



North Central U.S. Climate & Drought Outlook

July 2024

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Flooding on Vermilion River, SD, 6/21/24
Photo by Christine Wood



United States Department of Agriculture
Midwest Climate Hub



Further Information & Partners

- Today's and Past Recorded Presentations:

<https://mrcc.purdue.edu/multimedia/webinars.jsp>

<https://hprcc.unl.edu/webinars.php>

Next webinar: August 15, 2024

- NOAA's Climate Prediction Center: www.cpc.ncep.noaa.gov
- NOAA Climate Portal: www.climate.gov
- U.S. Drought Portal: www.drought.gov
- National Drought Mitigation Center: <http://drought.unl.edu/>
- State climatologists
 - <http://www.stateclimate.org>
- Regional climate centers
 - Midwest: <https://mrcc.purdue.edu/>
 - High Plains: <http://www.hprcc.unl.edu>



Mesonet AT SDSTATE Sioux Falls Snow Board 2024, Jun 22 08:18:06 AM

Flooding at Sioux Falls, SD
Photos from SD Mesonet



Mesonet AT SDSTATE Sioux Falls WSW 2024, Jun 22 06:18:07 AM



SOUTH DAKOTA STATE
UNIVERSITY EXTENSION

Agenda

Recent Conditions

Impacts

Outlooks

1-3 months



Grand Tetons, Photo by Mike Palecki, 7/15/24



Stormy skies in SD, Photo by Christine Wood, 6/22/24

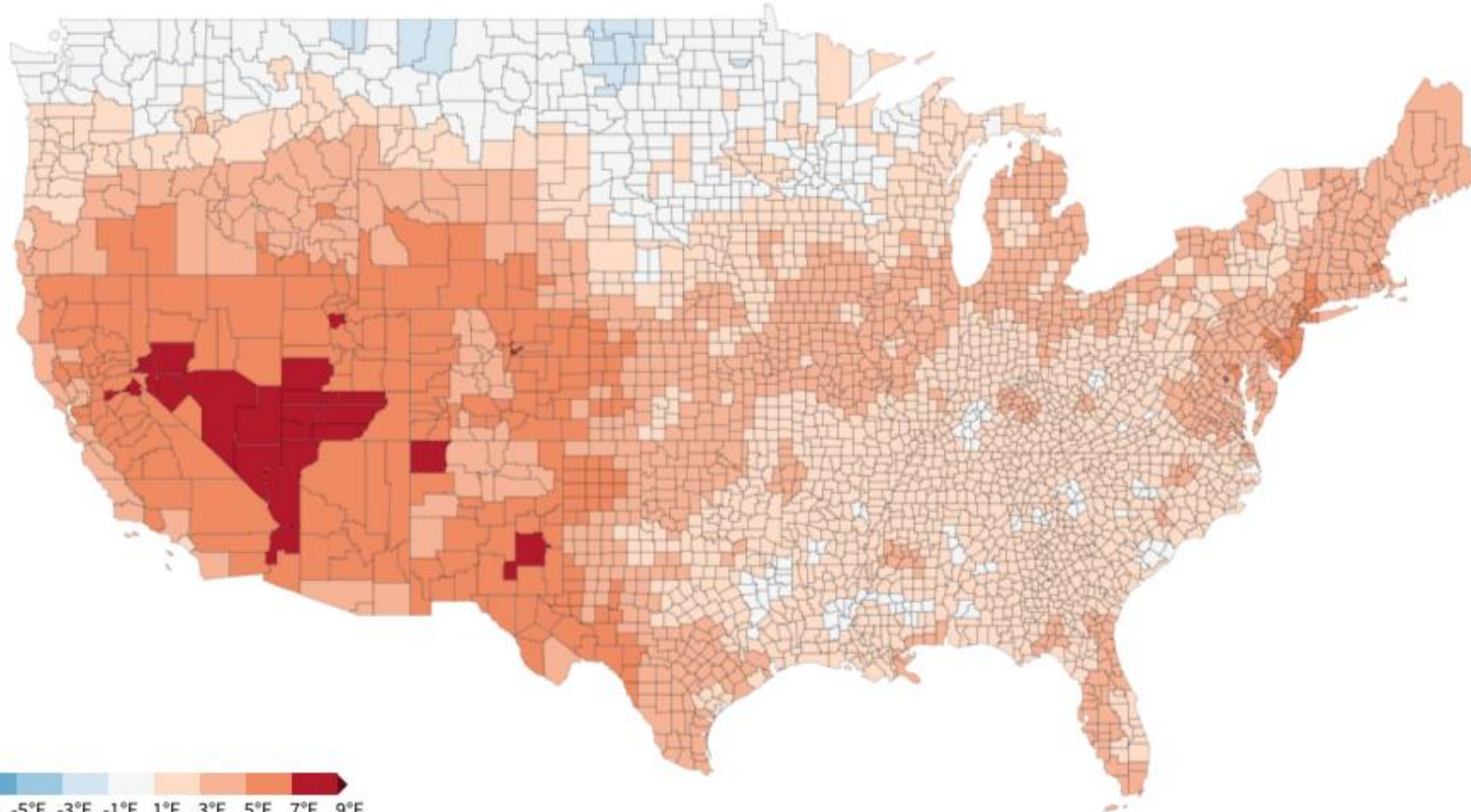


Ohio skies, Photo by Aaron Wilson

June Temperature Rankings

County Average Temperature Anomaly

June 2024



-9°F -7°F -5°F -3°F -1°F 1°F 3°F 5°F 7°F 9°F

Contiguous U.S. (Hover over a County)

Temp: 71.82°F

Anomaly: 3.35°F

Rank: 2nd Warmest

Mean: 68.47°F



- Top ranked counties in CO, western KS & NE
- Denver co. #1 warmest June
- CO, 3rd warmest
- WY, 10th warmest

<https://www.ncdc.noaa.gov/cag/>

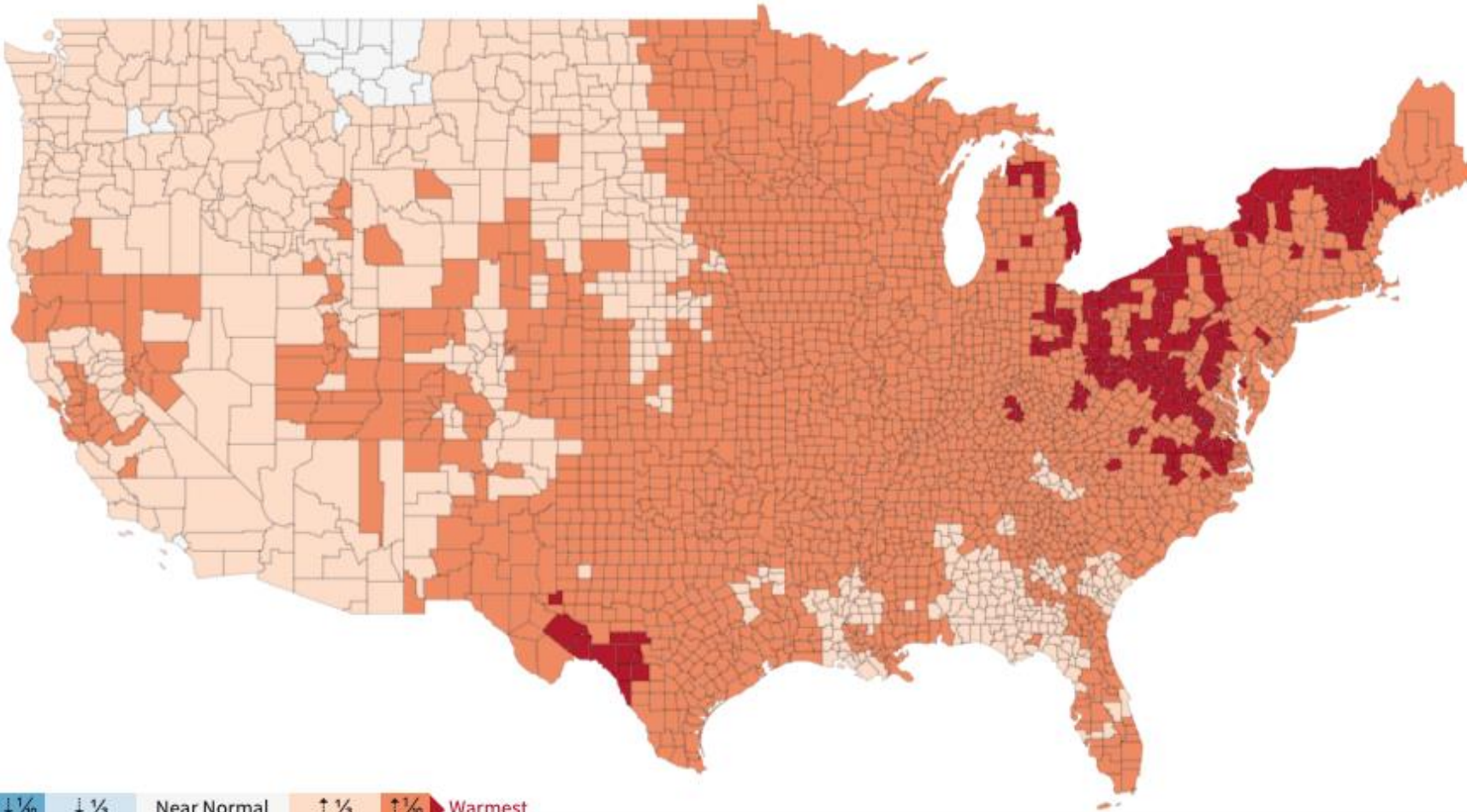


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January-June Temperature Rankings

County Average Temperature Rank (130 years)

January - June 2024



- 2nd warmest: OH, IL, MI, MO
- 3rd warmest: IN, WI, MN
- 4th warmest: IA, KY
- Record counties:
KY=8
MI=11
OH=39

<https://www.ncdc.noaa.gov/cag/>



Contiguous U.S. (Hover over a County)

Temp: 50.93°F Anomaly: 3.41°F Rank: 2nd Warmest Mean: 47.52°F

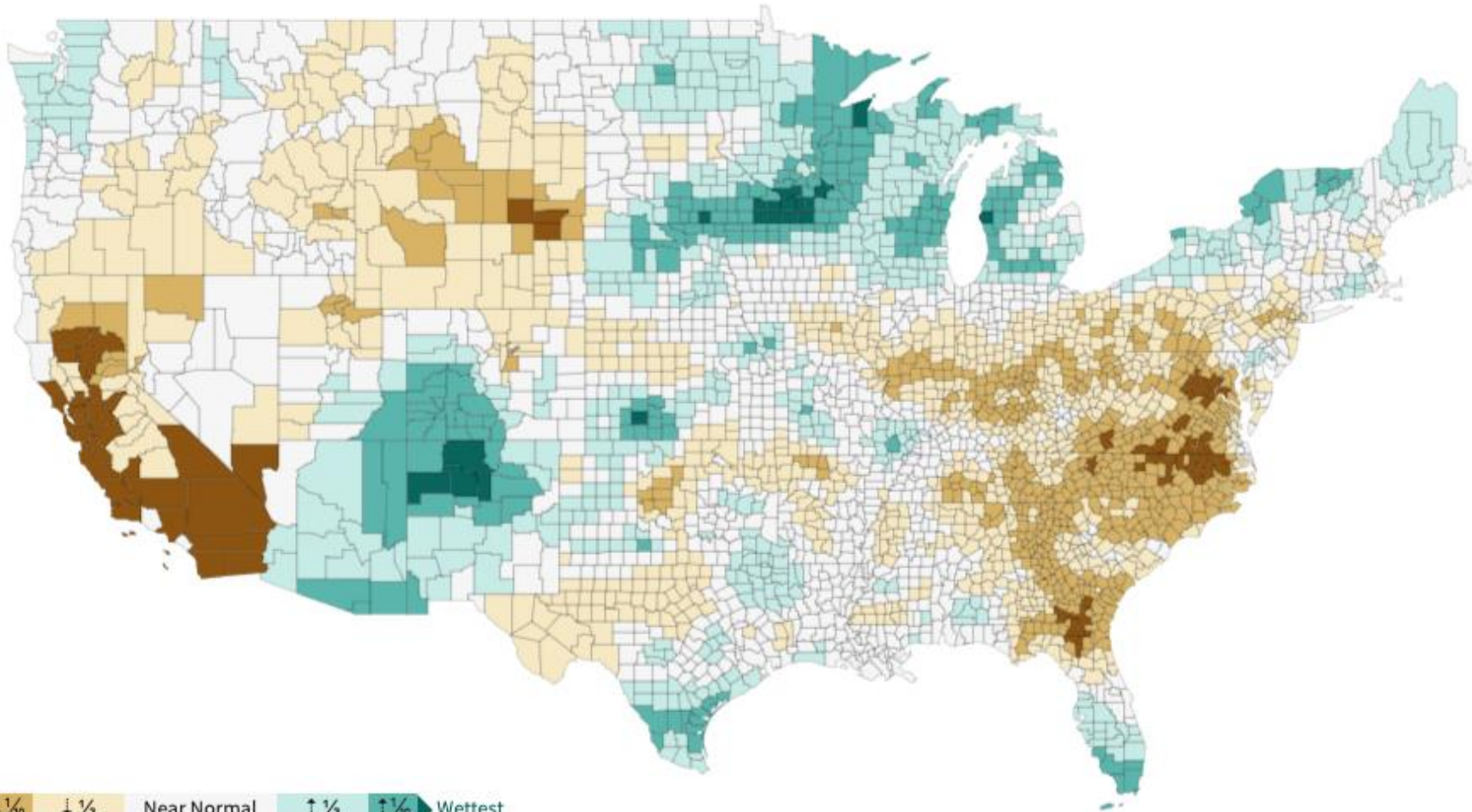


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June Precipitation Rankings

County Precipitation Rank (130 years)

June 2024



- #1 wettest counties: SD, MN, IA, WI
- #1 driest counties: Weston, WY, Custer & Fall River, SD

