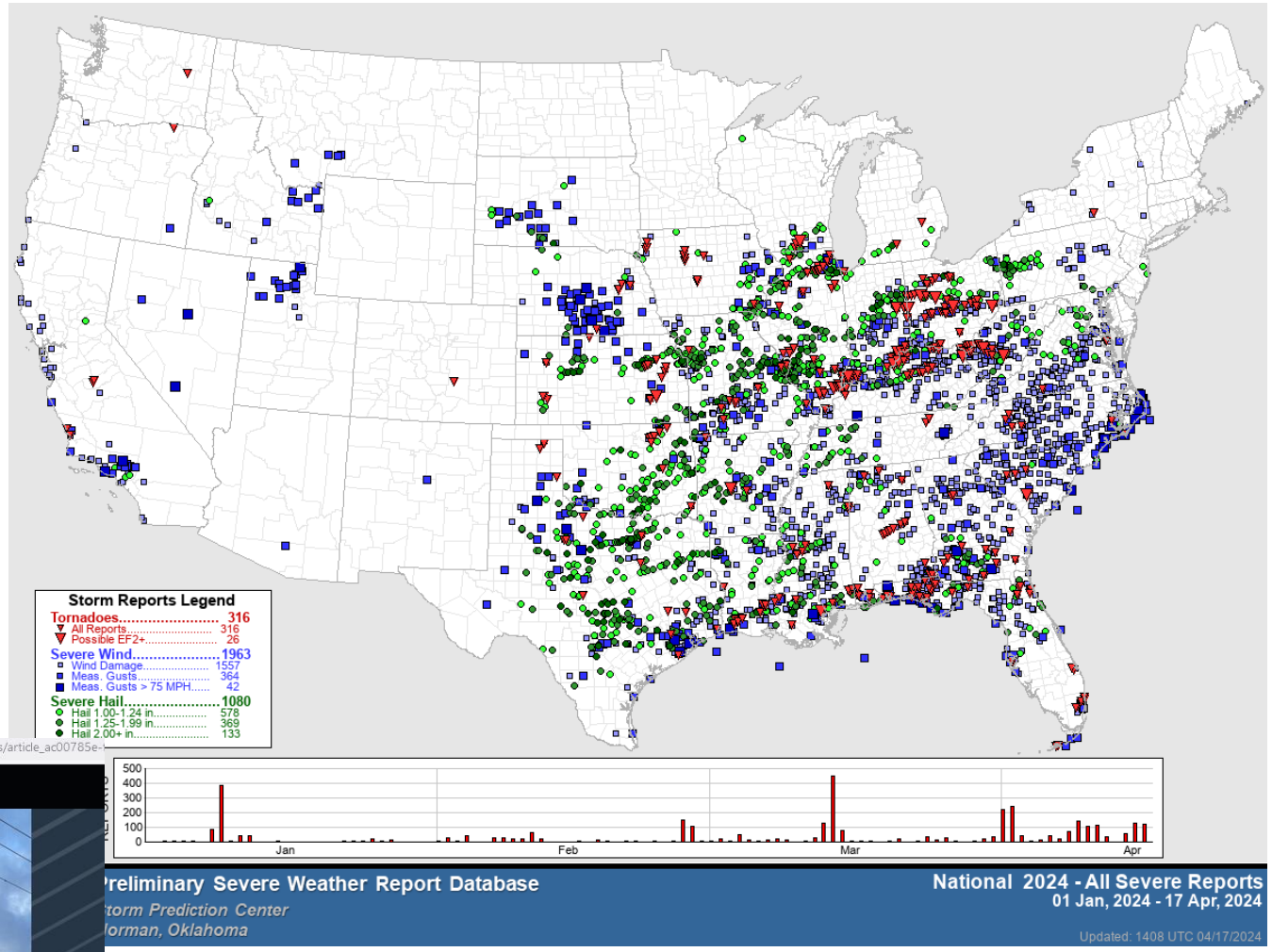
Generated 4/15/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Severe Weather Season

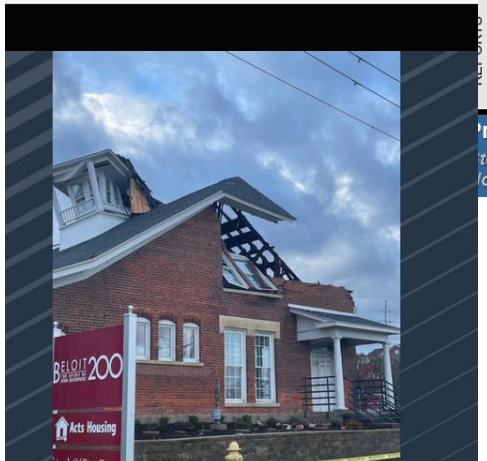
- 2024 Severe Weather Reports

- Fairly active south and east.
  - OH 28 tornadoes – (20 ann. Avg.)
  - Agricultural damage in several states
- Straight line winds – Plains
  - 80-90 mph gusts CO Apr. 6-7
  - 70 mph gusts nrn Plains



- Ag equipment damage – SW IN
- Hans Schmitz Purdue Ext.

- Pump house damage-Beloit, WI

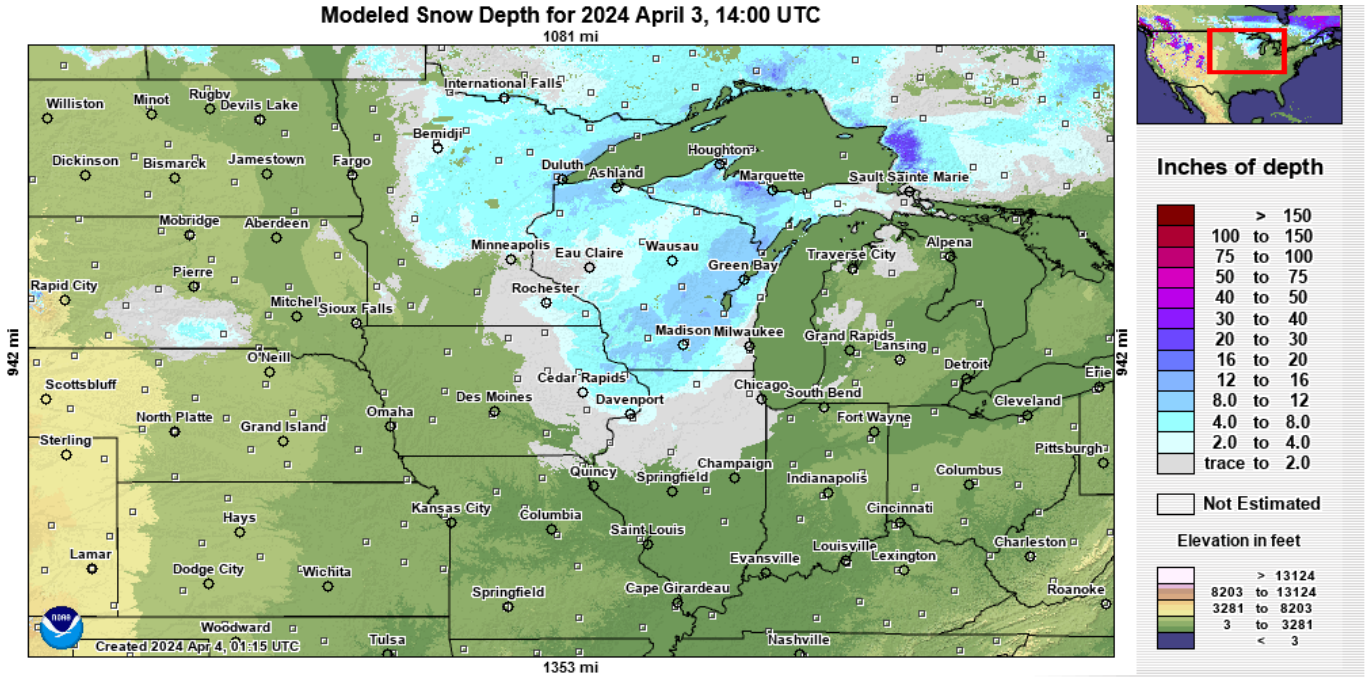


https://www.channel3000.com/news/beloits-pump-house-destroyed-due-to-storms/article_ac00785e-fccb-11ee-a102-bffe5a991709.html

https://www.spc.noaa.gov/climo/online/monthly/newm.html

Late Season Snows

- Blizzard in NE- SD (Apr. 6-7)
  - Livestock issues – some calf losses
  - Travel issues
- Snows MN-WI early April
  - Doubled cold season snow totals in cases
  - Melt-off added to soil moisture
  - Also travel issues



https://www.nohrsc.noaa.gov/interactive/html/map.html

- Blizzard Sioux County, NE
- UNL Extension

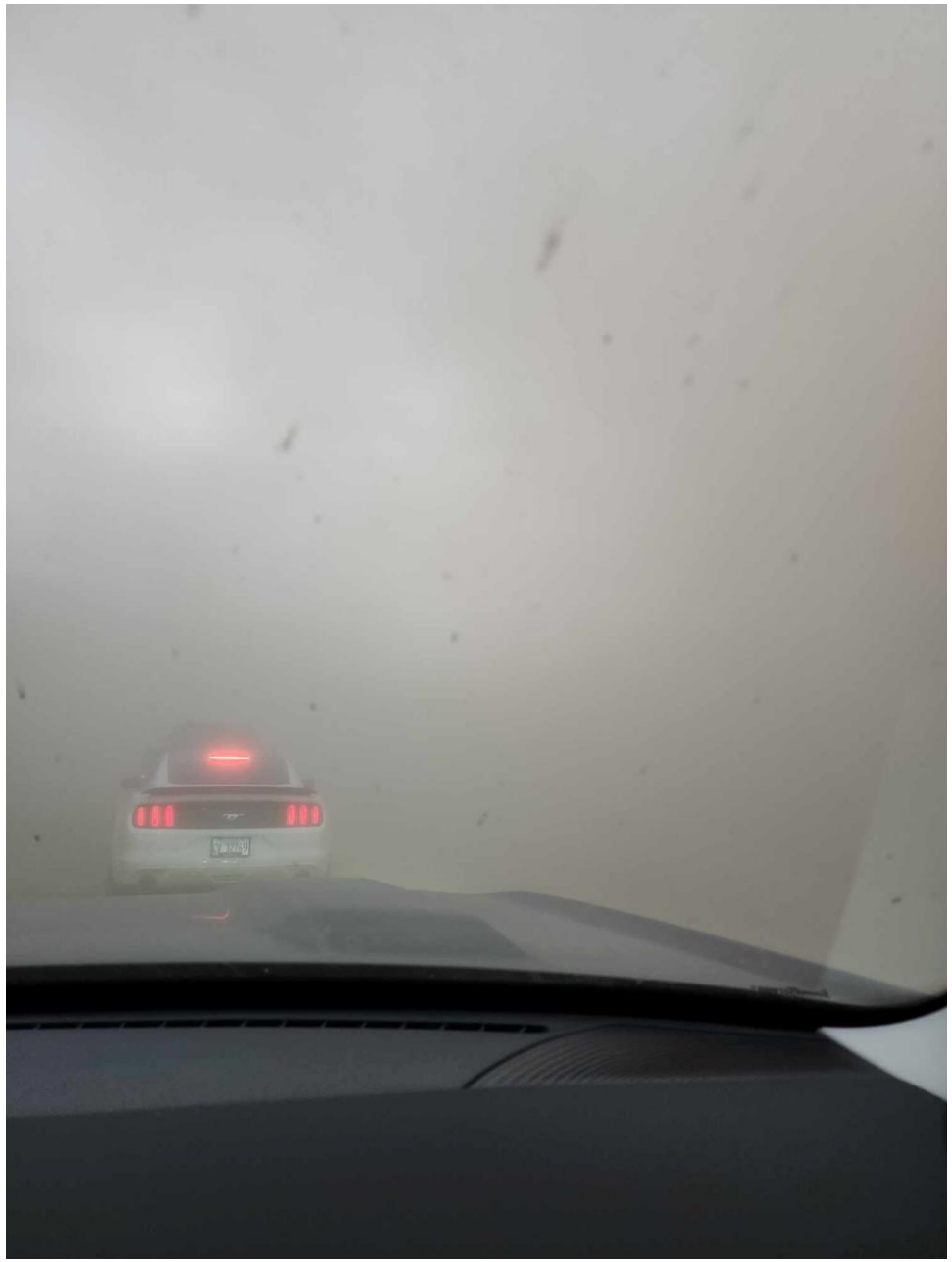
Spring Fire Issues

- Pine Ridge SD fire most recent
- Numerous small starts across northern states (MN, WI, MI)
- MI YTD – 34 fires, 155 acres burned, 2 residences, 4 outbuildings (only 4 this time last year).

- Pine Ridge Fire
- SD-DPS Facebook

- Pine Ridge Fire
- BIA – Pine Ridge Agency Facebook

Photo:
New Berlin, IL
Candi Scheuermann - X



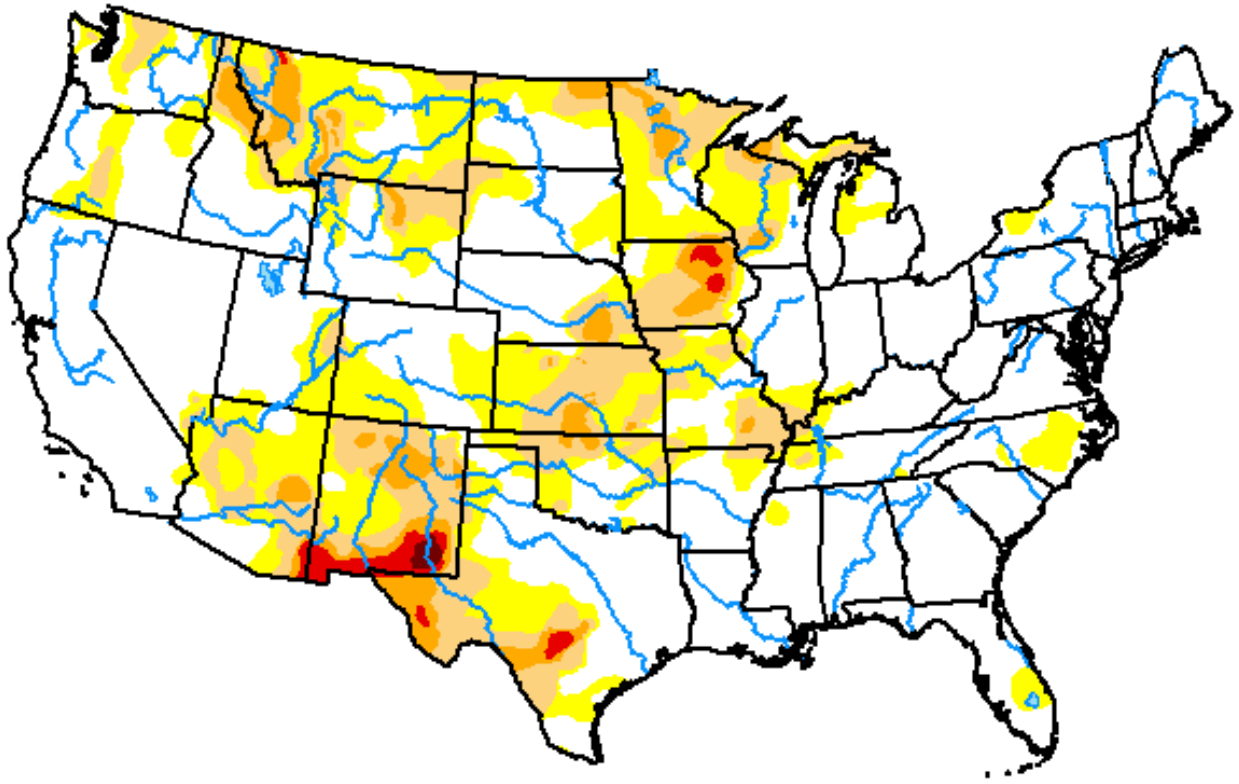
Climate context

DROUGHT

Drought Monitor

U.S. Drought Monitor

Contiguous U.S. (CONUS)



