

IOWA STATE
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Extension and Outreach



North Central U.S. Climate and Drought Outlook

November 2025

Madelynn Wuestenberg

ISU Extension Agricultural Climatologist

Further information and partners

- Today's and Past Recorded Presentations:
 - <https://mrcc.purdue.edu/webinars>
 - <https://hprcc.unl.edu/webinars.php>
- Next Webinar: December 18, 2025, with Bridgette Mason, University of Wisconsin
- 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>

Agenda

- Recent conditions
- River and stream flows
- Impacts
- Outlooks

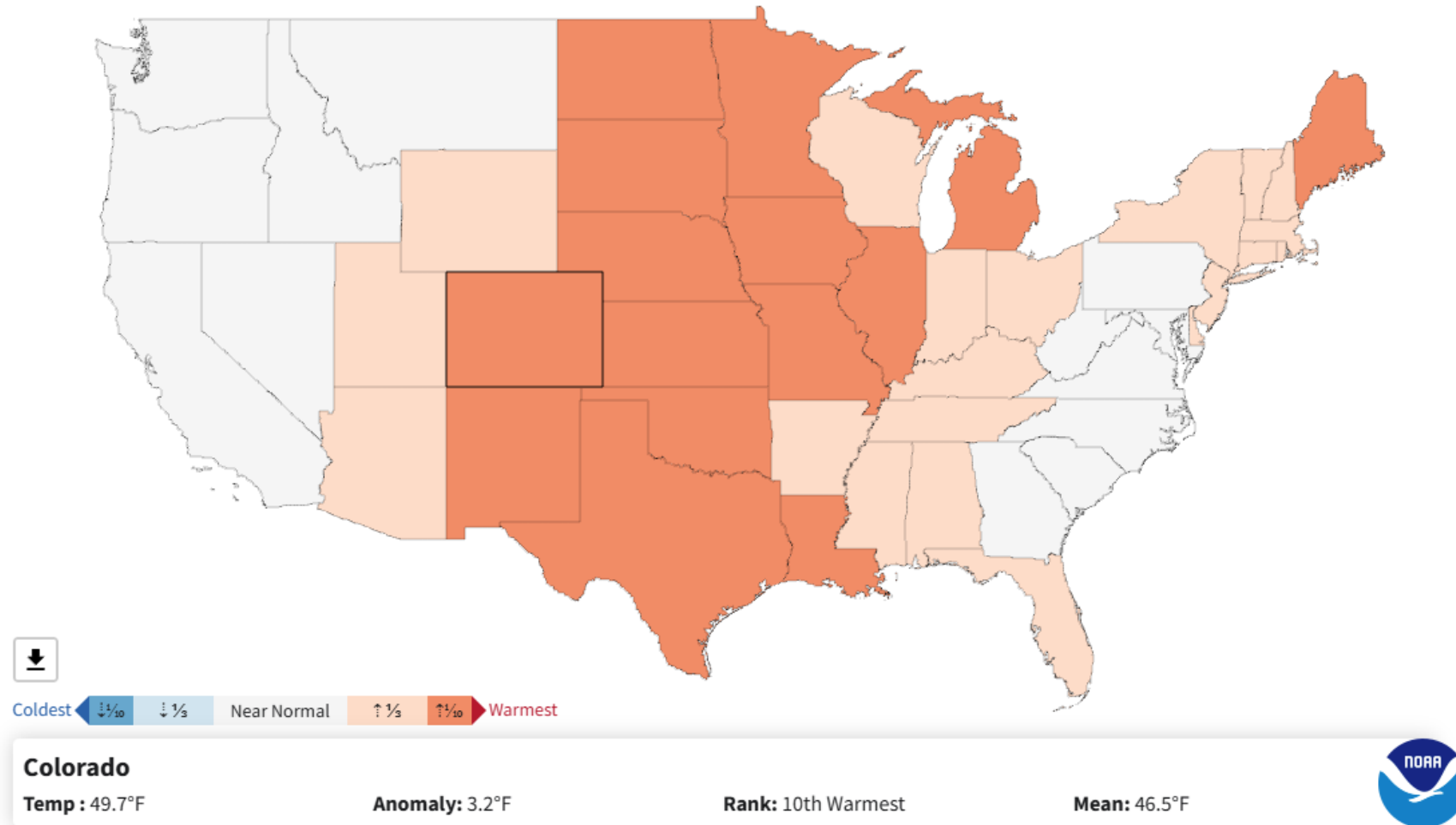


Photo: from Bridgette Mason

October Temperature Rankings

Statewide Average Temperature Rank (131 years)