<https://www.ncdc.noaa.gov/cag/>



Driest $\downarrow \frac{1}{10}$ $\downarrow \frac{1}{2}$ Near Normal $\uparrow \frac{1}{2}$ $\uparrow \frac{1}{10}$ Wettest

Contiguous U.S. (Hover over a County)

Precip: 2.74"

Anomaly: -0.18"

Rank: 41st Driest

Mean: 2.92"

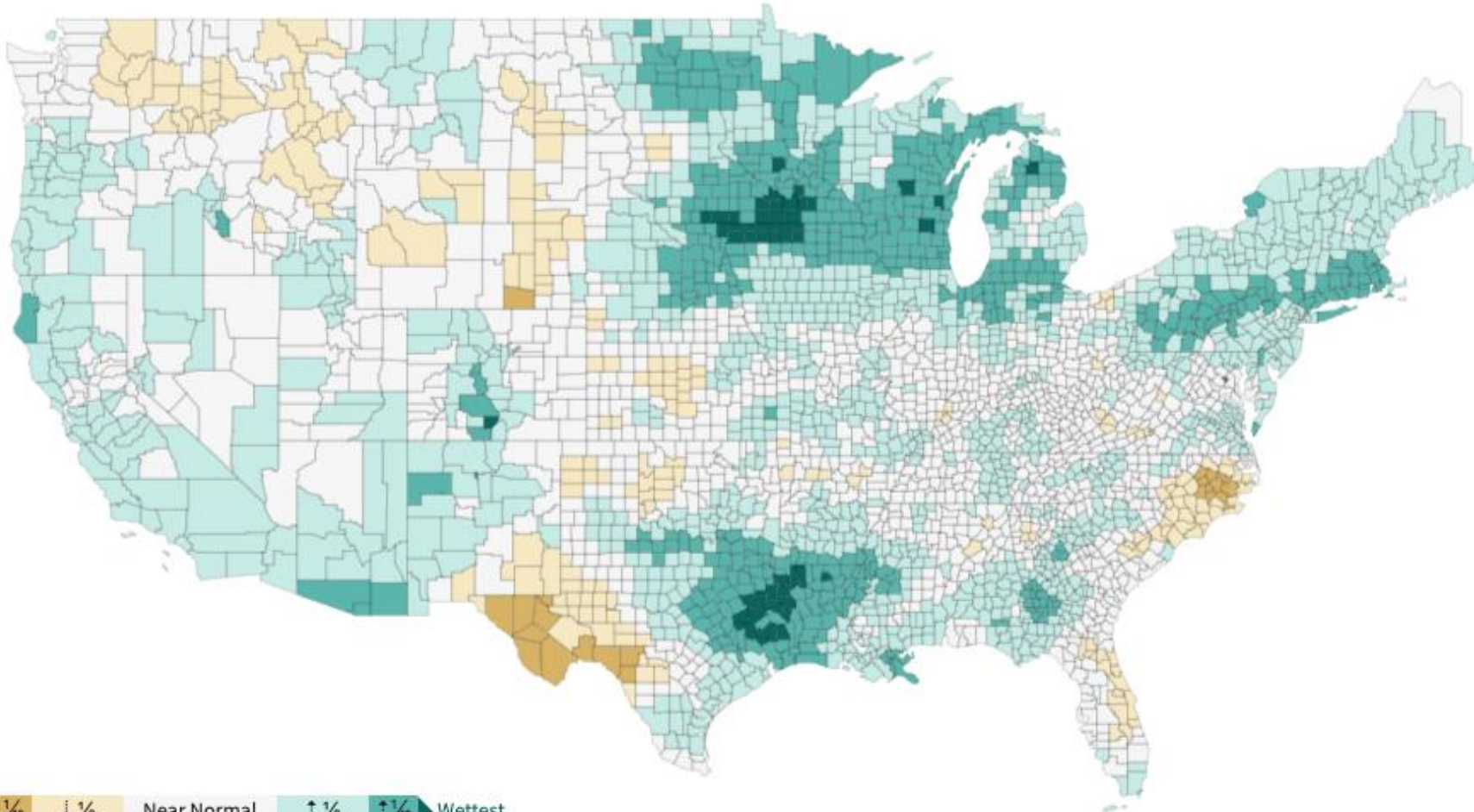


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January-June Precipitation Rankings

County Precipitation Rank (130 years)

January - June 2024



Driest $\downarrow \frac{1}{10}$ $\downarrow \frac{1}{2}$ Near Normal $\uparrow \frac{1}{2}$ $\uparrow \frac{1}{10}$ Wettest

Contiguous U.S. (Hover over a County)

Precip: 17.36"

Anomaly: 2.06"

Rank: 11th Wettest

Mean: 15.30"



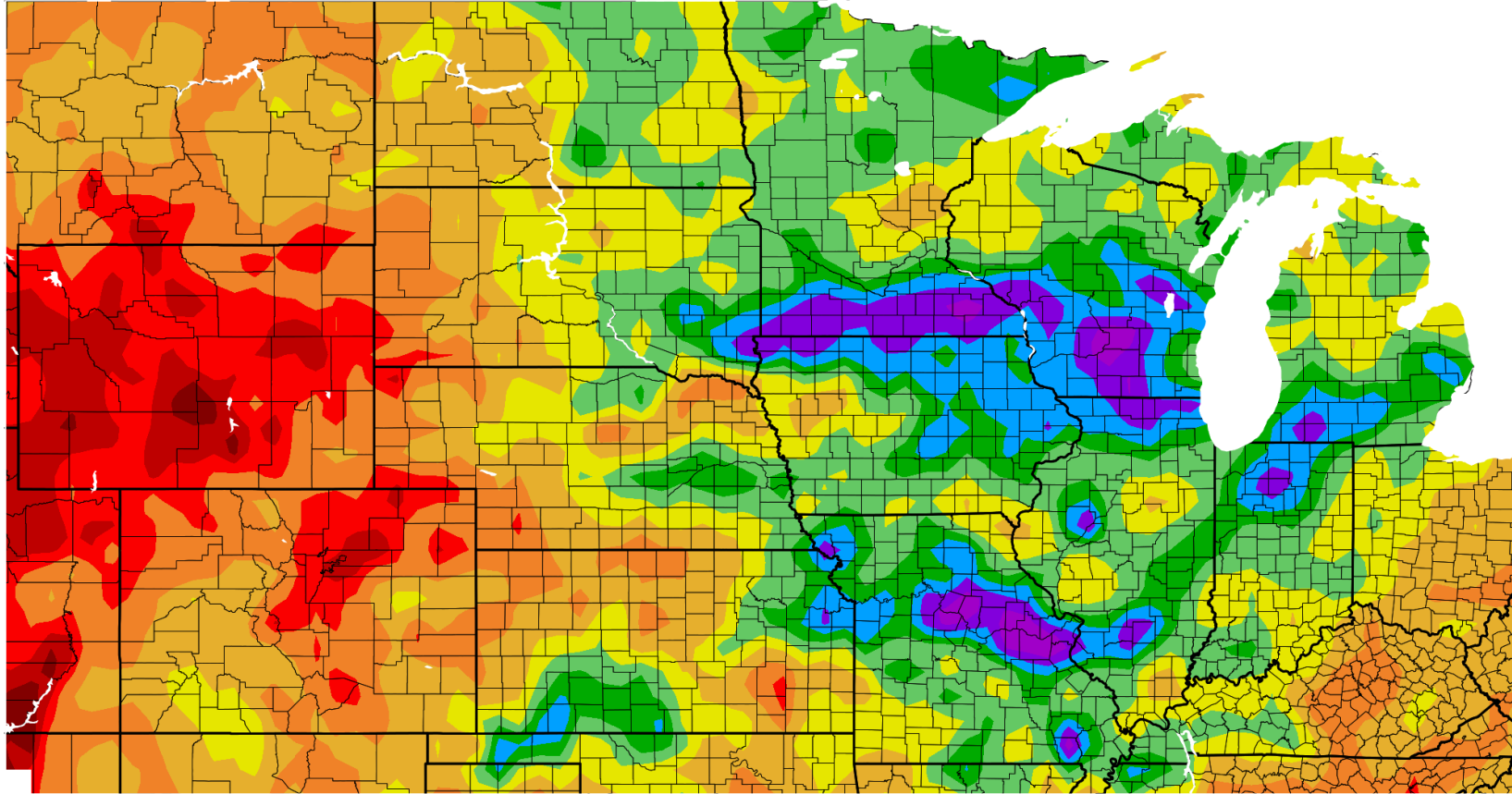
<https://www.ncdc.noaa.gov/cag/>



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Precipitation (in)

6/18/2024 – 7/17/2024



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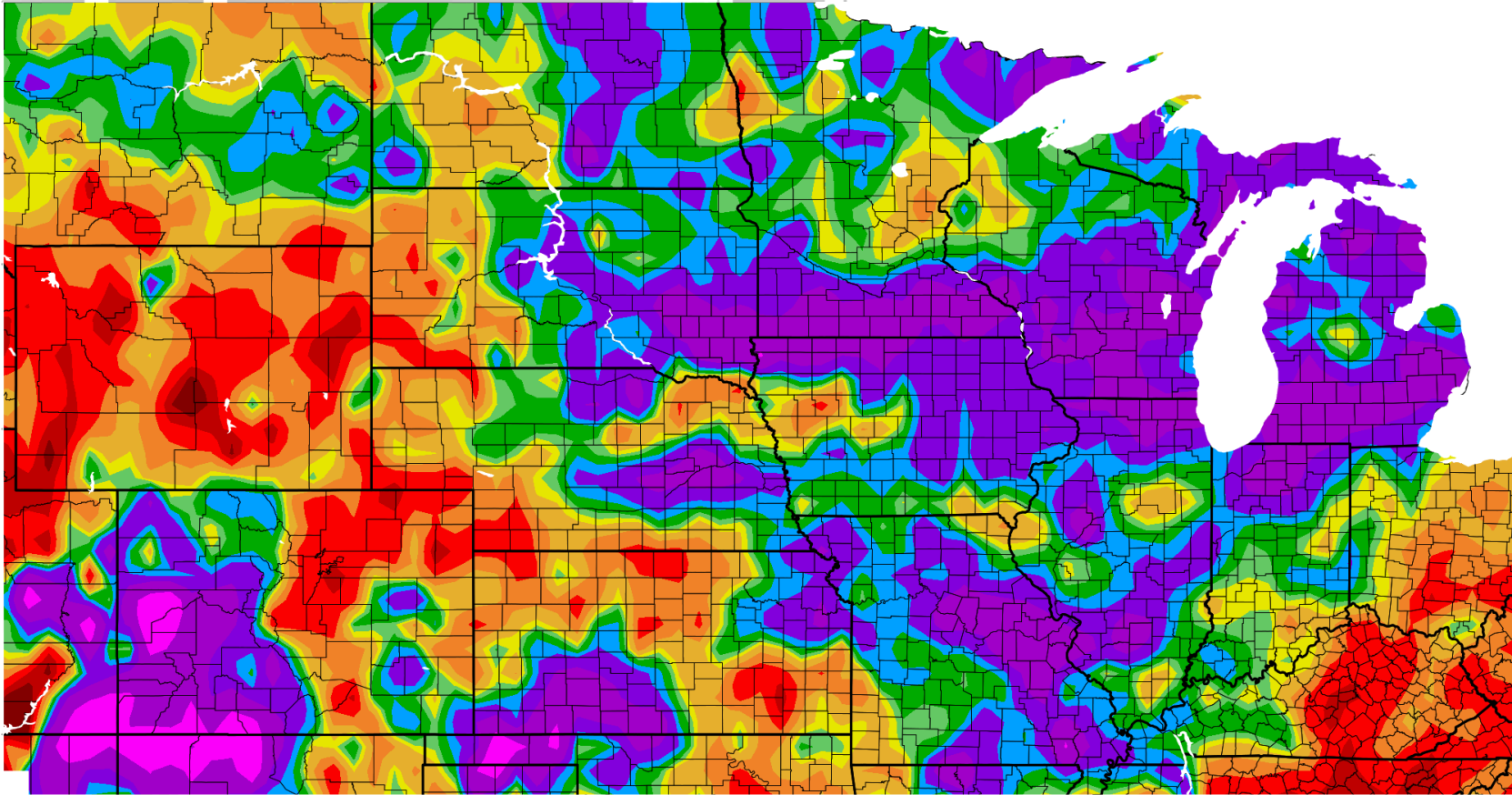


Generated 7/18/2024 at HPRCC using provisional data.