April 16, 2024

(Released Thursday, Apr. 18, 2024)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	61.38	38.62	17.90	5.20	1.07	0.14
Last Week *04-09-2024*	61.61	38.39	17.46	5.13	1.10	0.14
3 Months Ago *01-16-2024*	48.92	51.08	28.80	13.47	4.92	0.72
Start of Calendar Year *01-02-2024*	45.19	54.81	32.98	16.61	6.28	1.22
Start of Water Year *09-26-2023*	43.65	56.35	38.23	22.46	10.15	2.82
One Year Ago *04-18-2023*	53.48	46.52	25.84	12.47	5.54	2.24

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

Author:

Lindsay Johnson
National Drought Mitigation Center

droughtmonitor.unl.edu

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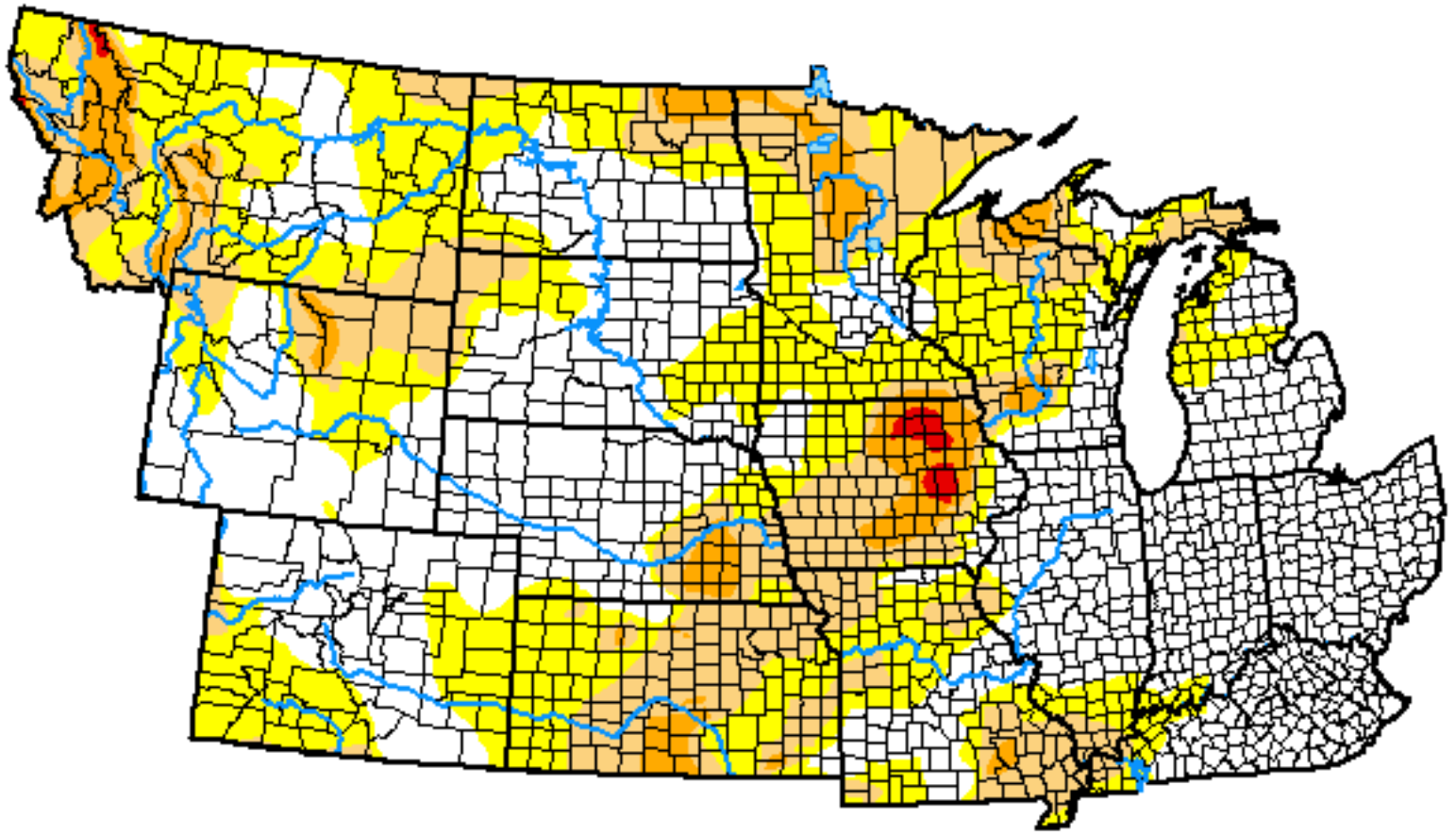
https://droughtmonitor.unl.edu

Drought Monitor

U.S. Drought Monitor

NWS Central



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Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	45.44	54.56	24.17	5.89	0.43	0.00
Last Week *04-09-2024*	45.23	54.77	23.53	6.04	0.51	0.00
3 Months Ago *01-16-2024*	38.54	61.46	29.20	9.33	2.07	0.00
Start of Calendar Year *01-02-2024*	39.12	60.88	34.11	13.18	2.68	0.01
Start of Water Year *09-26-2023*	39.86	60.14	40.32	19.88	6.29	0.49
One Year Ago *04-18-2023*	52.50	47.50	29.24	13.77	6.57	3.61

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
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droughtmonitor.unl.edu

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https://drough

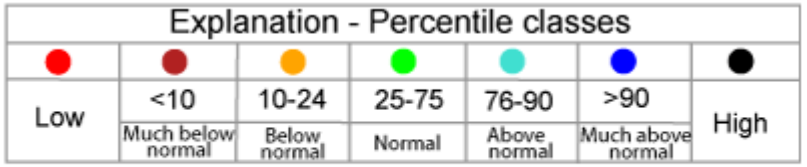
Photo:
CMOR Report
Texas County, MO

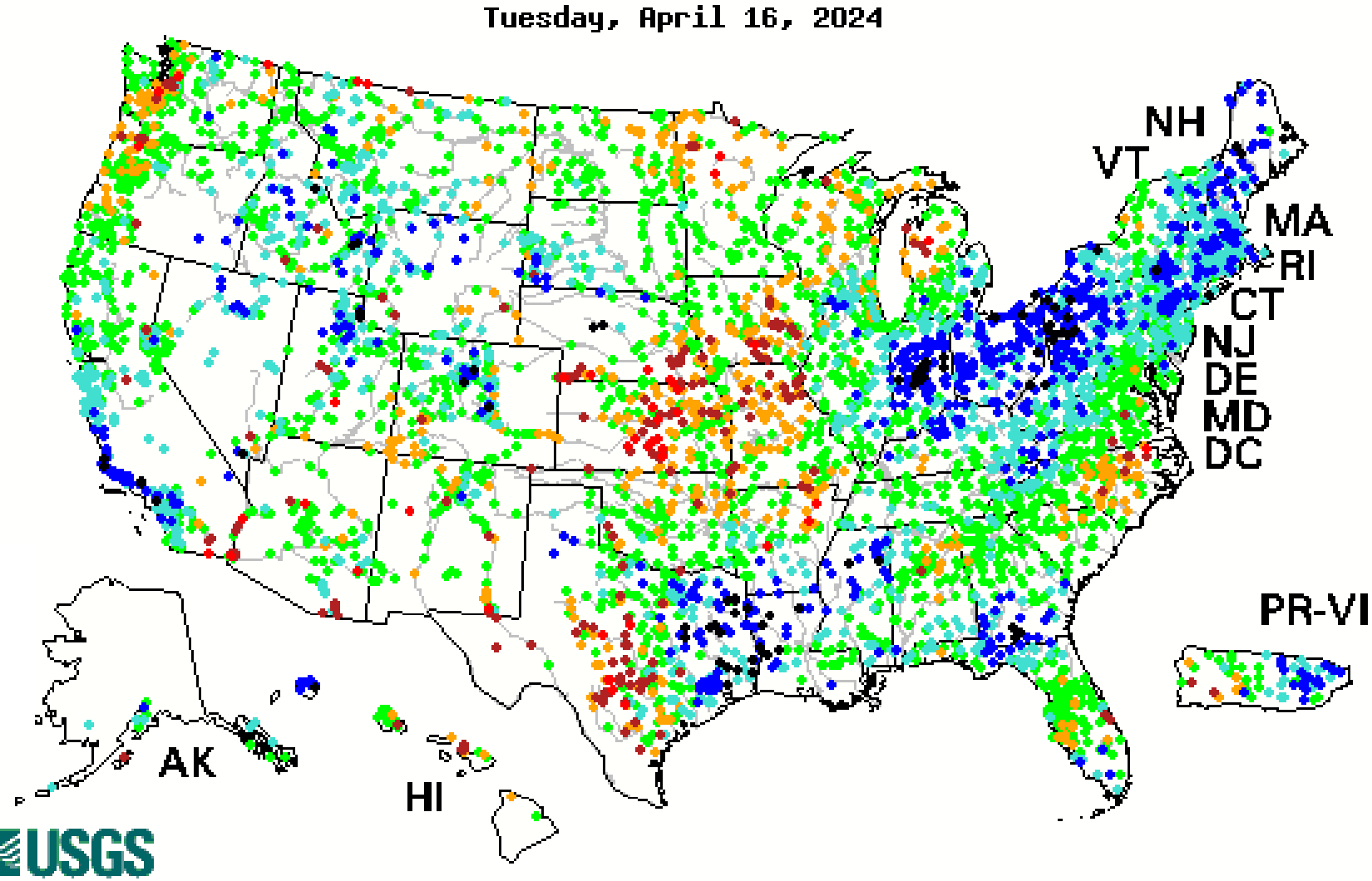
HYDROLOGIC IMPACTS

7-Day Average Streamflow

Tuesday, 16 April 2024

- Above normal streamflows east (IN-OH)
- Below normal (KS-NE-MO-IA)
- Also, below normal north – lack of snow melt and additional precipitation.





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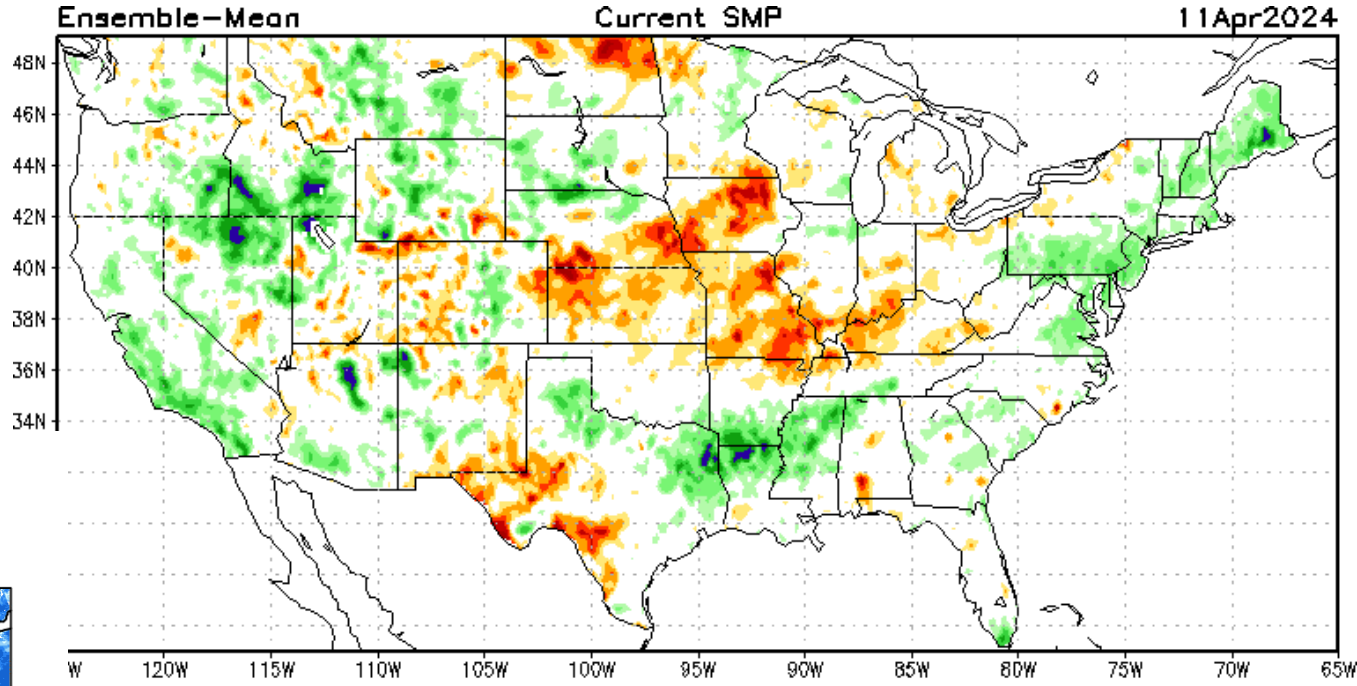
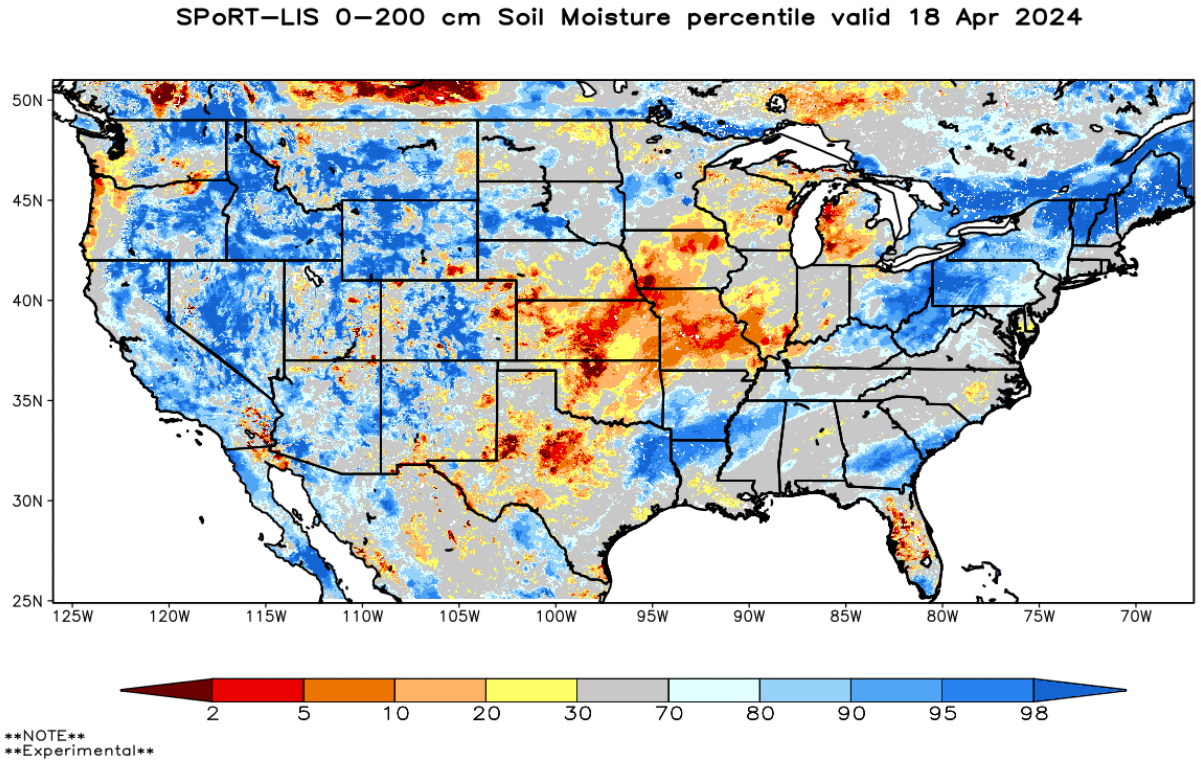
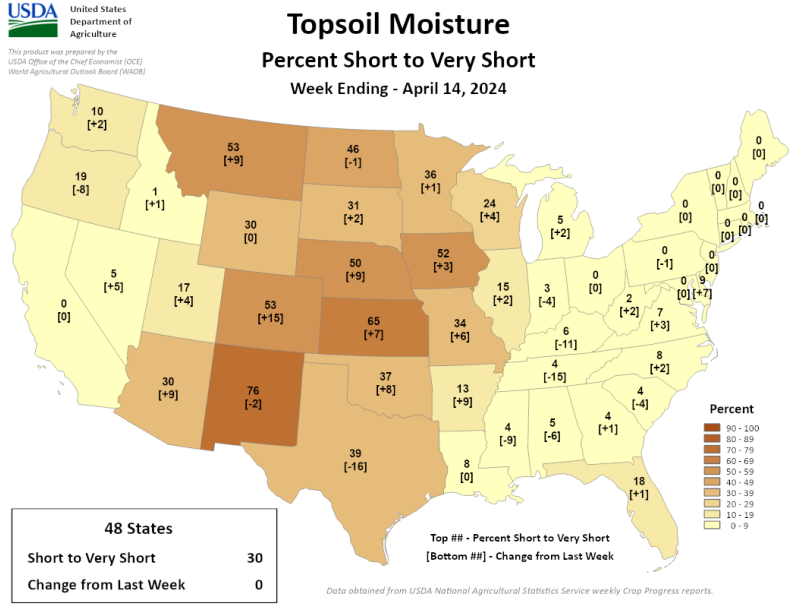
USGS

