North Central U.S. Climate & Drought Outlook: August 2025

Zack Leasor
Missouri State Climatologist
University of Missouri
Columbia, MO
leasorz@missouri.edu
(573)-882-5908
http://climate.missouri.edu/

Columbia, MO (Thomas Schwent)

Thanks to these groups for providing information

- American Association of State Climatologists (http://www.stateclimate.org)
- NOAA NCEI/NWS (https://www.noaa.gov/)
- USDA Climate Hubs (https://www.climatehubs.usda.gov/)
- National Drought Mitigation Center (http://drought.unl.edu/)
- Midwest and High Plains Regional Climate Centers
  - Midwest: https://mrcc.purdue.edu/
  - High Plains: http://www.hprcc.unl.edu

Today's and Past Recorded Presentations:

- https://mrcc.purdue.edu/multimedia/webinars.jsp
- https://hprcc.unl.edu/webinars.php

Next Regular Climate/Drought Outlook Webinar

- **Sep. 18, 2025 (1 PM CDT) Dr. Trent Ford (Illinois State Climatologist)**

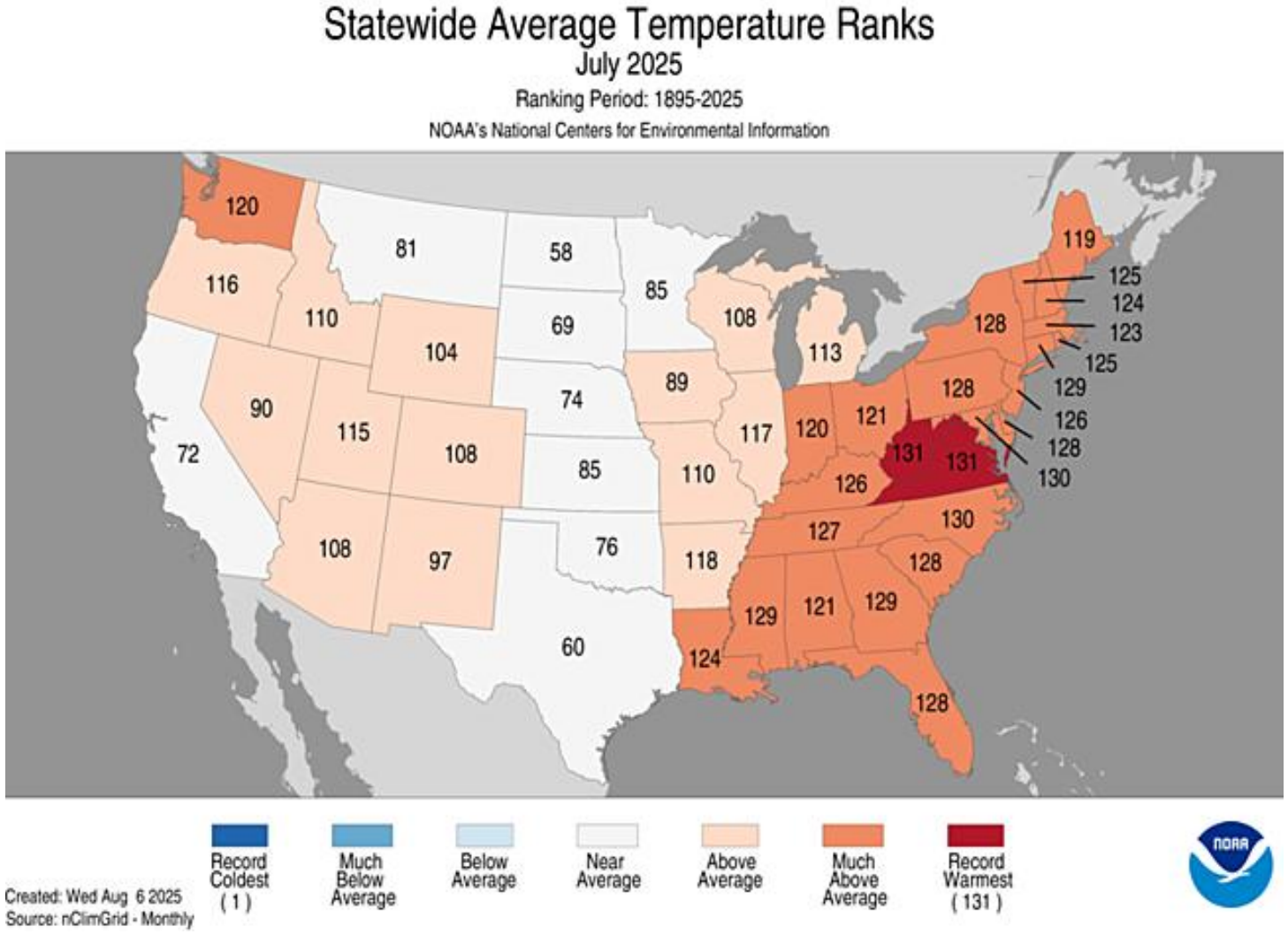
OSU Extension (Elizabeth Hawkins)

Agenda

- Recent Conditions
- Impacts
- Outlooks
- Q&A

Watertown, SD (Madison Kovarna)

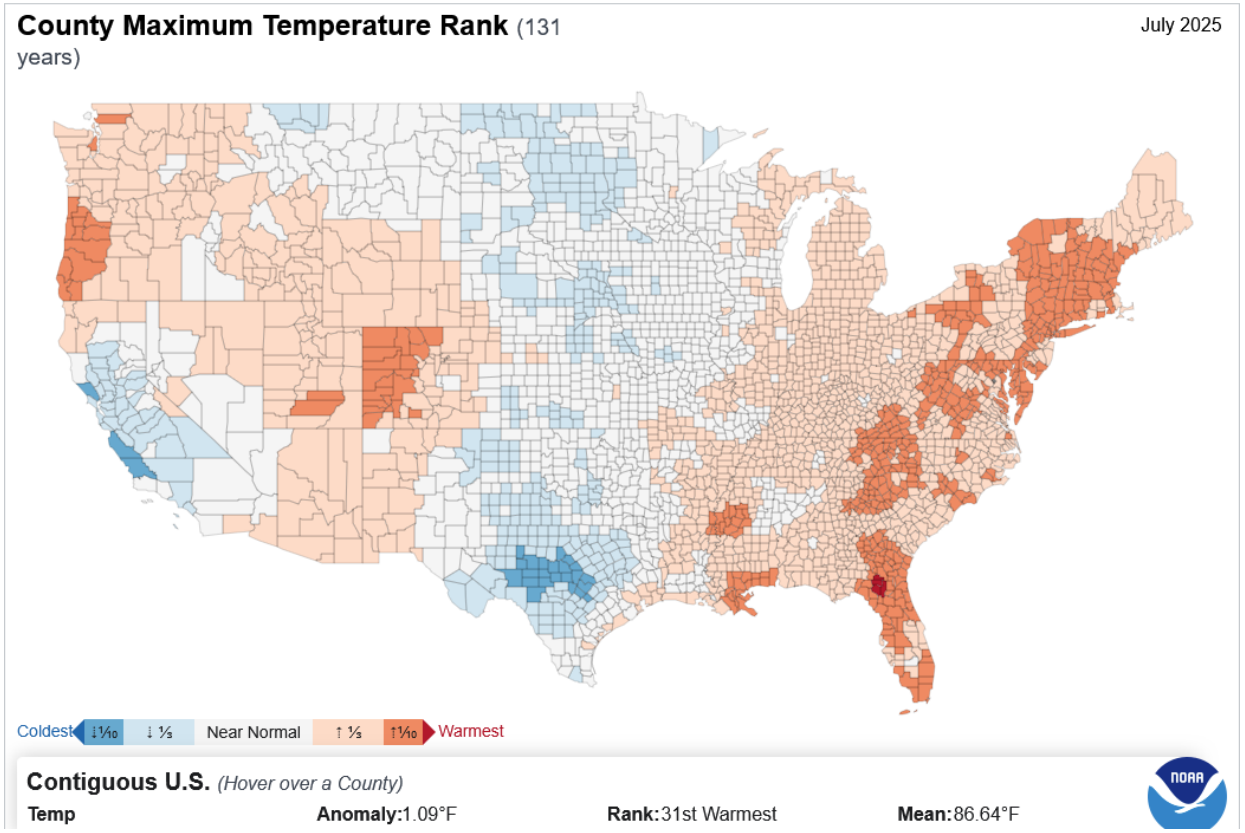
July Temperature Rankings

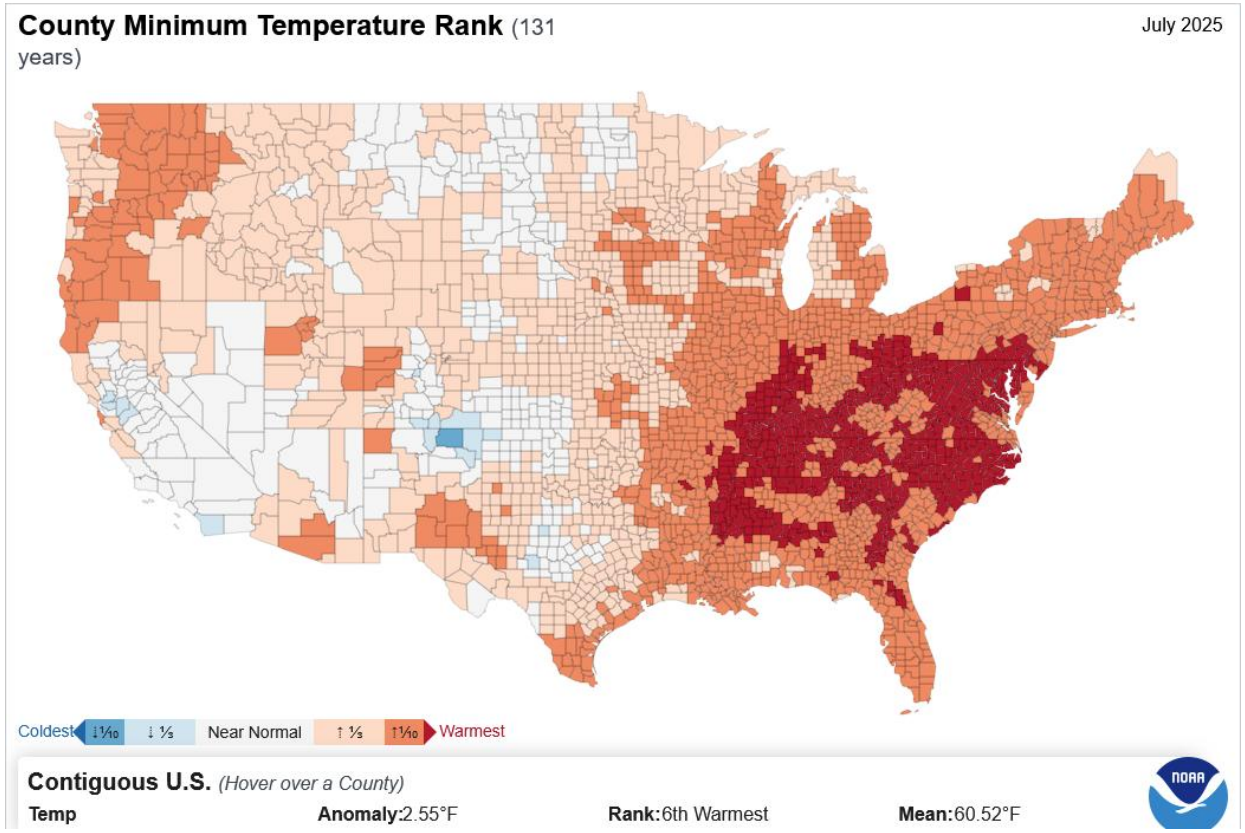


- 6th warmest July in Kentucky
- Warmer than average temperatures across most of the Central region
- Moderate July temperatures in the High Plains

https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/

July Temperature Rankings





A 'festering' weather pattern helped make summer 2025 muggy and miserable

Christopher Cann
USA TODAY
Aug. 13, 2025 | Updated Aug. 14, 2025, 11:30 a.m. ET

Feel sticky this summer? That's because it's been record muggy in the Eastern U.S.

By Associated Press , Seth Borenstein, M.K. Wildeman · August 10, 2025

https://www.usatoday.com/story/news/nation/2025/08/13/humidity-summer-heat-temperatures/85623778007/ https://whyy.org/articles/summer-weather-2025-humidity/YY

https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/

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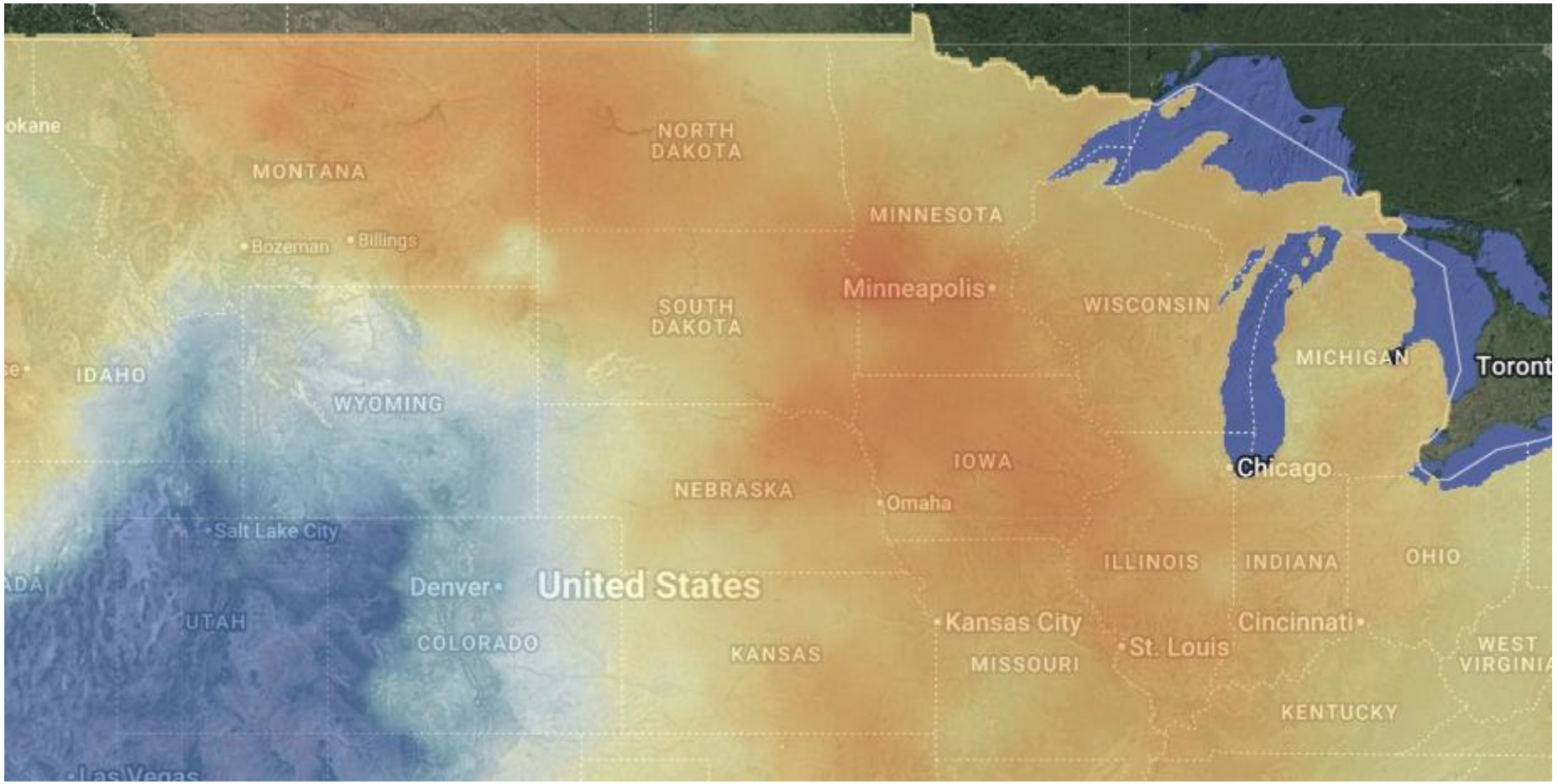
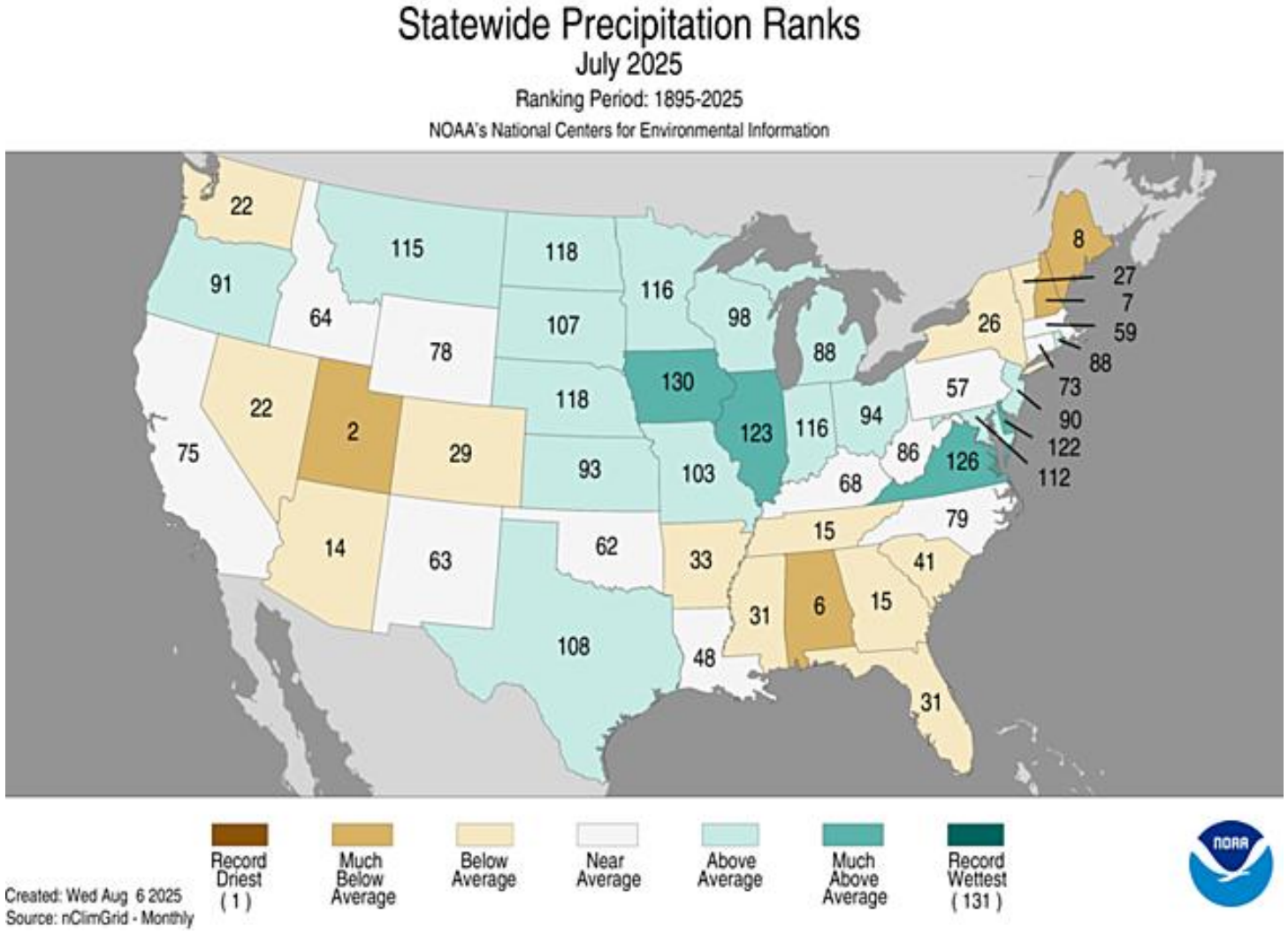
Mean Dew Point Temperature Difference from Average (gridMET)

2025-07-19 to 2025-08-17, Mean, vs. 1991 - 2020



https://app.climateengine.org/climateEngine

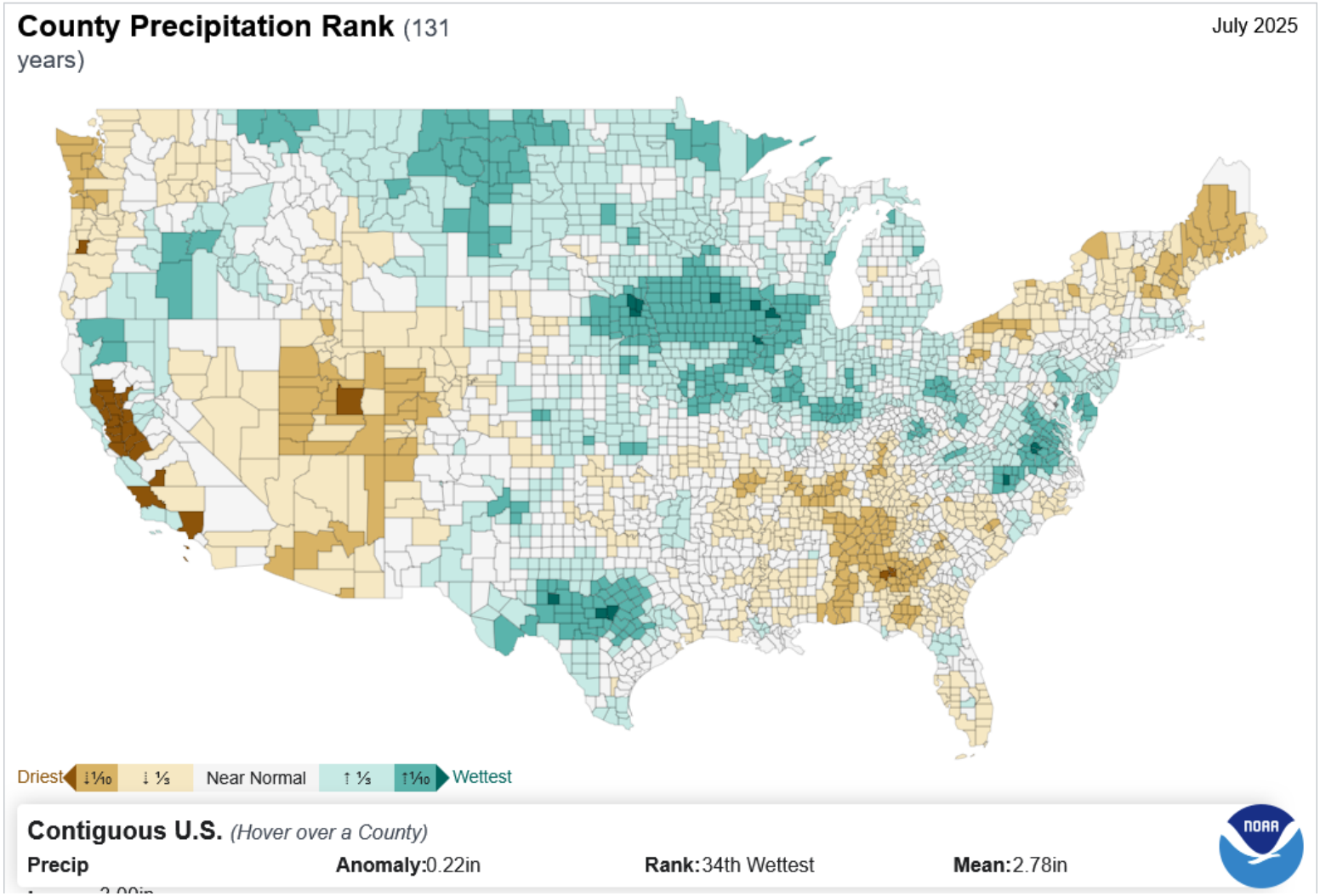
July Precipitation Rankings



- July precipitation was mostly above average across the region
- 2nd wettest July on record in Iowa
- 8th wettest July on record in Illinois
- Only Colorado received below-average precipitation in the Central region

https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/

July Precipitation Rankings



Wettest July on Record (Counties)