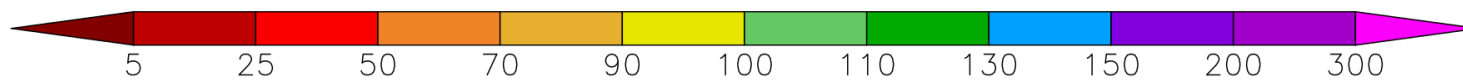
NOAA Regional Climate Centers

Percent of Normal Precipitation (%)

6/18/2024 – 7/17/2024

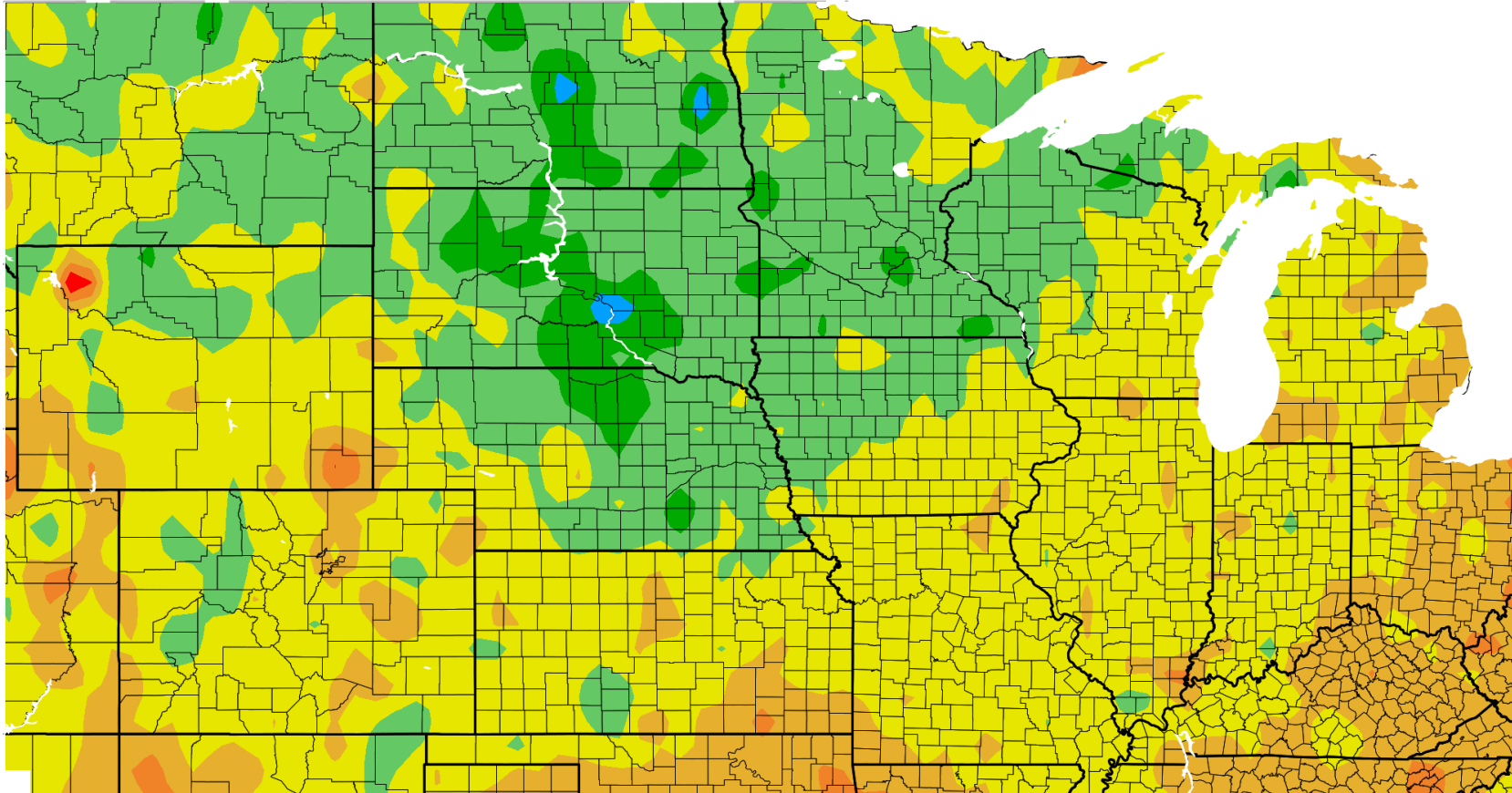


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Departure from Normal Temperature (F)

6/18/2024 - 7/17/2024



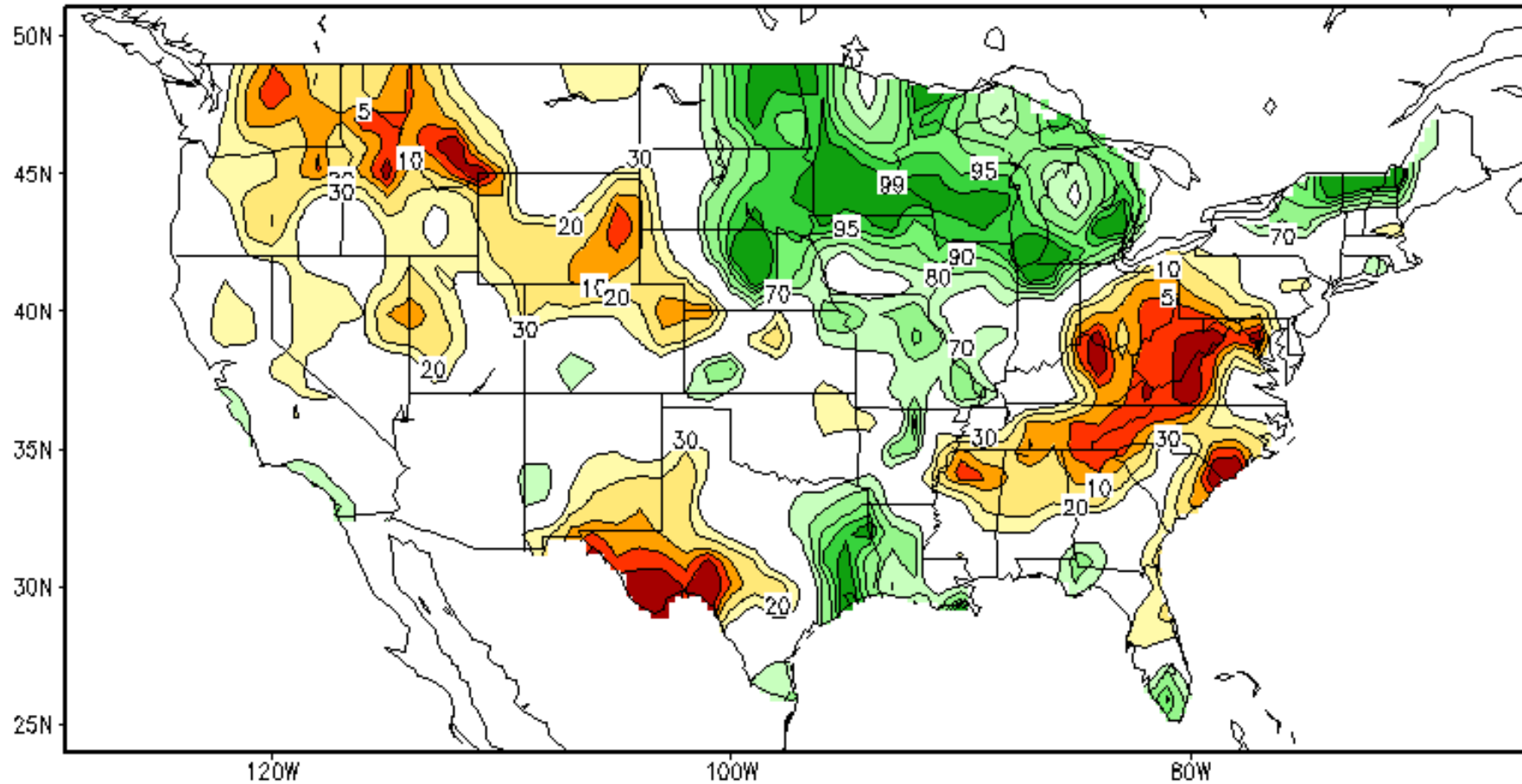
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Generated 7/18/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Calculated Soil Moisture Ranking Percentile JUL 17, 2024



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U.S. Drought Monitor NWS Central

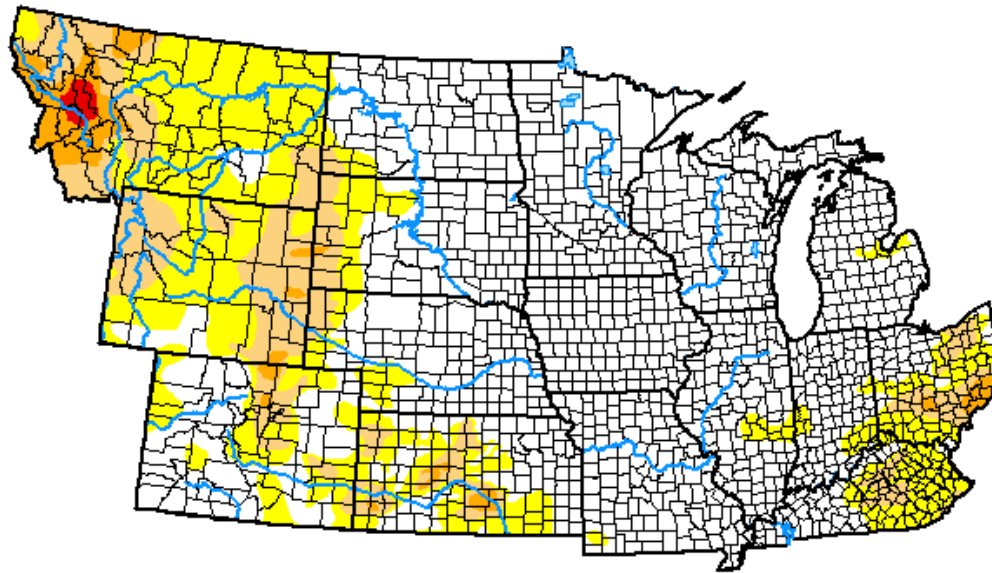
July 16, 2024

(Released Thursday, Jul. 18, 2024)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	63.50	36.50	14.17	3.12	0.35	0.00
Last Week <i>07-09-2024</i>	62.24	37.76	13.21	1.03	0.00	0.00
3 Months Ago <i>04-16-2024</i>	45.44	54.56	24.17	5.89	0.43	0.00
Start of Calendar Year <i>01-02-2024</i>	39.12	60.88	34.11	13.18	2.68	0.01
Start of Water Year <i>09-26-2023</i>	39.86	60.14	40.32	19.88	6.29	0.49
One Year Ago <i>07-18-2023</i>	37.97	62.03	38.17	16.24	5.73	0.65



Intensity:



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:

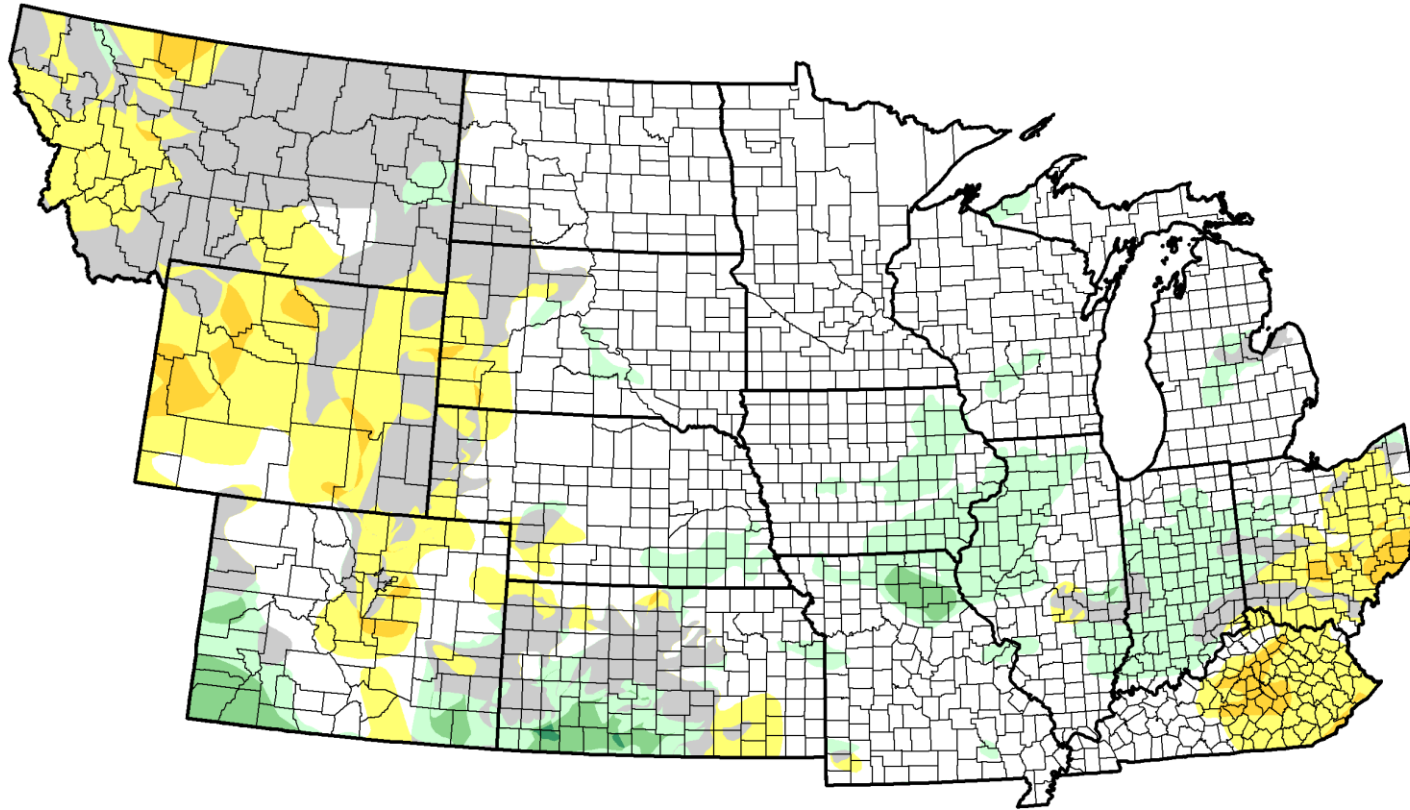
Brian Fuchs
National Drought Mitigation Center














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U.S. Drought Monitor Class Change - NWS Central 4 Week



-  5 Class Degradation
-  4 Class Degradation
-  3 Class Degradation
-  2 Class Degradation
-  1 Class Degradation
-  No Change
-  1 Class Improvement
-  2 Class Improvement
-  3 Class Improvement
-  4 Class Improvement
-  5 Class Improvement