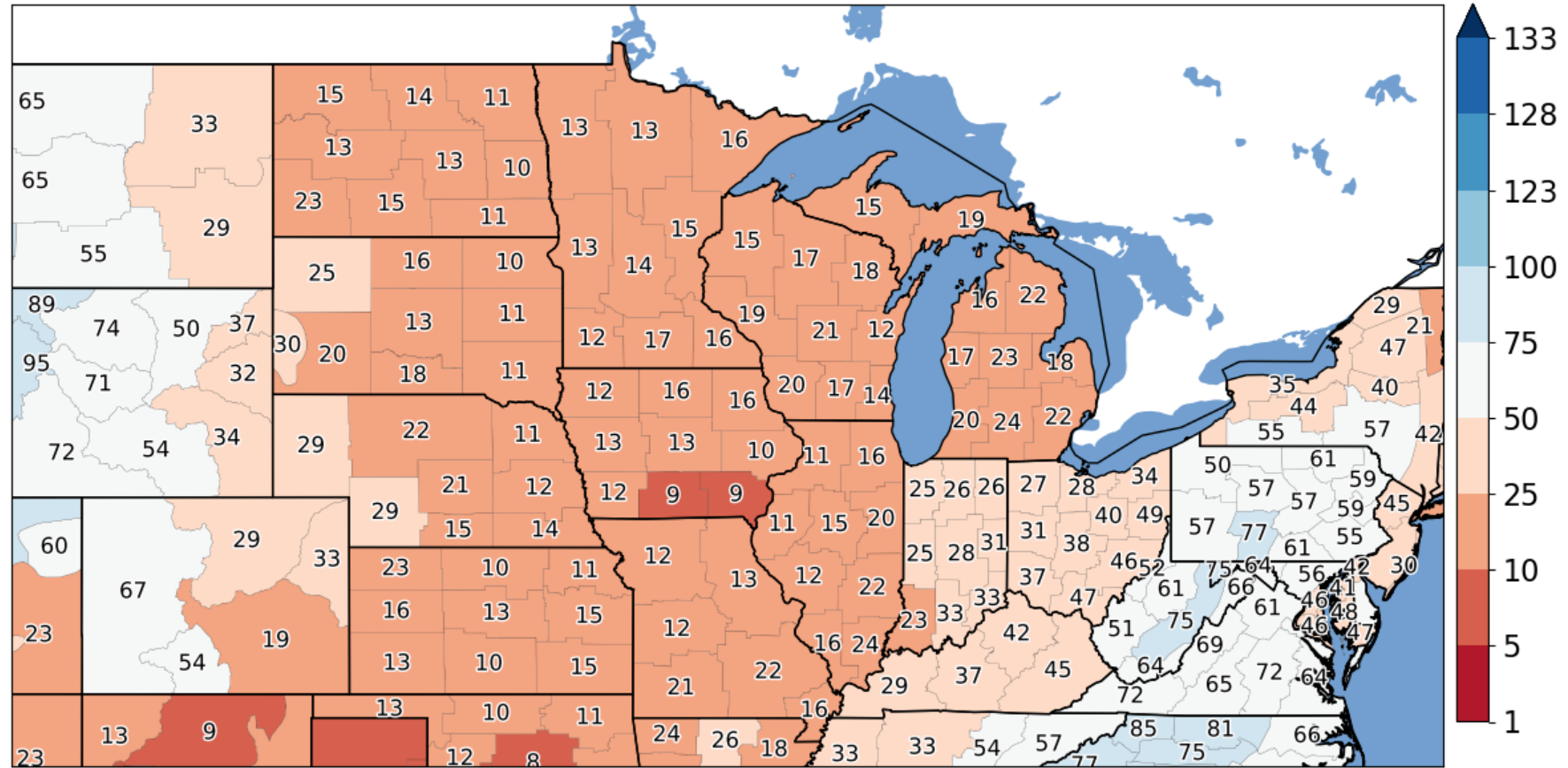
October 2025



October Temperature Rankings



30 Sep 2025 ~7 AM till 31 Oct 2025 ~7 AM Average Temperature Ranks by Climate District
Based on IEM Estimates, 1 is hottest out of 133 total years (1893-2025)