- Iowa (4), Nebraska (3)

https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/

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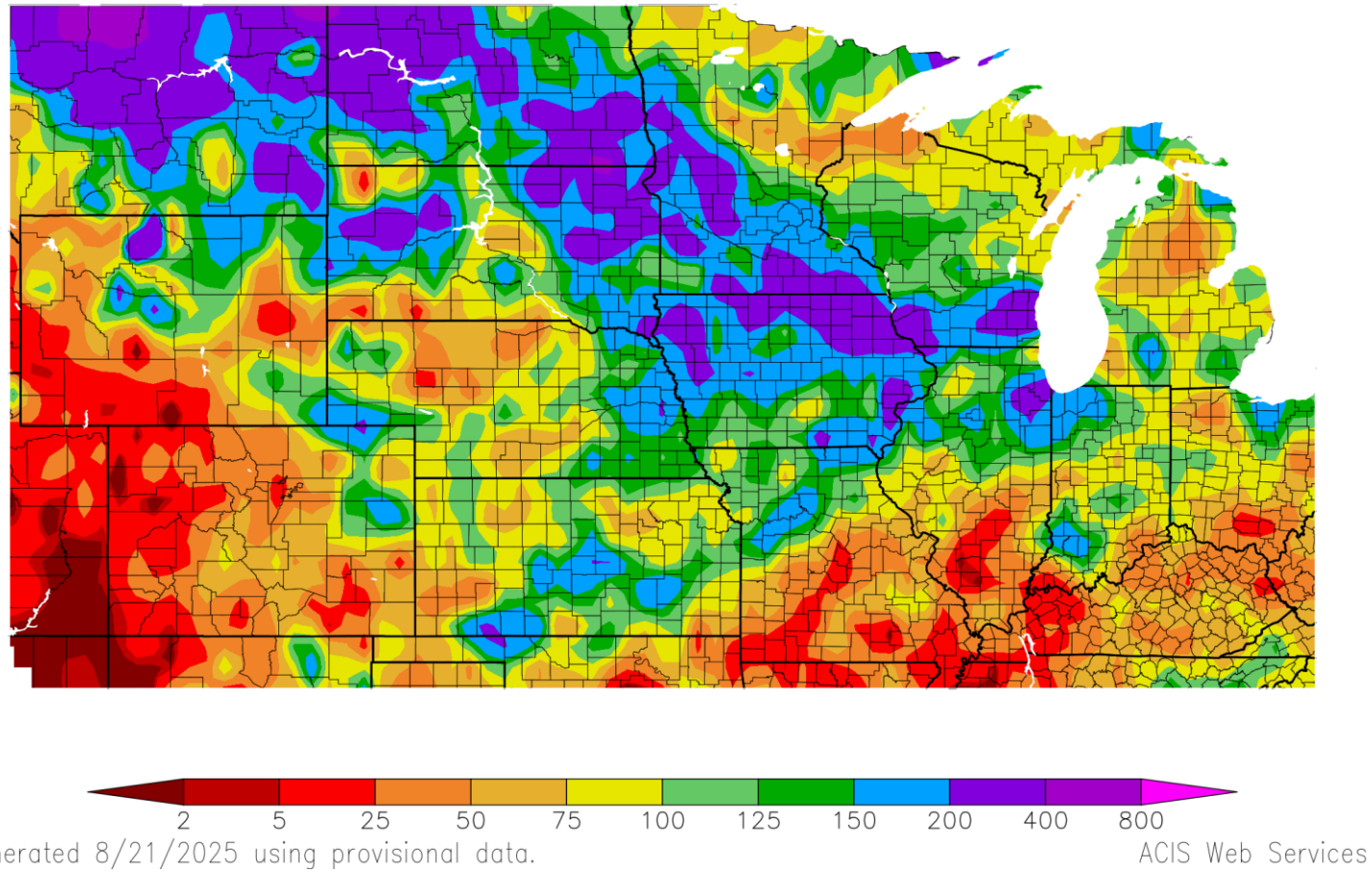
Percent of Normal Precipitation (%)
7/22/2025 – 8/20/2025



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

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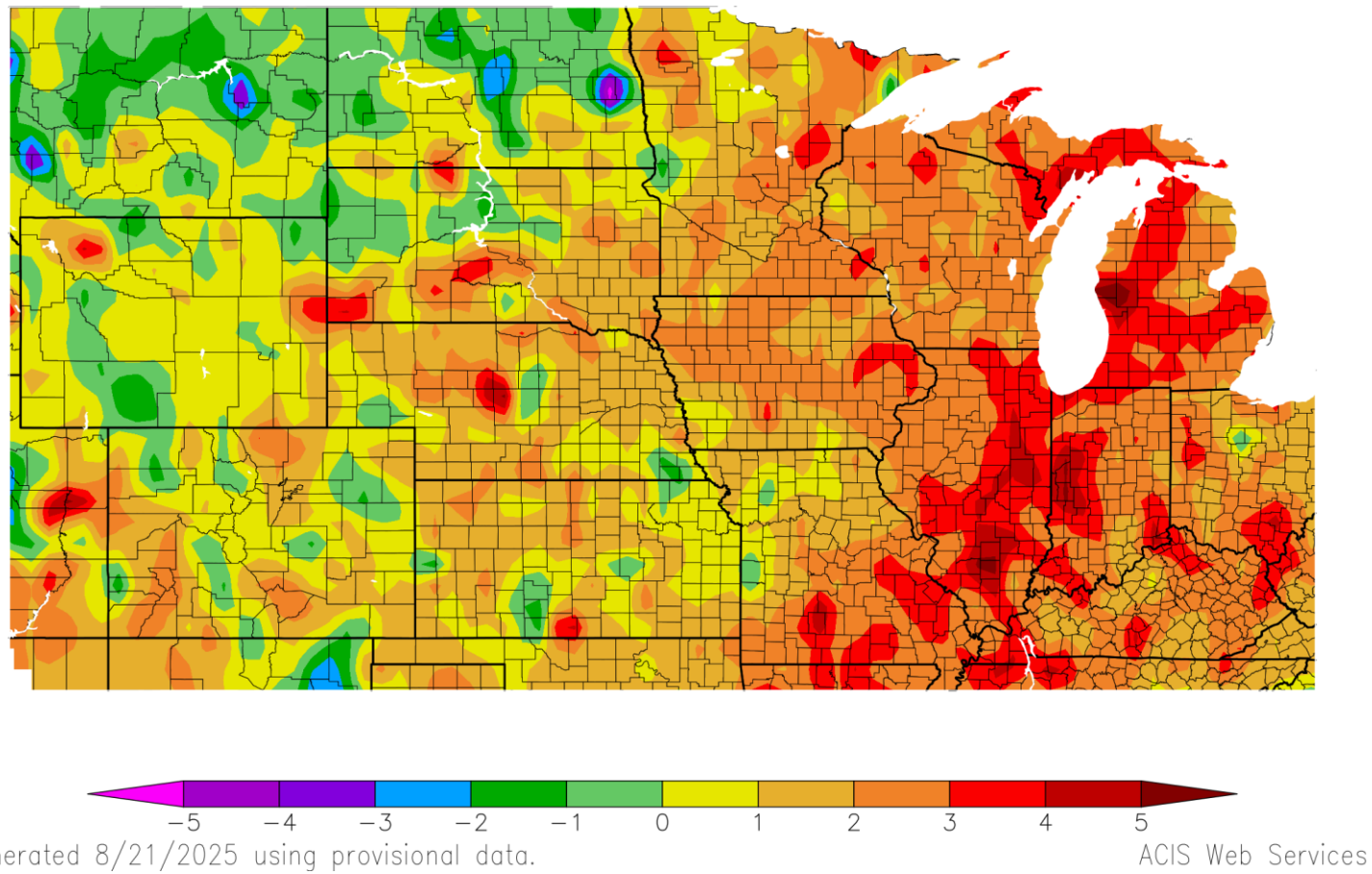
Departure from Normal Temperature (F)
7/22/2025 – 8/20/2025



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

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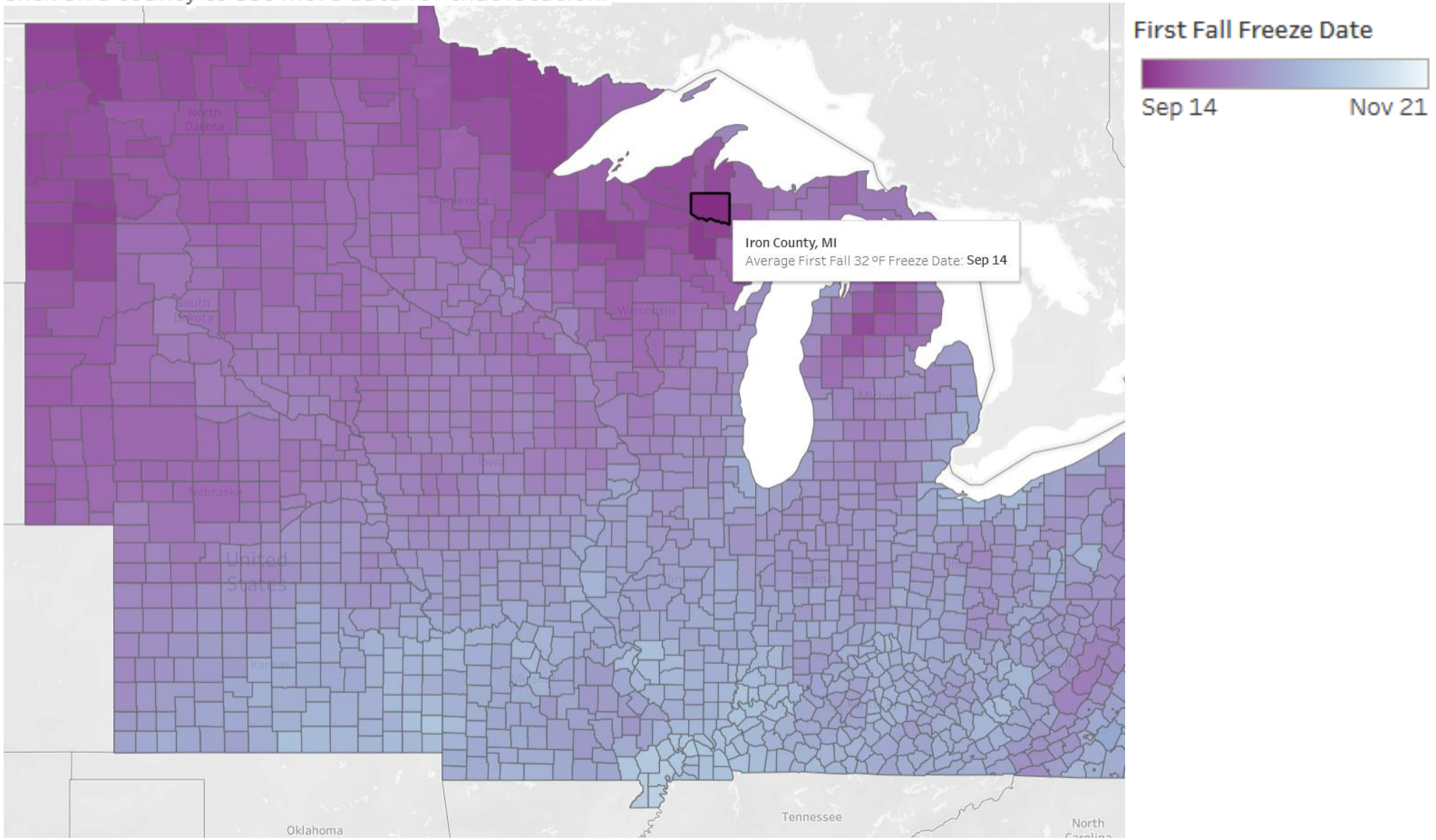
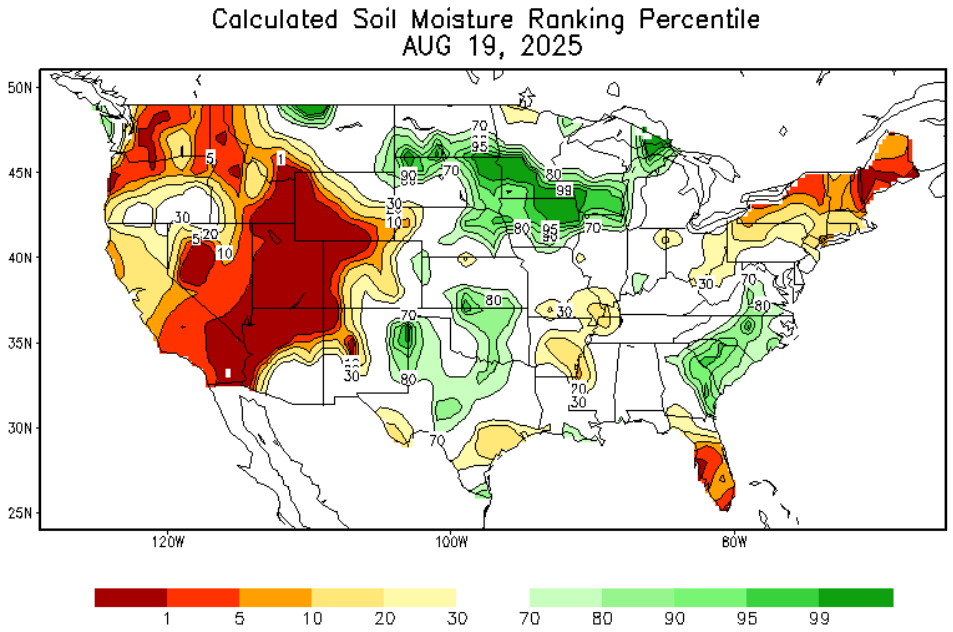
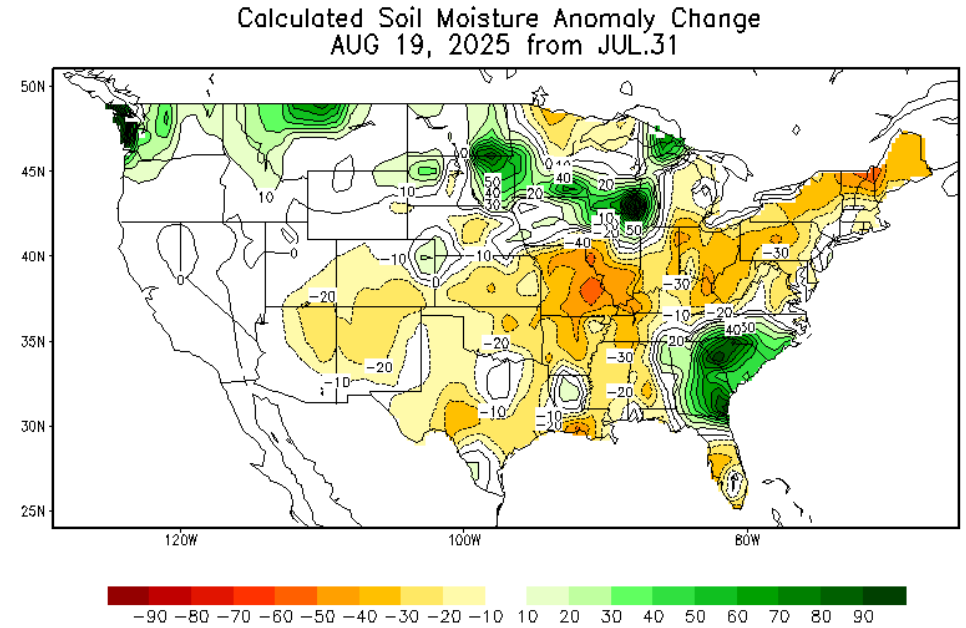
Average First Fall 32 °F Freeze Date

Click on a county to see more data for that location.



https://mrcc.purdue.edu/freeze/freezedatetool





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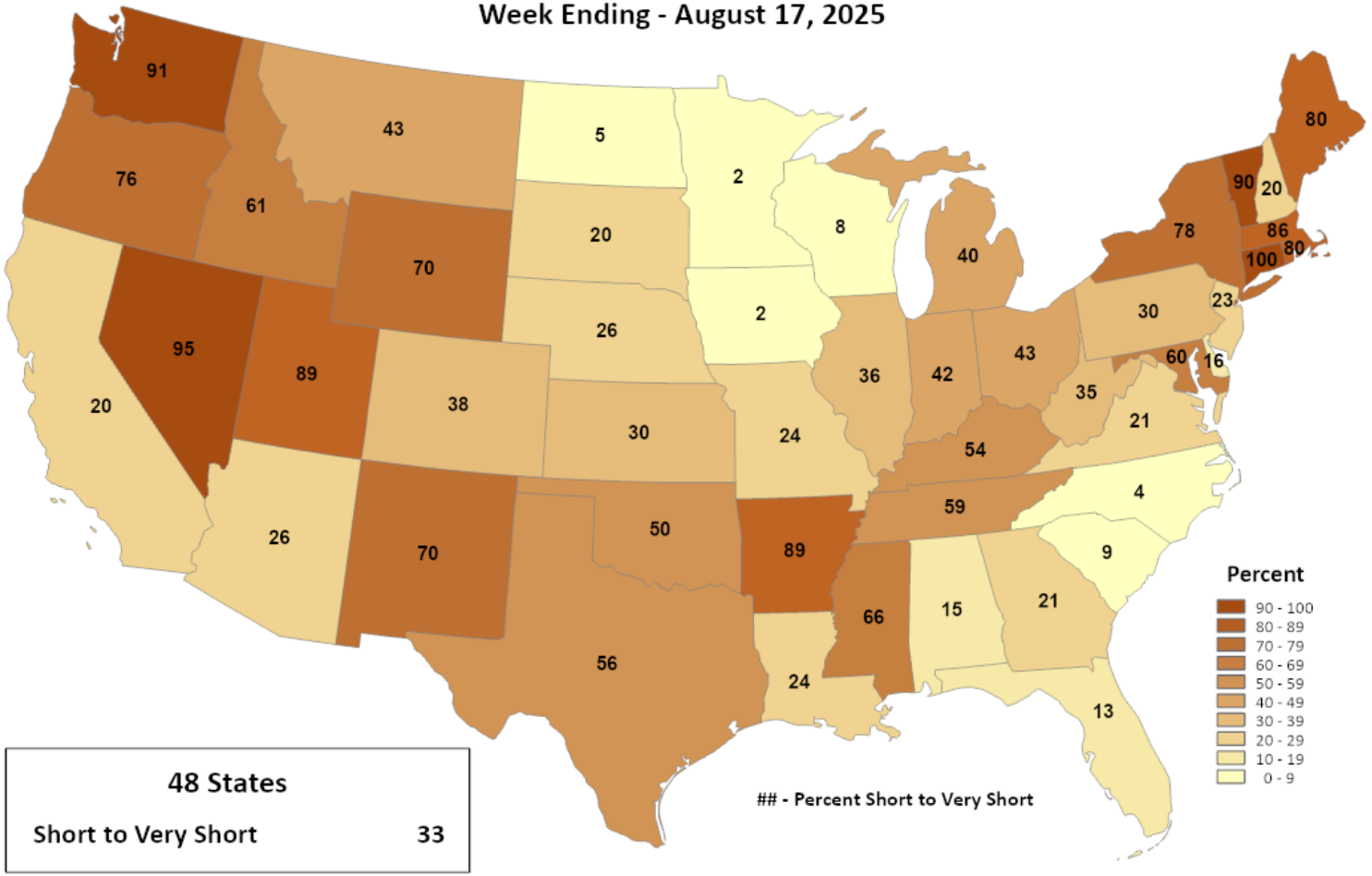
USDA United States Department of Agriculture

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

Topsoil Moisture

Percent Short to Very Short

Week Ending - August 17, 2025



48 States	
Short to Very Short	33

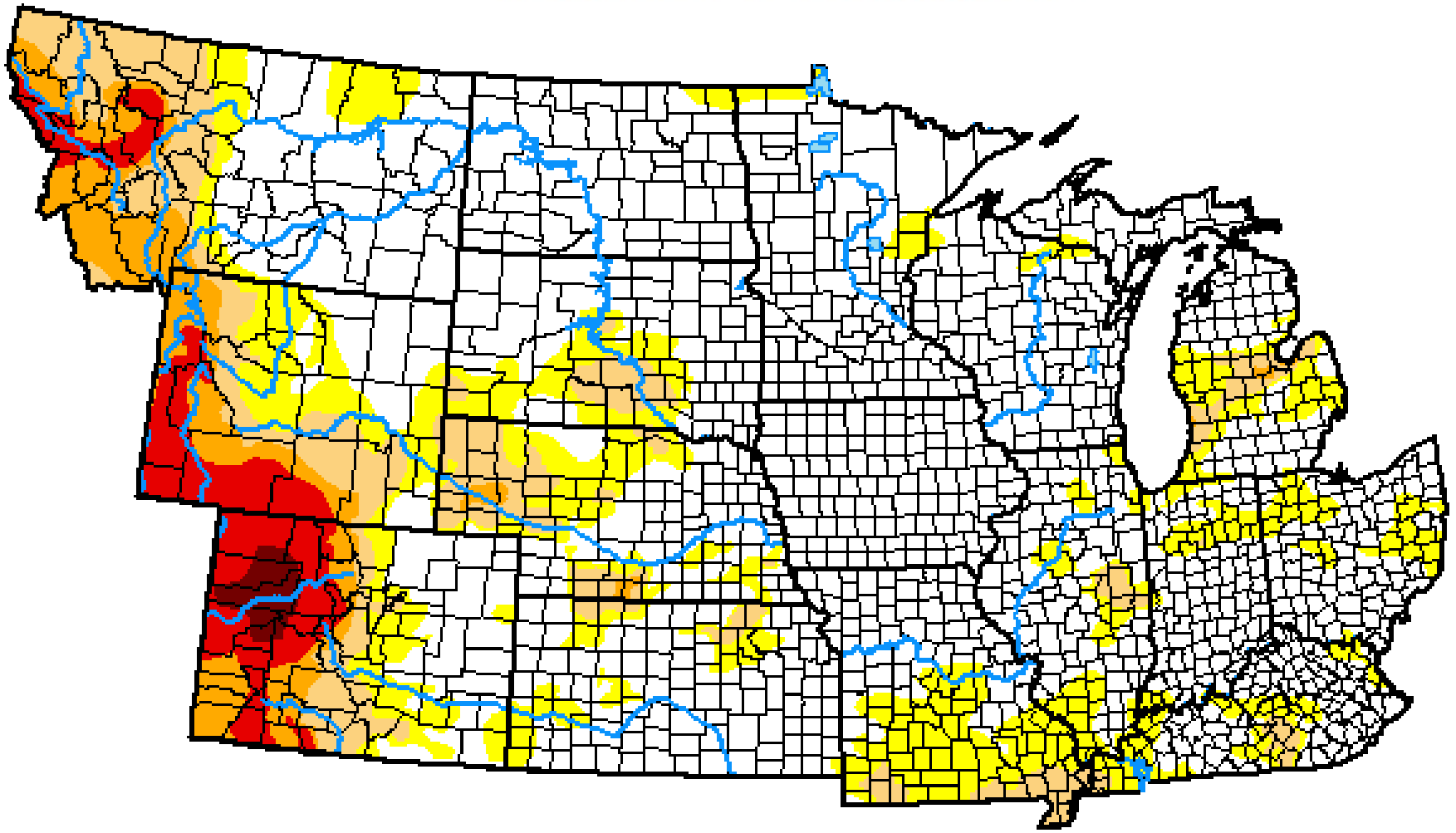
Data obtained from USDA National Agricultural Statistics Service weekly Crop Progress reports.

https://www.cpc.ncep.noaa.gov/products/Soilmst_Monitoring/US/Soilmst/Soilmst.shtml

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

U.S. Drought Monitor

NWS Central



Missouri Climate Center

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August 19, 2025

(Released Thursday, Aug. 21, 2025)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	64.43	35.57	18.68	9.84	5.03	0.64
Last Week *08-12-2025*	64.93	35.07	18.20	9.39	3.91	0.64
3 Months Ago *05-20-2025*	38.26	61.74	30.95	11.40	2.29	0.00
Start of Calendar Year *01-07-2025*	31.02	68.98	45.49	19.38	5.80	0.00
Start of Water Year *10-01-2024*	20.79	79.21	36.88	12.04	3.20	0.40
One Year Ago *08-20-2024*	50.17	49.83	21.87	7.52	1.68	0.11