Soil Moisture

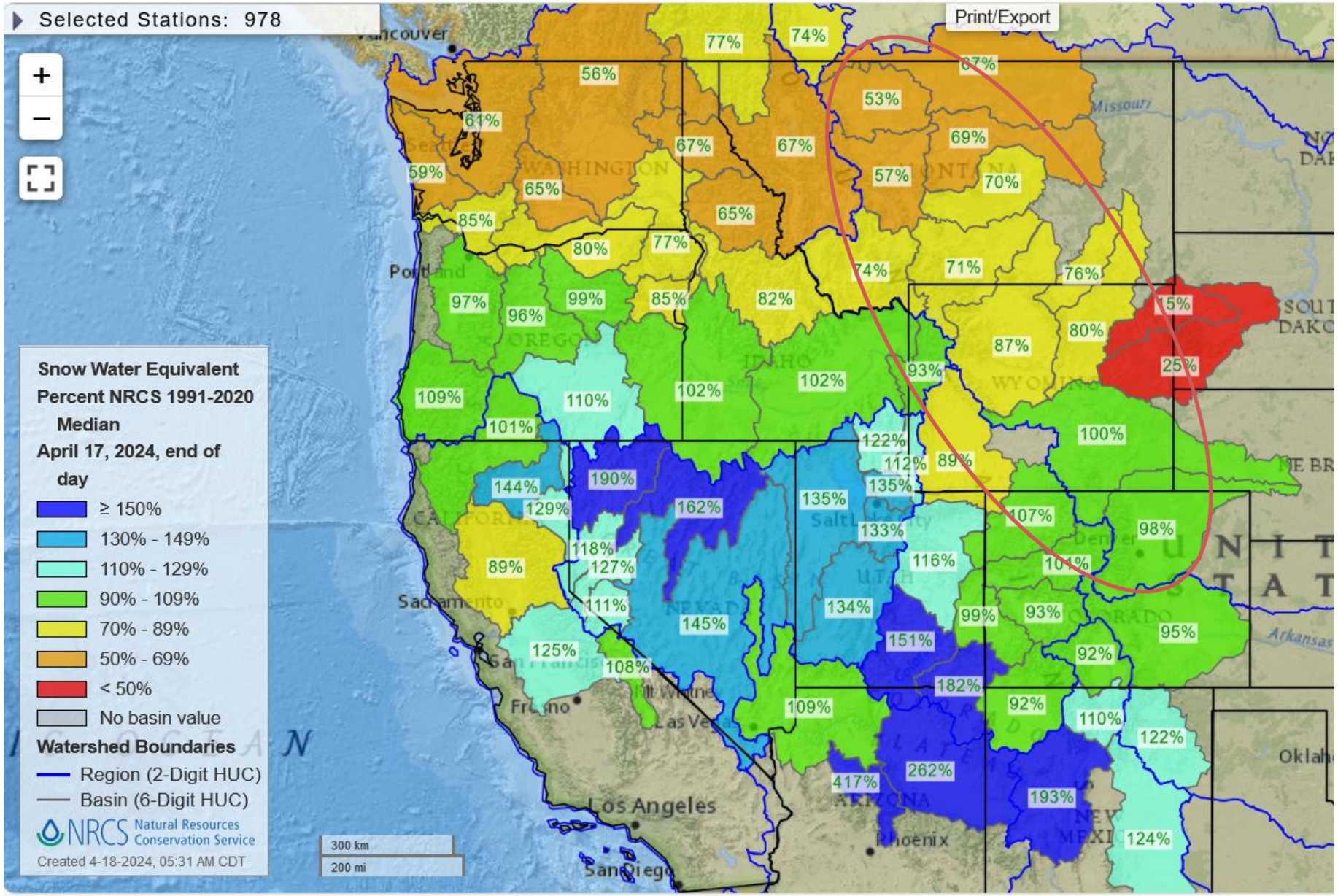
- Similar dryness compared to streamflow area
- Soil moisture not that wet east except for part of OH
- Odd dryness around Great Lakes in NASA map







https://agindrought.unl.edu/Other.aspx
https://weather.msfc.nasa.gov/sport/case_studies/lis_CONUS.html
http://www.cpc.ncep.noaa.gov/products/Soilmst_Monitoring/US/Soilmst/Soilmst.shtml#



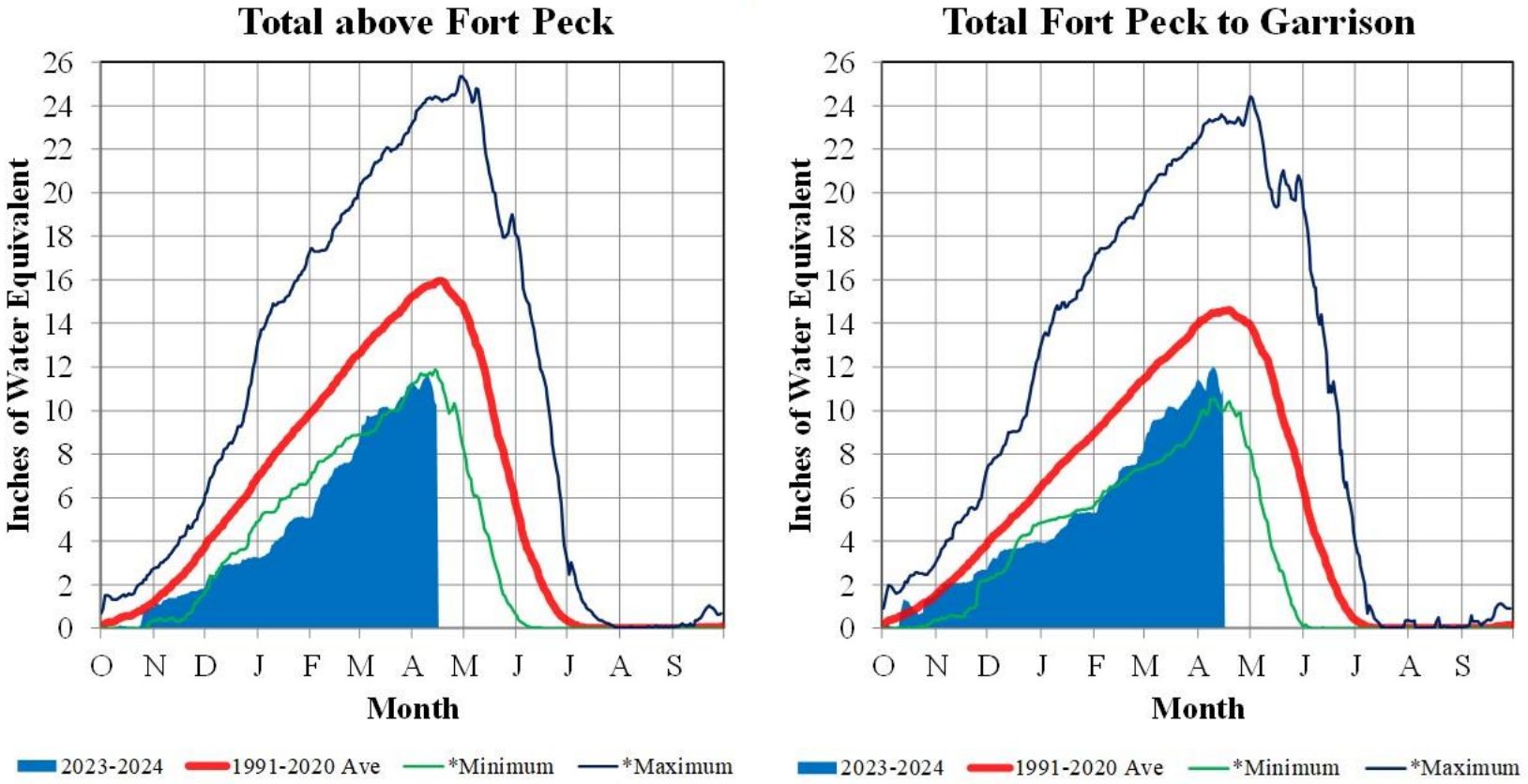
NRCS Snow Water Equivalent

- Below average all Upper Missouri Basins
- Near average – Platte River – Lower Missouri Basins

https://www.nrcs.usda.gov/wps/portal/wcc/home/

Missouri River Basin – Mountain Snowpack Water Content
2023-2024 with comparison plots from recent high and low years

15-Apr-2024



On April 15, 2024 the mountain Snow Water Equivalent (SWE) in the "Total above Fort Peck" reach is 10.2" and 64% of the (1991-2020) average. The mountain SWE in the "Fort Peck to Garrison" reach is 10.9" and 75% of the (1991-2020) average. The normal peak for both reaches occurs near April 17.

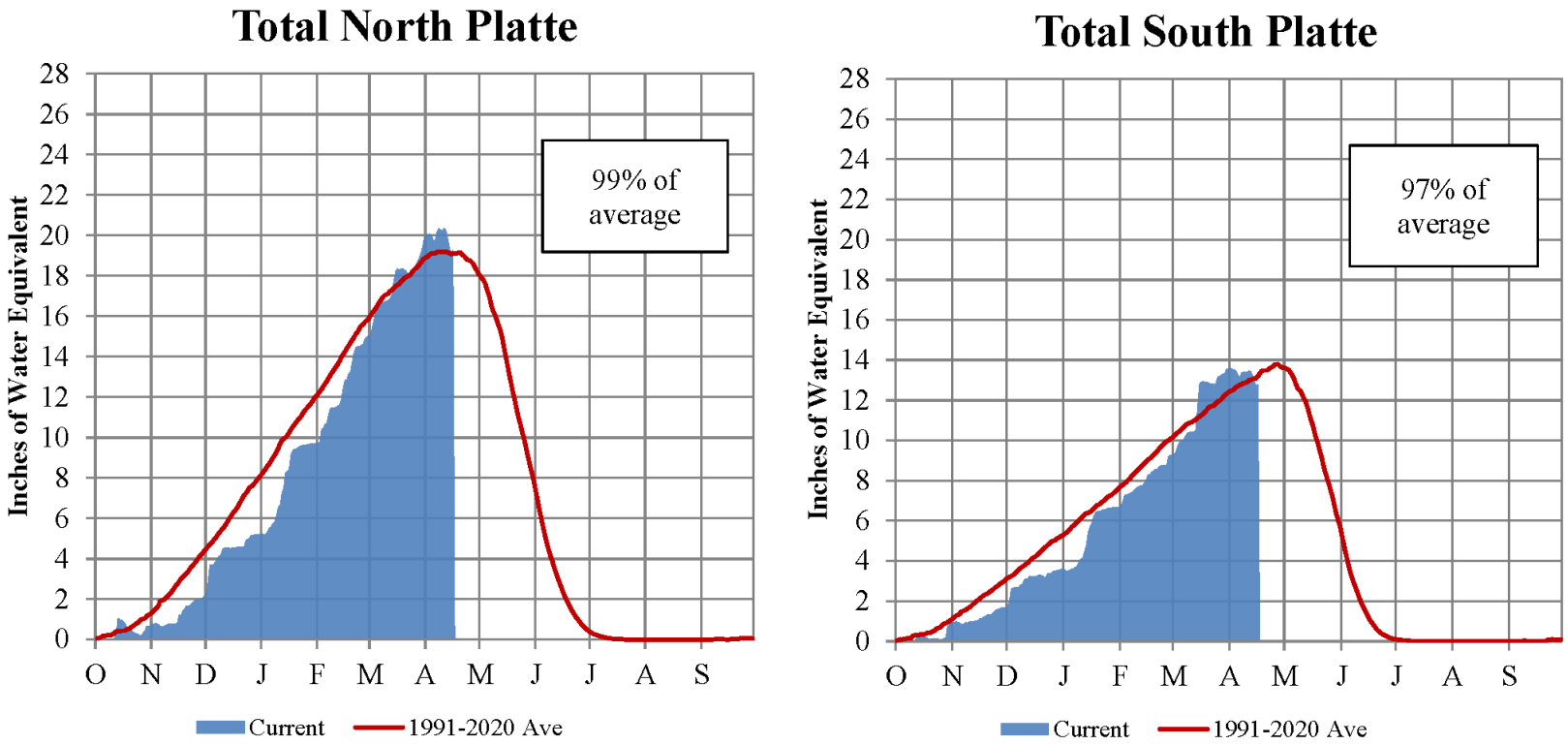
*Refers to the minimum or maximum SWE in the basin for that day in the historical years 1991-2020.