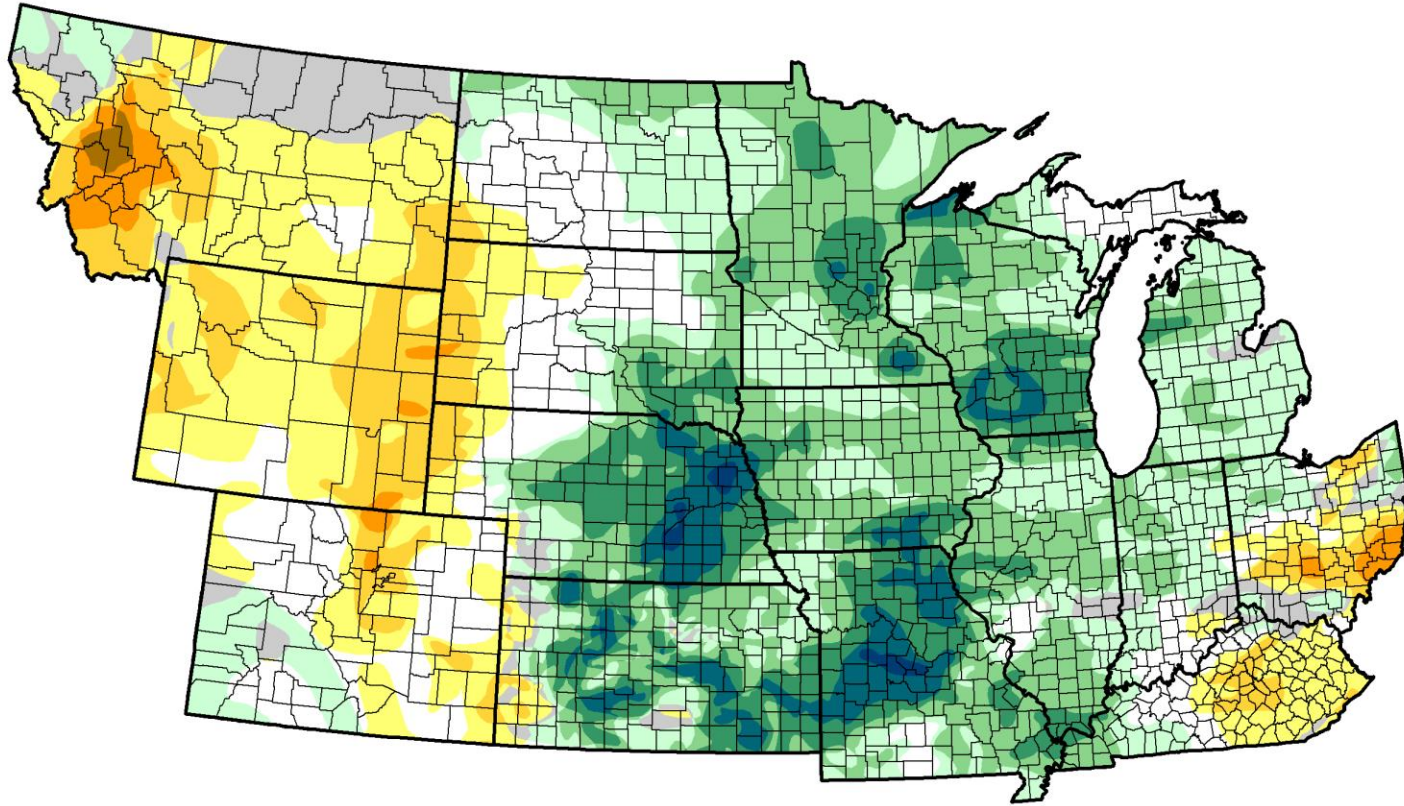
July 16, 2024
compared to
June 18, 2024




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U.S. Drought Monitor Class Change - NWS Central 52 Week



-  5 Class Degradation
-  4 Class Degradation
-  3 Class Degradation
-  2 Class Degradation
-  1 Class Degradation
-  No Change
-  1 Class Improvement
-  2 Class Improvement
-  3 Class Improvement
-  4 Class Improvement
-  5 Class Improvement

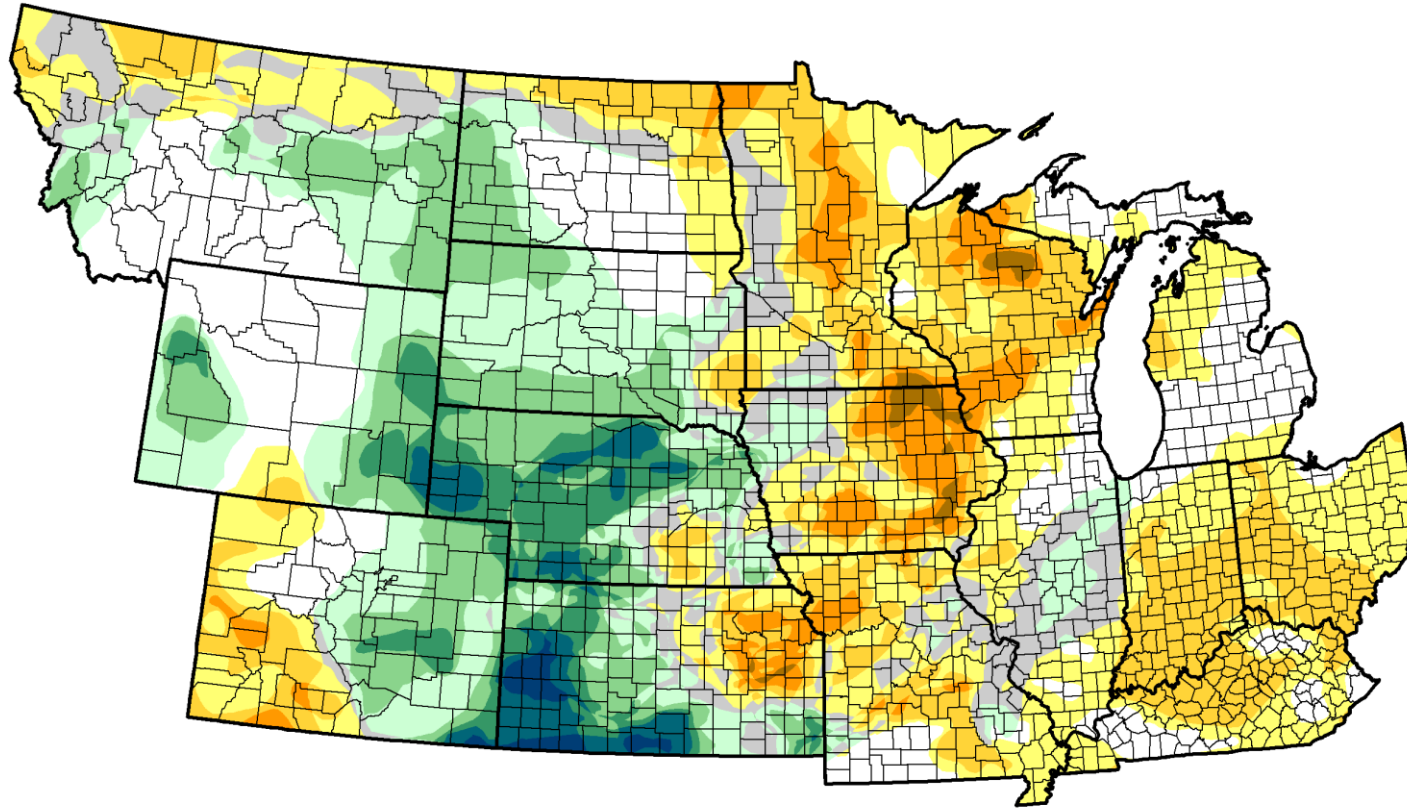
July 16, 2024
compared to
July 18, 2023












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U.S. Drought Monitor Class Change - NWS Central 24 Week



-  5 Class Degradation
-  4 Class Degradation
-  3 Class Degradation
-  2 Class Degradation
-  1 Class Degradation
-  No Change
-  1 Class Improvement
-  2 Class Improvement
-  3 Class Improvement
-  4 Class Improvement
-  5 Class Improvement

October 17, 2023
compared to
May 2, 2023

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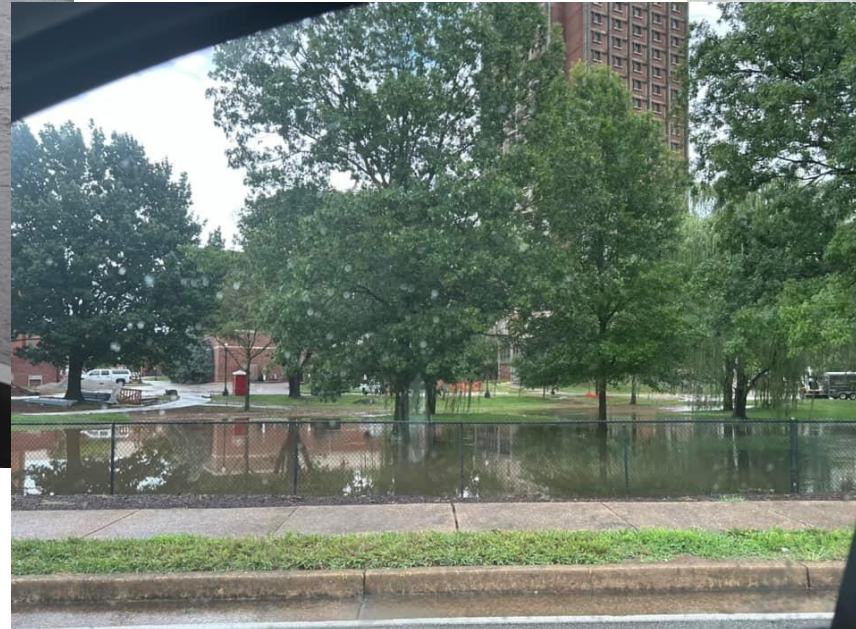
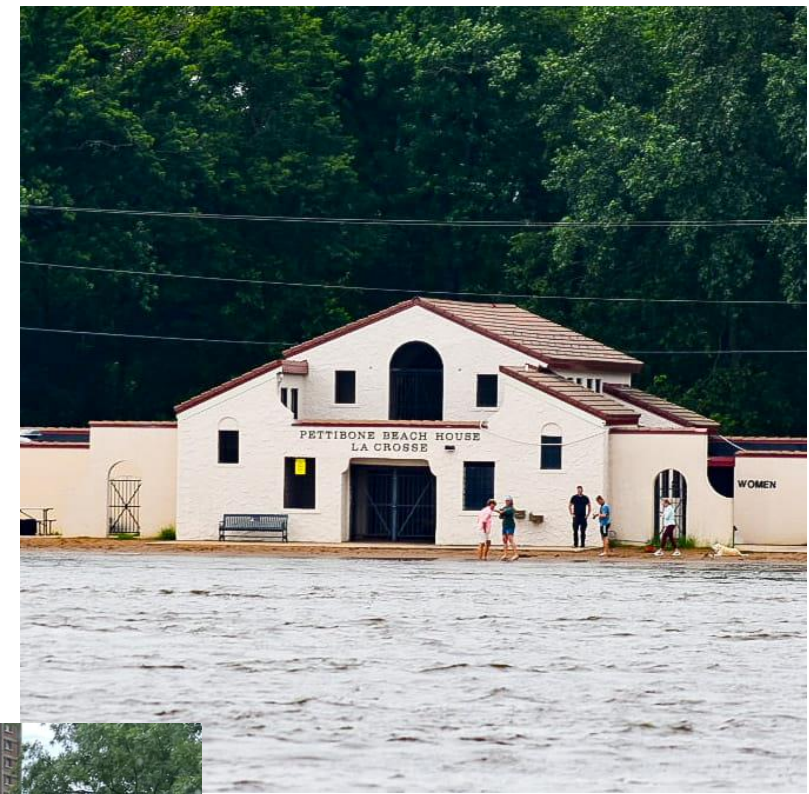
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Climate Impacts

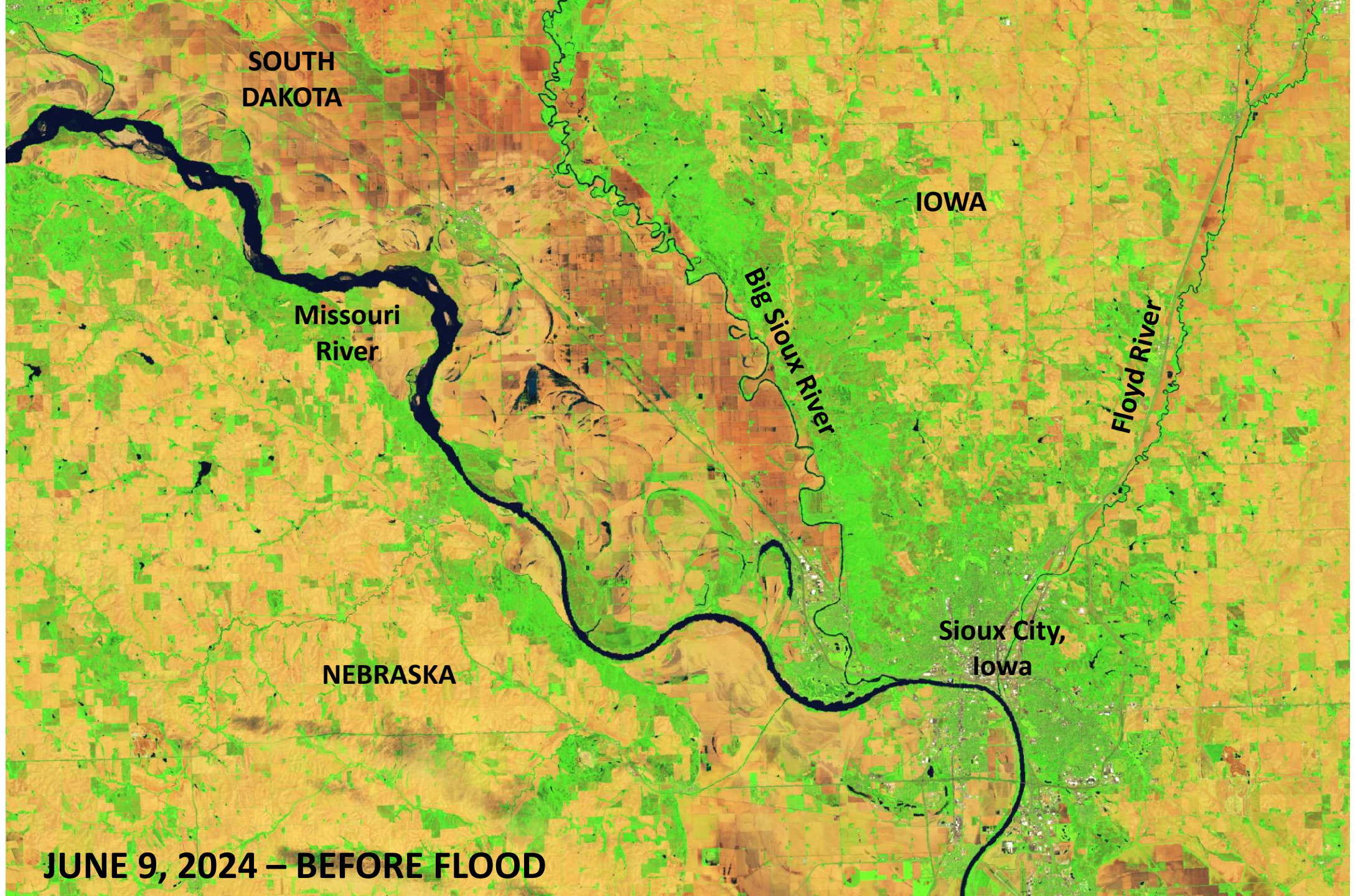


Mississippi River Lock & Dam #1, near Coon Rapids, MN.
Photo by Kris Larsen-Kelly. 6/28/24

Mississippi River flooding
at La Crosse, WI. Photo by
Jeff Boyne.