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

Missouri Climate Center

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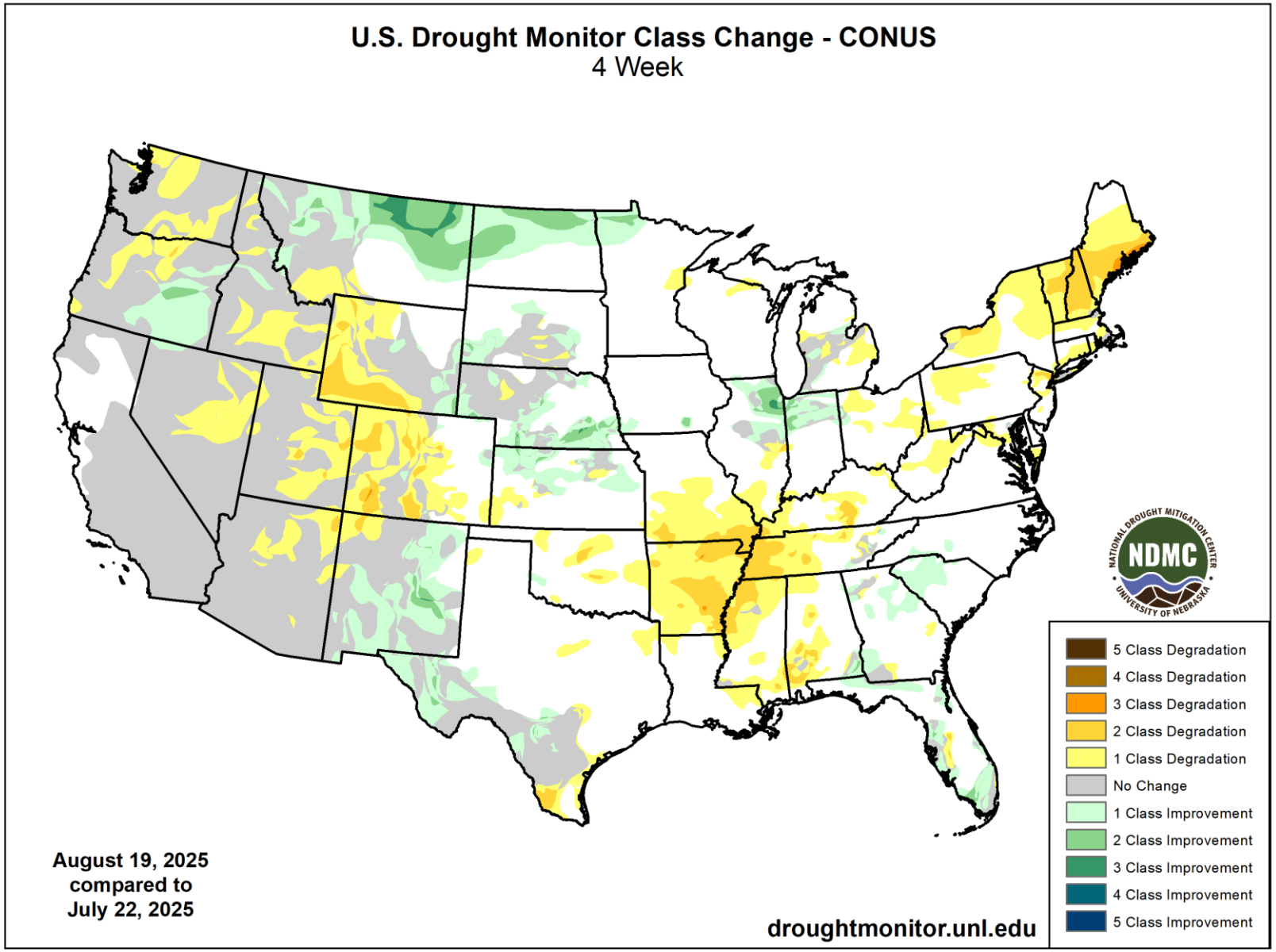

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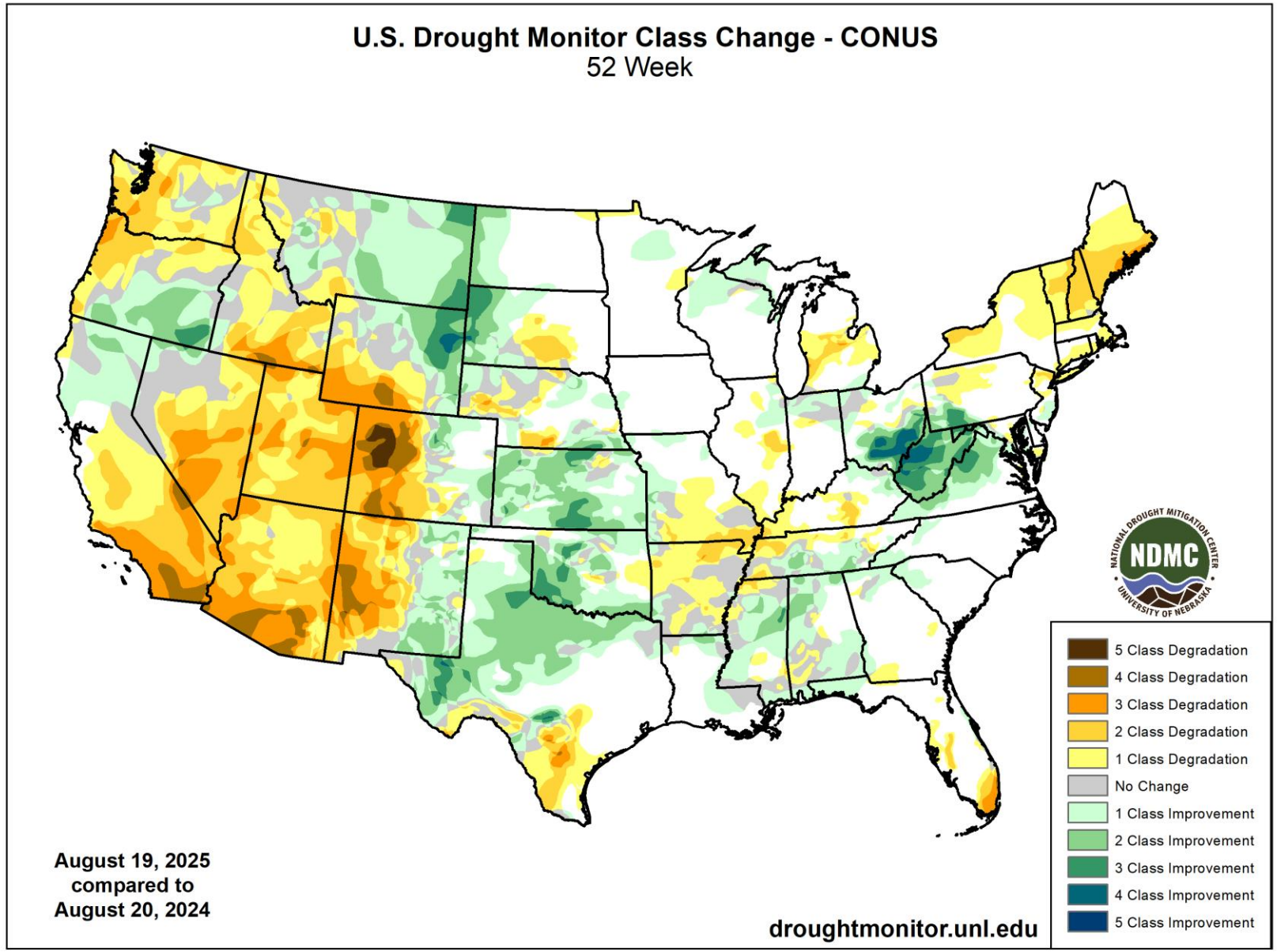
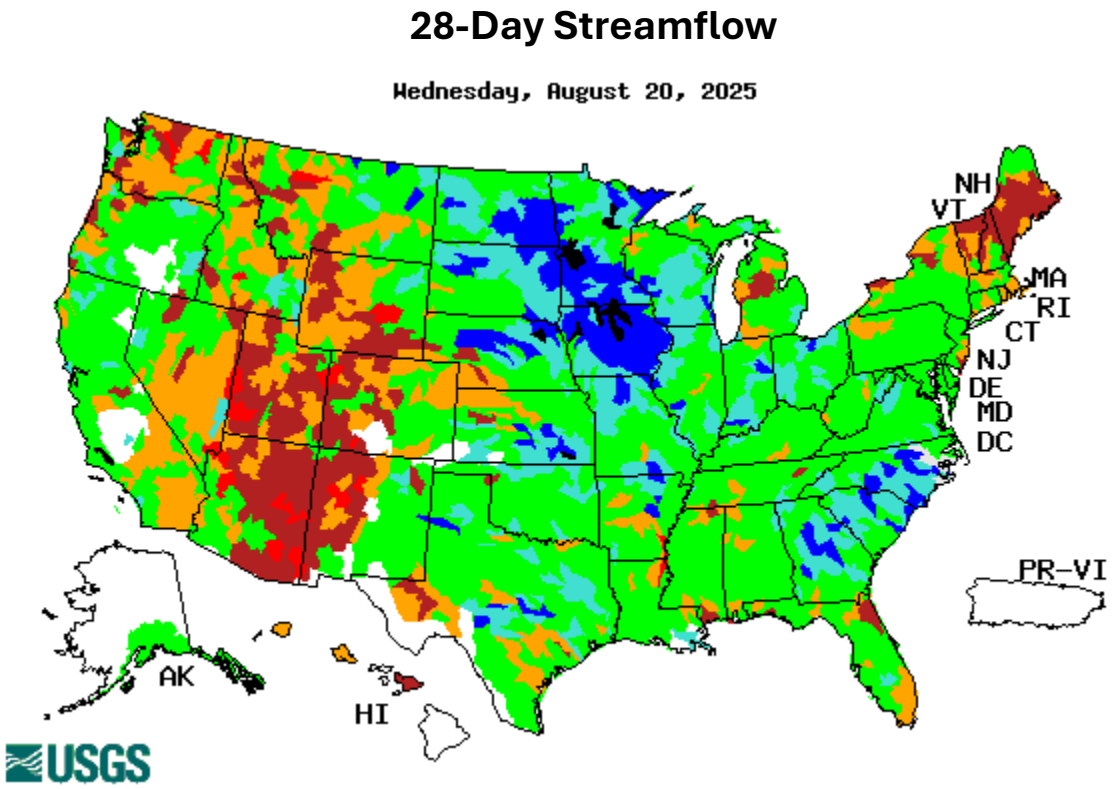
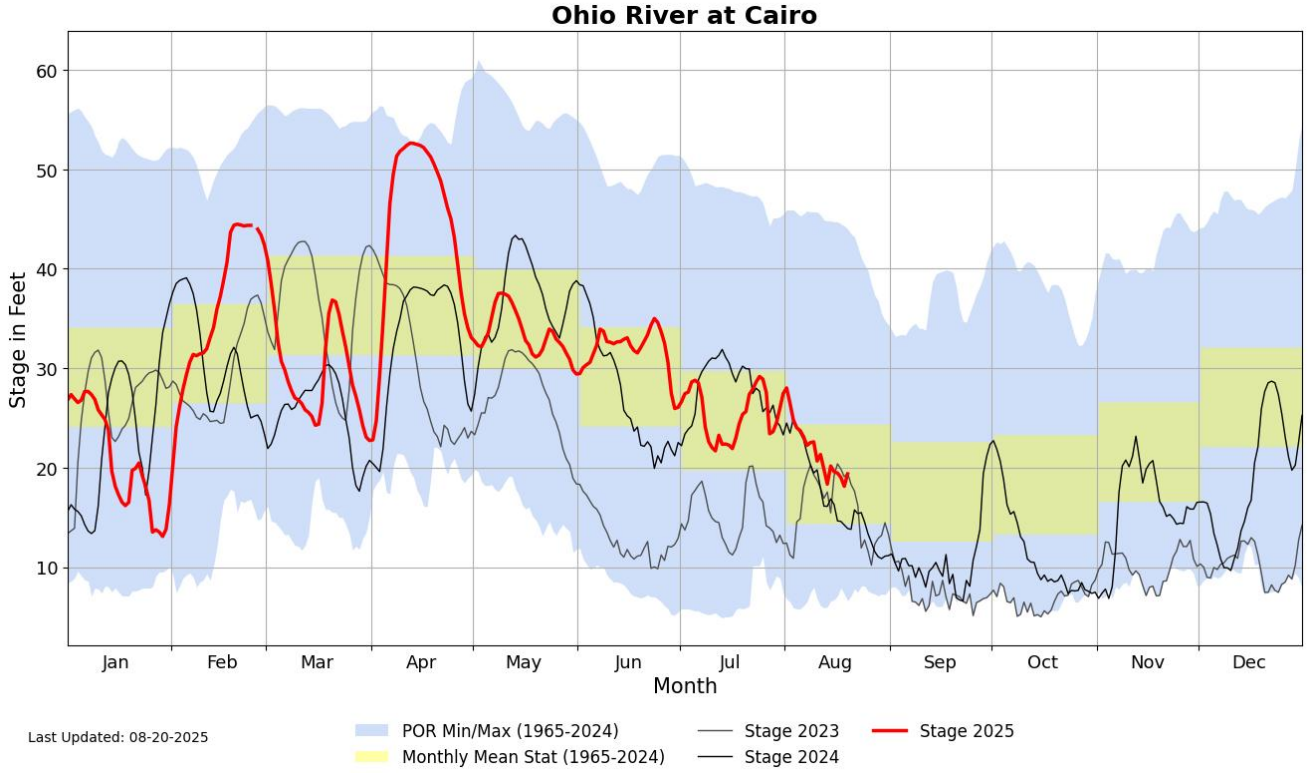


Hydrologic Update





Courtesy: Anna Wolverton (NOAA/USACE)

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		

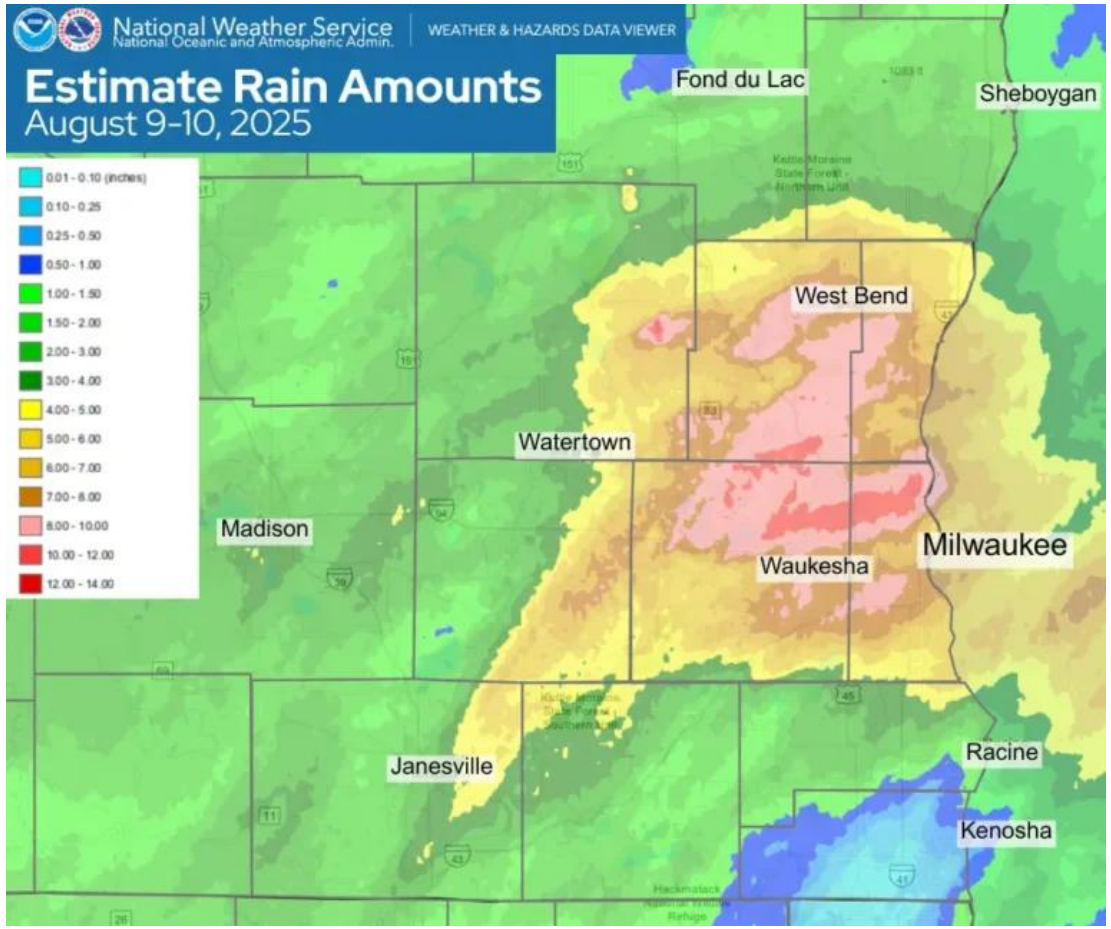
https://waterwatch.usgs.gov/index.php?id=pa28d&sid=w__map|m__pa28d_nwc

Door County, WI (Mary Markwardt)

Impacts

Flooding & Severe Weather

Milwaukee Flash Flood: Aug 9-10, 2025



Wisconsin's Single-Day Rain Records

Location	Rain Total	Date
Mellen (Ashland Co.)	11.72″	June 24, 1946
Butler (Waukesha Co.)	**11.64″**	**August 9, 2025**
W. Madison (Dane Co.)	11.63″	August 20, 2018
New Berlin (Waukesha Co.)	**11.37″**	**August 9, 2025**
Menomonee Falls (Waukesha Co.)	**11.29″**	**August 9, 2025**
Brookfield (Waukesha Co.)	**11.25″**	**August 9, 2025**
W. Madison (Dane Co.)	11.19″	August 20, 2018

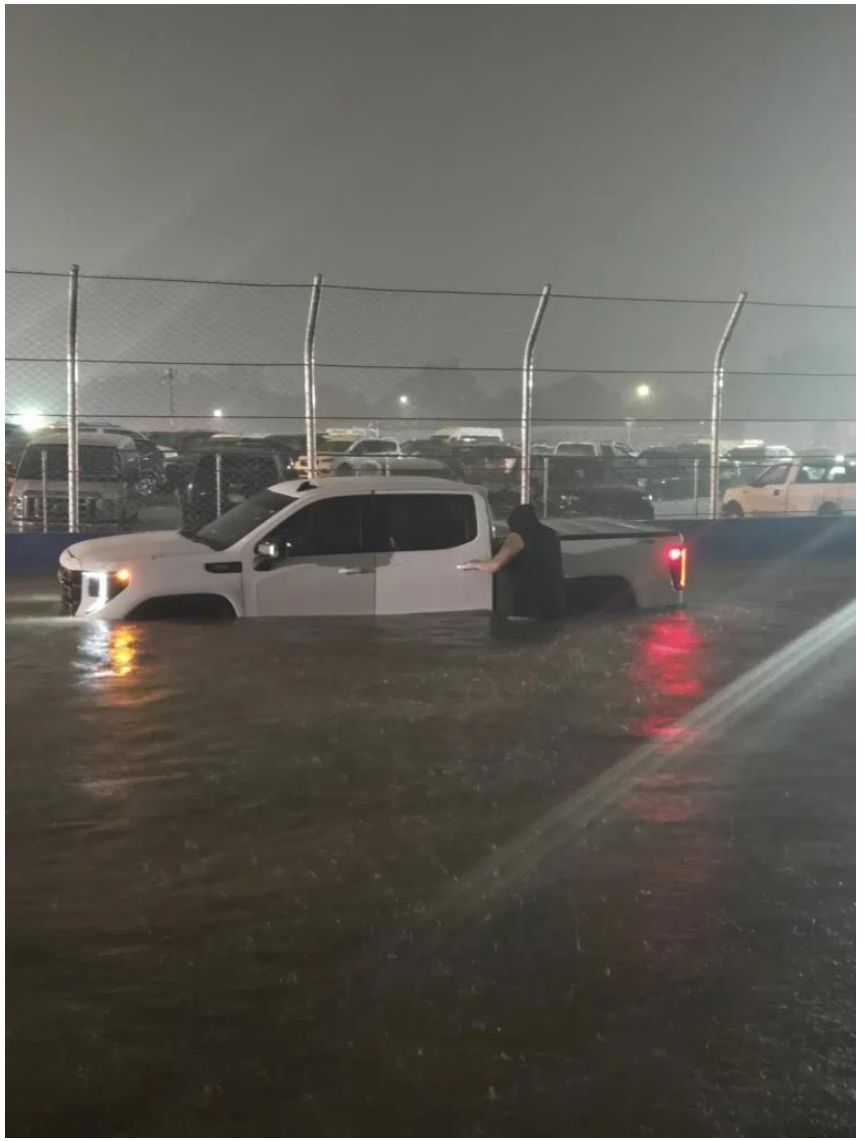
Wisconsin's highest 24-hour rainfall totals with records dating back as early as 1869. Bolded totals from August 2025 indicate that these reports are preliminary and may be adjusted. Source: SC ACIS.

https://climatology.nelson.wisc.edu/historic-flooding-in-southeast-wisconsin-august-2025/

Flooding & Severe Weather

Milwaukee Flash Flood: Aug 9-10, 2025

Milwaukee, WI (Noah Reading)

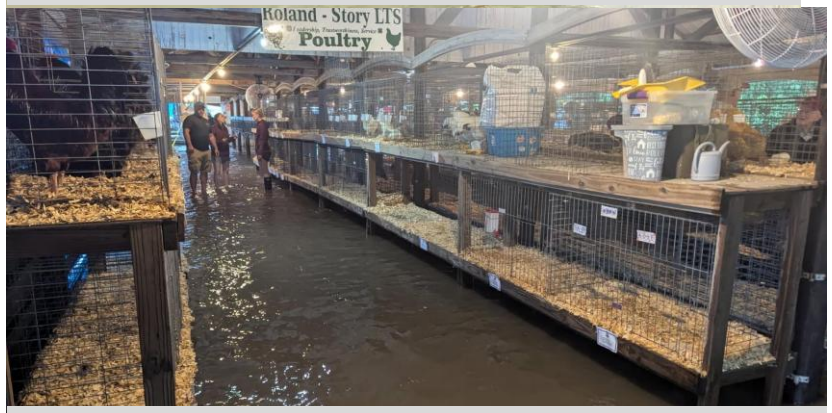


Milwaukee, WI (Denise Jones)