Provisional data. Subject to revision.

https://www.nwd-mr.usace.army.mil/rcc/reports/snow.jpg

Platte River Basin - Mountain Snowpack Water Content
Water Year 2023-2024

April 16, 2024

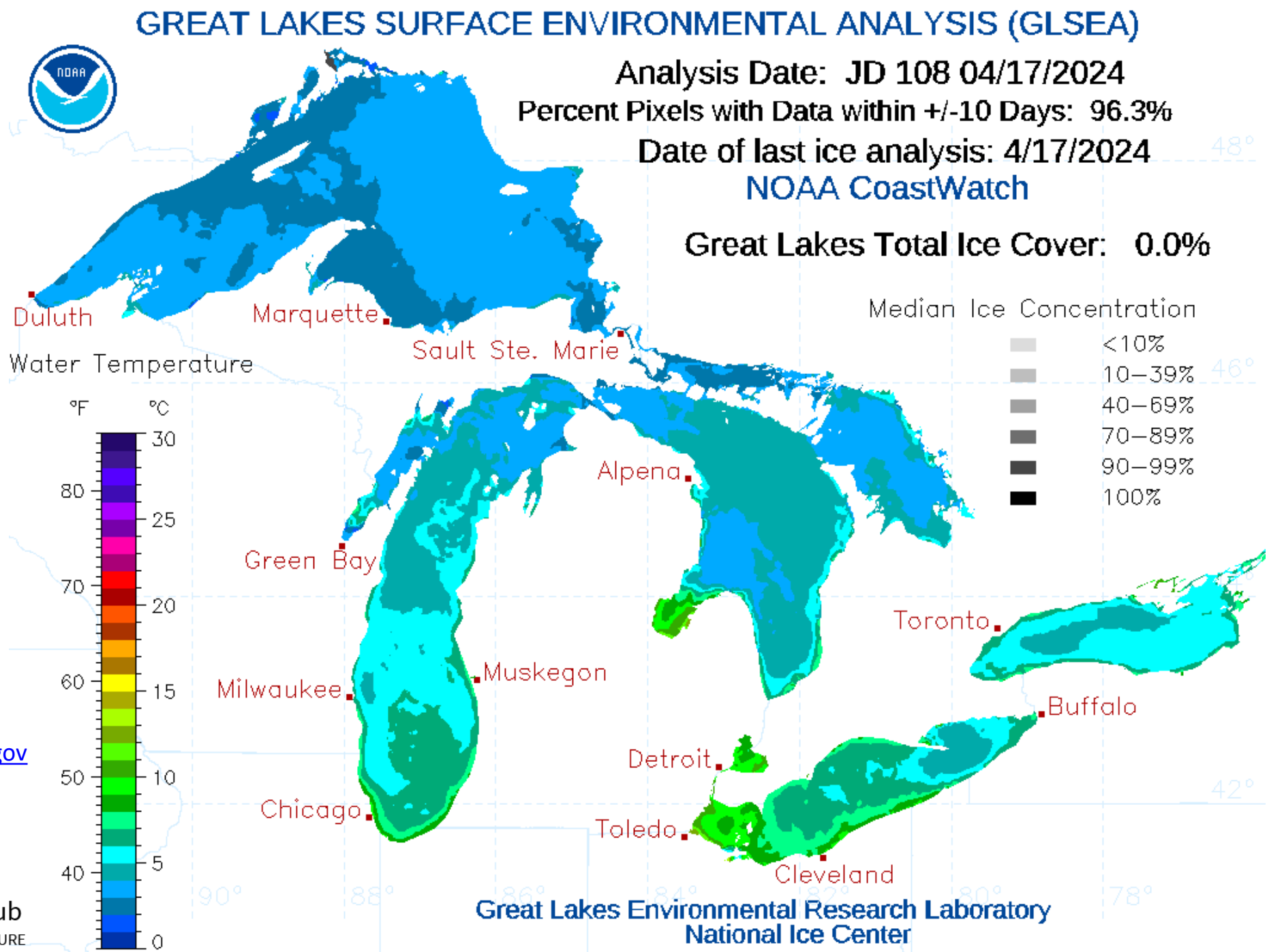


The North and South Platte River Basin mountain snowpacks normally peak near April 10 and the end of April, respectively. The snowpack began melting on April 12 in both basins. As of April 16, 2024, the mountain snowpack SWE in the "Total North Platte" reach is 18.9", 99% of the (1991-2020) average. The mountain snowpack SWE in the "Total South Platte" reach is 12.7", 97% of the (1991-2020) average.

Source: USDA, Natural Resource Conservation Service

Provisional Data. Subject to Revision

https://www.nwd-mr.usace.army.mil/rcc/reports/platte_snow.png



https://coastwatch.glerl.noaa.gov/satellite-data-products/great-lakes-surface-environmental-analysis-glsea/

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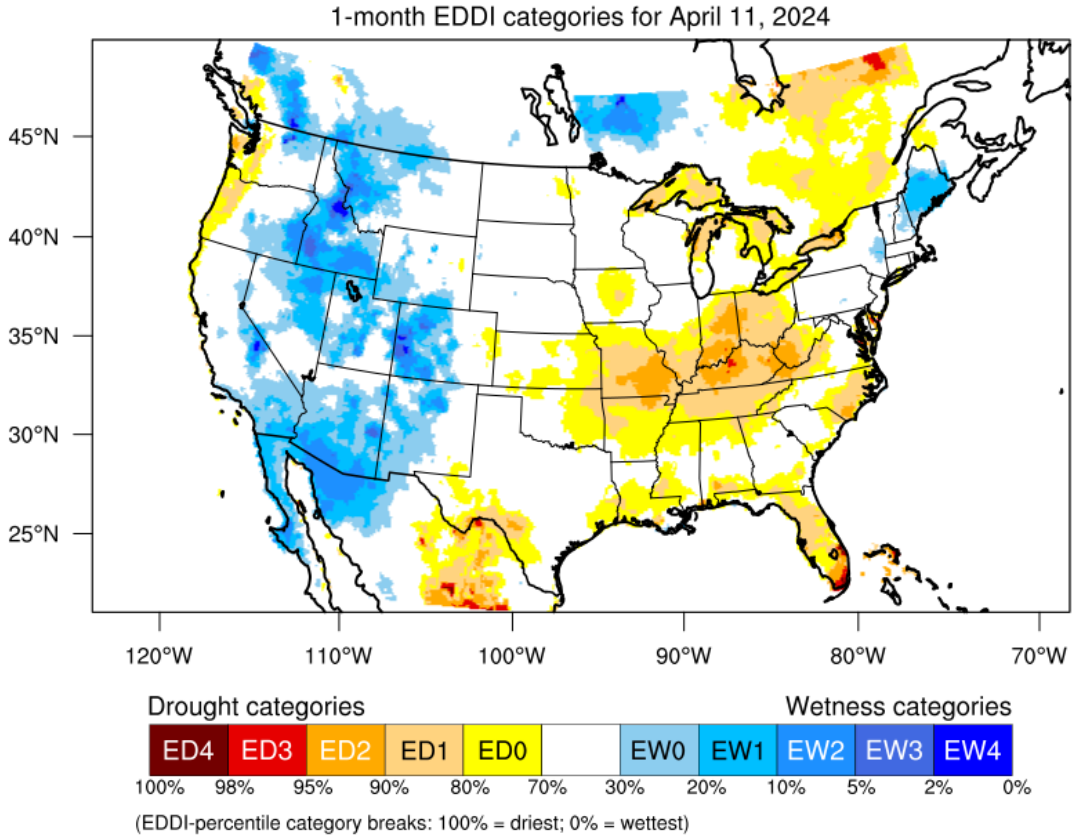
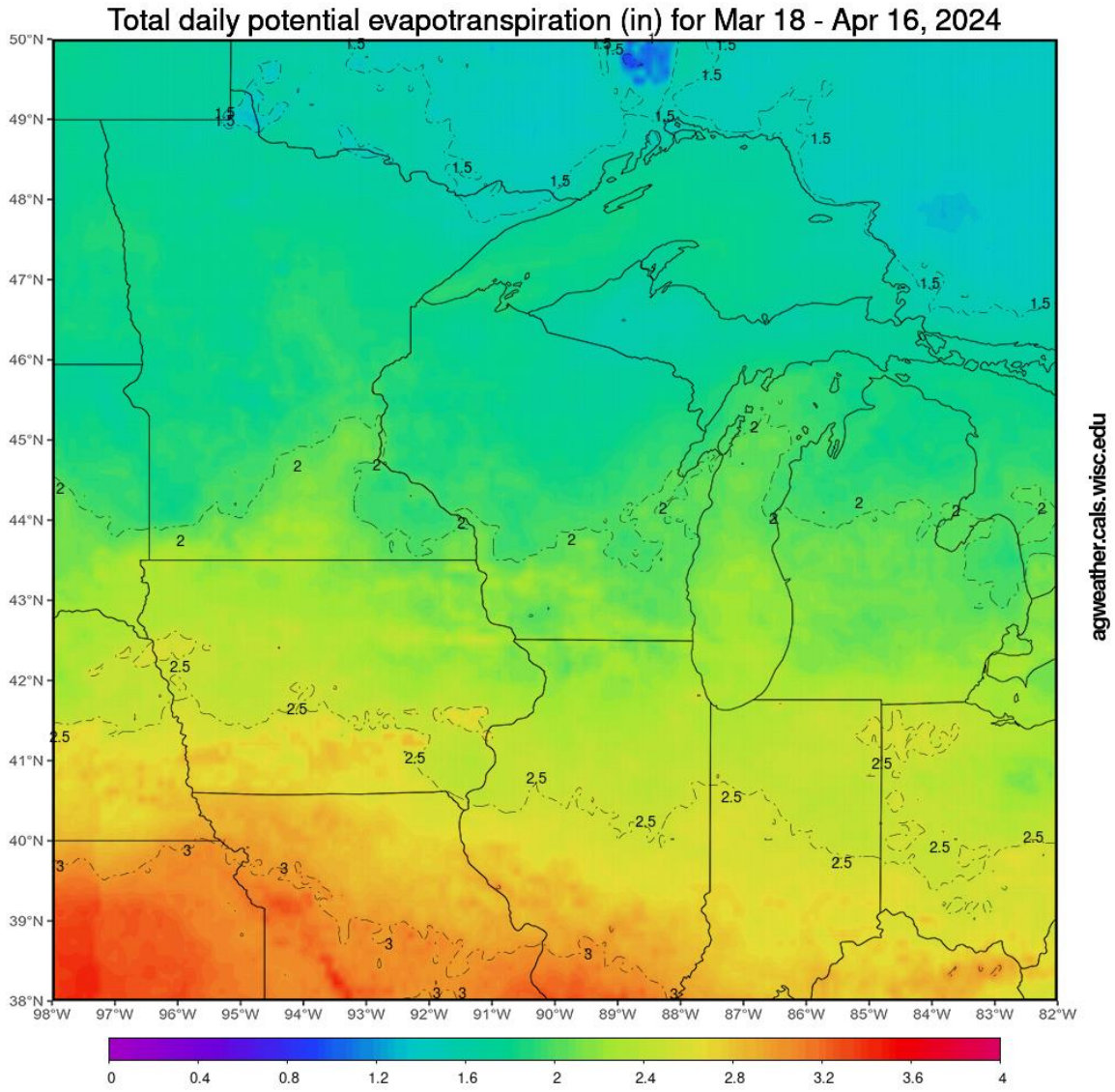
Evaporative Demand

- Not as warm temperature reducing evap. Demand
- Still increasing demand as spring continues
- Largest south/Ohio Valley





https://psl.noaa.gov/eddi/#current_conditions

U.S. DEPARTMENT OF AGRICULTURE

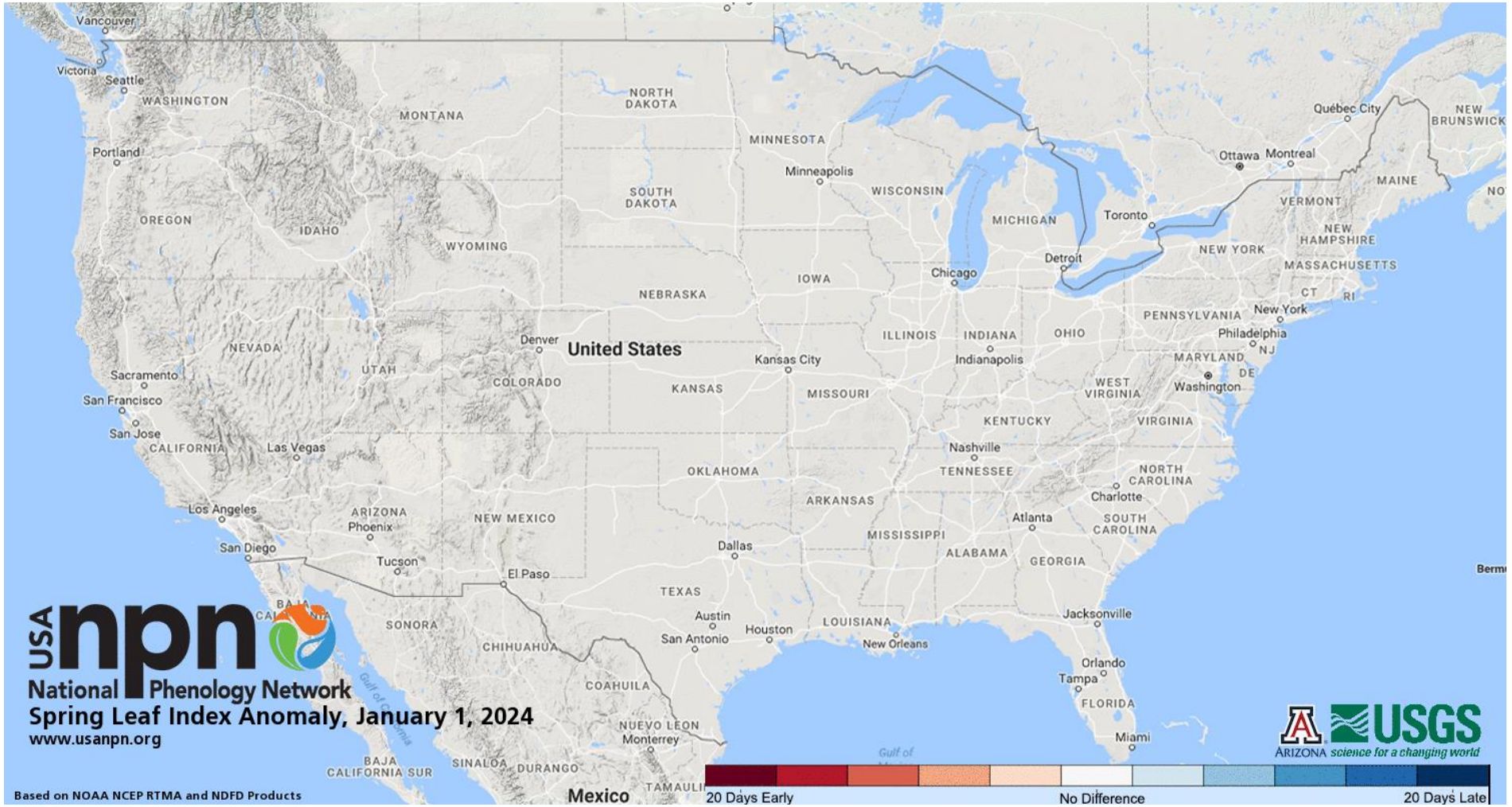
Various Water Issues

- Great Lakes – ice gone – early ice out on all Great Lakes (winter warmth) – a little in MN Lakes
- Heavier rain – flooding east Ohio River and other tributaries (receding)
- Drier far north – lack of snow (runoff).
- Lower stream flows elsewhere longer term dryness
- Mississippi – OK for now. Definitely monitoring.
- Missouri River still OK, but low inflows (upper)
- Higher ET still – though not quite as anomalous
- Long-term dryness still an issue.