Flooding on Western Kentucky
University, Bowling Green, KY.
Photo by Crystal Stiles. 7/9/24



**SOUTH
DAKOTA**

IOWA

**Missouri
River**

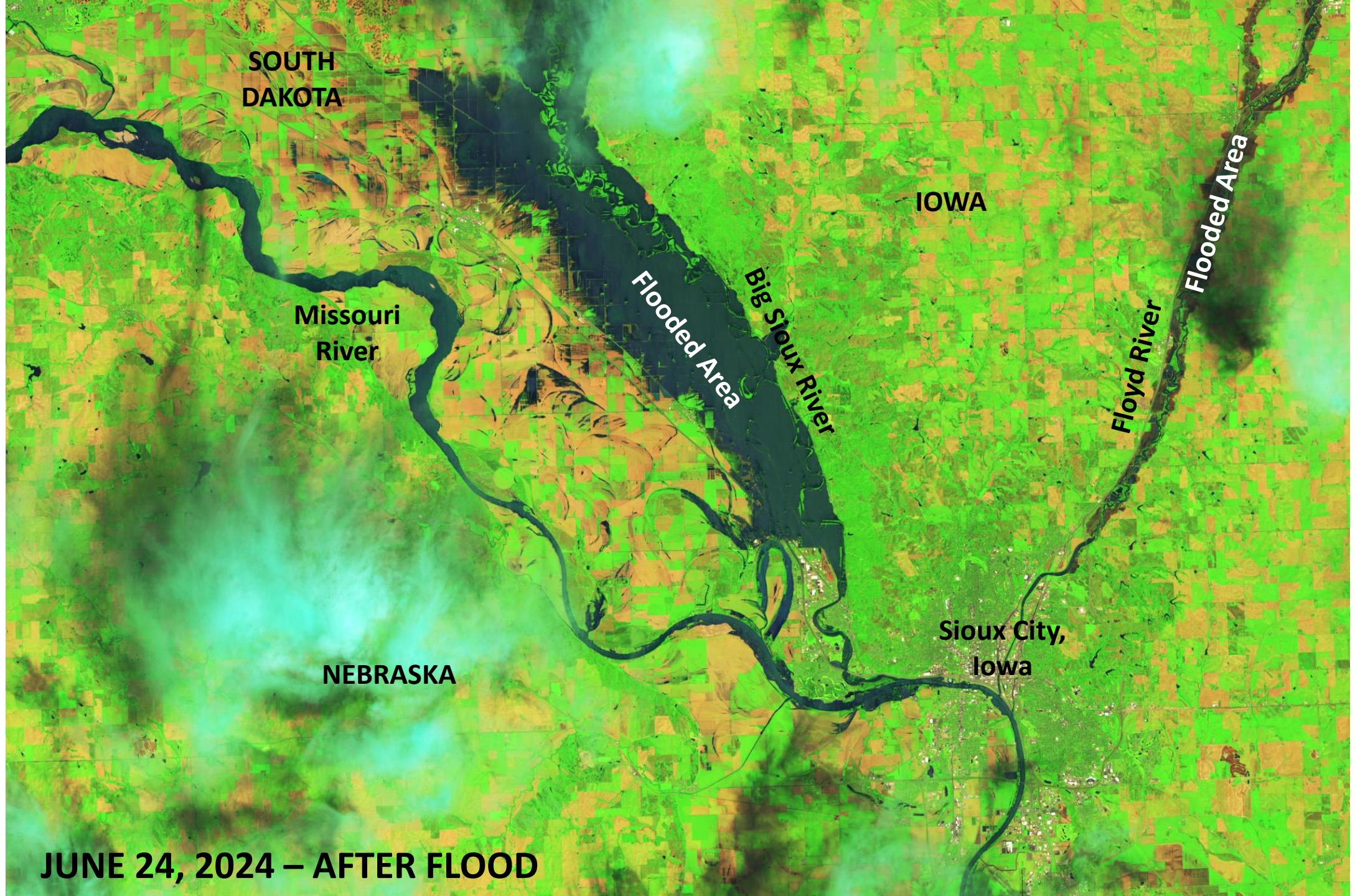
Big Sioux River

Floyd River

NEBRASKA

**Sioux City,
Iowa**

JUNE 9, 2024 – BEFORE FLOOD



**SOUTH
DAKOTA**

IOWA

**Missouri
River**

Flooded Area

Big Sioux River

Floyd River

Flooded Area

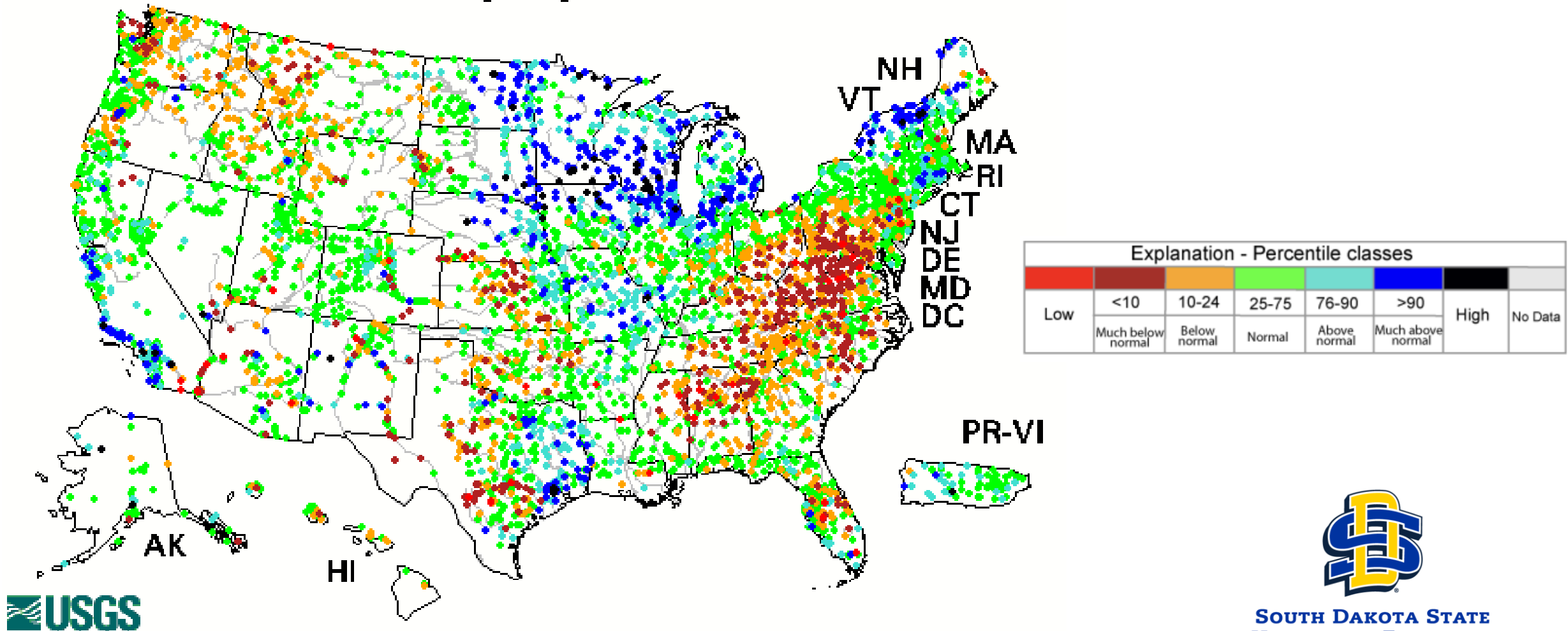
NEBRASKA

**Sioux City,
Iowa**

JUNE 24, 2024 – AFTER FLOOD

28-day streamflow percentile

Wednesday, July 17, 2024

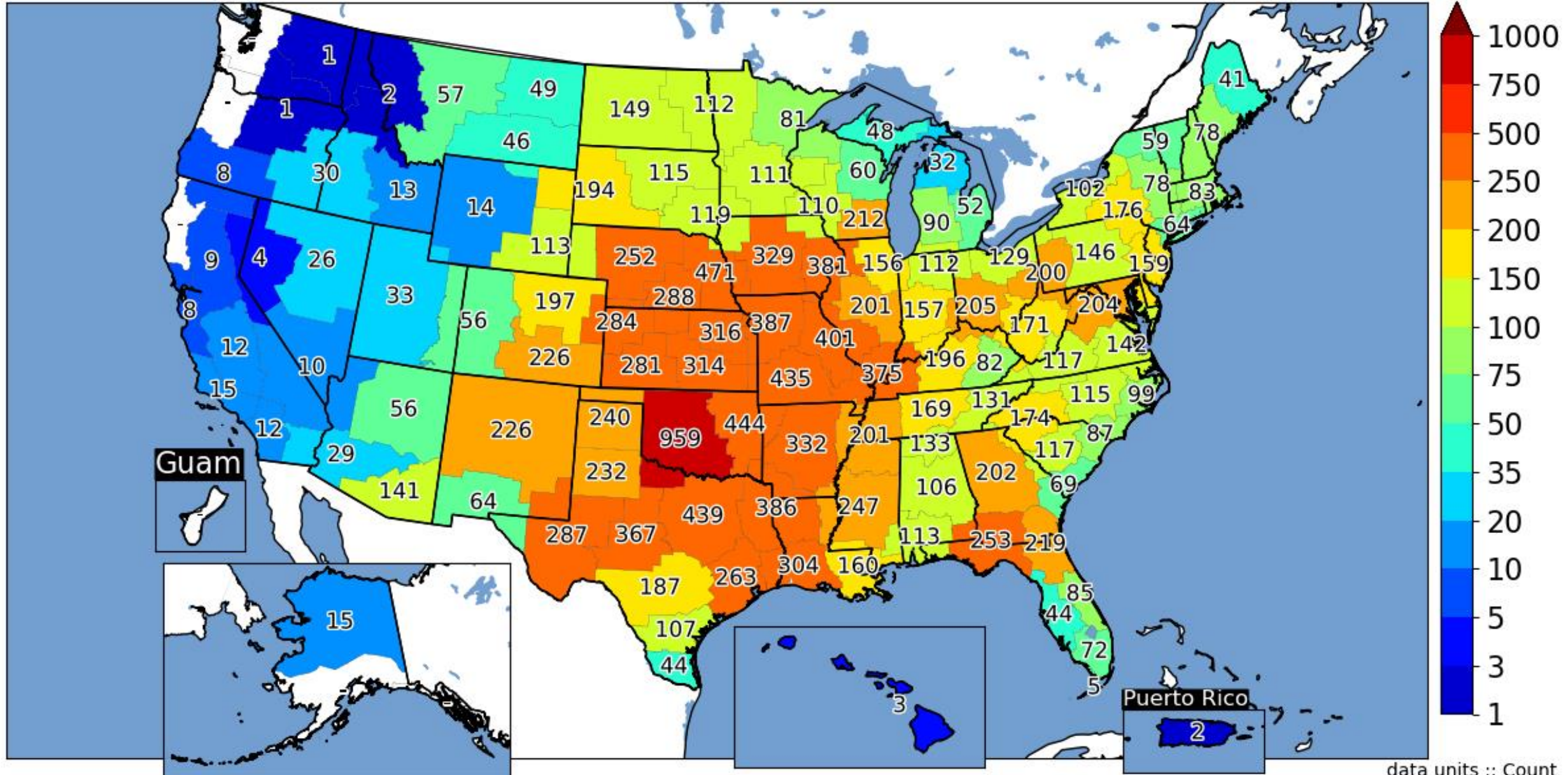


https://waterwatch.usgs.gov/?map_type=pa28d_nwc



VTEC Unique Event Event Count by WFO

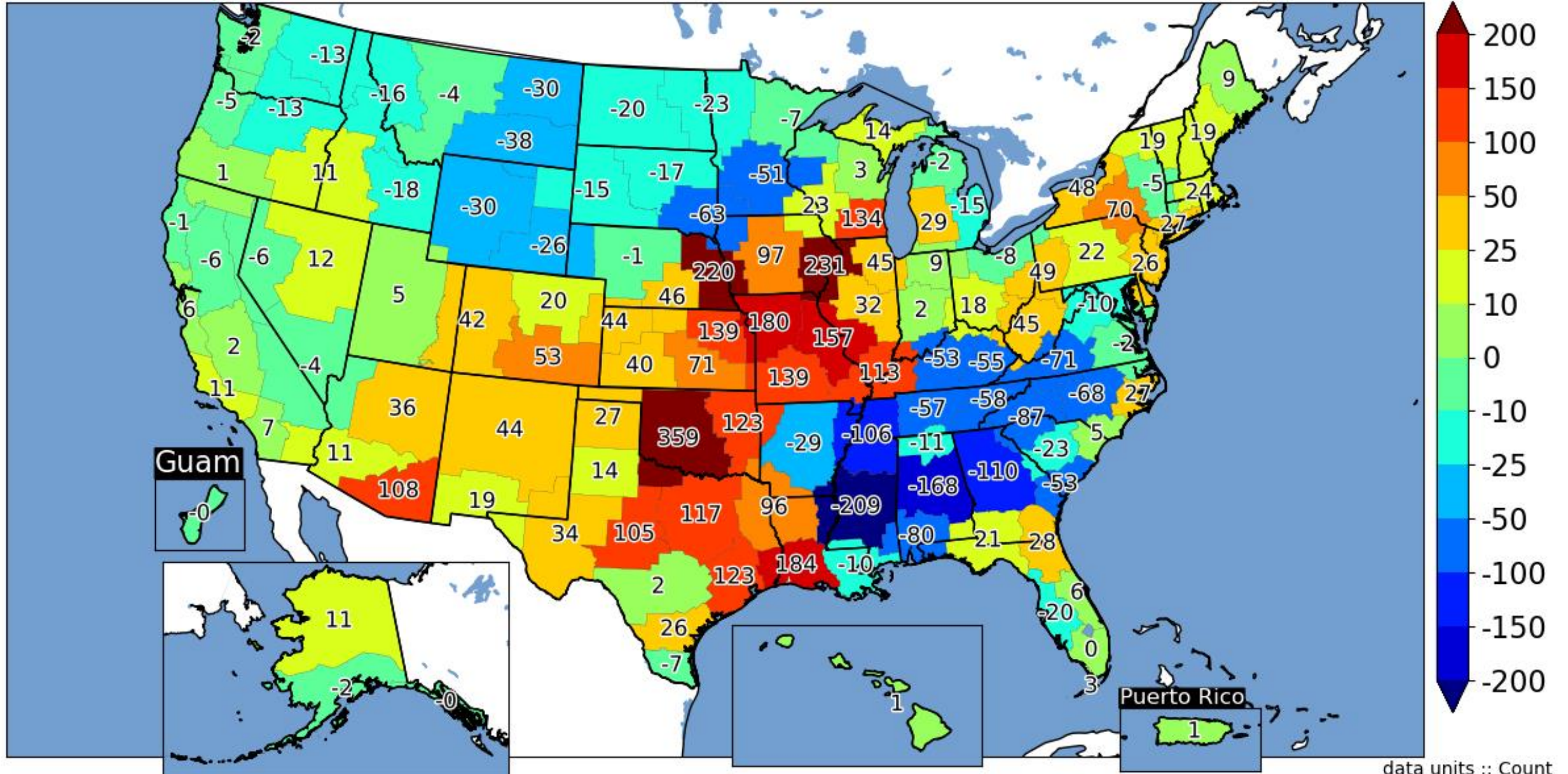
Issued between 01 Jan 2024 00:00 - 17 Jul 2024 23:59 UTC, based on VTEC: SV.W TO.W 17,927 Events over 116 WFOs



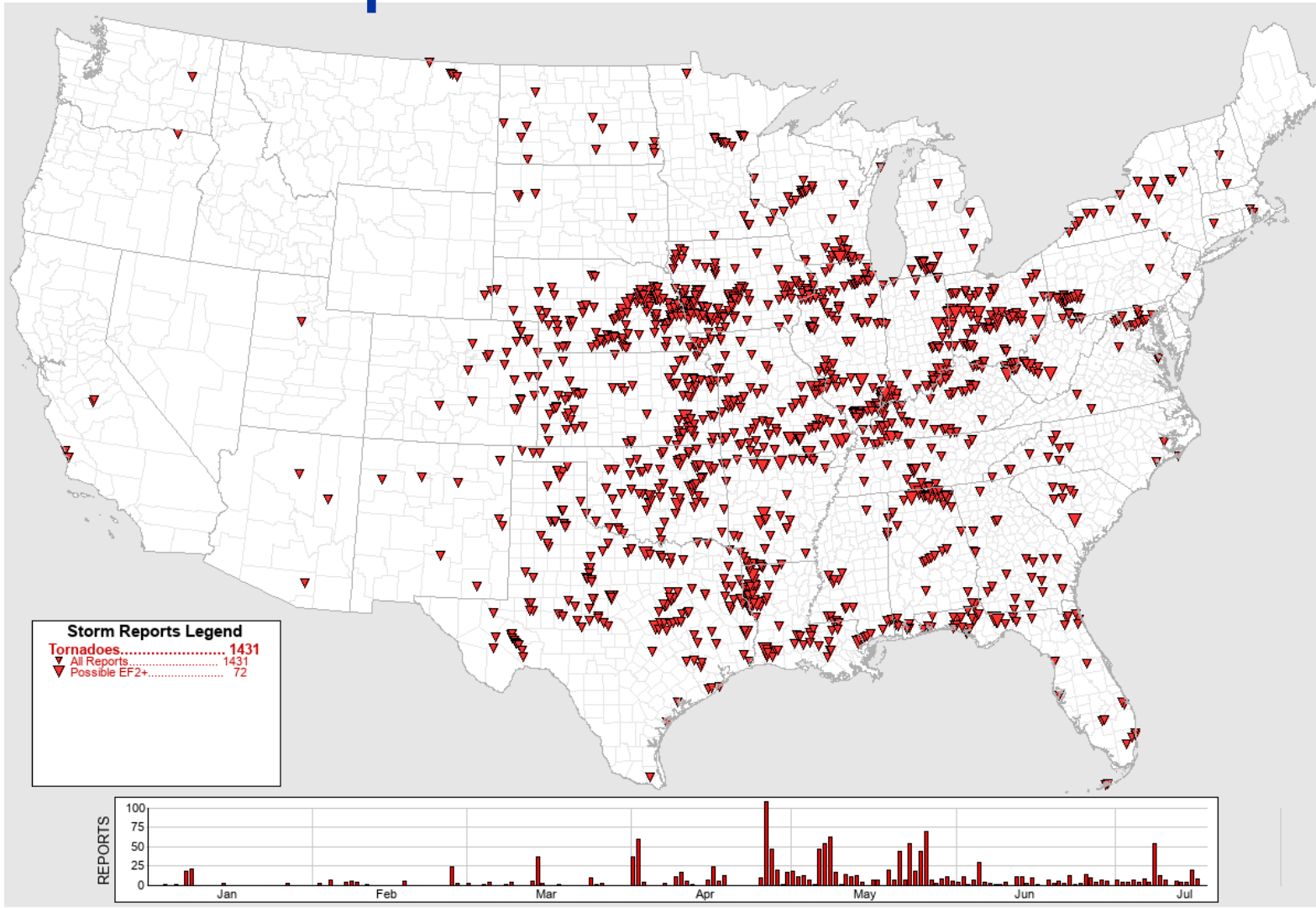


VTEC Unique Event Departure from Average of Event Count by WFO