Flooding & Severe Weather

Iowa

Story County Fairgrounds (Joe Alfieri), July 19

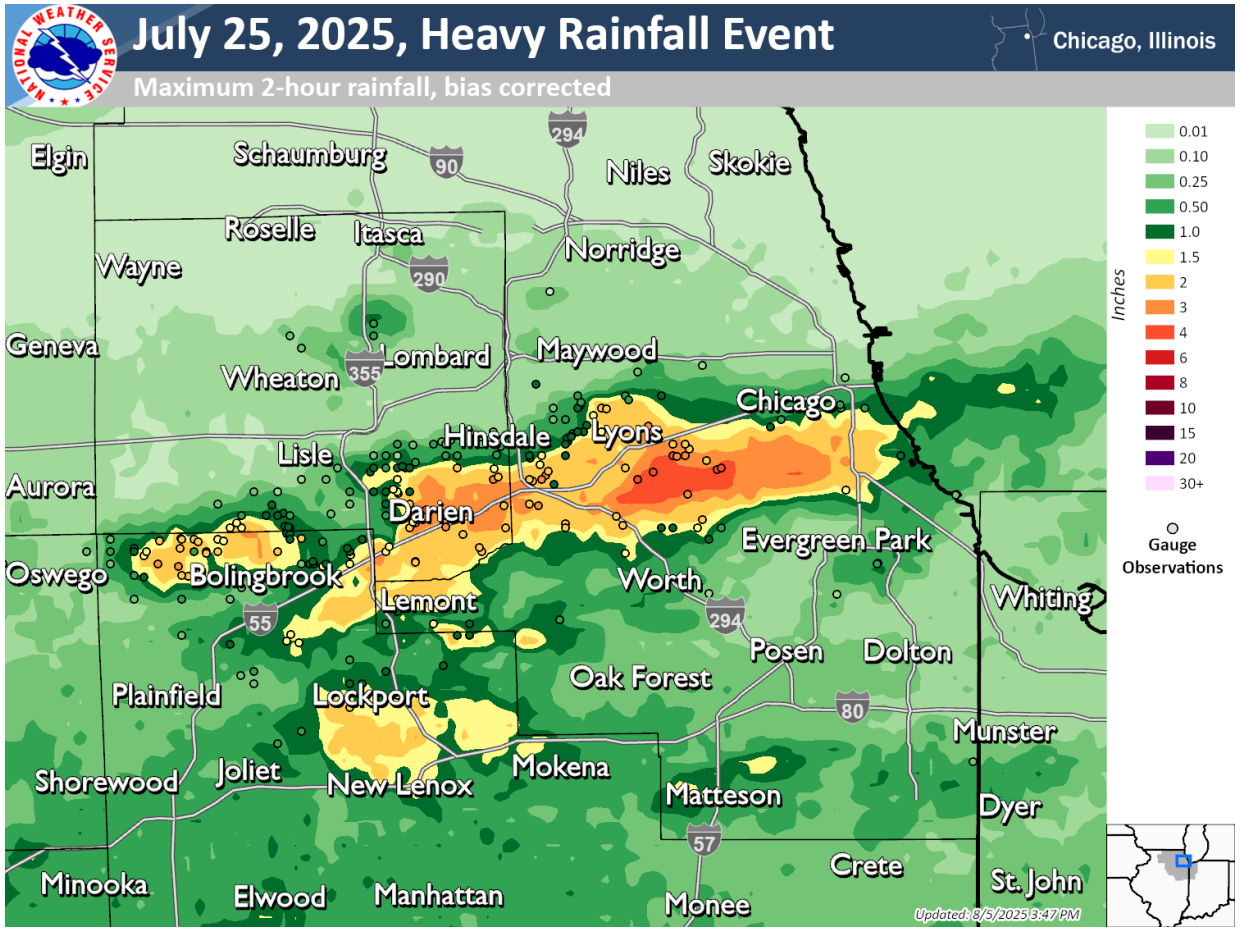


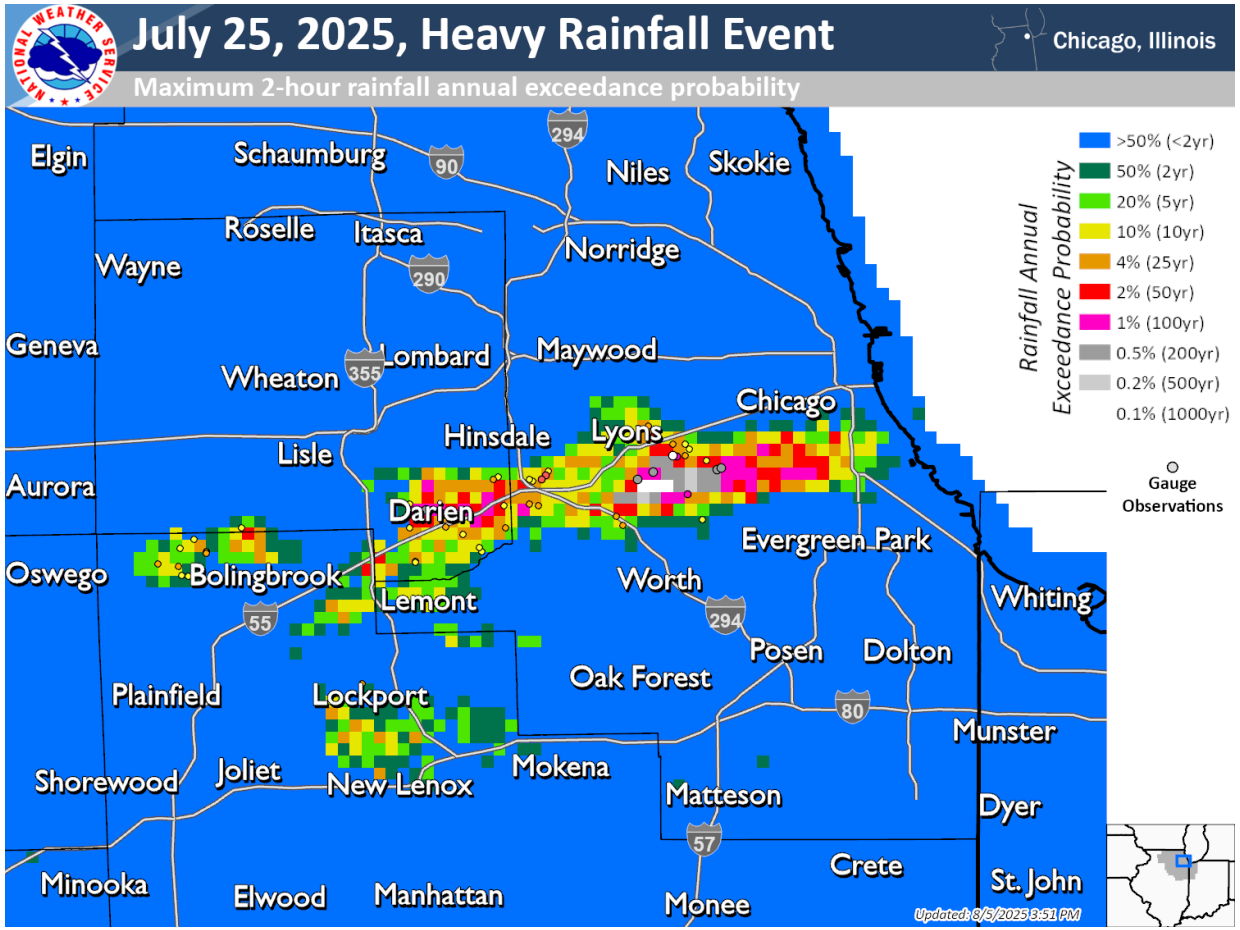
Story County Fairgrounds (Patrick Quance), July 19

July 28 Derecho (Gentry Sorensen ISU Extension)

Flooding & Severe Weather

Illinois





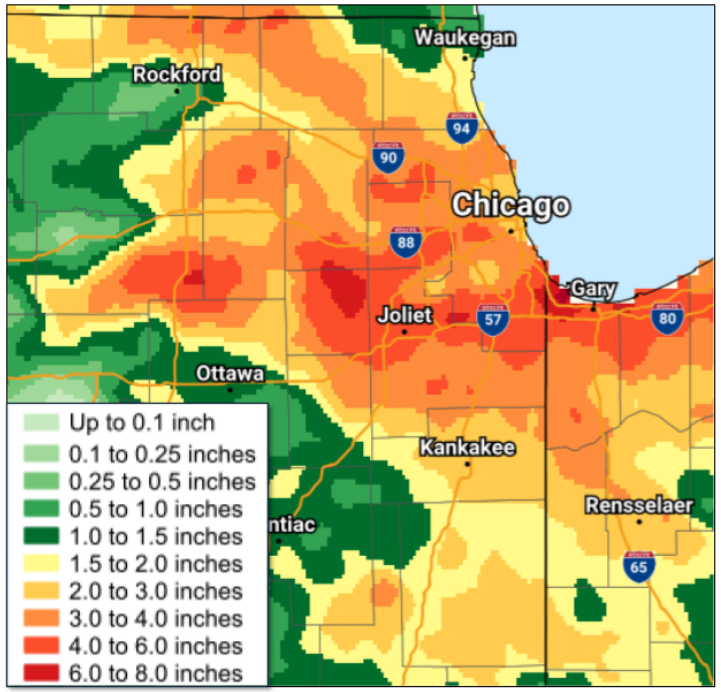
Flooding & Severe Weather

Illinois

3-Day Rainfall Totals (8/16 - 8/19)

Thank you to our volunteer observers, broadcast media, and followers for your reports!

Radar-Estimated Rainfall Totals



For more on this event, see weather.gov/chicago

- Multiple rounds of thunderstorms impacted the region from the afternoon of August 16th through the early morning on the 19th.
- Numerous instances of flash flooding occurred across the region during this active stretch of weather.

Selected Rainfall Totals (72-hour totals ending 7 AM 8/19)	
Oswego, IL (CoCoRaHS)	8.54 in.
Paw Paw, IL (Personal weather station)	7.21 in.
Lockport, IL (Mesonet)	6.71 in.
Oak Forest (CocoRaHS)	6.60 in.
Dyer, IN (Mesonet)	6.59 in.
NWS Observations (24-hour totals ending 7 AM 8/19)	
Romeoville (NWS Chicago)	5.31 in.
Chicago - O'Hare Airport	4.16 in.
Midway Airport 3 SW	2.17 in.
Rockford Airport	0.73 in.

National Oceanic and Atmospheric Administration
U.S. Department of Commerce

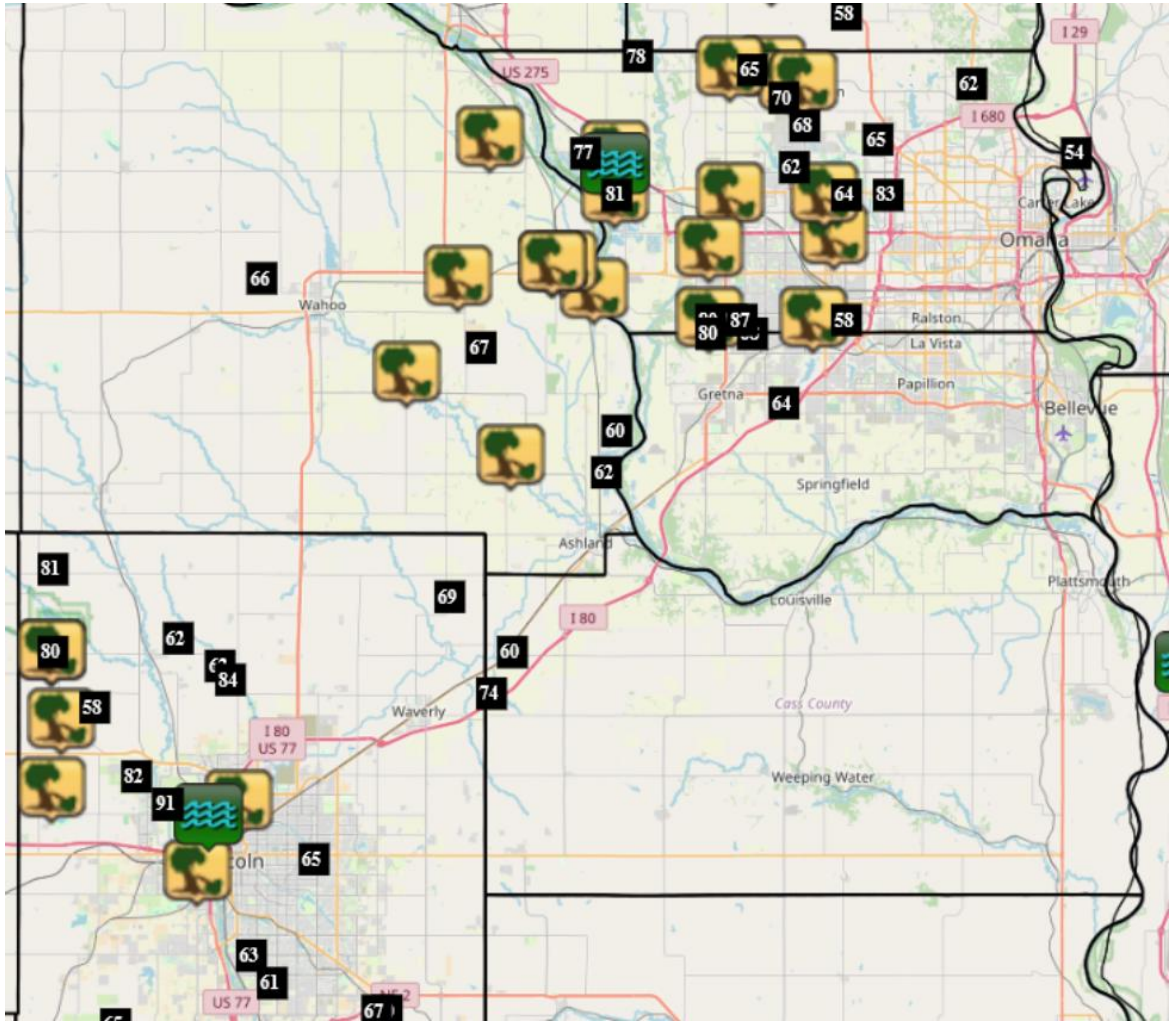
National Weather Service
Chicago, IL

Flooding & Severe Weather

Nebraska - August 9-10, 2025

Nebraska State Penitentiary, Lincoln, NE

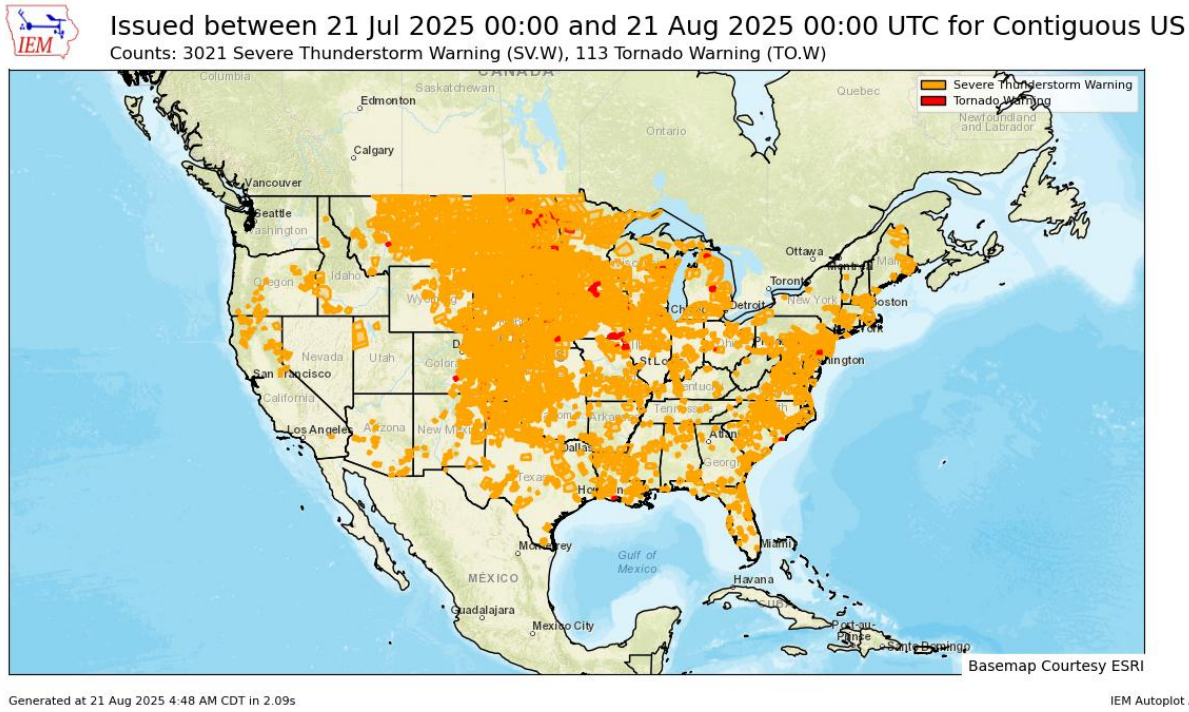
https://corrections.nebraska.gov/ndcs-continues-storm-damage-response



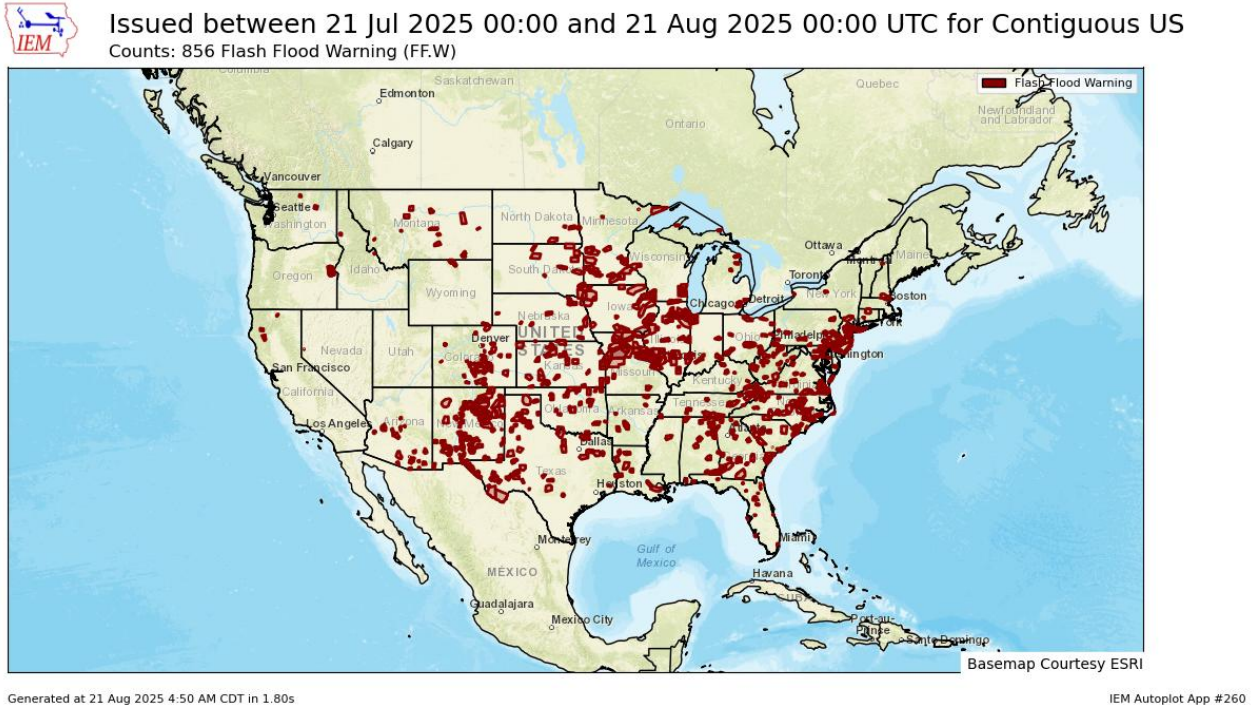
https://mesonet.agron.iastate.edu/plotting/auto/?q=242

Flooding & Severe Weather

CONUS Severe T' Storm Warnings (7/21 – 8/20): 3,021
CONUS Tornado Warnings (7/21 – 8/20): 113



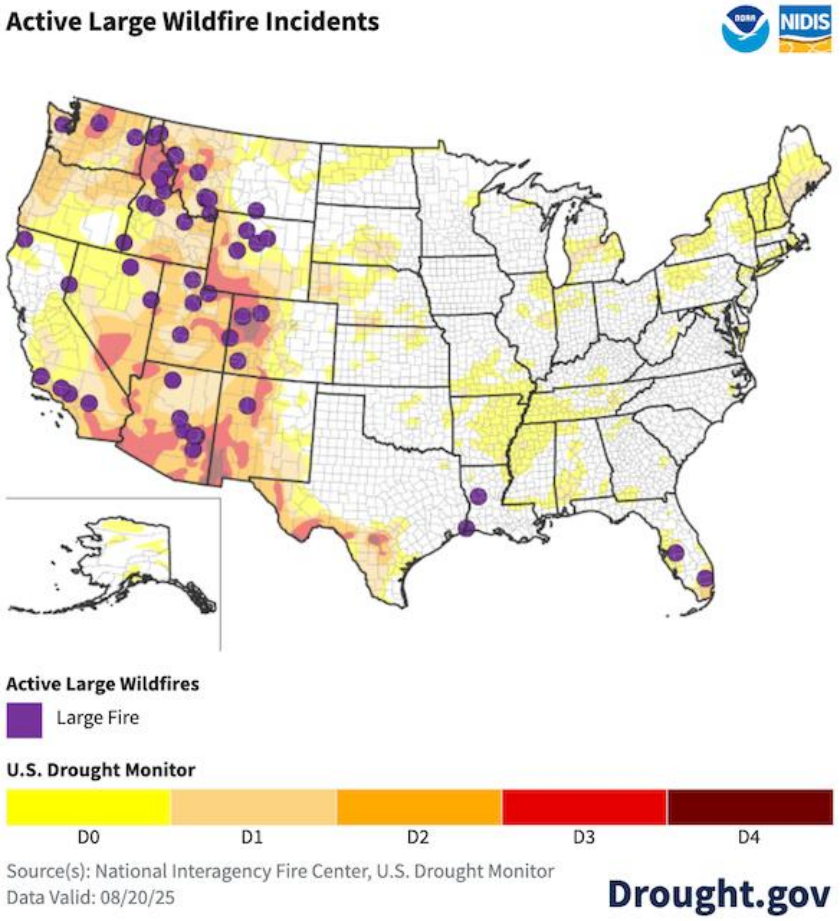
CONUS Flash Flood Warnings (7/21 – 8/20): 113