Photo:
Pete Boulay
MN State Climate Office

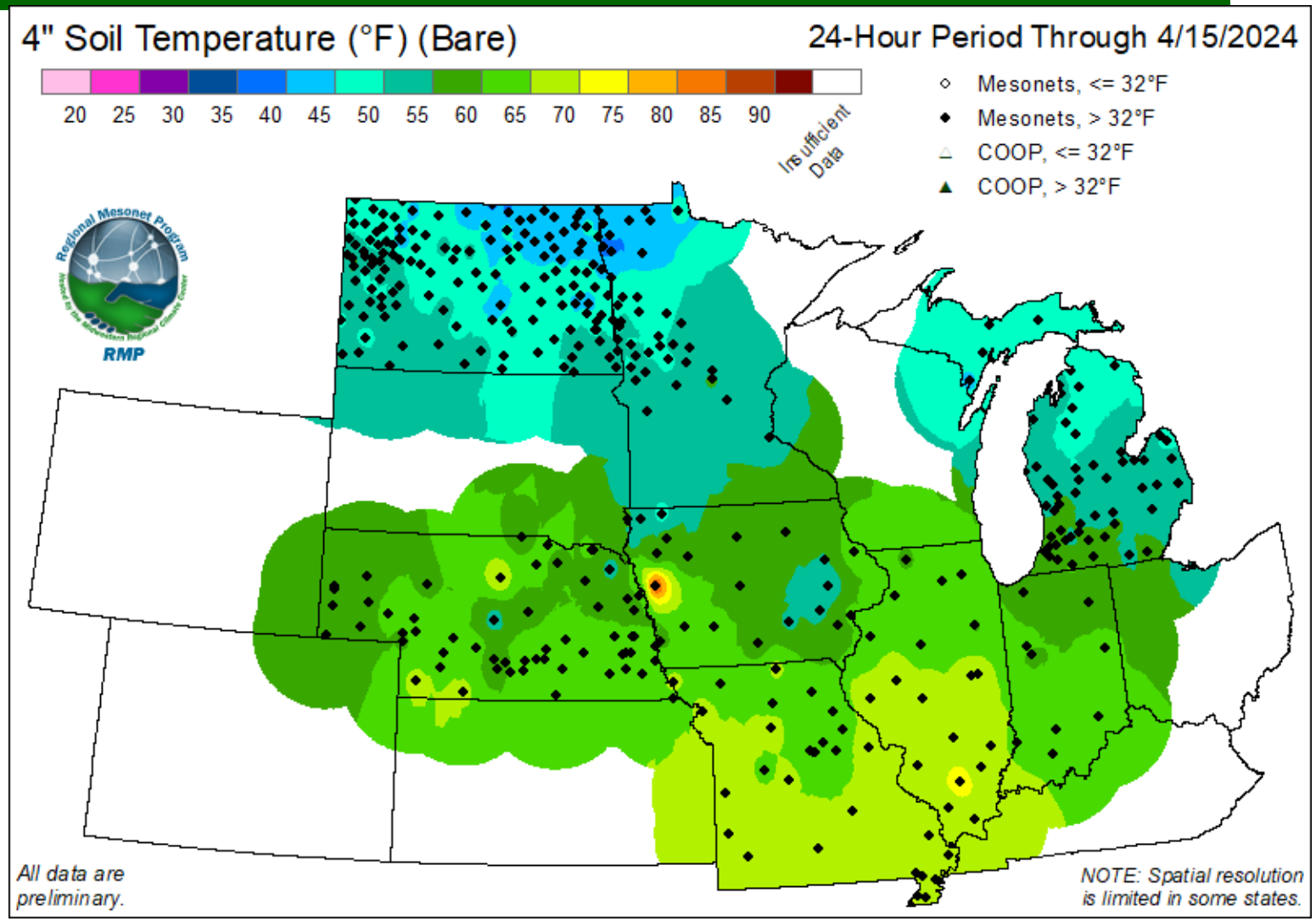
AGRICULTURAL IMPACTS

NPN – First Leaf



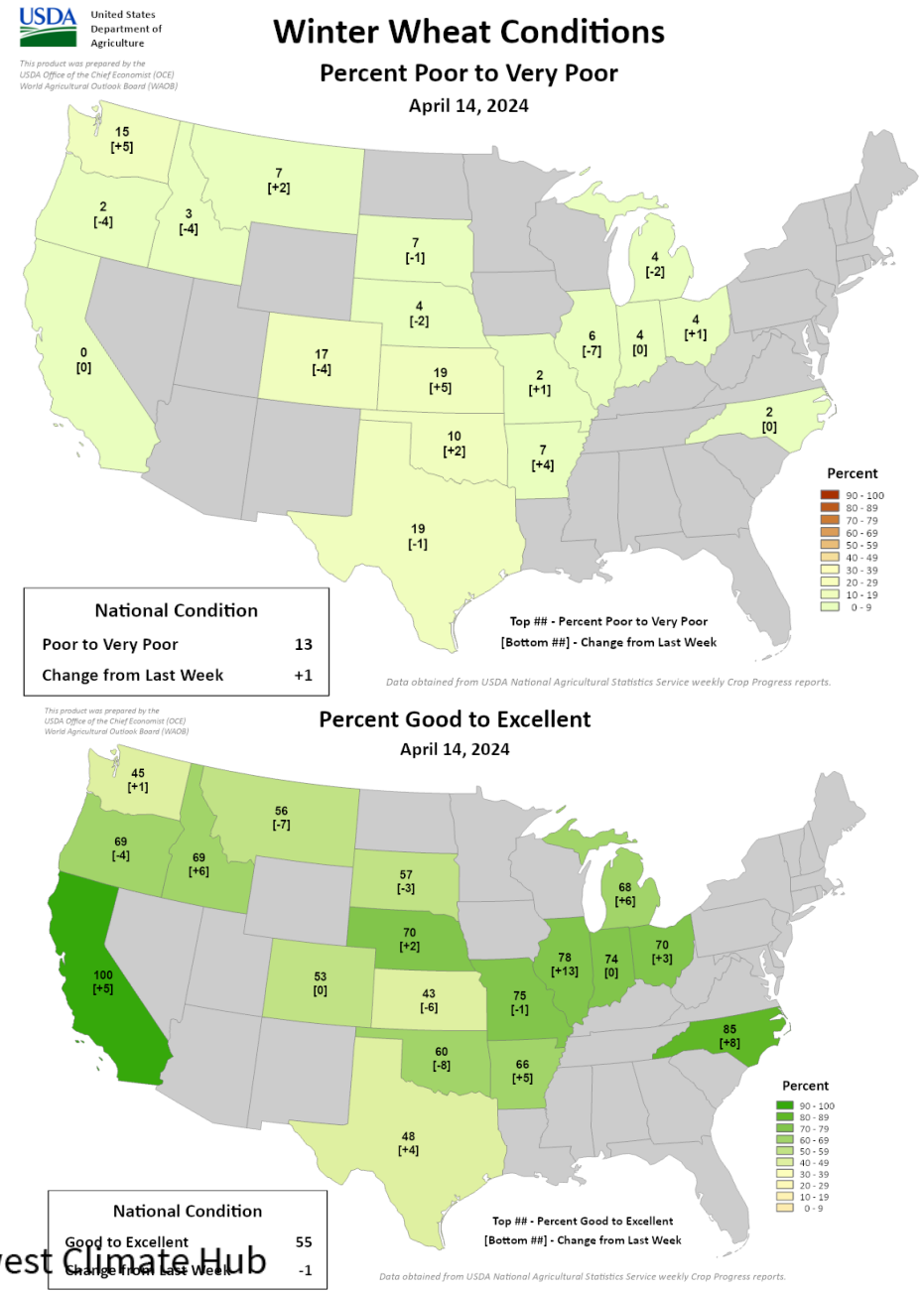
https://www.usanpn.org/data/maps/spring

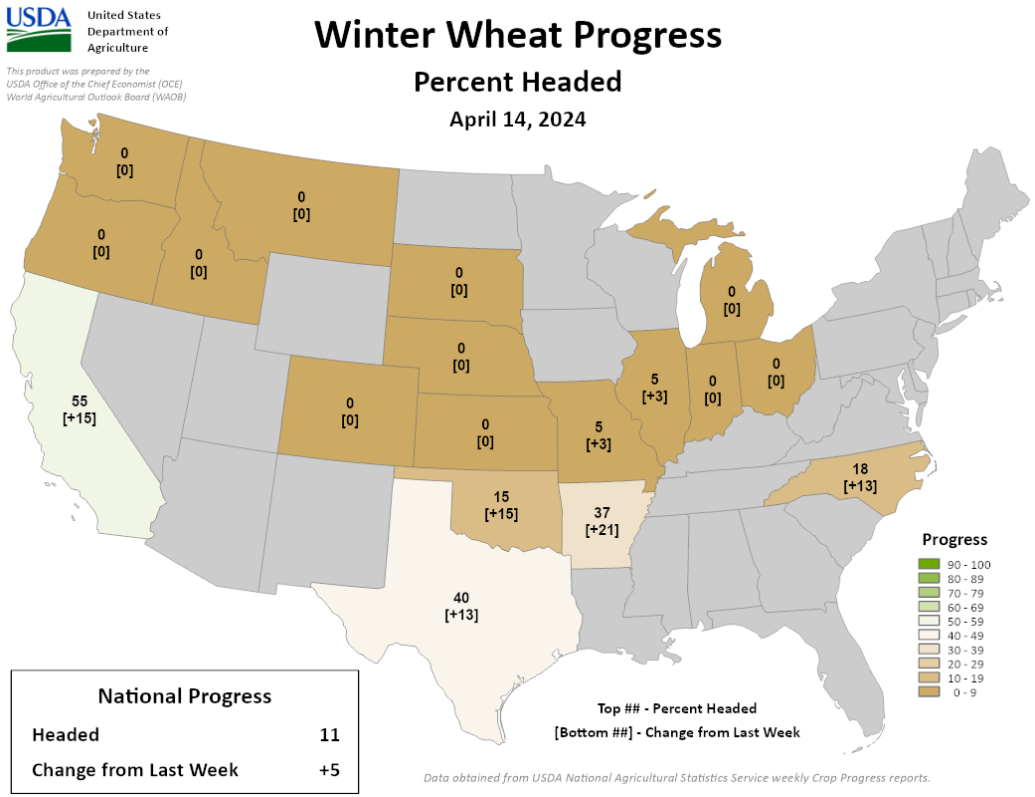
Soil Temperature



https://mrcc.purdue.edu/RMP/currentMaps

USDA NASS Crop Progress Winter Wheat





https://agindrought.unl.edu/Other.aspx

USDA NASS Crop Progress

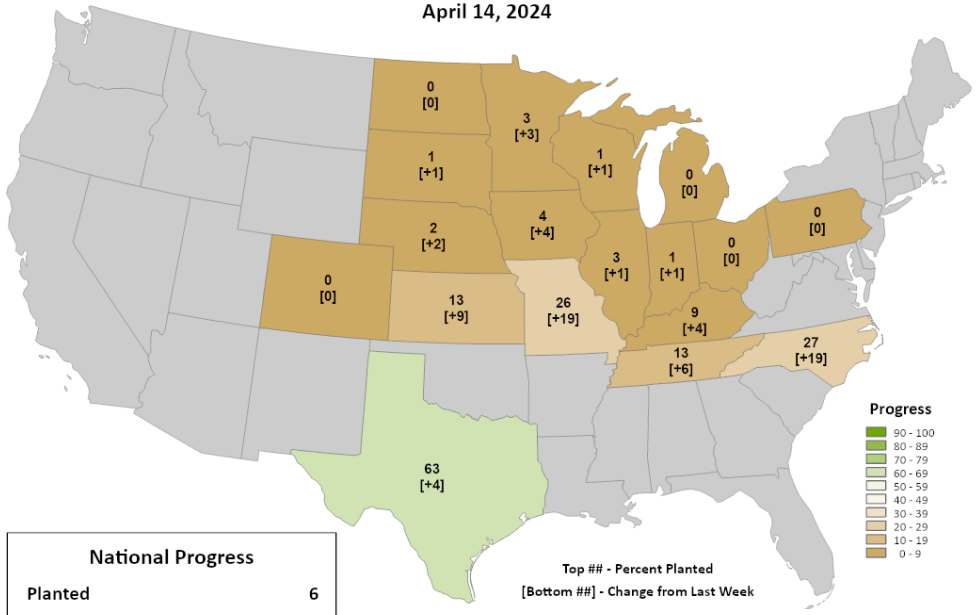
United States Department of Agriculture

This product was prepared by the USDA Office of the Chief Economist (OCE) World Agricultural Outlook Board (WAOB)

Corn Progress

Percent Planted

April 14, 2024



National Progress	
Planted	6
Change from Last Week	+3

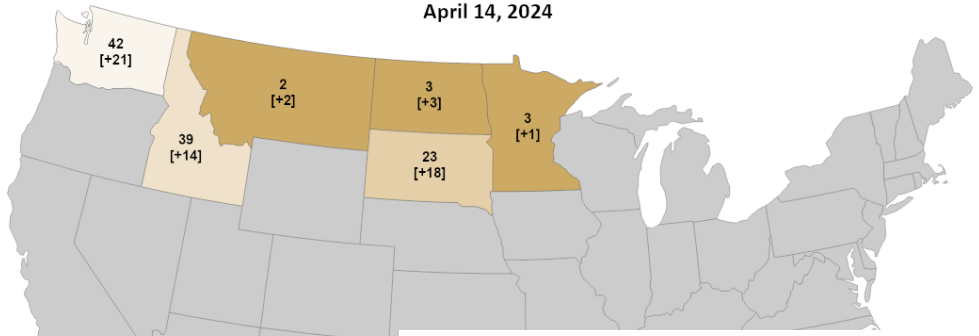
United States Department of Agriculture

This product was prepared by the USDA Office of the Chief Economist (OCE) World Agricultural Outlook Board (WAOB)

Spring Wheat Progress

Percent Planted

April 14, 2024



United States Department of Agriculture

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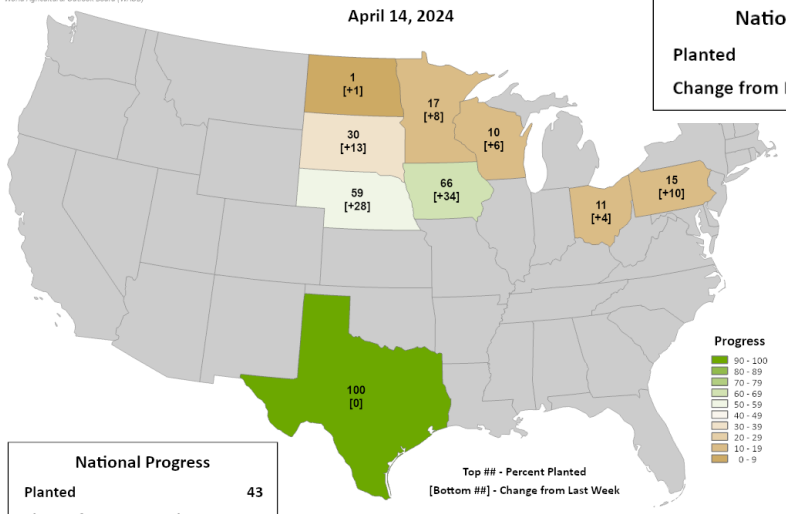
Oats Progress

Percent Planted

April 14, 2024



National Progress	
Planted	43
Change from Last Week	+9

National Progress	
Planted	7
Change from Last Week	+4

United States Department of Agriculture

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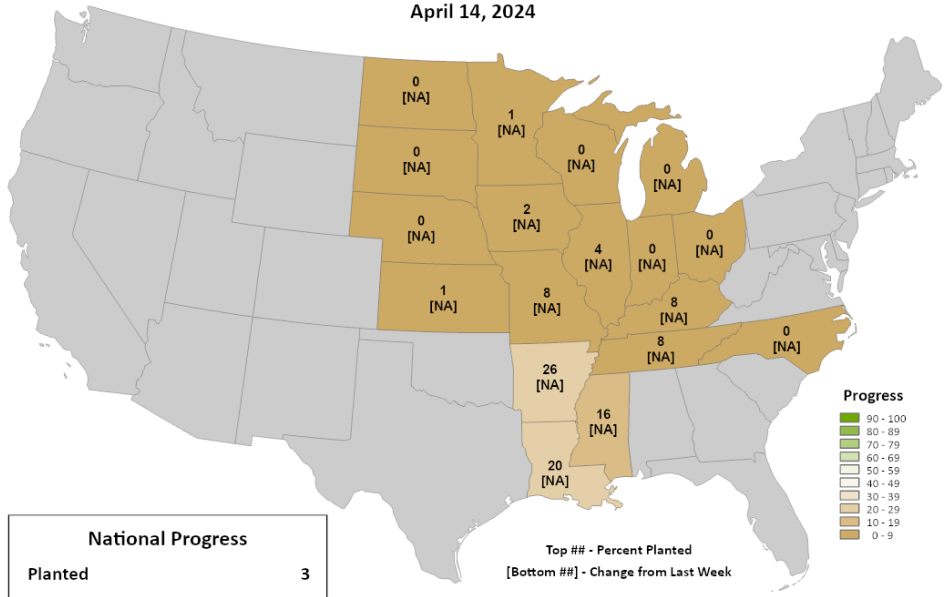
Soybeans Progress

Percent Planted

April 14, 2024



National Progress	
Planted	3
Change from Last Week	NA

Data obtained from USDA National Agricultural Statistics Service weekly Crop Progress reports.