Issued between 01 Jan 2024 00:00 - 17 Jul 2024 23:59 UTC, based on VTEC: SV.W TO.W , Period of Record: 2002-2024



Tornado reports for 2024



OH: 64 so far
WI: 40 so far, avg 23, 9 on June 22
IA: 125 so far, mostly in Apr and May
NE: 129, 36 in June & July
IL: 88 so far



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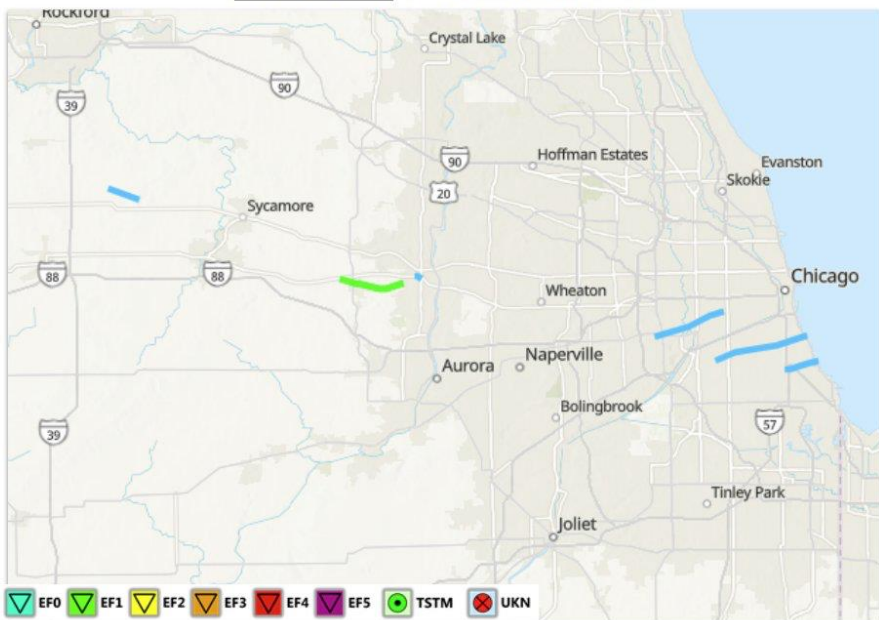
July 14 and 15, 2024 Tornadoes

July 17, 2024
8:06 PM

At least 25 tornadoes occurred within a 48-hour period in northern Illinois and northwestern Indiana

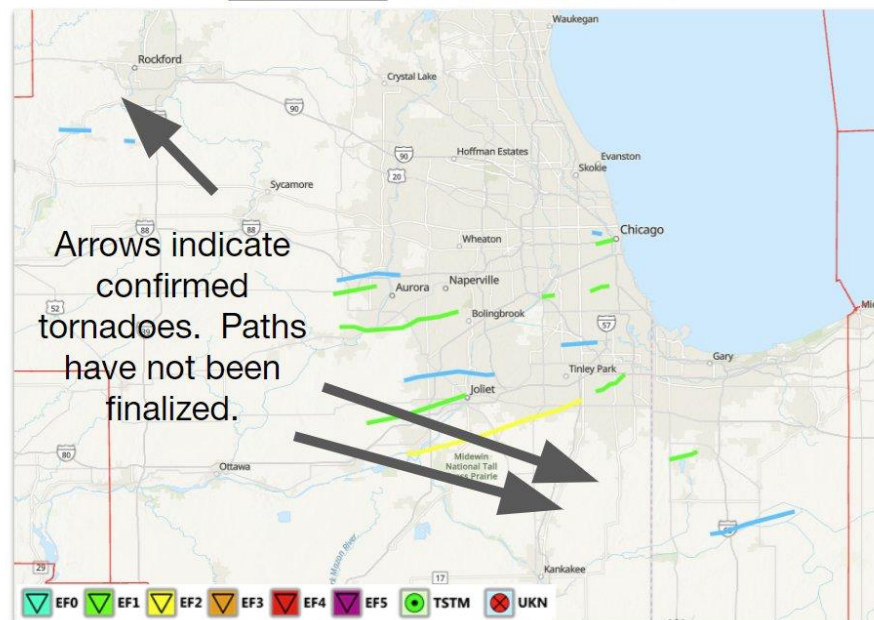
July 14, 2024

At least 6 tornadoes



July 15, 2024

At least 19 tornadoes



Arrows indicate confirmed tornadoes. Paths have not been finalized.

Damage surveys still are ongoing

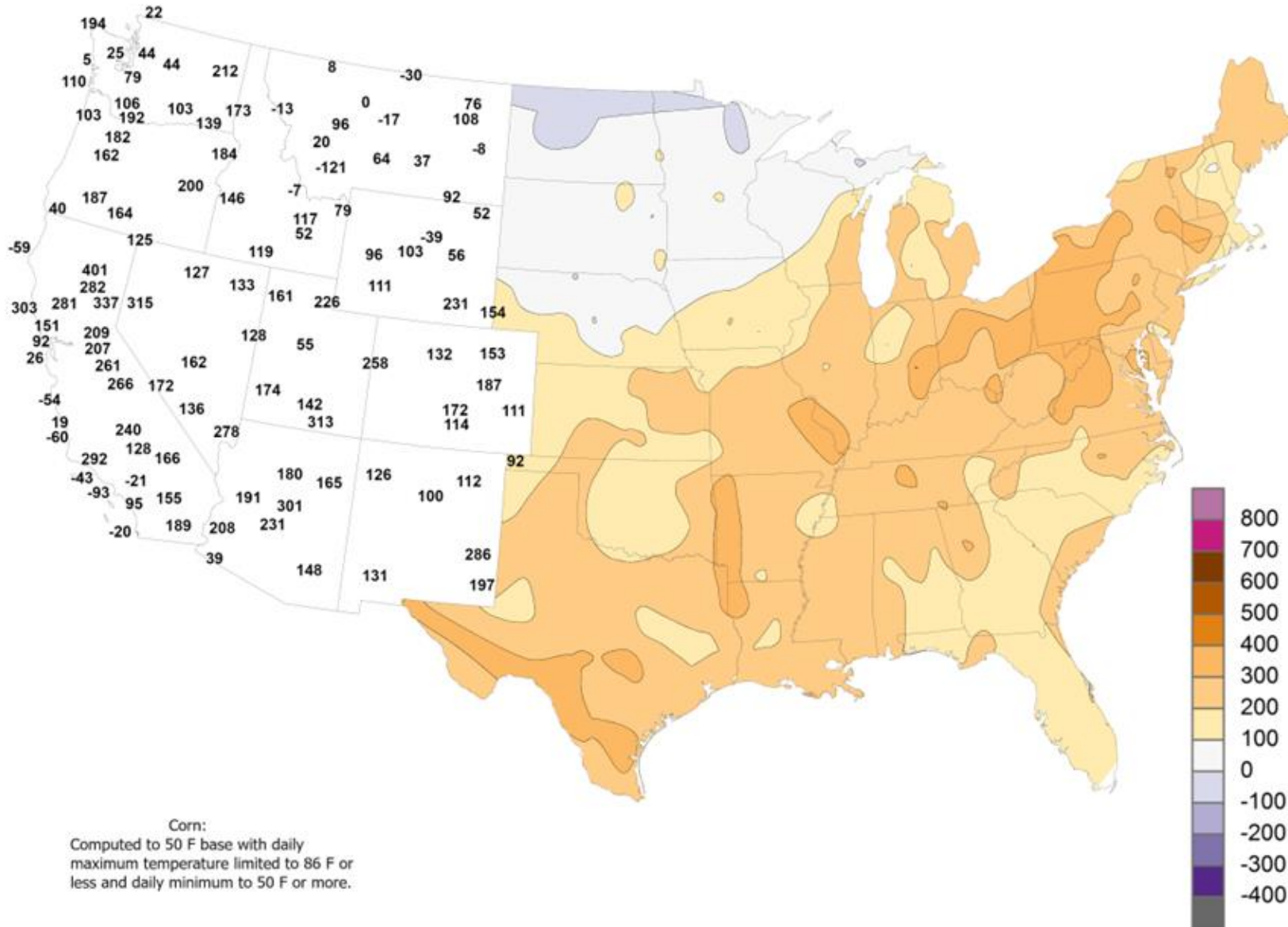


National Weather Service
Chicago, IL



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Departure from Normal Growing Degree Days Apr 1 - Jul 13, 2024