https://mesonet.agron.iastate.edu/plotting/auto/?q=260

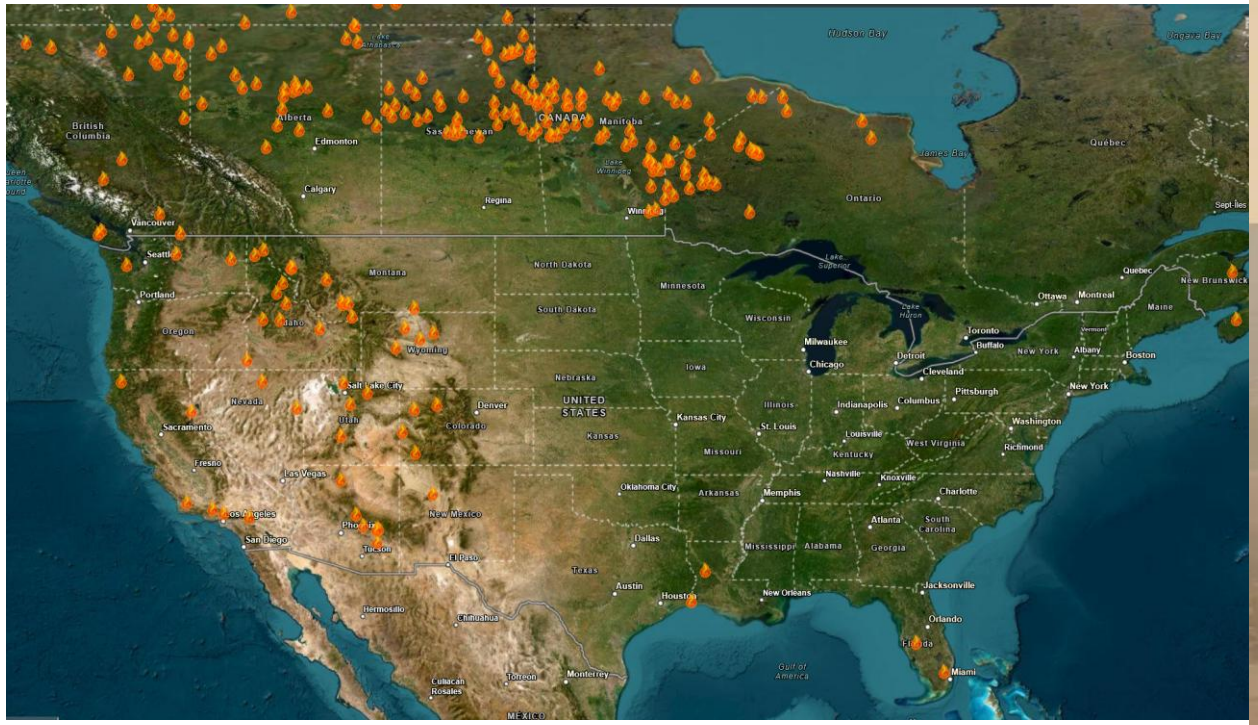
Wildfire & Smoke

- Colorado's worst fire year since 2020



Colorado Newsline / Mesa County Sheriff's Office

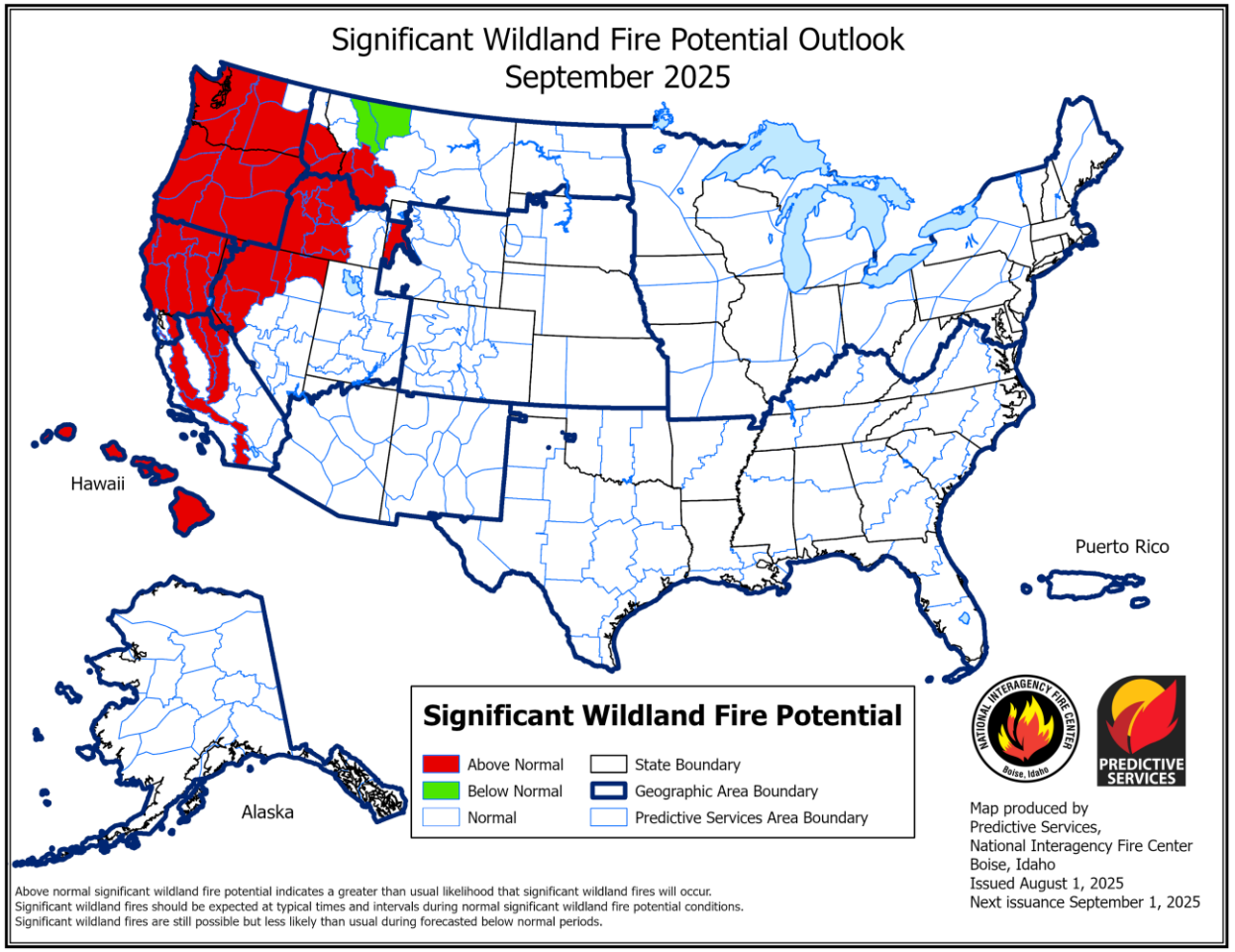
Wildfire & Smoke

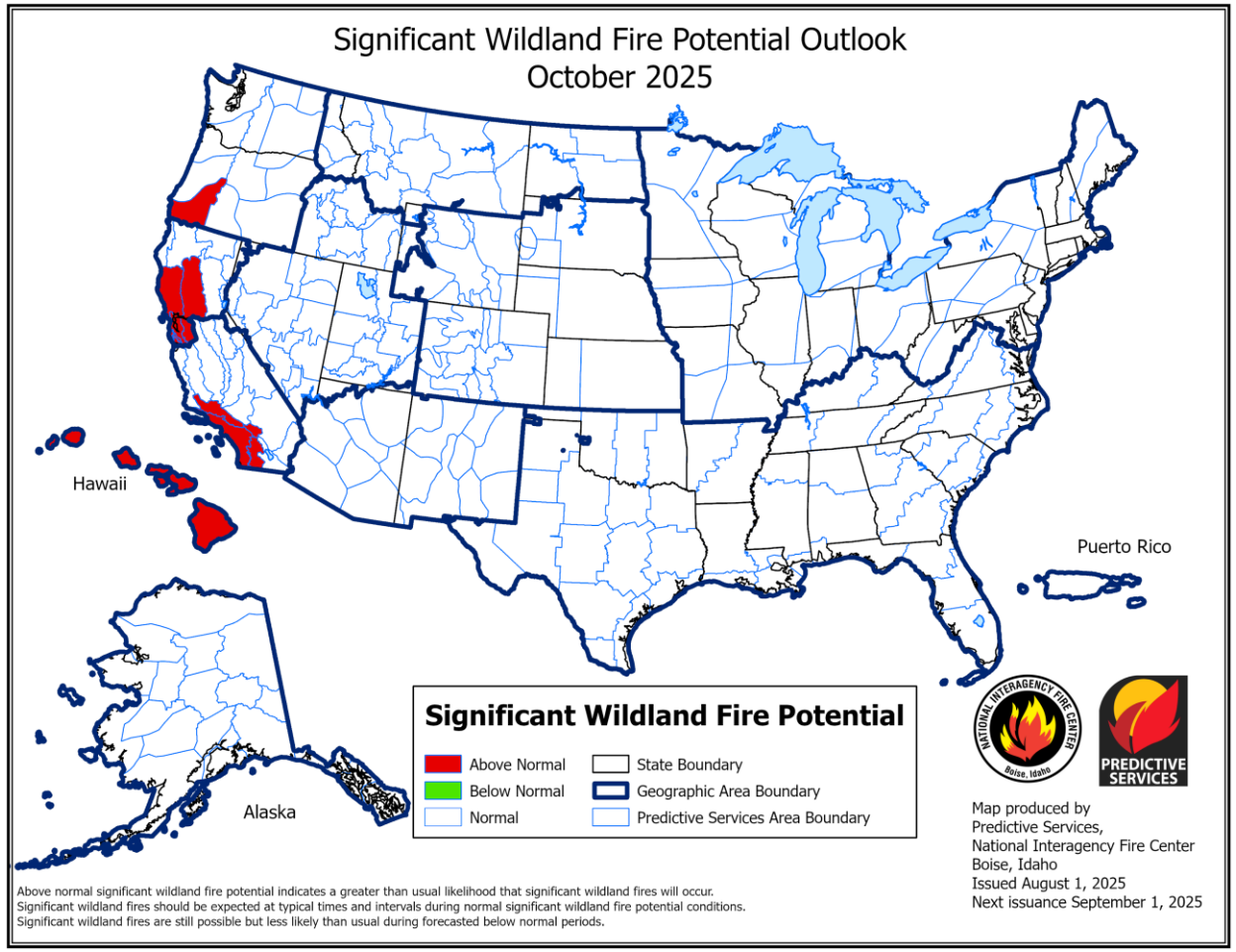


St. Paul, MN (Kerem Yücel, Minnesota Public Radio)

https://firms.modaps.eosdis.nasa.gov

Fall Fire Weather Potential

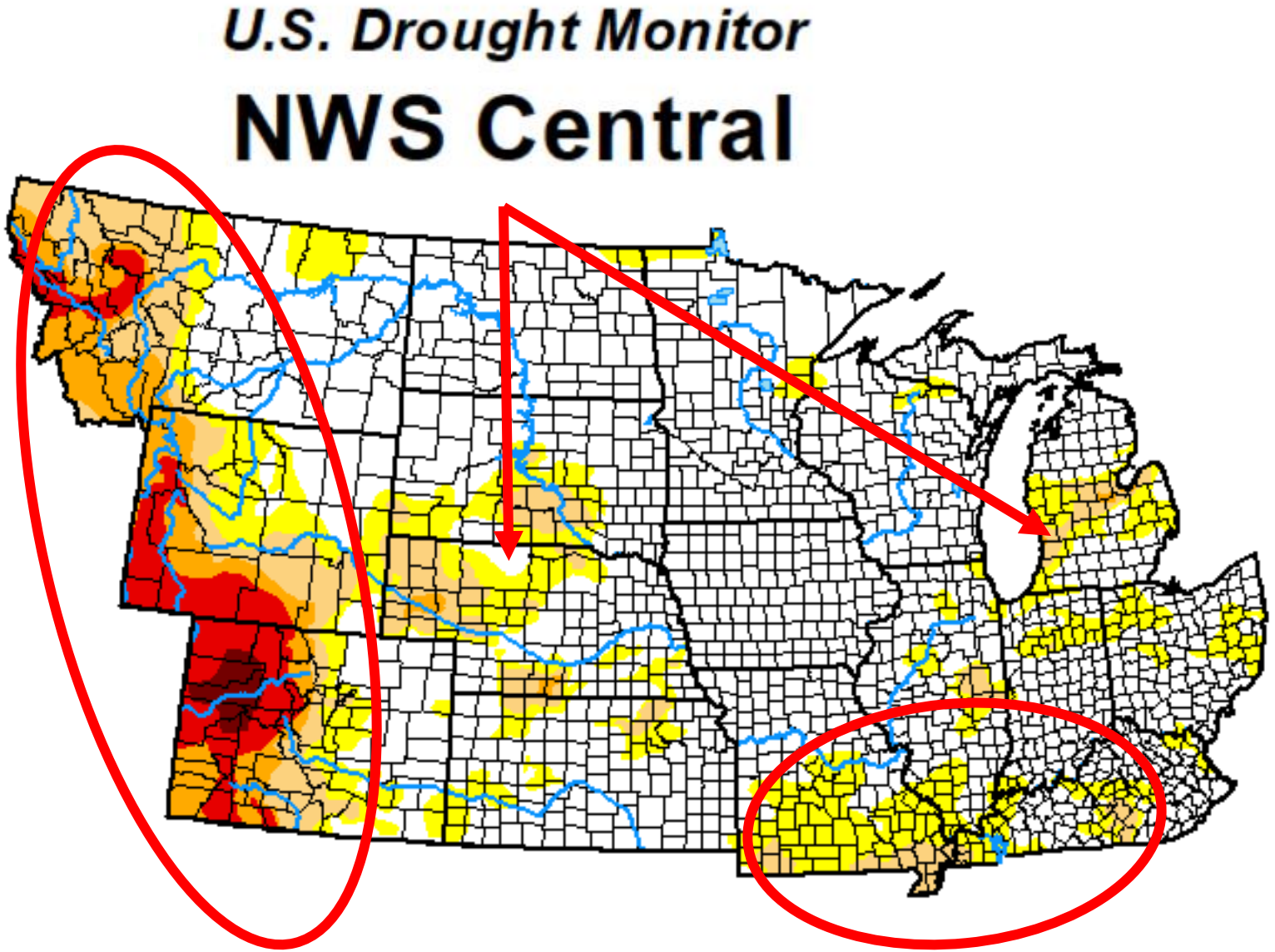




https://www.nifc.gov/nicc/predictive-services/outlooks

Drought Impacts

Liberty County, MT (CMOR)

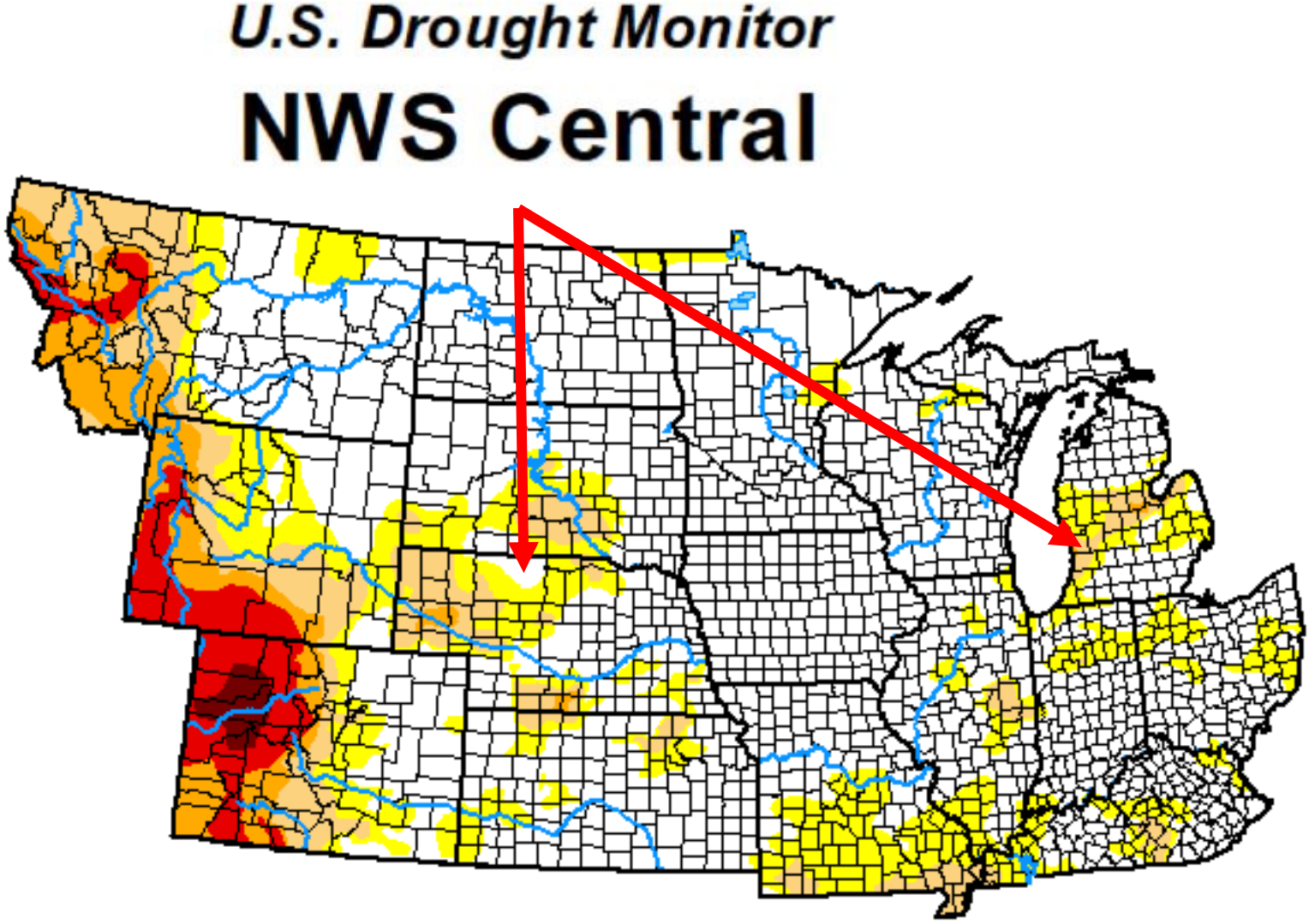


https://droughtimpacts.unl.edu/tools/conditionmonitoringobservations.aspx
https://droughtmonitor.unl.edu/

Drought Impacts

- Specialty crops in Michigan impacted
  - ~ 40% of tart cherry crop estimated to be lost
  - Smaller blueberries with a shorter picking season
  - Mature trees dropping leaves
- Dry grasses and stock ponds in South Dakota/western NE

Gregory County, SD (CMOR)

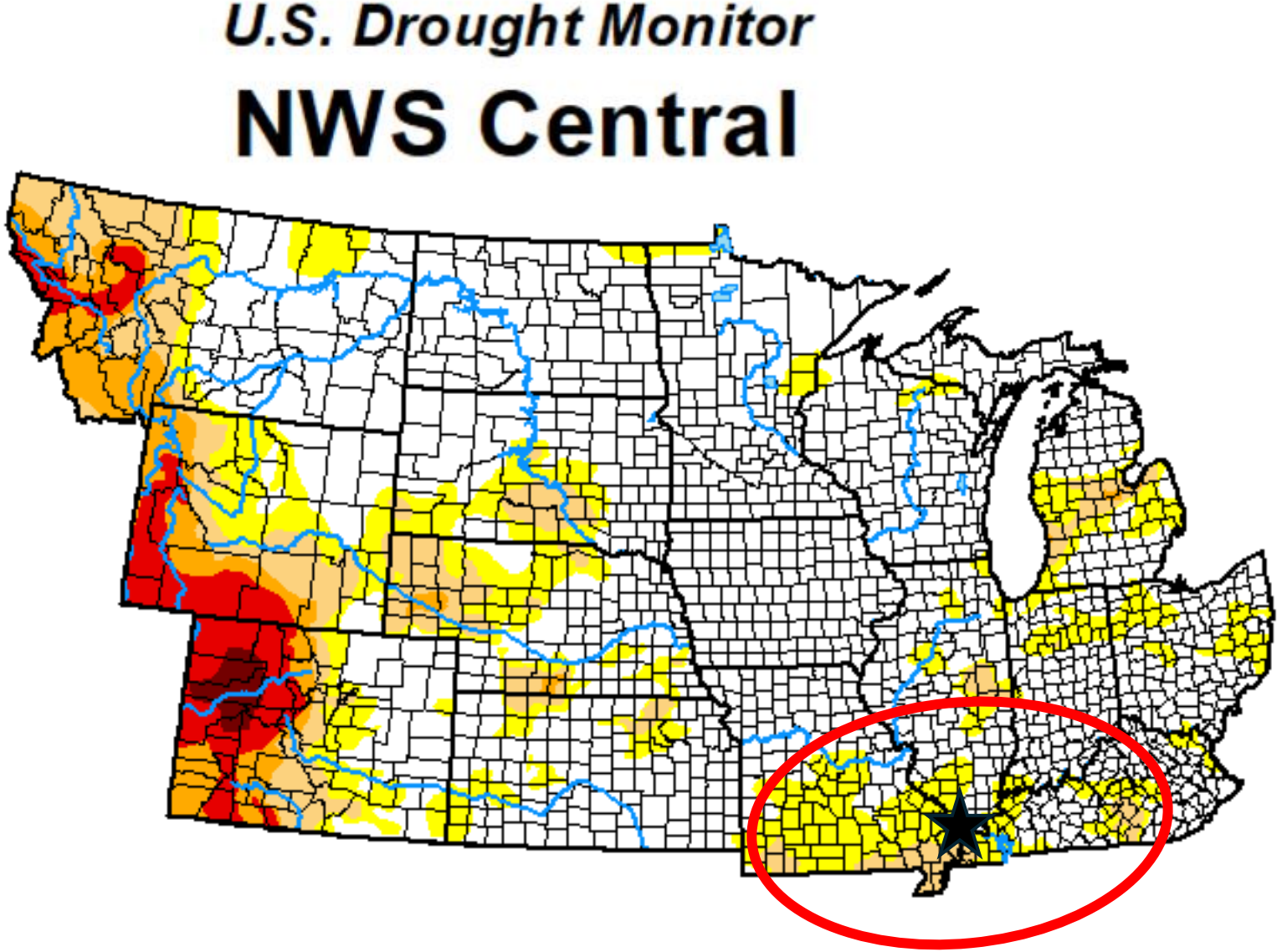


https://droughtimpacts.unl.edu/tools/conditionmonitoringobservations.aspx
https://droughtmonitor.unl.edu/

Drought Impacts

- Flash drought emergence
- Rapid transition from wet to dry is resulting in agricultural impacts in MO, IL, and KY

Ozark County, MO (CMOR)

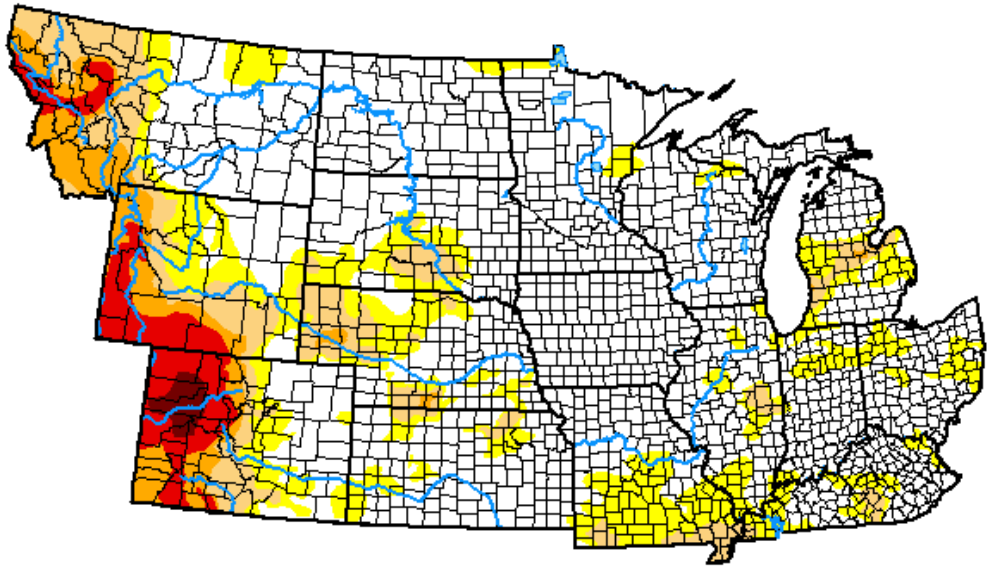


https://droughtimpacts.unl.edu/tools/conditionmonitoringobservations.aspx
https://droughtmonitor.unl.edu/