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Various Ag/Plant Issues

- Very early phenology nearly everywhere (2-3 weeks ahead)
- Early planting – but not too quick, yet (some in Feb-Mar)
- Soils a little wet east. Other places OK so far.
- Drought concerns still hanging on

- Some concerns on freeze coming this weekend with perennials and advanced stages.

Photo:
Aaron Wilson
Ohio State University

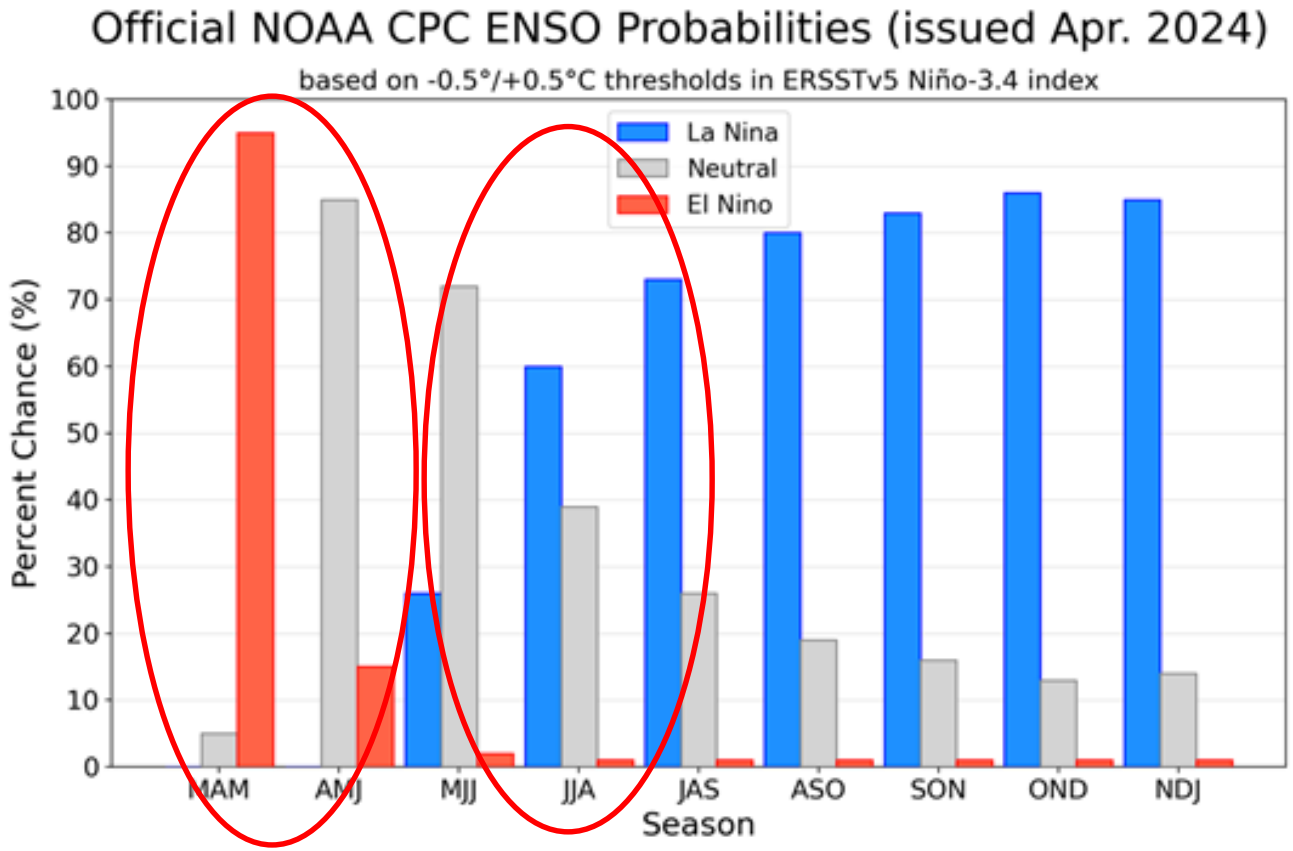
A look ahead

OUTLOOKS

CPC Probabilistic ENSO Outlook

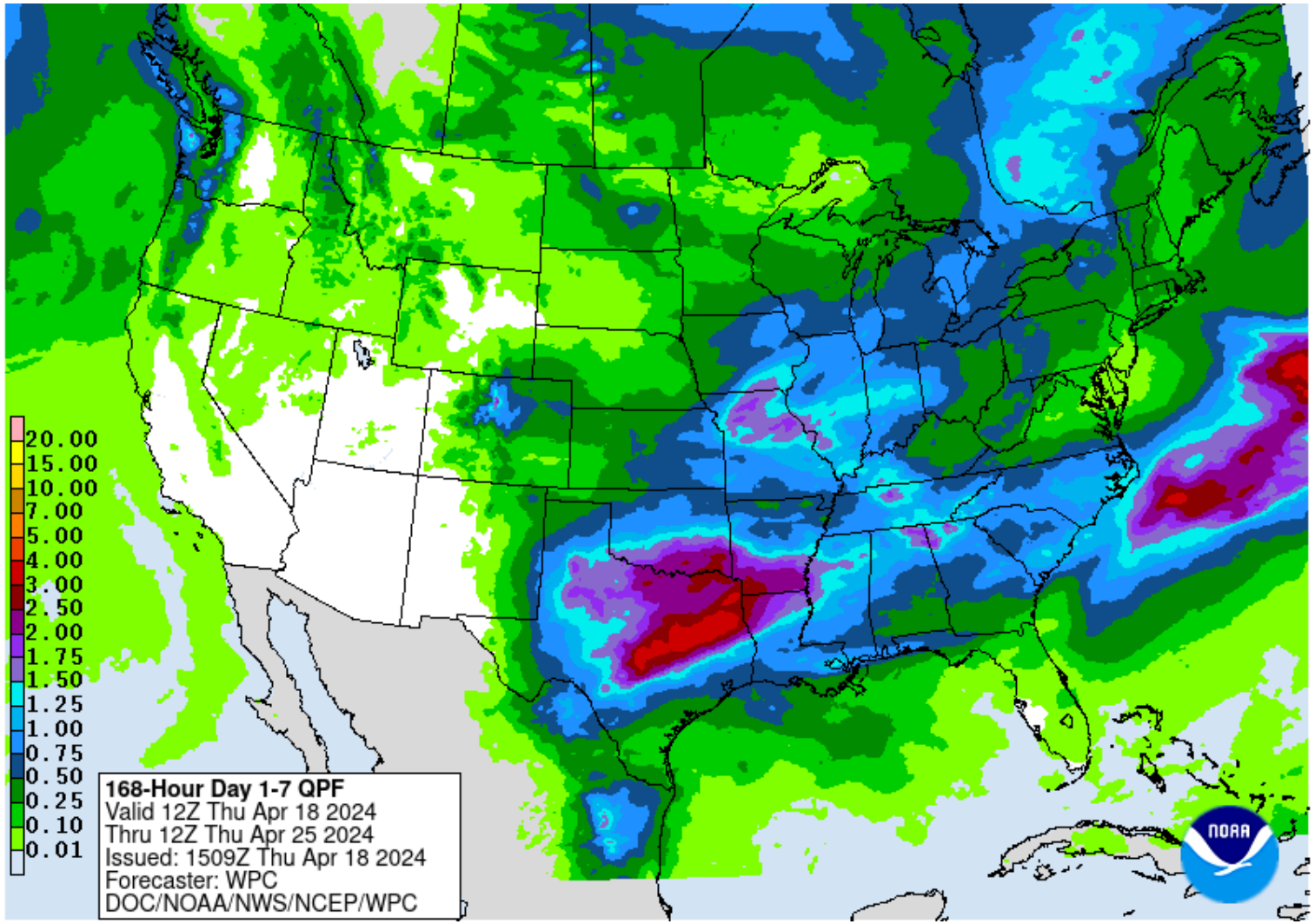
Updated: 11 April 2024

A transition from El Niño to ENSO-neutral is likely by April-June 2024 (85% chance), with the odds of La Niña developing by June-August 2024 (60% chance).



- El Niño now
- La Niña most likely by late summer.