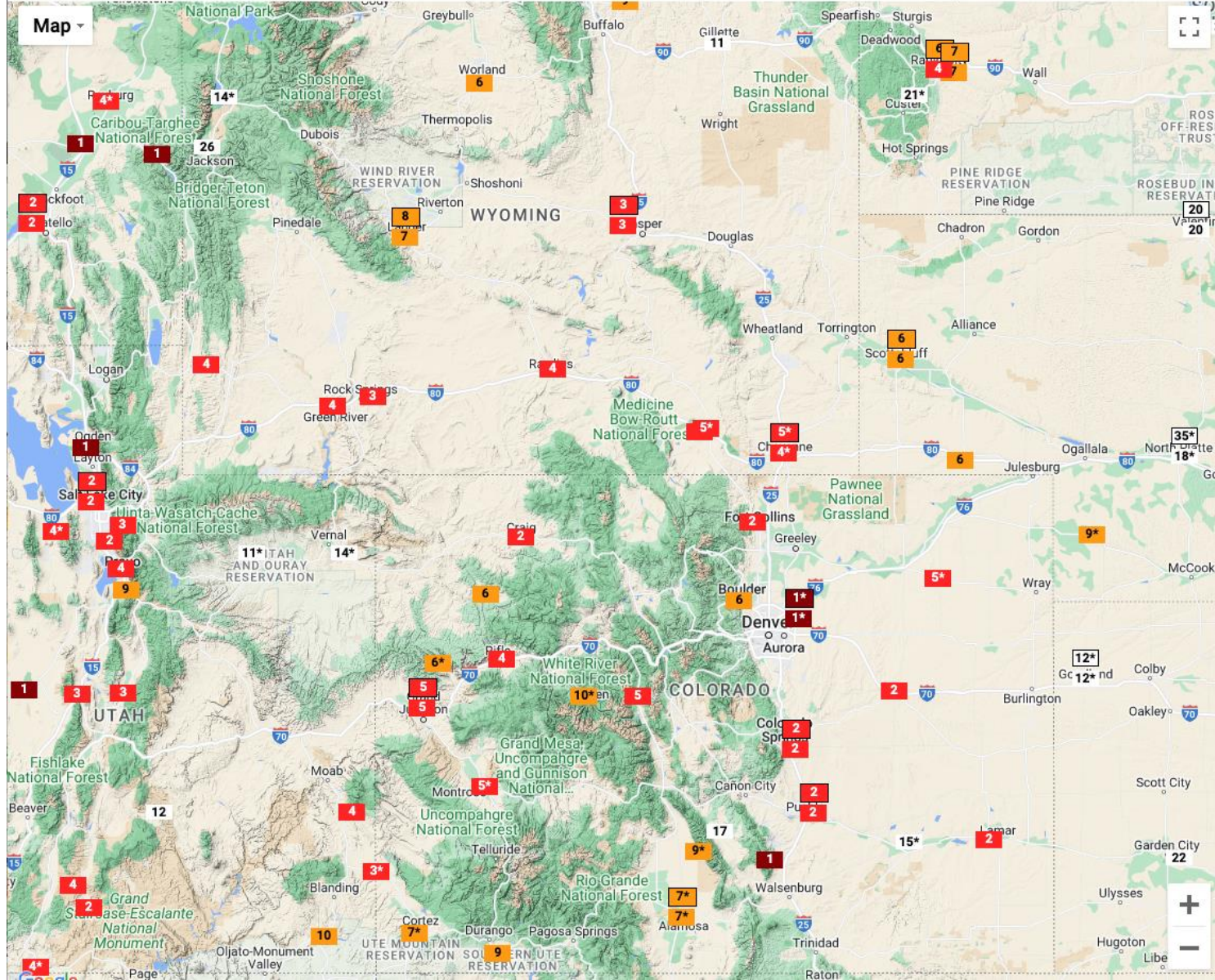


- Due to consistent warmth across much of the U.S., there have been more growing degree days (for corn) than usual, promoting crop growth.
- However, some Northern crop production areas would benefit from warmer weather.

Record high temperatures, last 7 days

Station Perspectives Regional Map Perspectives Streaks & Thresholds Perspective

Observed Average Maximum Temperature for Jul 11 2024 to Jul 17 2024 (970 stations)



Legend Rank

	Highest
	2nd-5th
	6th-10th
	-
	10th-6th
	5th-2nd
	Lowest

* Indicates tied ranking

Climate Perspectives

Powered by ACIS

NOAA Regional Climate Centers



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Highlights

- Agriculture:
 - Wheat harvest progress ahead of average
 - Generally corn & soybean ahead of average in all but northwest regions
 - Drought affecting pasture, forage and hay in the west
 - Some livestock losses due to flooding in Iowa
- Harmful Algae Bloom for Lake Erie forecast to be near last year (as of 6/27). Above average rainfall & runoff could raise risk in August.



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Climate outlooks

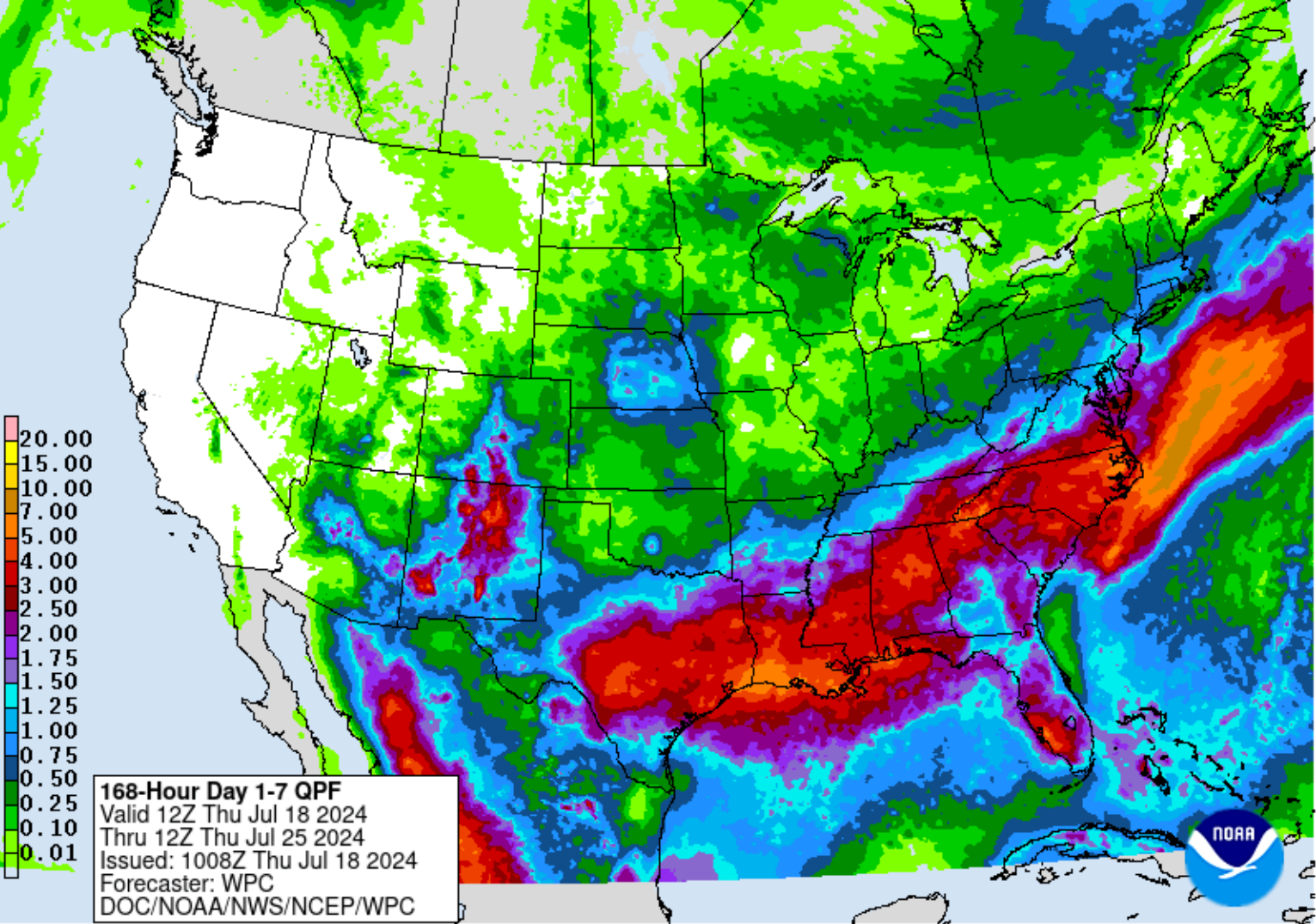
- El Niño
- 7-day precipitation forecast
- 8-14 day outlook
- August temperature and precipitation
- 3-month season temperature and precipitation



Lake Michigan, 7/15/24. Photo by Allison Beauchane

7-day Quantitative Precipitation Forecast

Valid: 18 July-25 July



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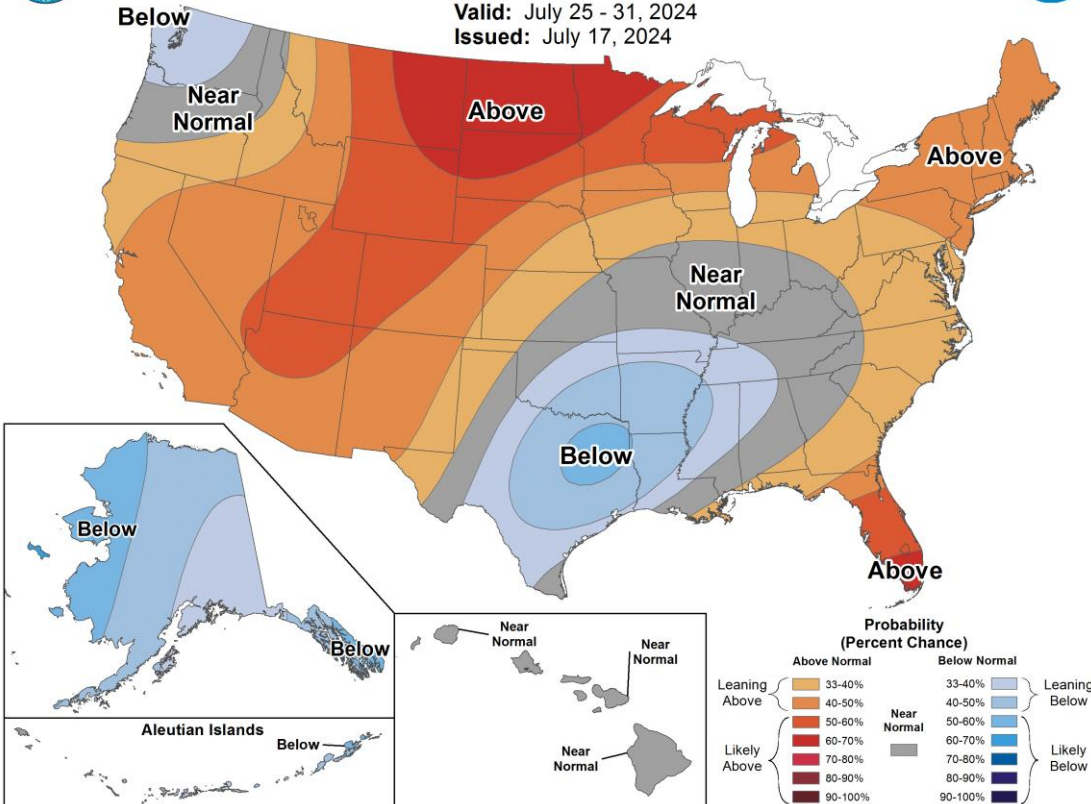