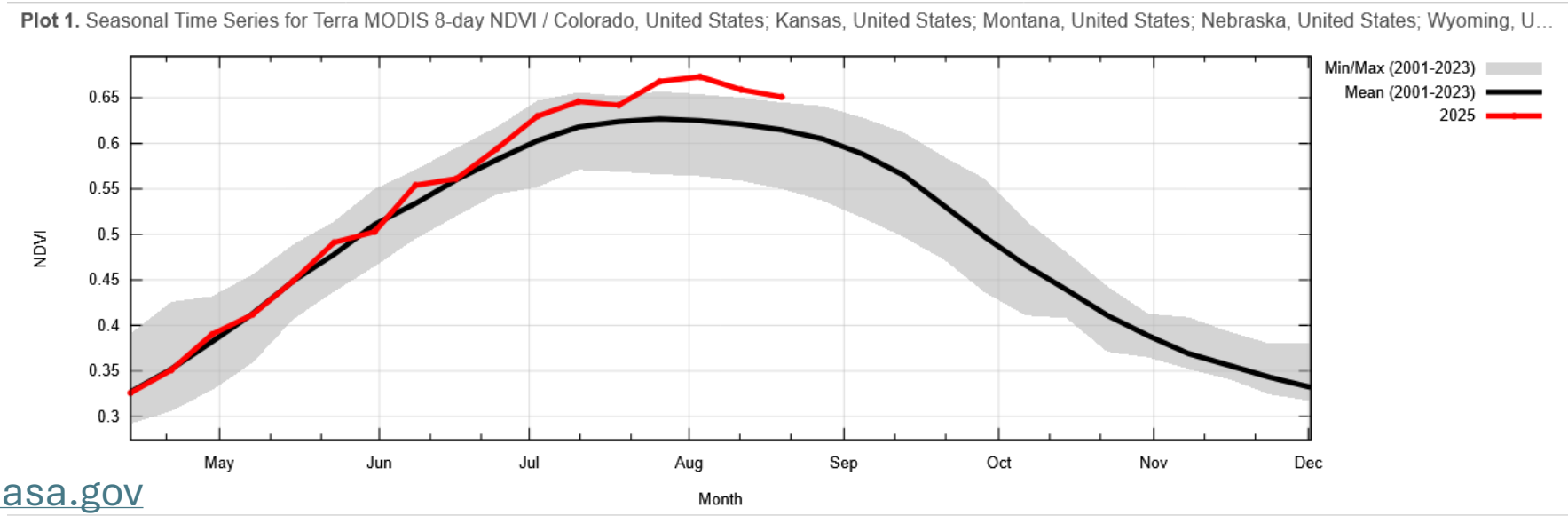
Agricultural Impacts

U.S. Drought Monitor

NWS Central



https://droughtmonitor.unl.edu/

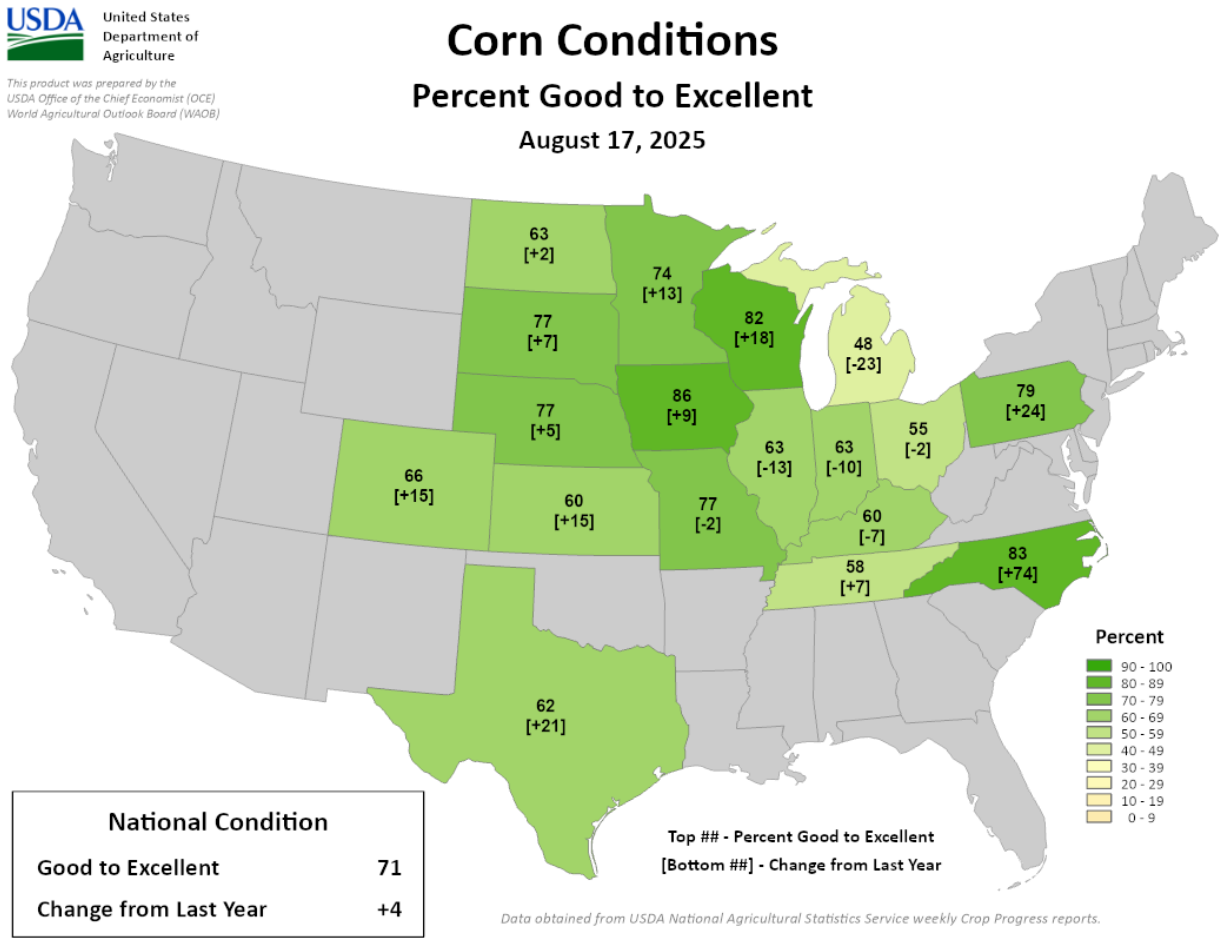


https://glam1/gsfc/nasa.gov

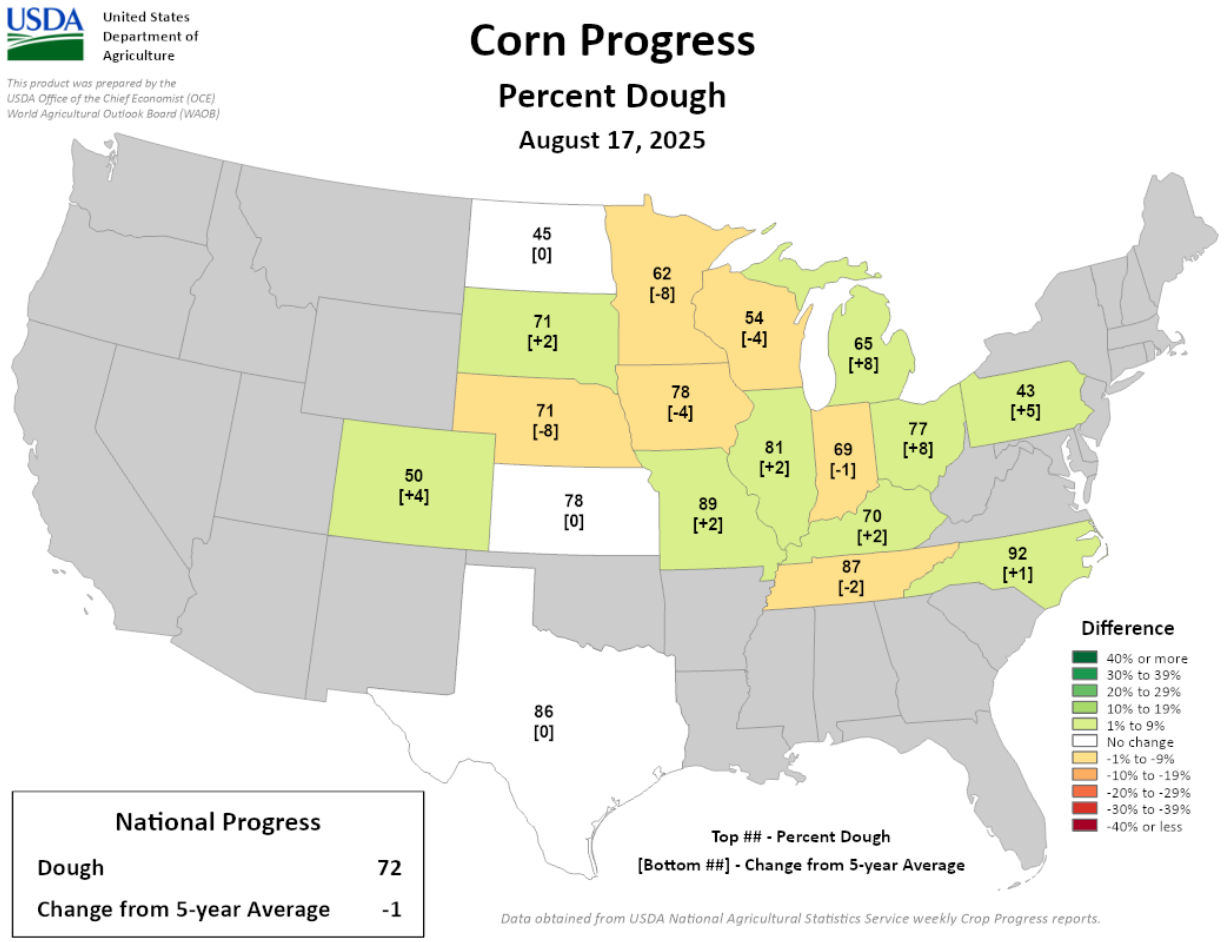
Crop Progress & Conditions

Missouri Climate Center

UNIVERSITY OF MISSOURI Extension



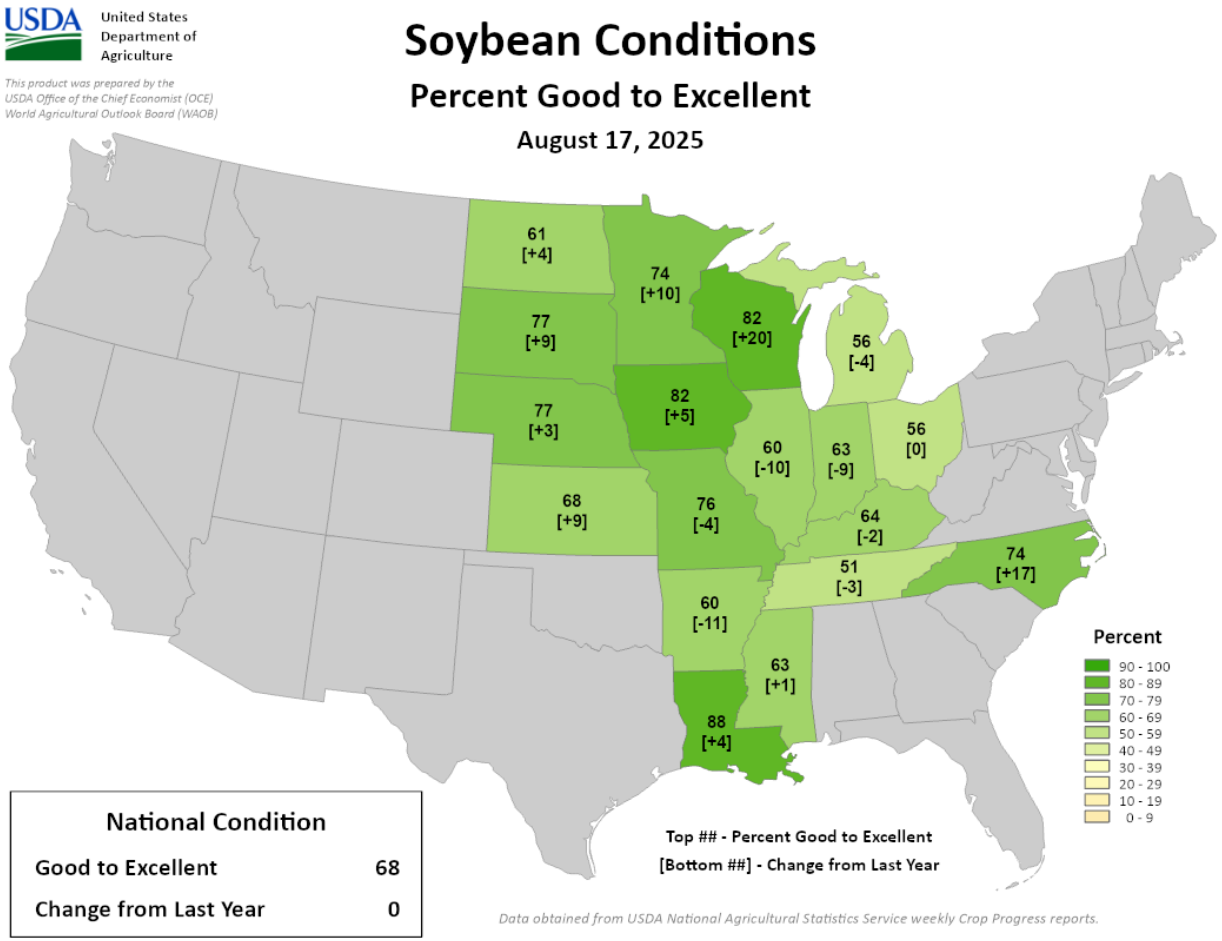
National Condition	
Good to Excellent	71
Change from Last Year	+4



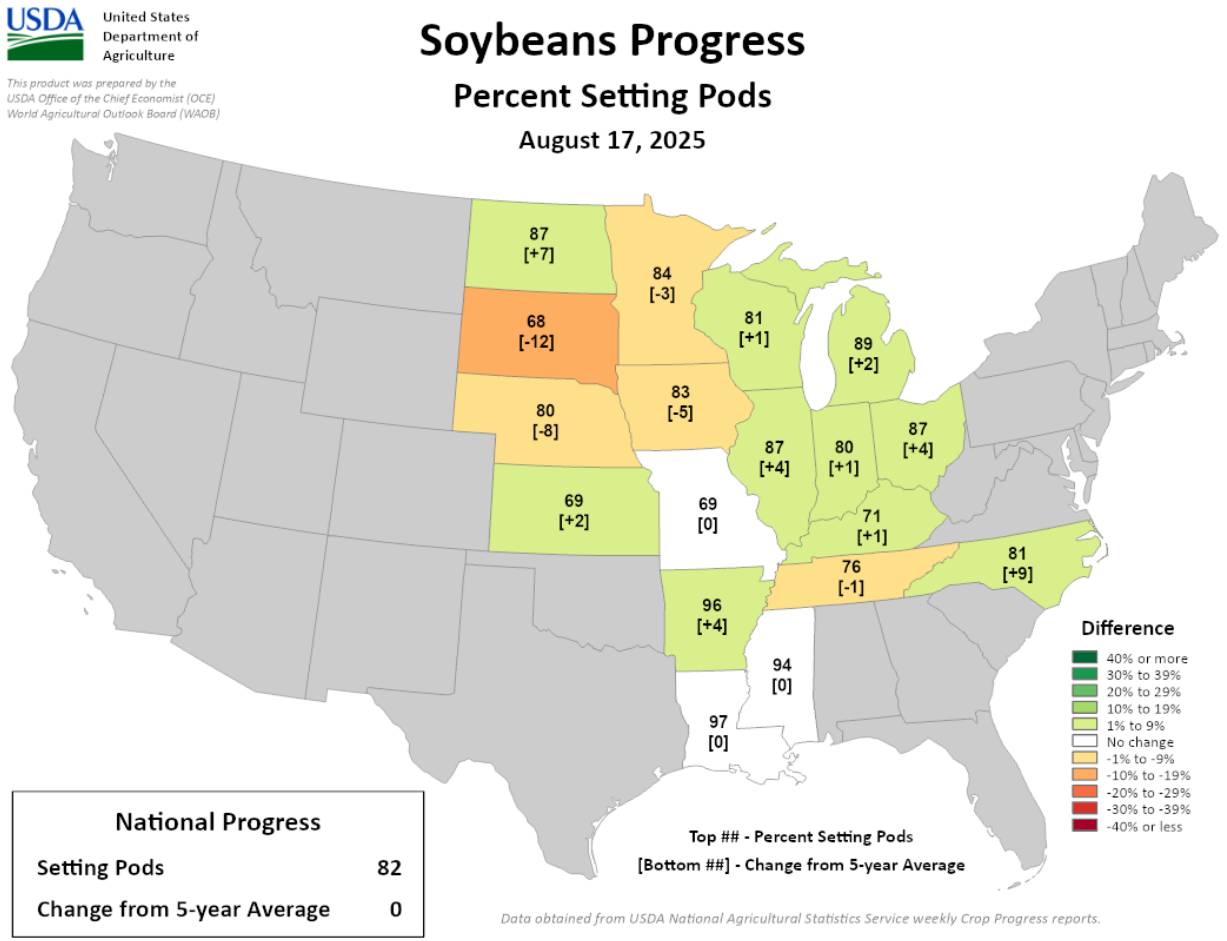
National Progress	
Dough	72
Change from 5-year Average	-1

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

Crop Progress & Conditions



National Condition	
Good to Excellent	68
Change from Last Year	0



National Progress	
Setting Pods	82
Change from 5-year Average	0

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

Crop Progress & Conditions

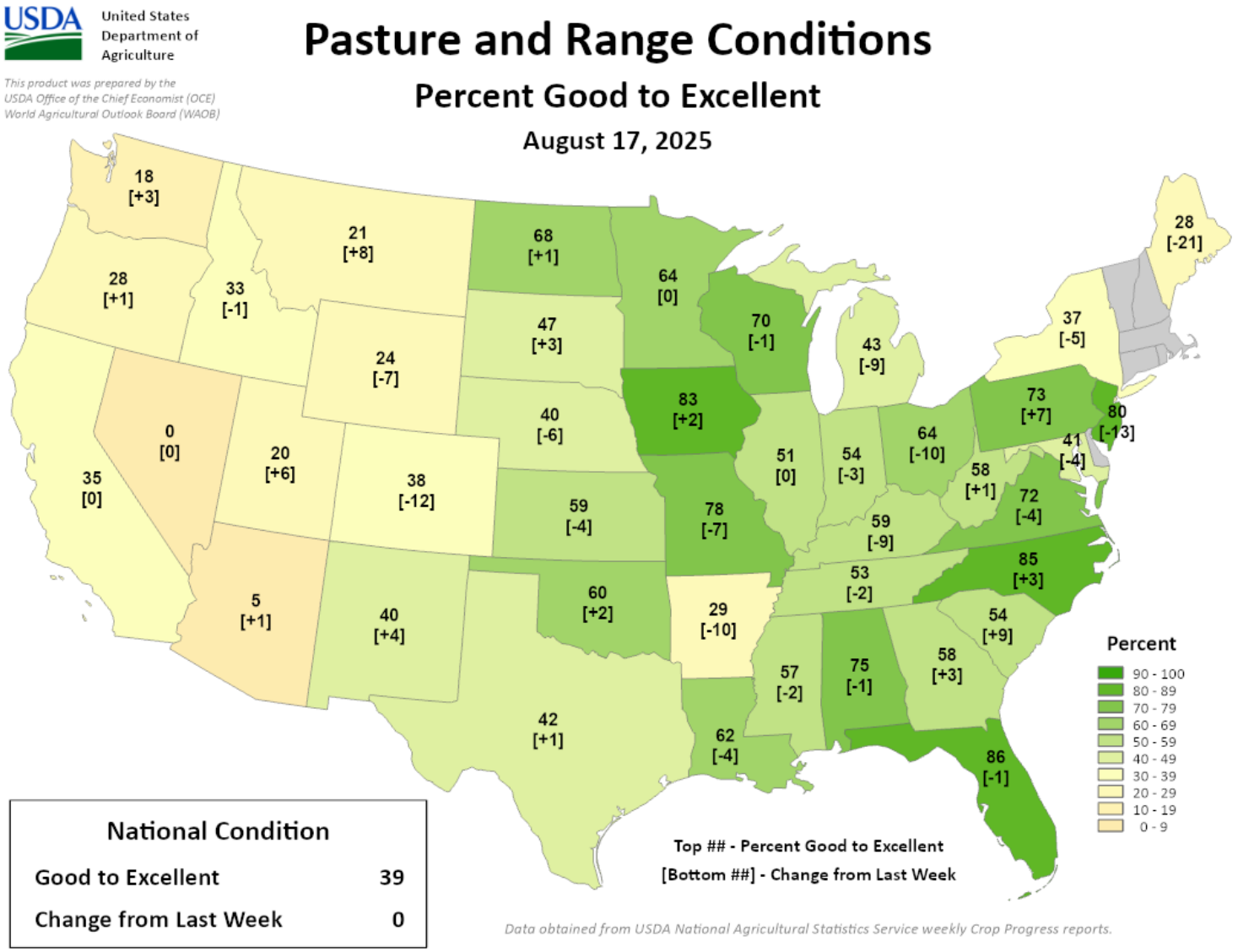
Missouri Climate Center

UNIVERSITY OF MISSOURI Extension

- Excess moisture has led to some disease issues in agriculture

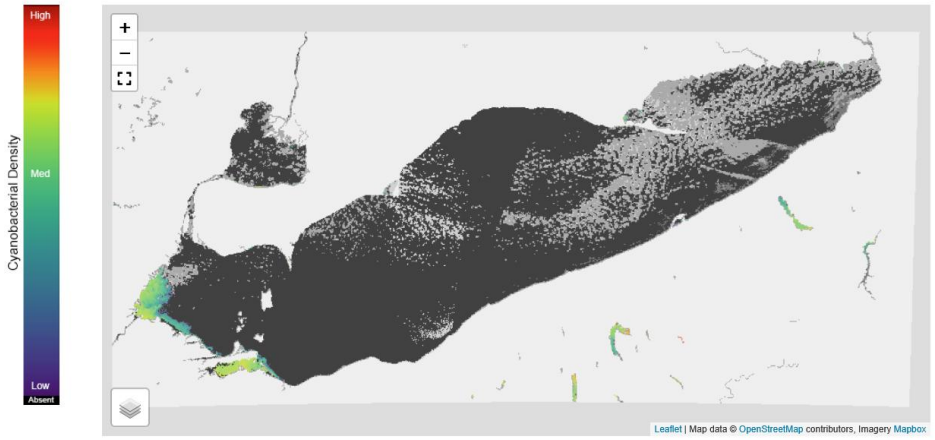
Courtesy Meaghan Anderson
ISU Extension

Pasture Conditions

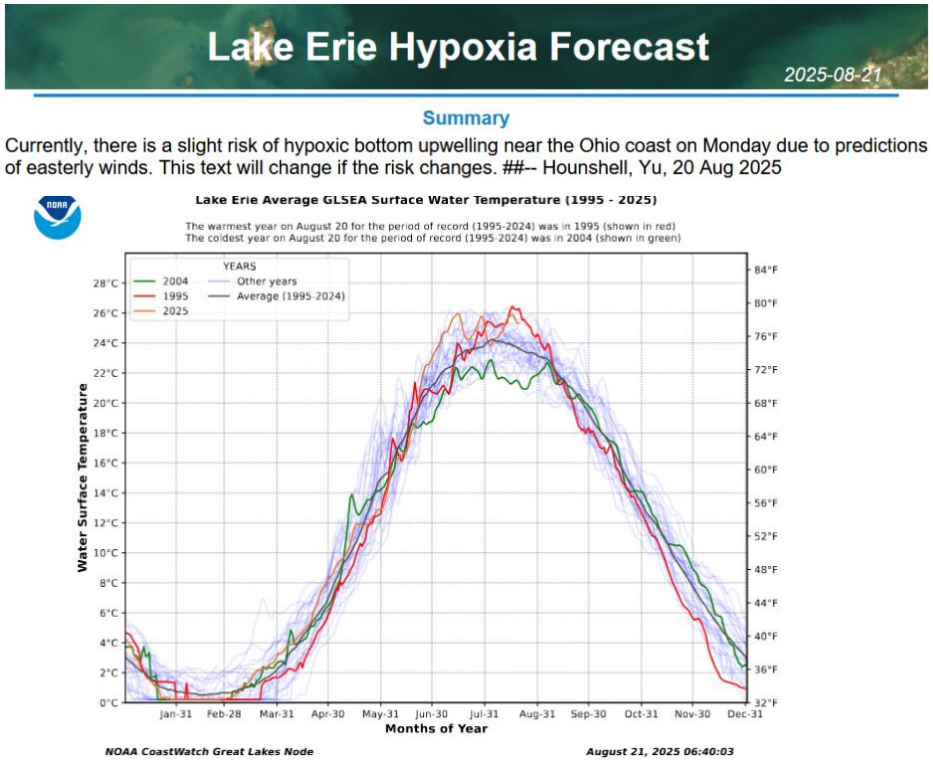


https://agindrought.unl.edu/Other.aspx

Great Lakes



https://coastalscience.noaa.gov/forecasting-and-modeling/lake-erie-hypoxia-forecast/