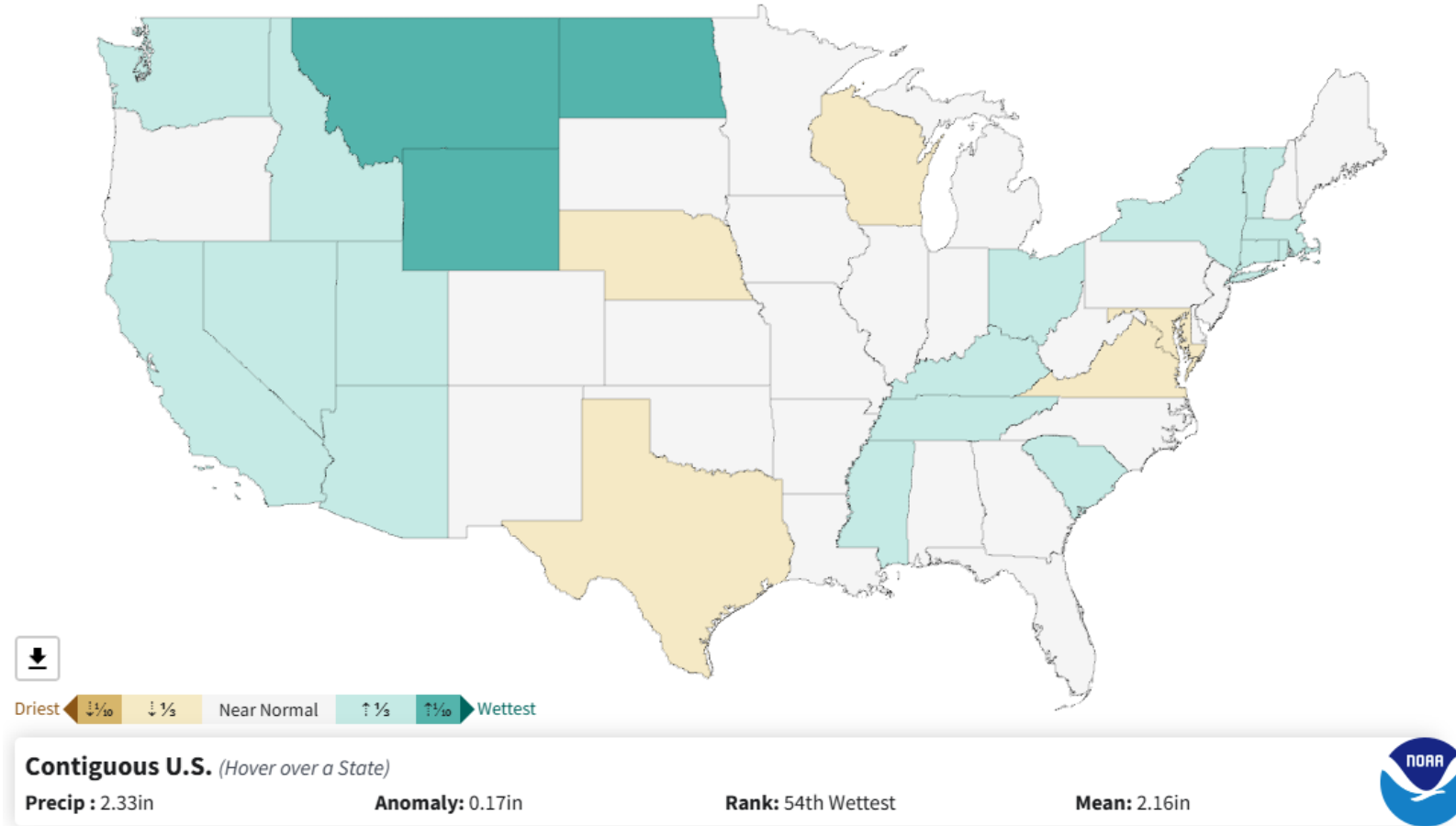
data units ::
IEM Autoplot App #24

Generated at 18 Nov 2025 4:00 PM CST in 22.77s

October Precipitation Rankings

Statewide Precipitation Rank (131 years)