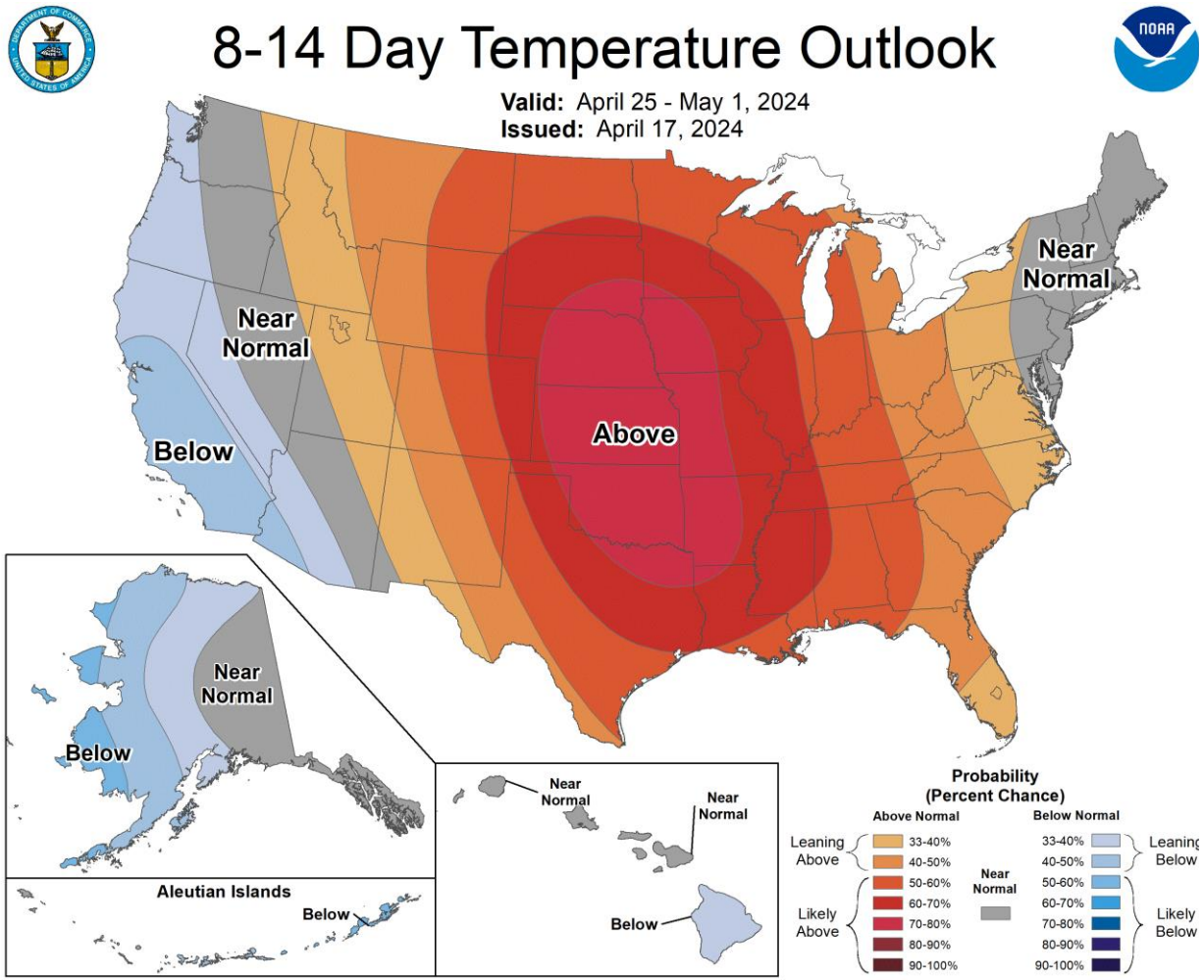
7-day (Model) Precipitation Forecast

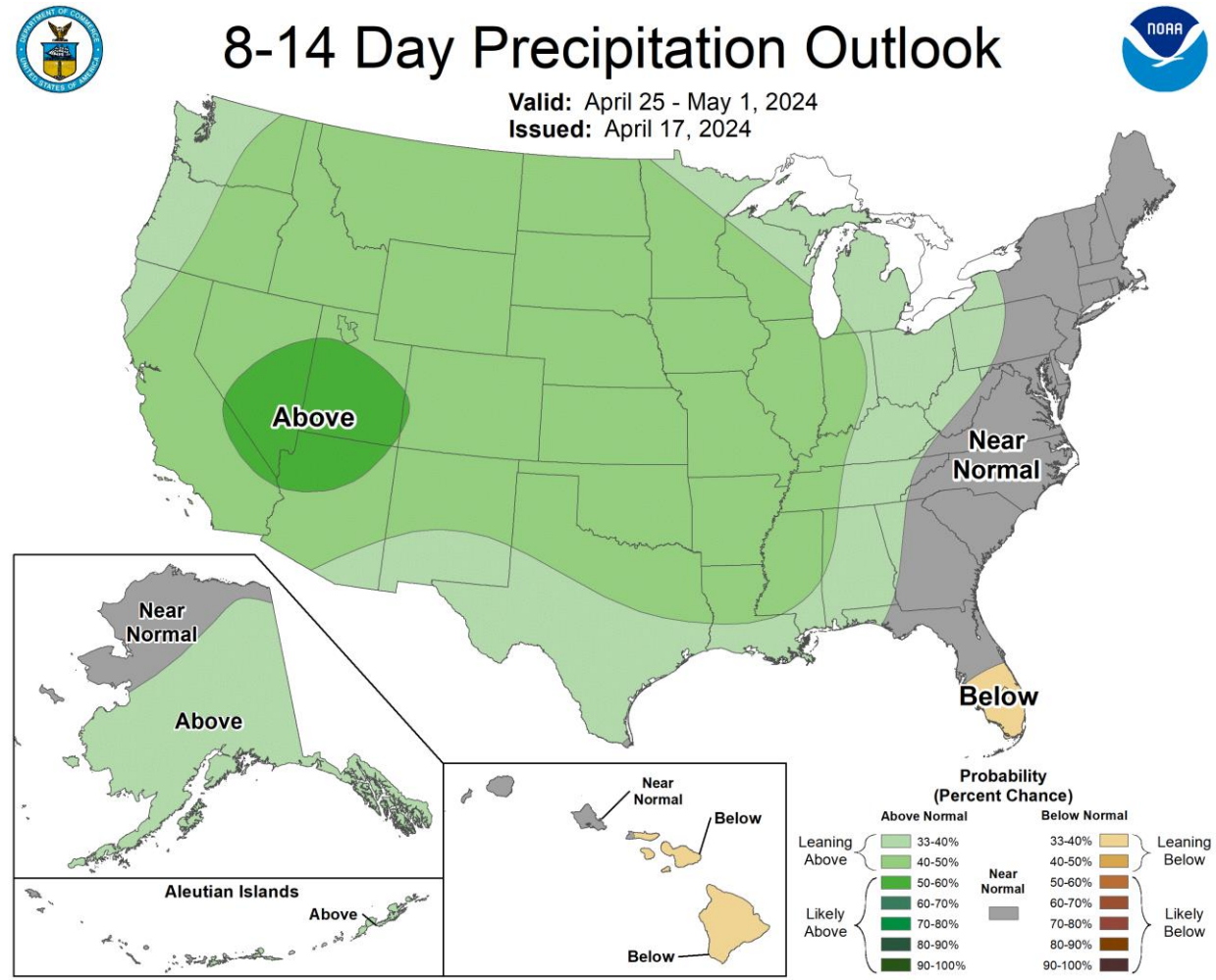


https://www.wpc.ncep.noaa.gov/qpf/p168i.gif?1702298495

Some 1-2” amounts of rain possible across parts of region. Less likely north.

8-14 Day Temp. and Precip. Outlook





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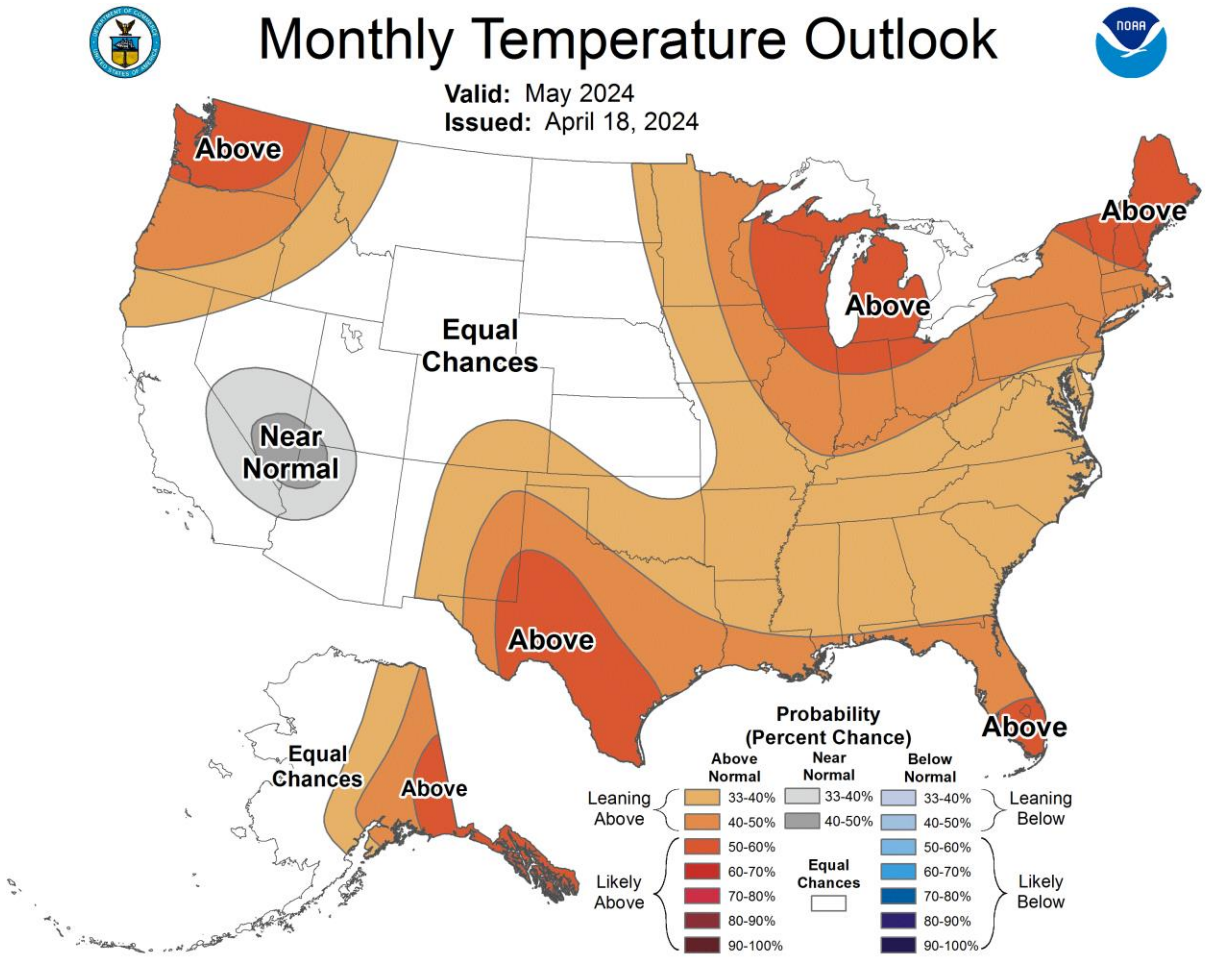
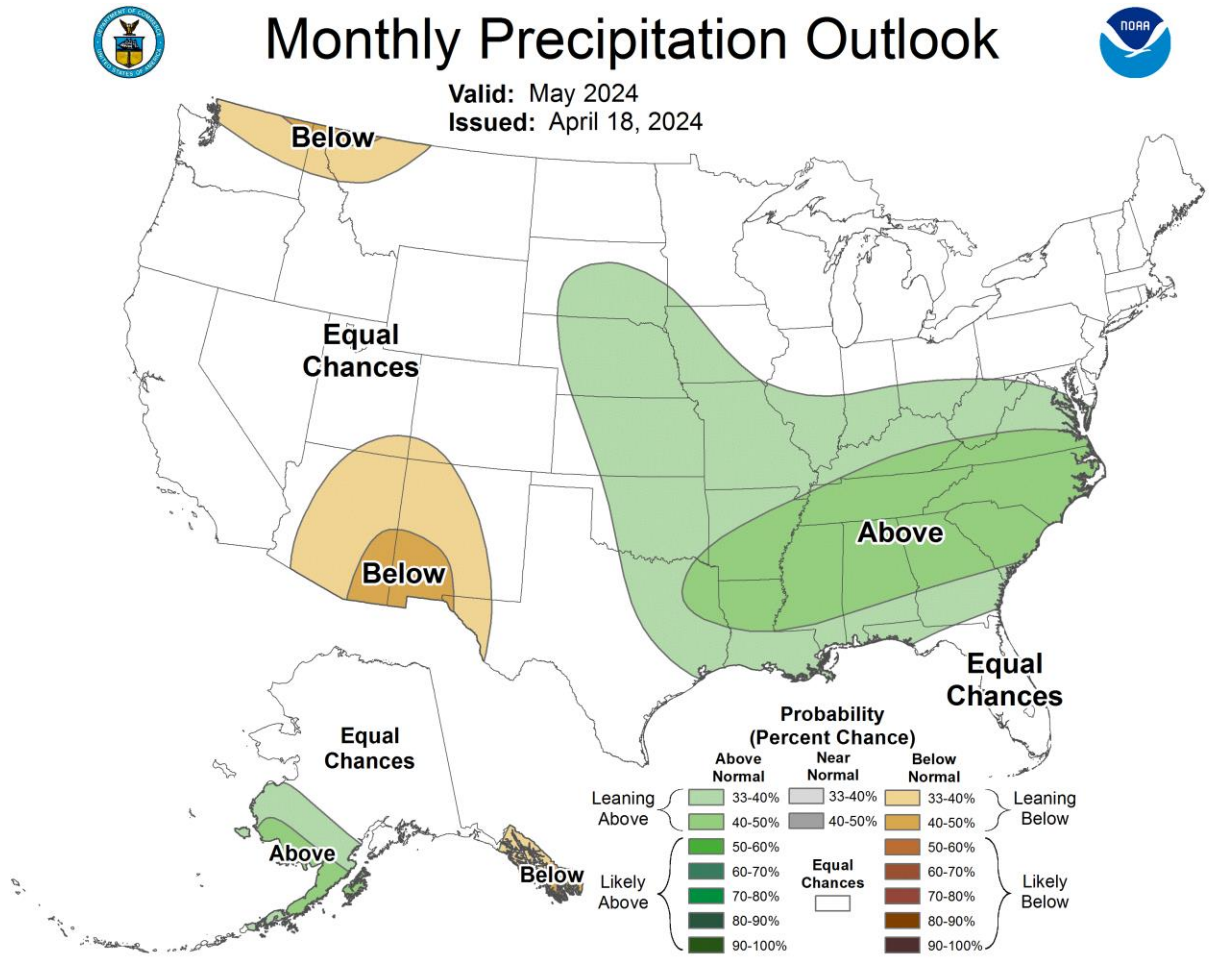
http://www.cpc.ncep.noaa.gov/

30 Day Temp and Precip. Outlook





http://www.cpc.ncep.noaa.gov/

30 day outlook for May– more likely warmer except the Plains. HInts toward wetter south.

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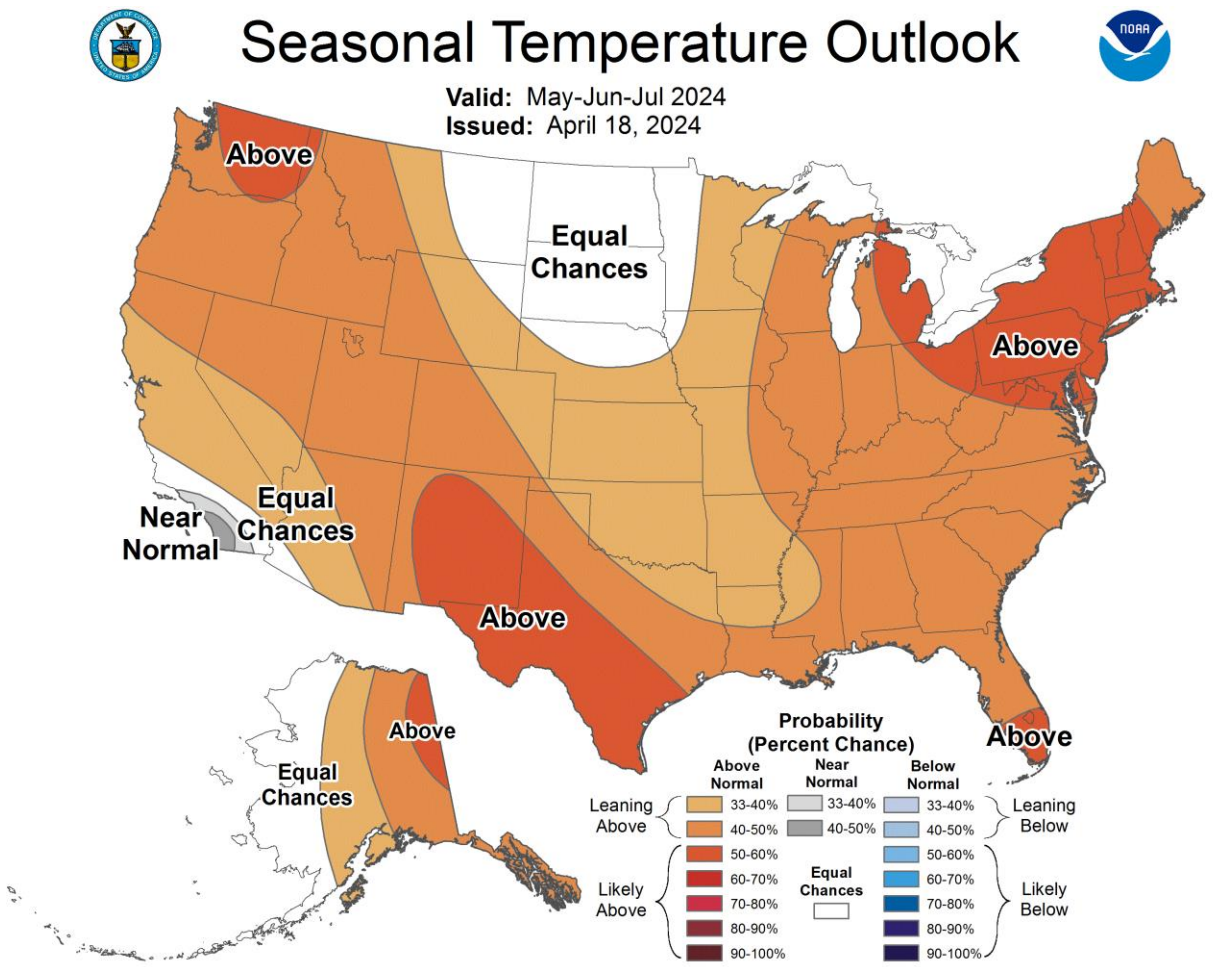
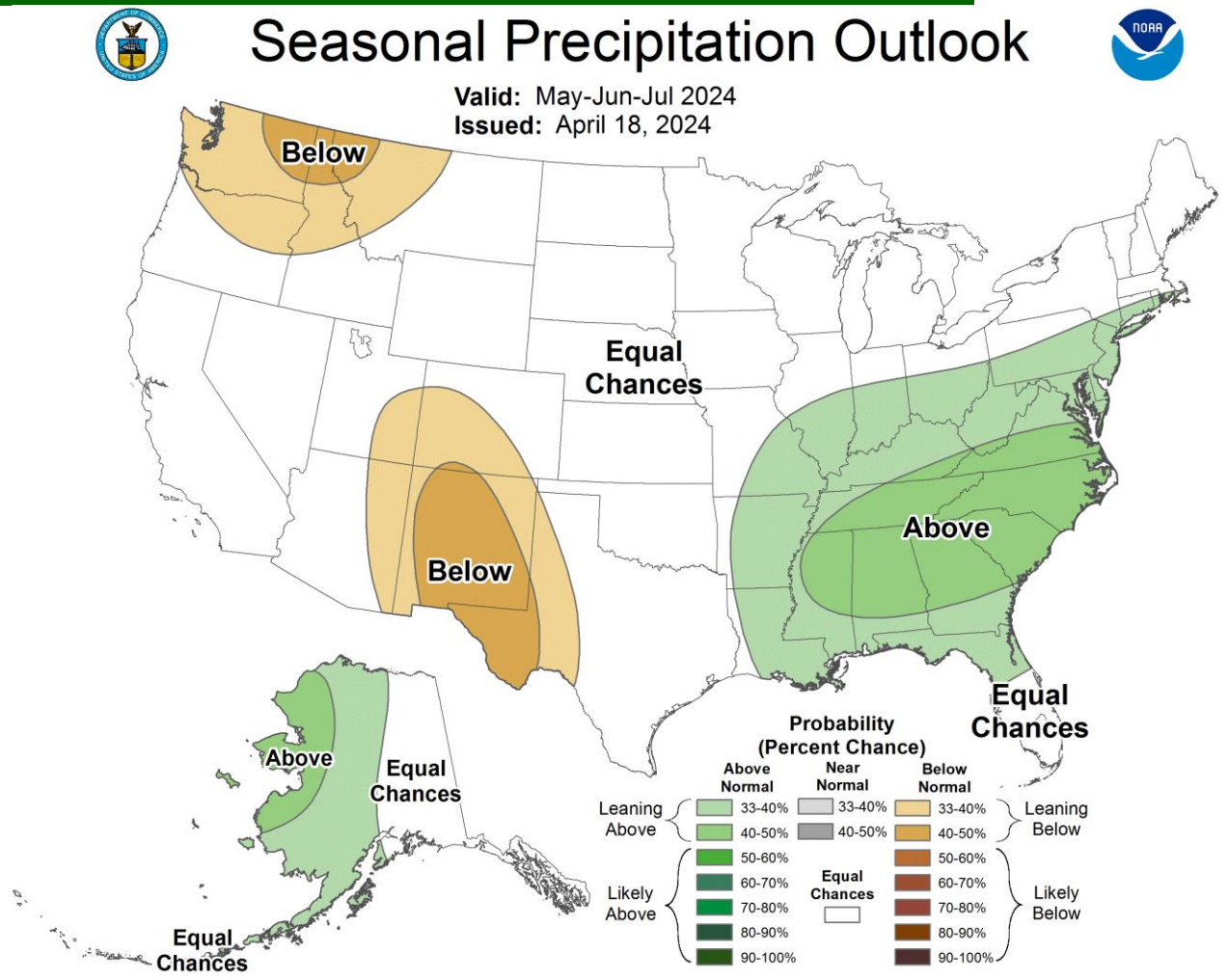
90 Day Temp and Precip. Outlook