8-14 Day Outlook



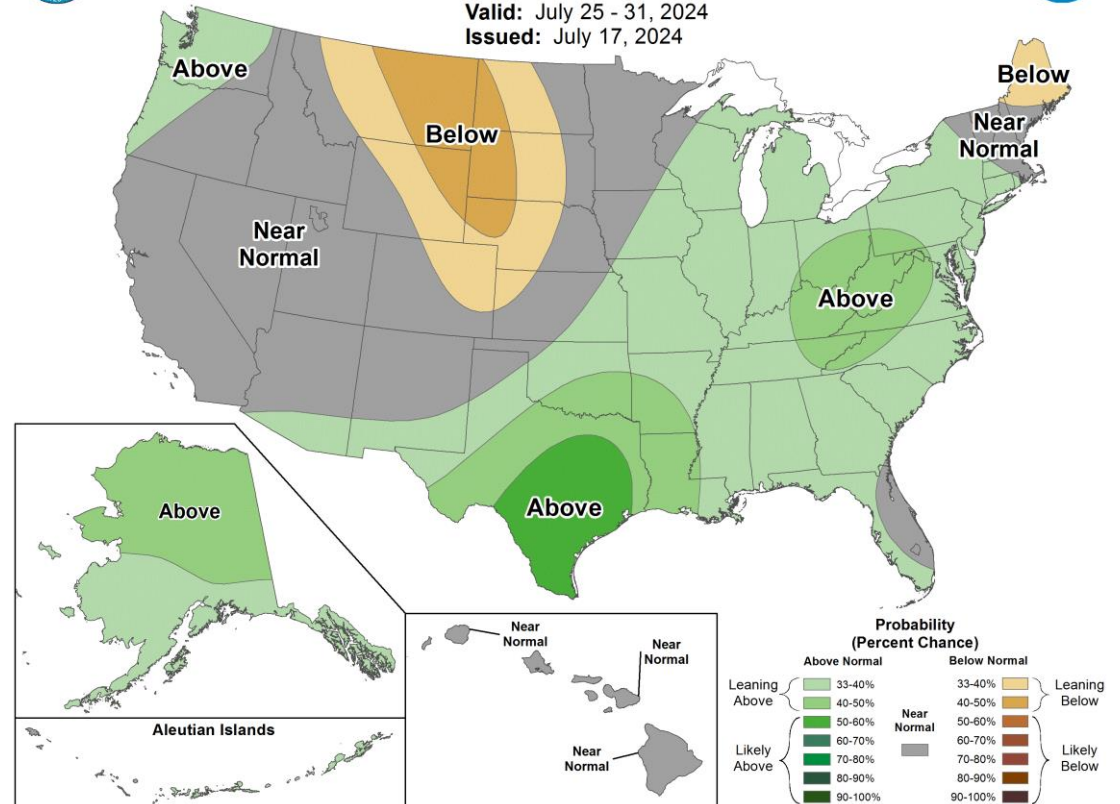
8-14 Day Temperature Outlook

Valid: July 25 - 31, 2024
Issued: July 17, 2024



8-14 Day Precipitation Outlook

Valid: July 25 - 31, 2024
Issued: July 17, 2024





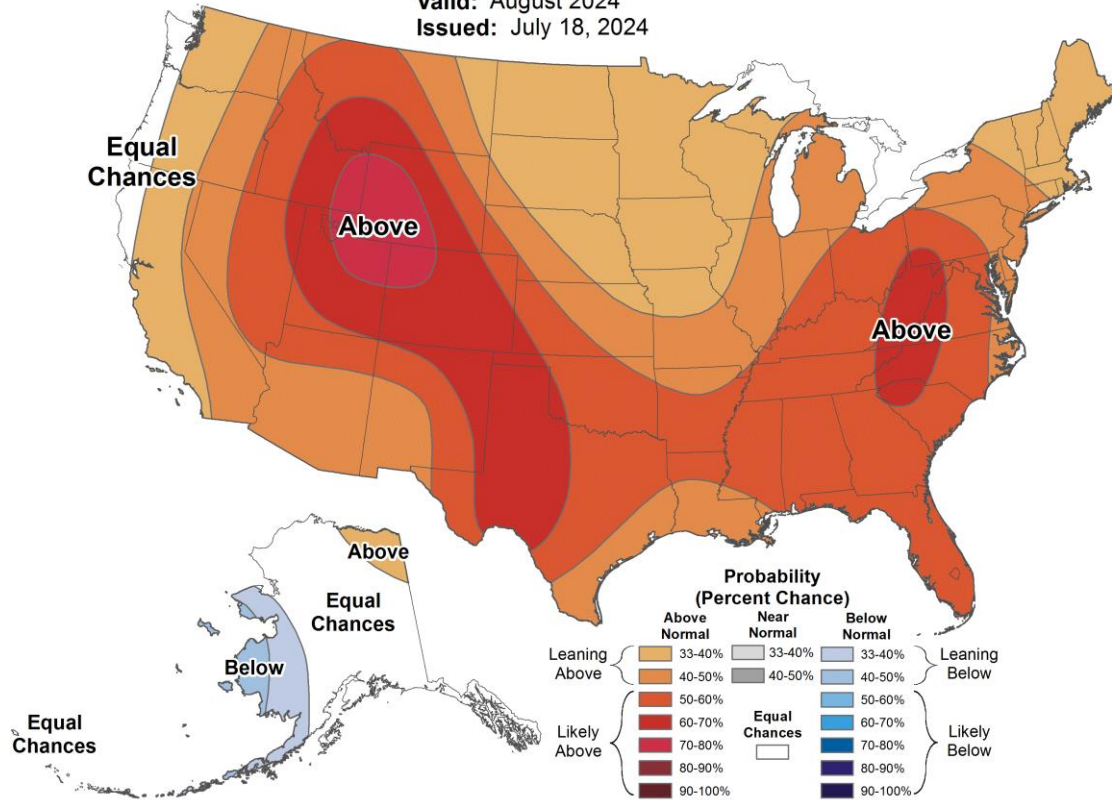
August Outlook



Monthly Temperature Outlook



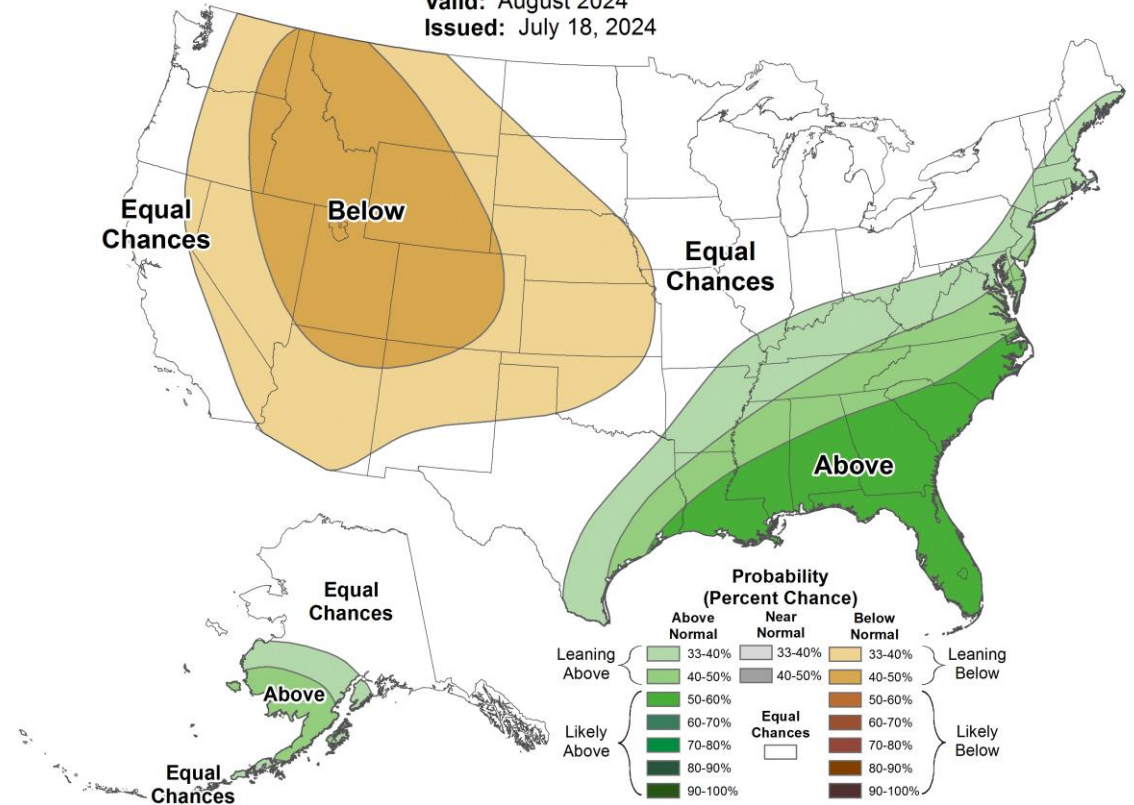
Valid: August 2024
Issued: July 18, 2024



Monthly Precipitation Outlook



Valid: August 2024
Issued: July 18, 2024





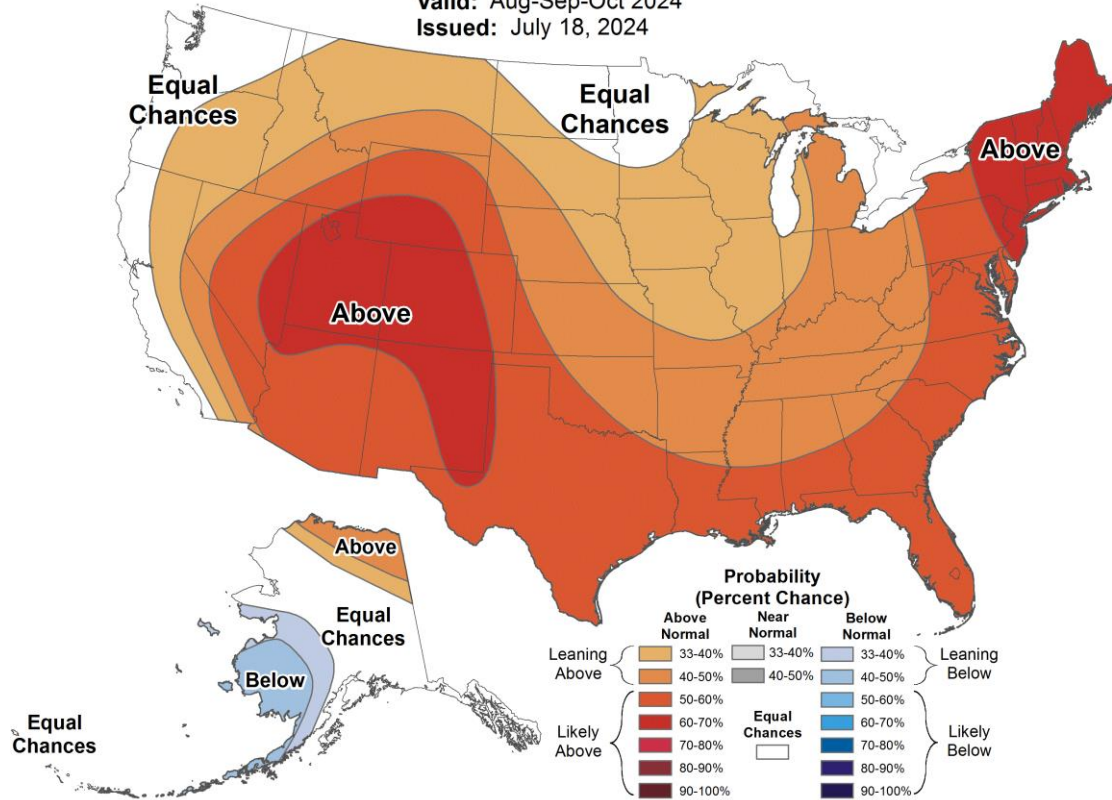
August-October Outlook



Seasonal Temperature Outlook



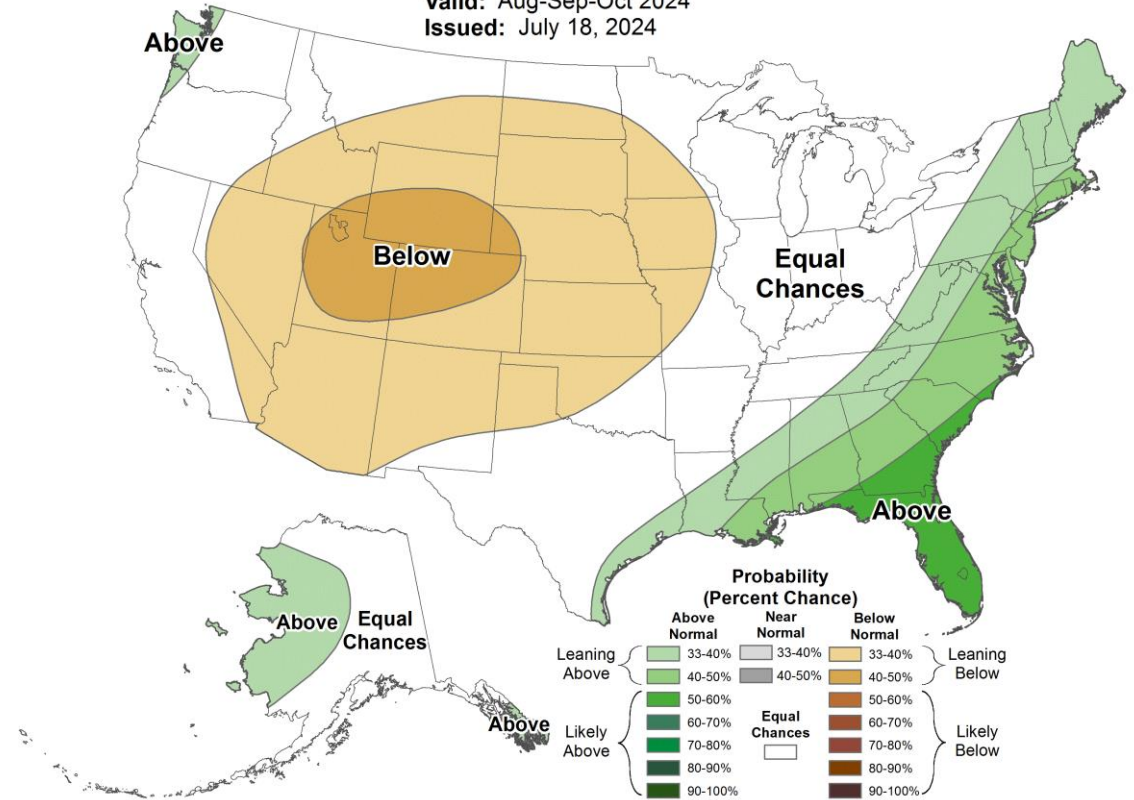
Valid: Aug-Sep-Oct 2024
Issued: July 18, 2024



Seasonal Precipitation Outlook



Valid: Aug-Sep-Oct 2024
Issued: July 18, 2024



Thank You!

- Questions:
 - **Climate:**
 - Laura Edwards: laura.edwards@sdstate.edu, 605-626-2870
 - Dennis Todey: dennis.todey@usda.gov , 515-294-2013
 - Doug Kluck: doug.kluck@noaa.gov, 816-564-2417
 - Brian Fuchs: bfuchs2@unl.edu 402 472-6775
 - **Agriculture:**
 - Brad Rippey, brad.rippley@usda.gov
 - **Weather:**
 - crhroc@noaa.gov



Ohio skies. Photo by Aaron Wilson.



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SDSU Extension State Climatologist



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