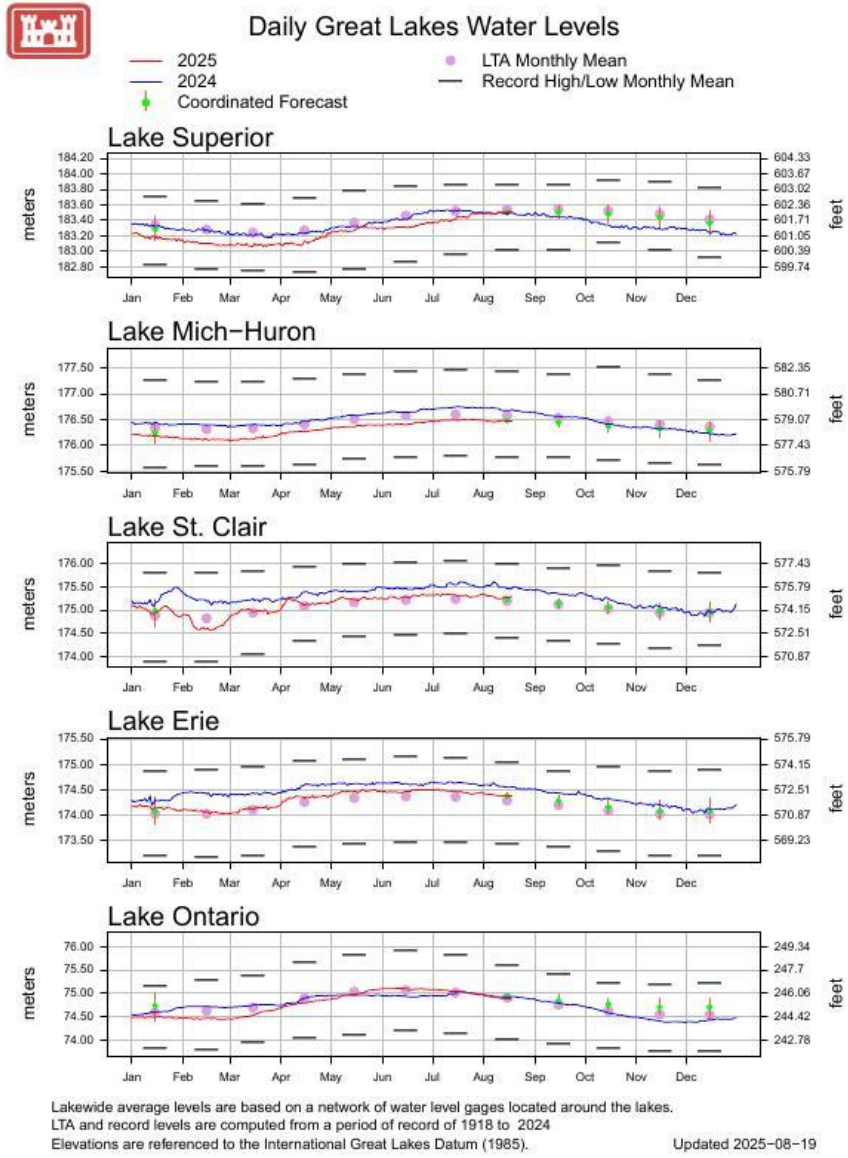


https://coastwatch.glerl.noaa.gov/statistics/average-surface-water-temperature-glsea/

Great Lakes Surface Water Temperatures Relative to Normal

Lake Superior:	Warmer
Lake Michigan:	Warmer
Lake Erie:	Warmer
Lake St. Clair:	Warmer
Lake Ontario:	Warmer
Lake Huron:	Warmer

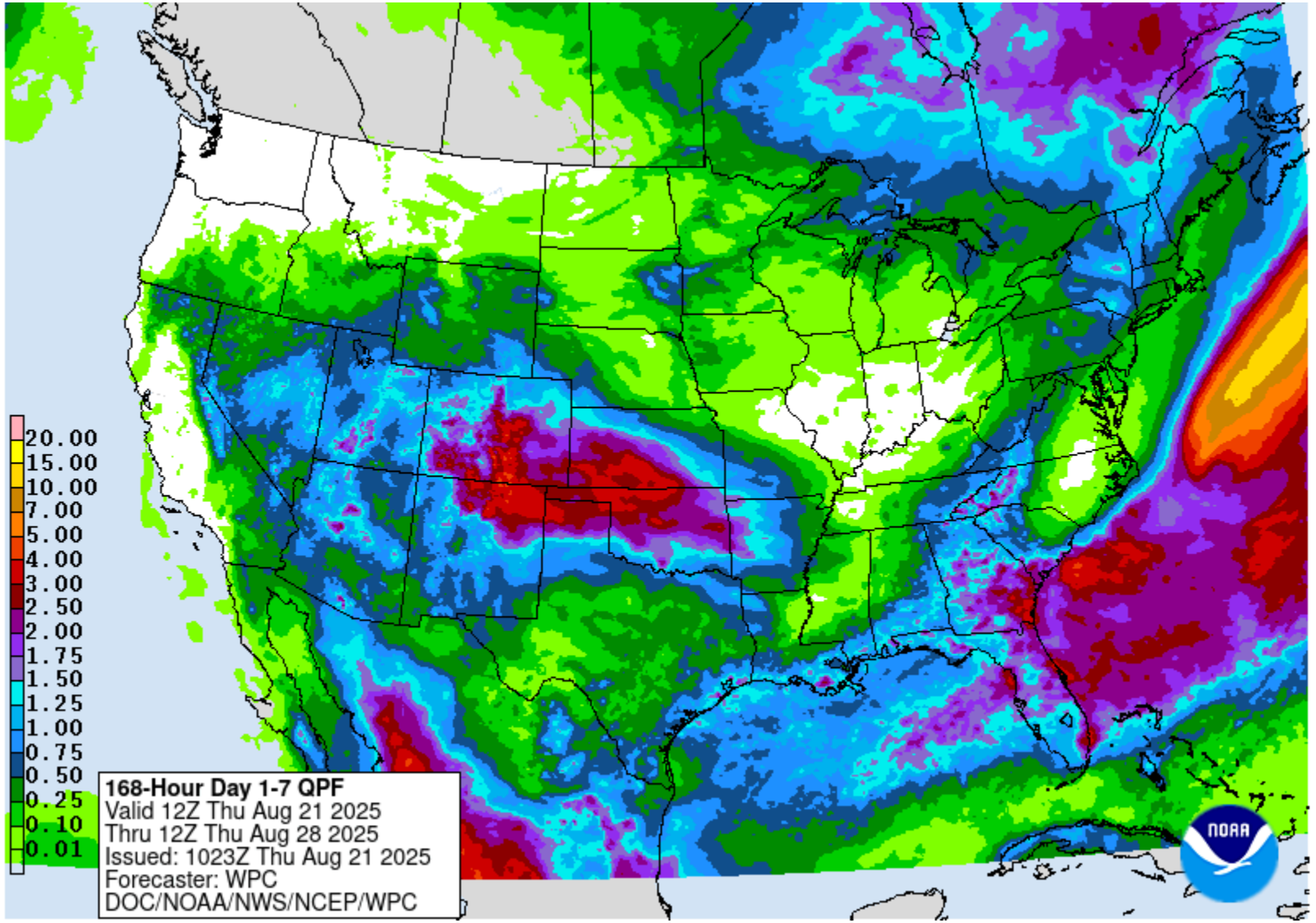
Courtesy Alisa Young (NOAA)



https://lre-wm.usace.army.mil/ForecastData/GLBasinConditions/daily-GLWL-Graph.jpg