http://www.cpc.ncep.noaa.gov/

Hints towards wetter still except nrn plains. Very little indication on precipitation.

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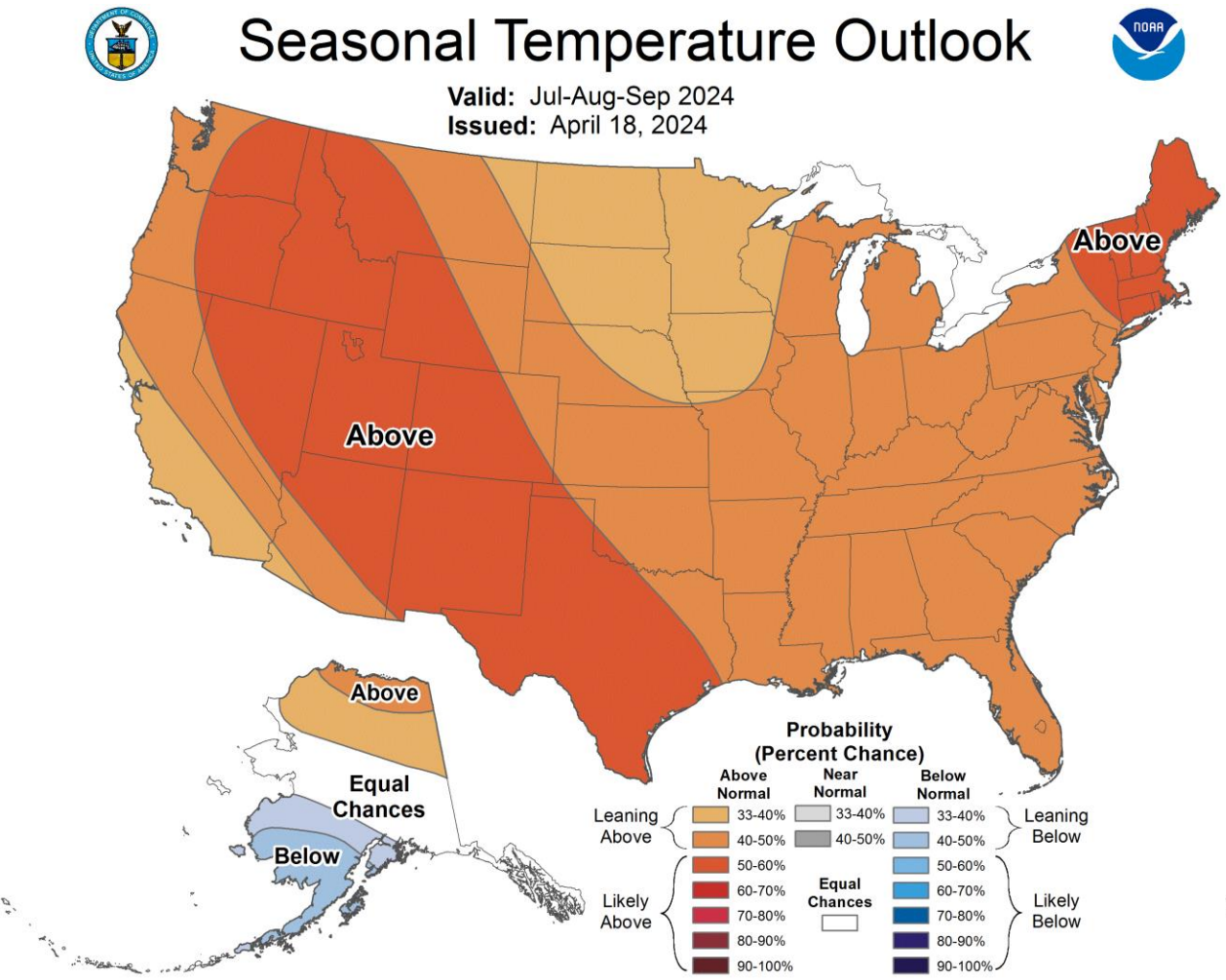
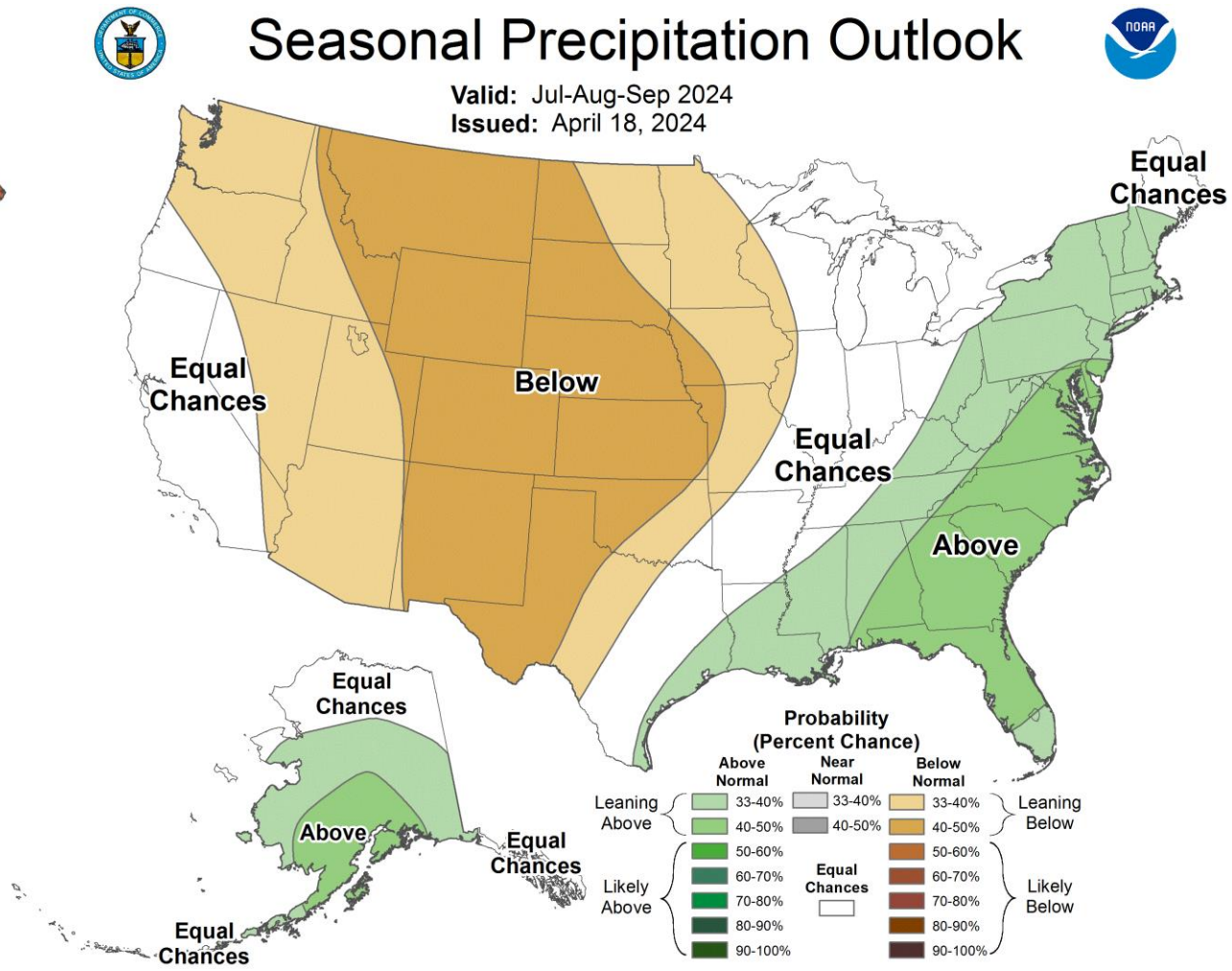
Summer Outlook (July-Sept.)





- La Niña likely more dominant.
- Heat and dryness increasingly likely

https://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/churchill.php

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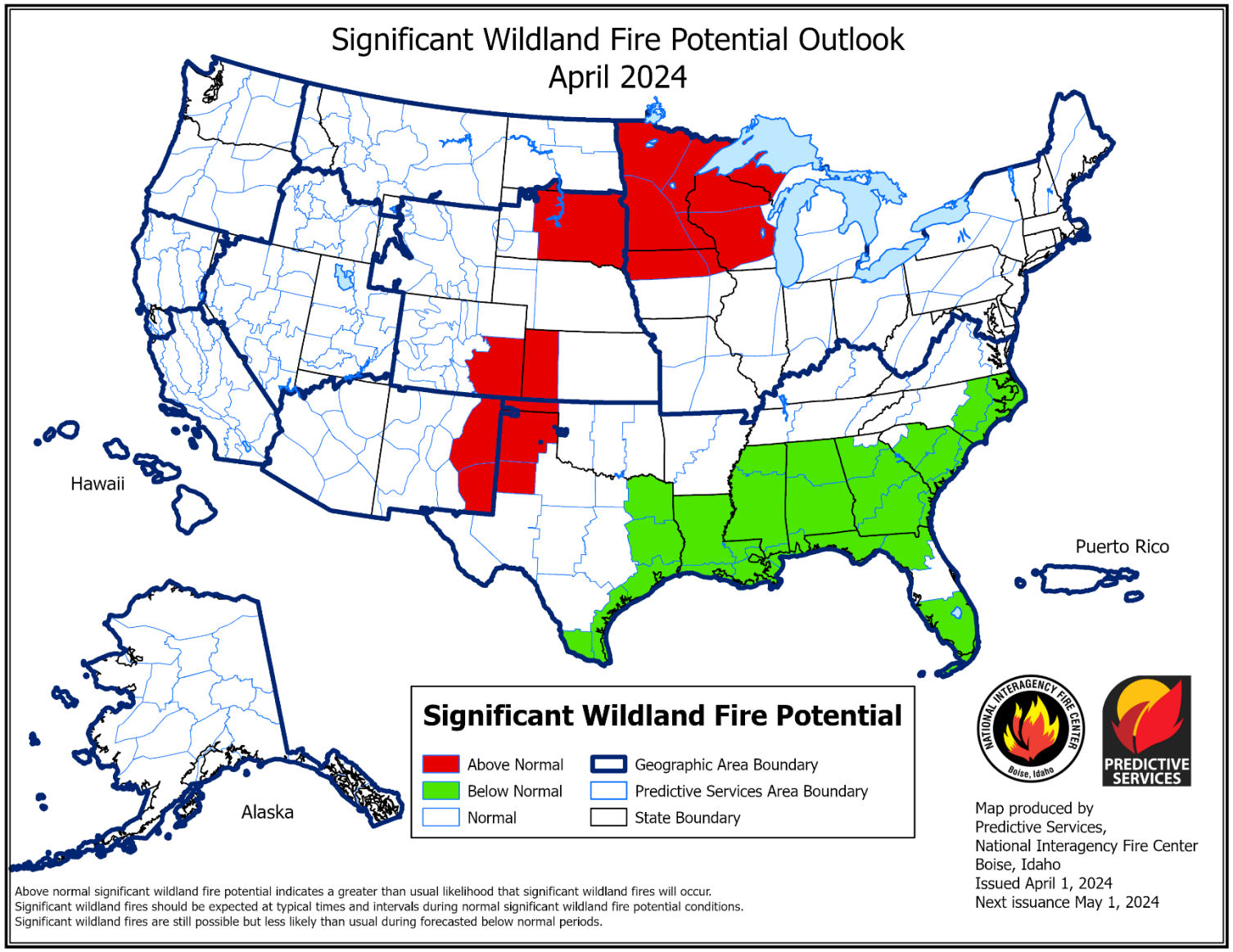

Wildland Fire Potential

No additional wildfire potential in the region indicated after April outlook.

https://www.nifc.gov/nicc/predictive/outlooks/outlooks.htm

Summary

- *Conditions*
- Drought improvement – a little wet east.
- Good ag conditions –monitoring freeze potential.
- Fire issues still exist-green-up helping
- Rivers OK for now.

- *Outlooks*
- El Niño weakening to La Niña by summer.
- Drought risk apparent – maybe more west.
- Better precipitation chances early in growing season.
- Mid-late growing season likely the concerning time.

Further Information - Partners

- **Today's and Past Recorded Presentations and :**
  - https://mrcc.purdue.edu/multimedia/webinars.jsp
  - https://hprcc.unl.edu/webinars.php
- NOAA's National Climatic Data Center: www.ncdc.noaa.gov
  - ➢ Monthly climate reports (U.S. & Global): www.ncdc.noaa.gov/sotc/
- NOAA's Climate Prediction Center: www.cpc.ncep.noaa.gov
- Climate Portal: www.climate.gov
- U.S. Drought Portal: www.drought.gov
- National Drought Mitigation Center**: http://drought.unl.edu/**
- USDA Climate Hubs https://www.climatehubs.usda.gov/
- State climatologists
  - http://www.stateclimate.org
- Regional climate centers
  - http://mrcc.purdue.edu
  - http://www.hprcc.unl.edu

Thank You and Questions?

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https://www.climatehubs.usda.gov/hubs/midwest

https://www.climatehubs.usda.gov/newsletter-signup

MidwestClimateHub@usda.gov

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Contact Laurie to sign up for newsletter and monthly ag outlooks!

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