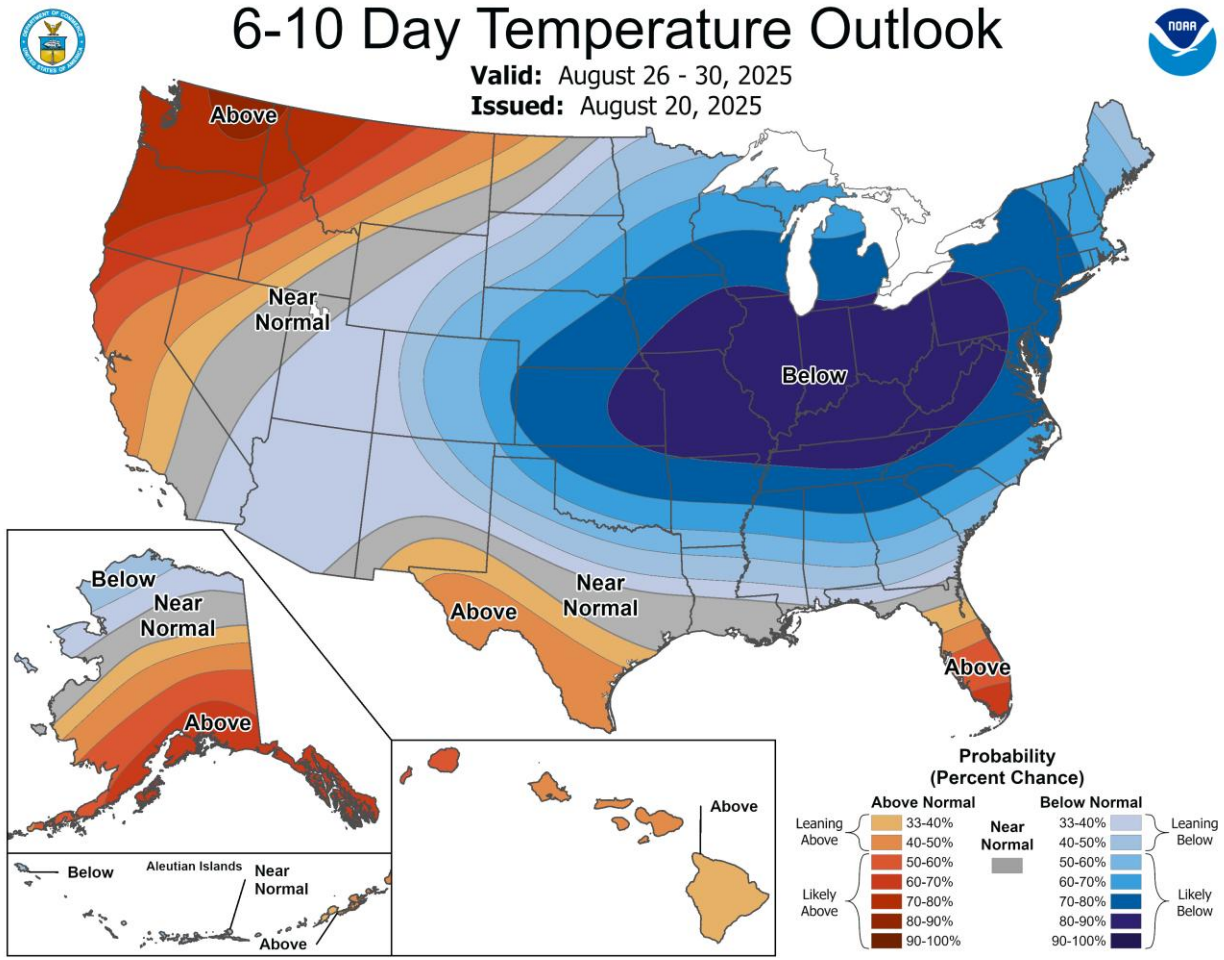
Outlooks

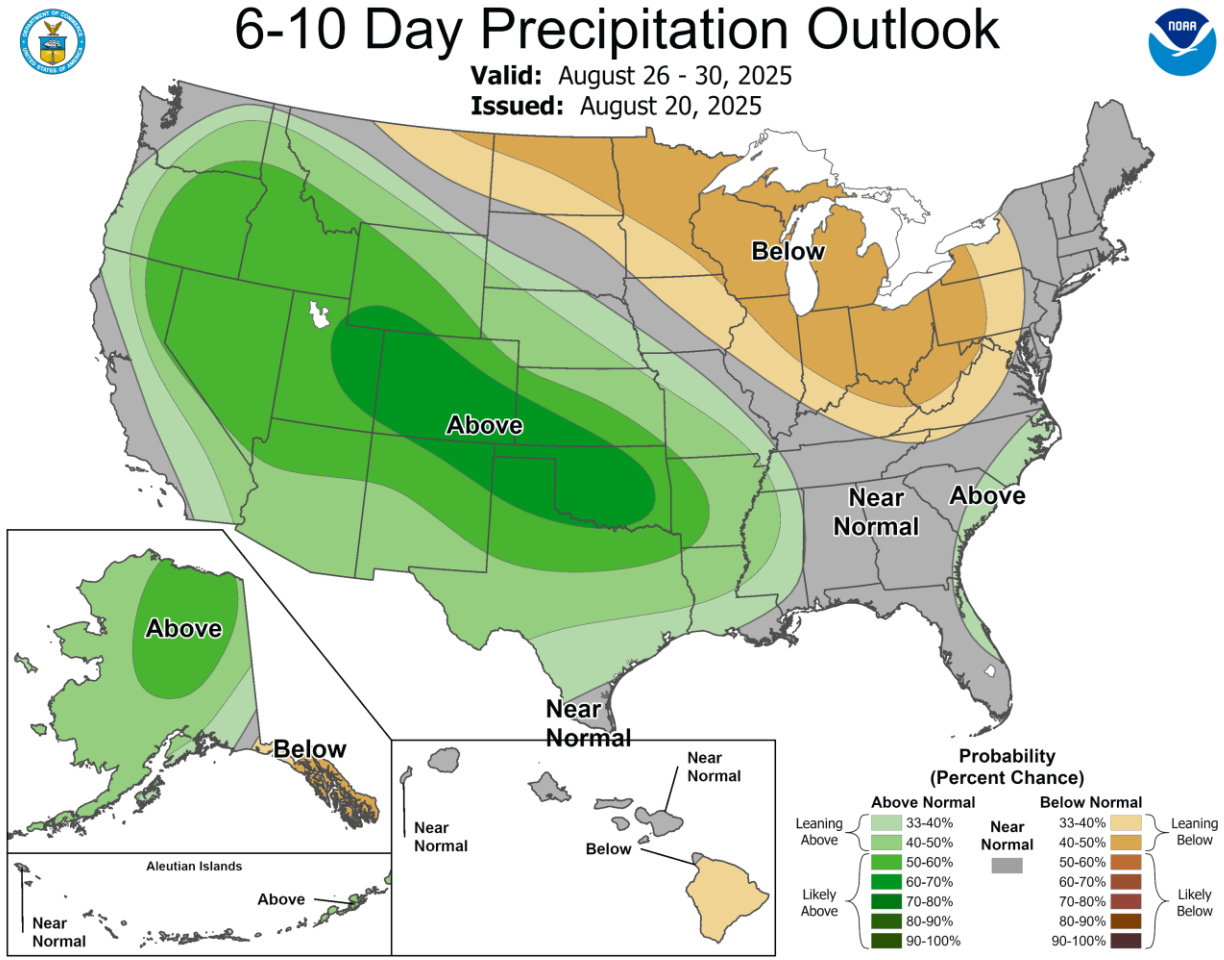
7-day Precipitation Forecast



https://www.wpc.ncep.noaa.gov/#page=qpf

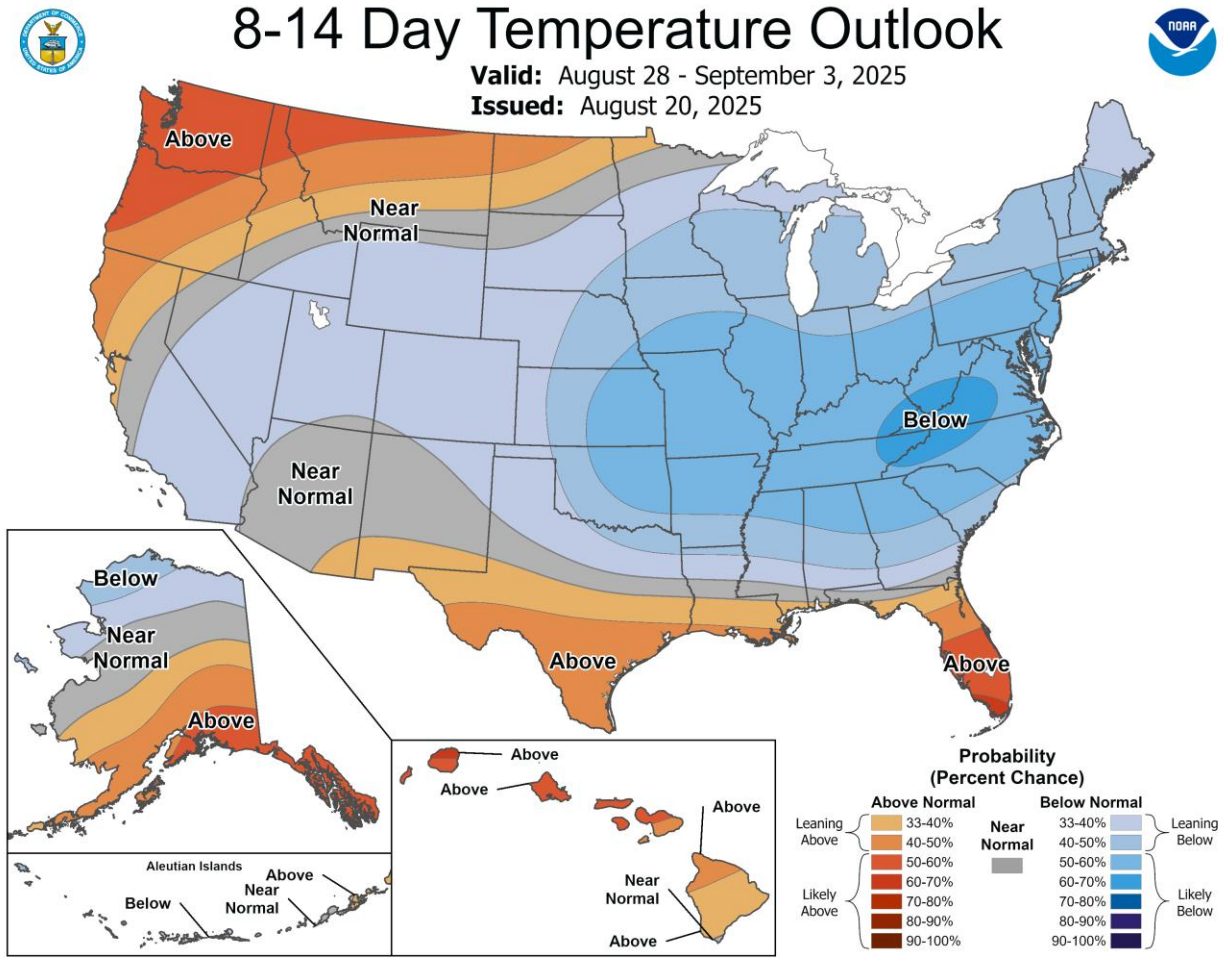
6-10 Day Outlook

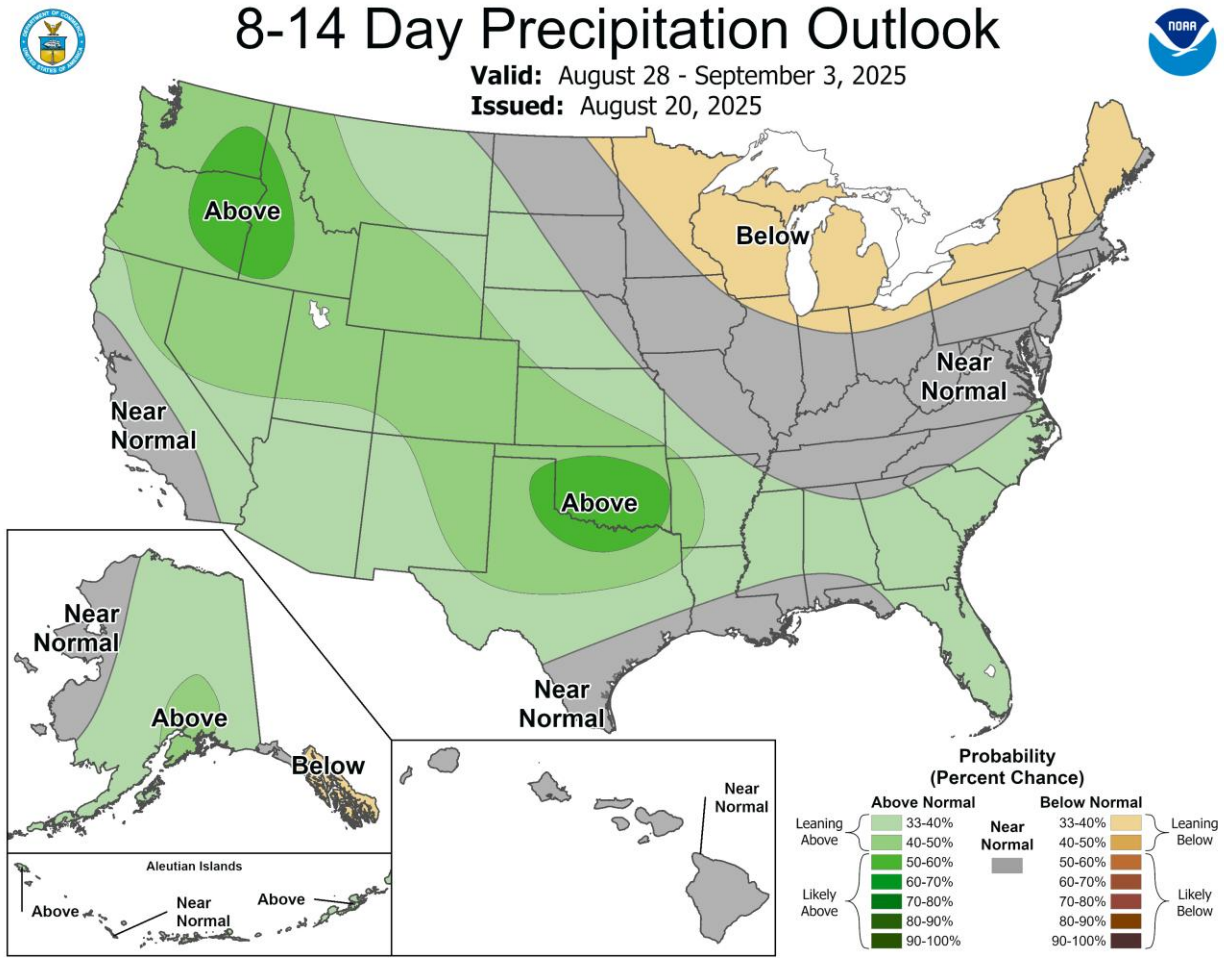




https://www.cpc.ncep.noaa.gov/

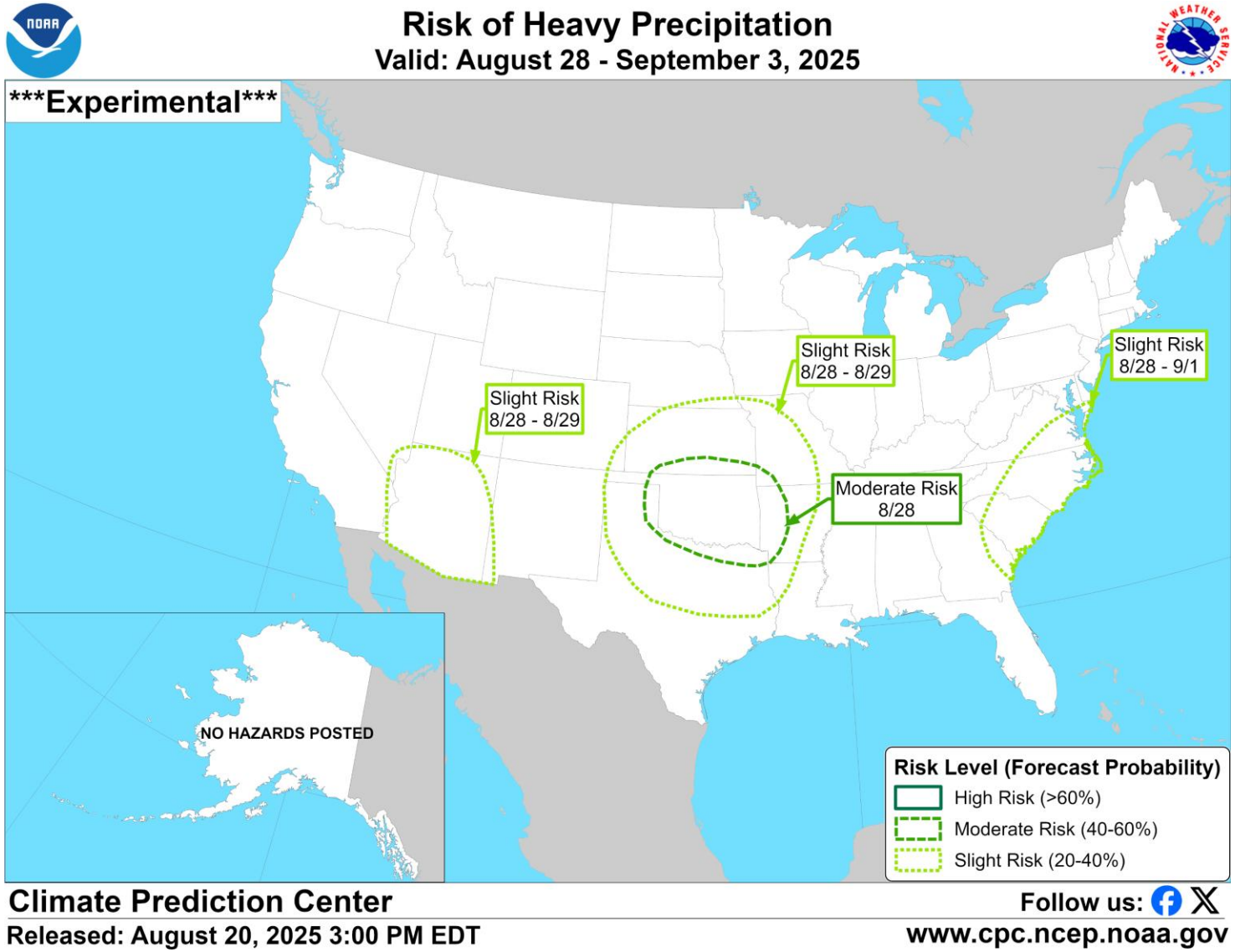
8-14 Day Outlook





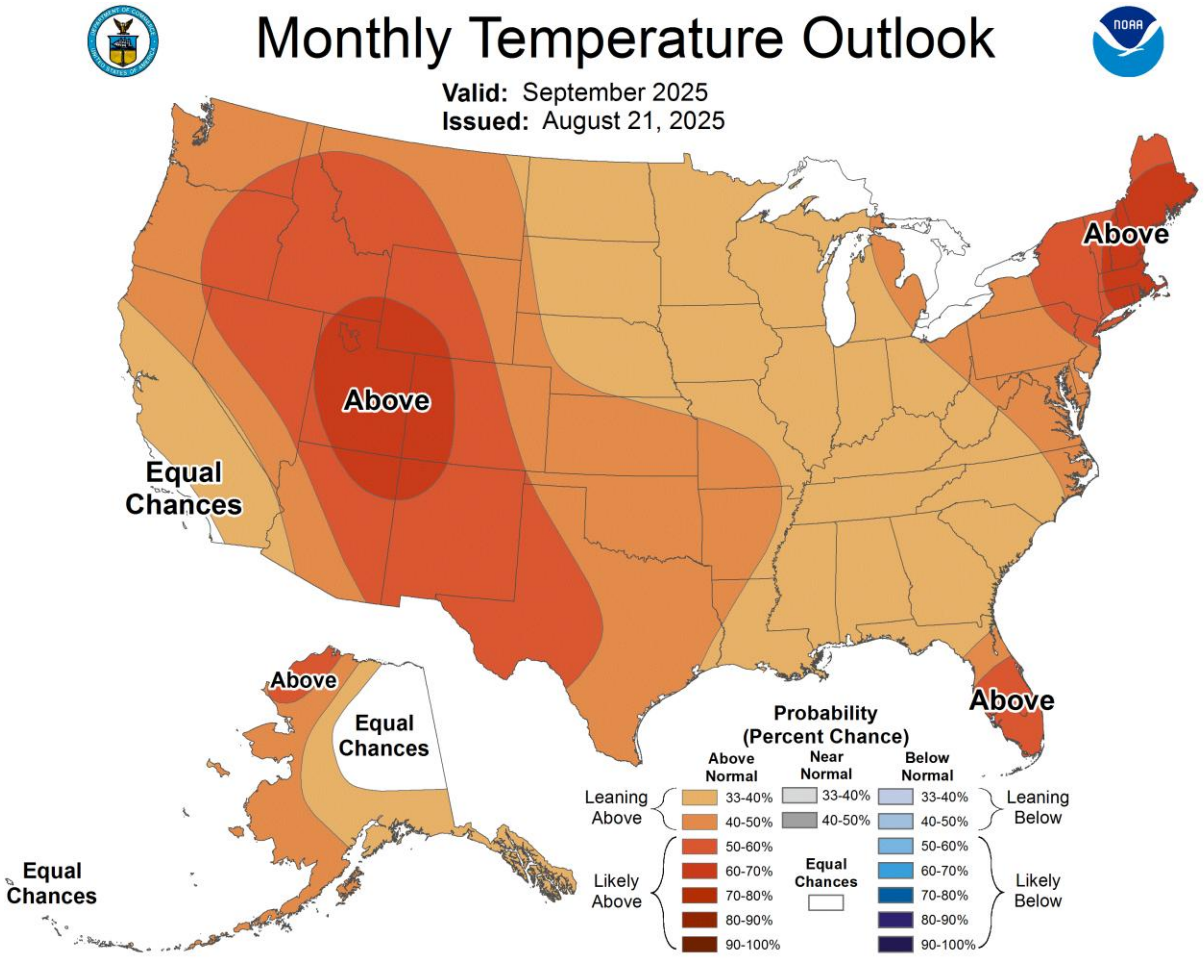
https://www.cpc.ncep.noaa.gov/

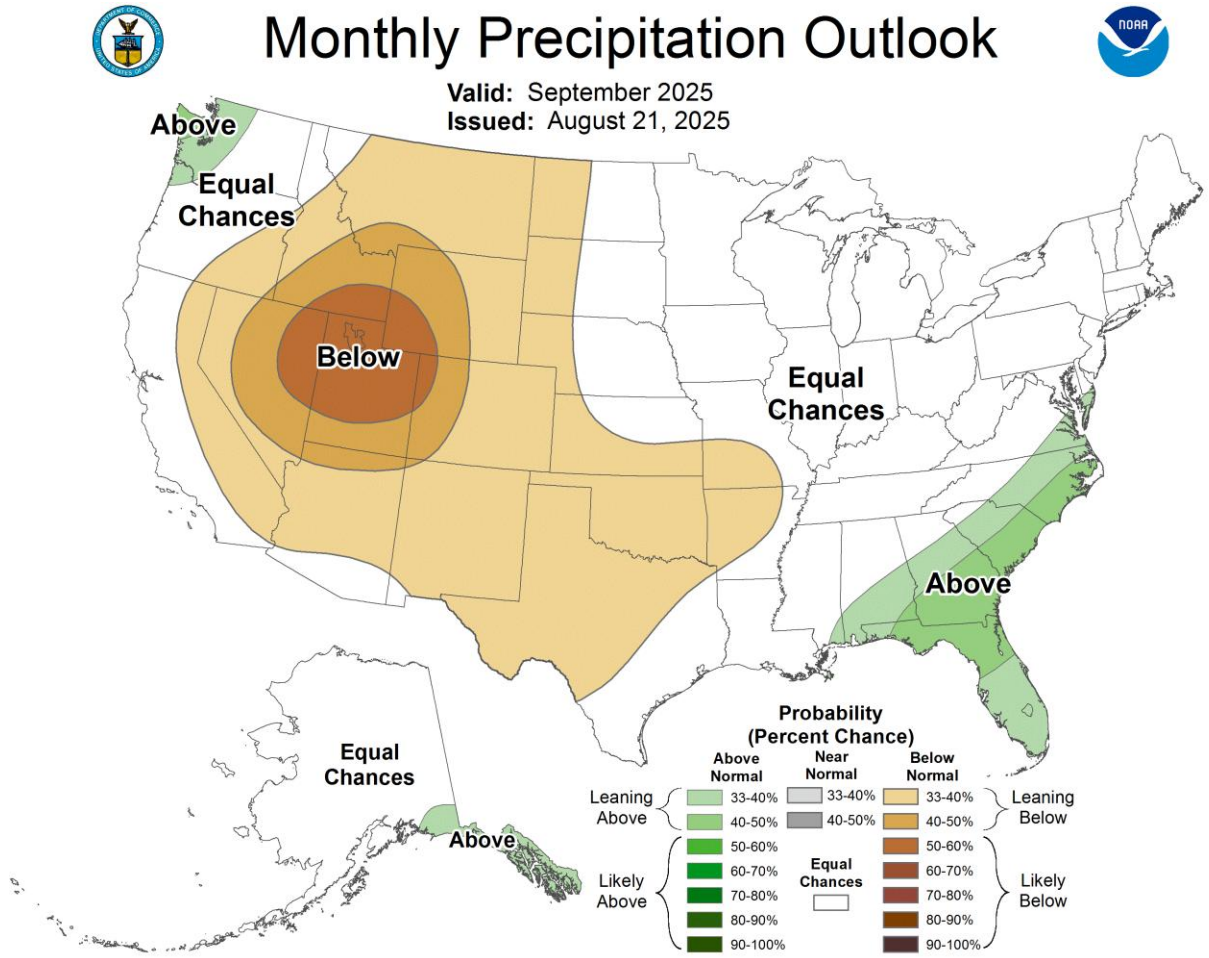
CPC 8-14 Day Hazards Outlook



https://www.cpc.ncep.noaa.gov/products/predictions/threats/precip_probhazards_d8_14_contours.png

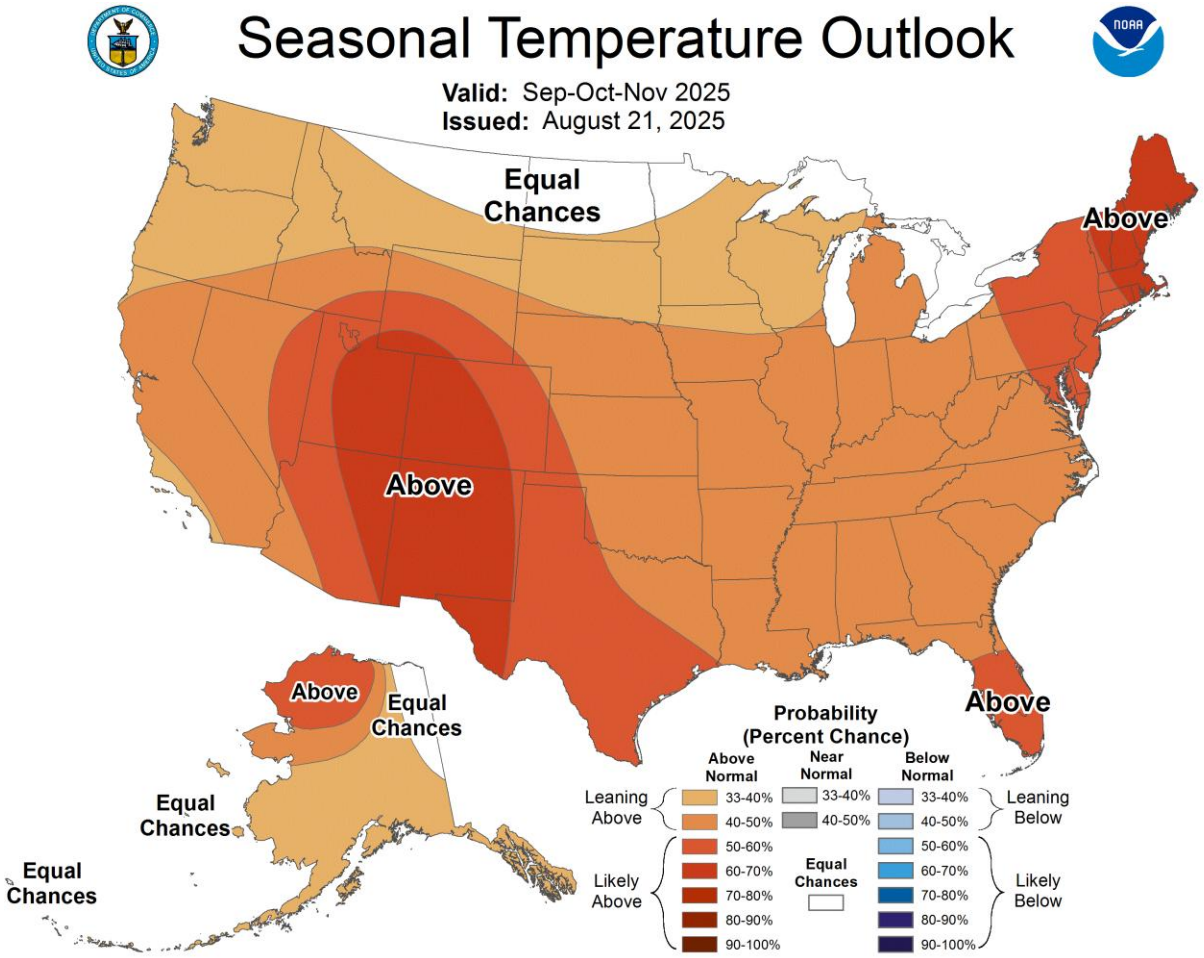
Monthly Outlook (September)

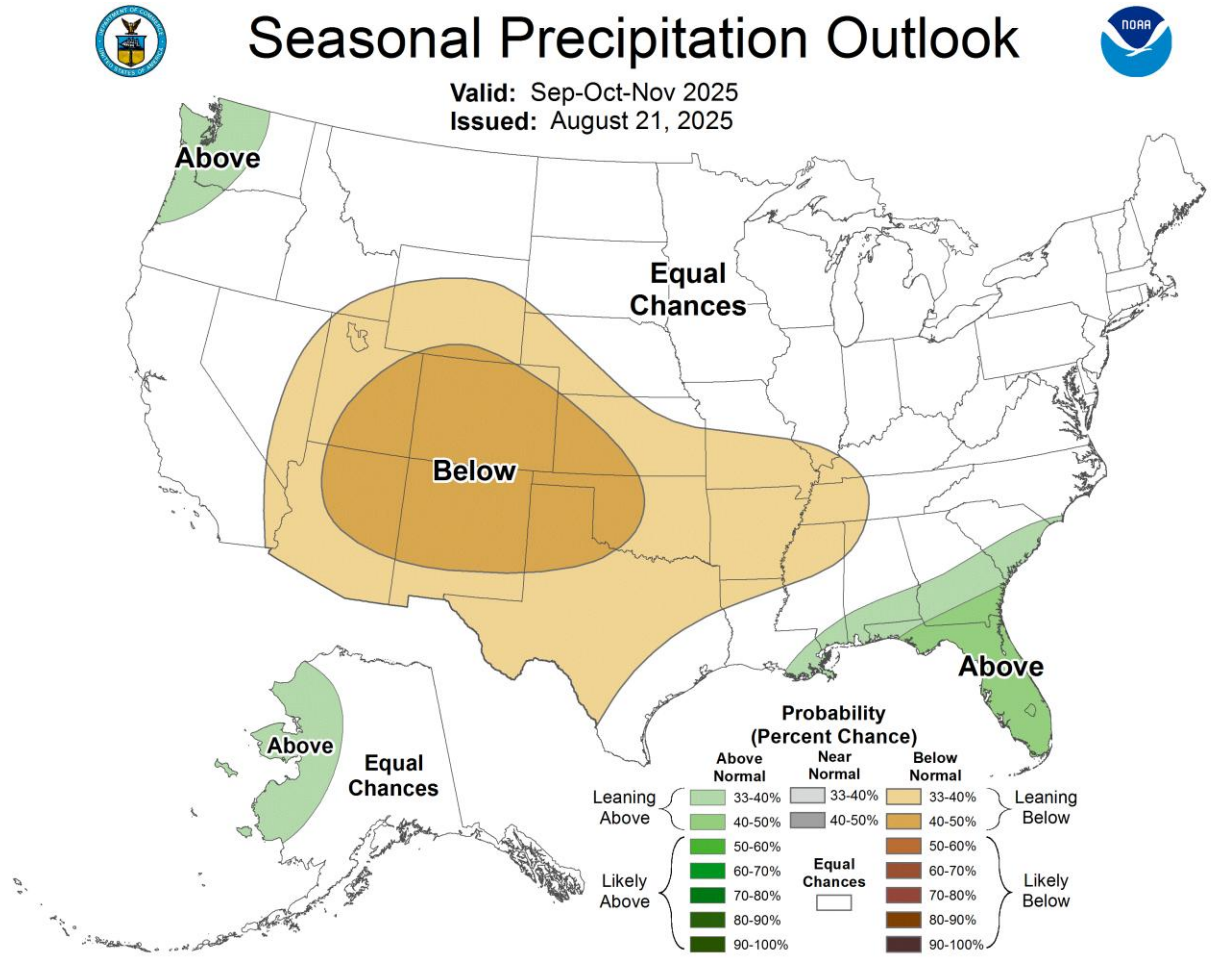




https://www.cpc.ncep.noaa.gov/

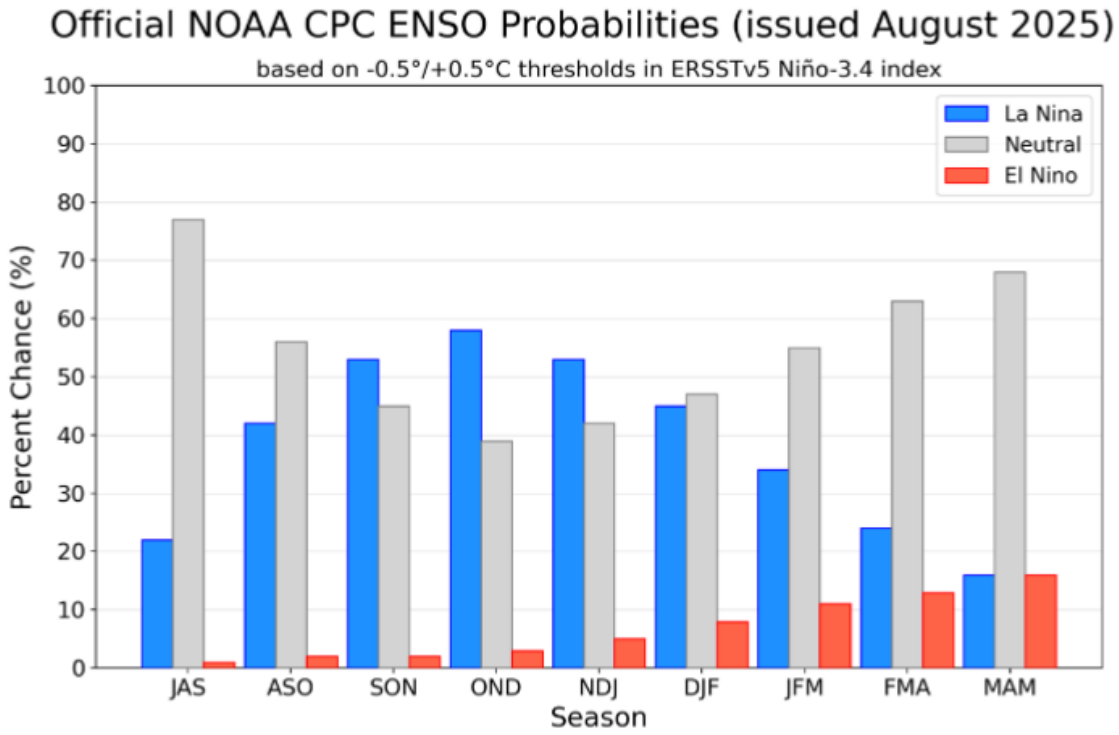
Seasonal Outlook (Sep-Nov)





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

ENSO Update



ENSO Alert System Status: La Niña Watch

ENSO-neutral is present.*

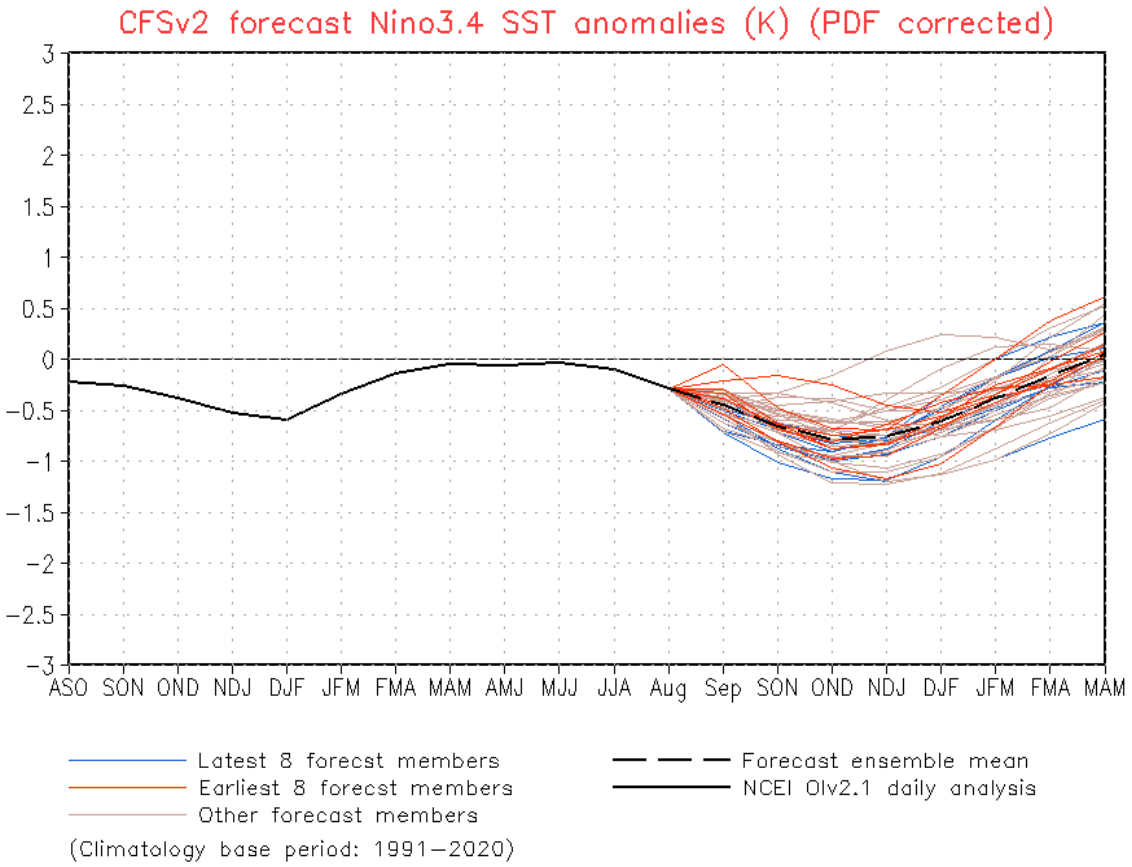
Equatorial sea surface temperatures (SSTs) are near average across most of the Pacific Ocean.

ENSO-neutral is most likely through the late Northern Hemisphere summer 2025 (56% chance in August-October). Thereafter, a brief period of La Niña conditions is favored in the fall and early winter 2025-26 before reverting to ENSO-neutral.*

Update prepared by:
Climate Prediction Center / NCEP
18 August 2025

https://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/enso.shtml

ENSO Update



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Summary

- After a big cool down in the east, above average temperatures are favored in the region during late summer and fall
- La Nina?
- Significant rainfall may ease drought conditions in the west. Flash drought in the MO/OH Valleys
- Good year for crops. Some issues with heat/humidity on crops and hay production

Noble County, OH (Aaron Wilson)

Thank You!

- Questions:

  Climate:

  - Zack Leasor: leasorz@missouri.edu, 573-882-5908
  - Dennis Todey: dennis.todey@usda.gov , 515-294-2013
  - Doug Kluck: doug.kluck@gmail.com, 816-564-2417
  - Brian Fuchs: bfuchs2@unl.edu 402-472-6775

  Agriculture:

  - Brad Rippey, brad.rippey@usda.gov

Next webinar scheduled for September 18, 2025. Presenter: Dr. Trent Ford (Illinois State Climatologist)

Thank You!

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Rocheport, MO (Zack Leasor)

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