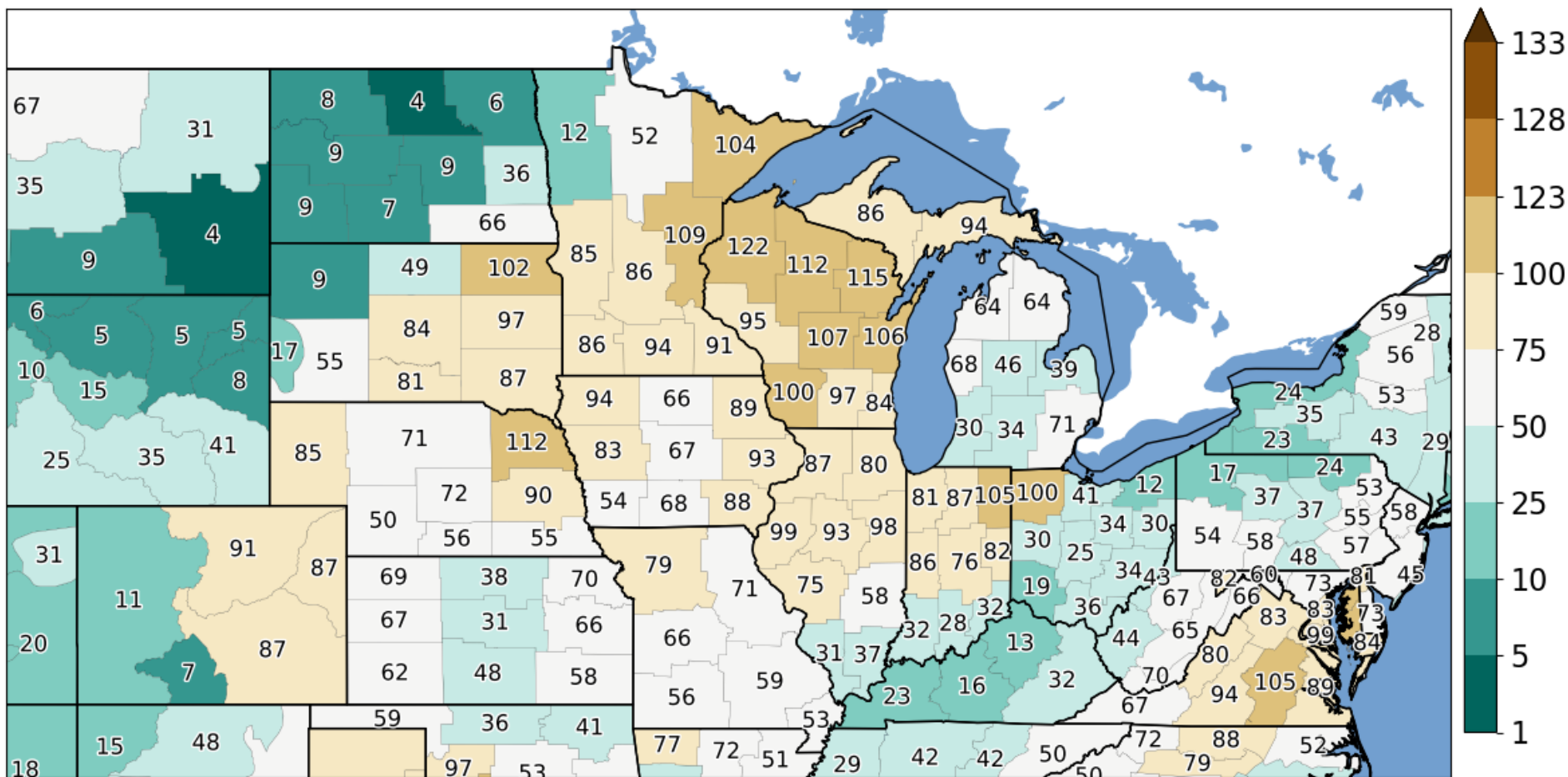
October 2025



October Precipitation Rankings



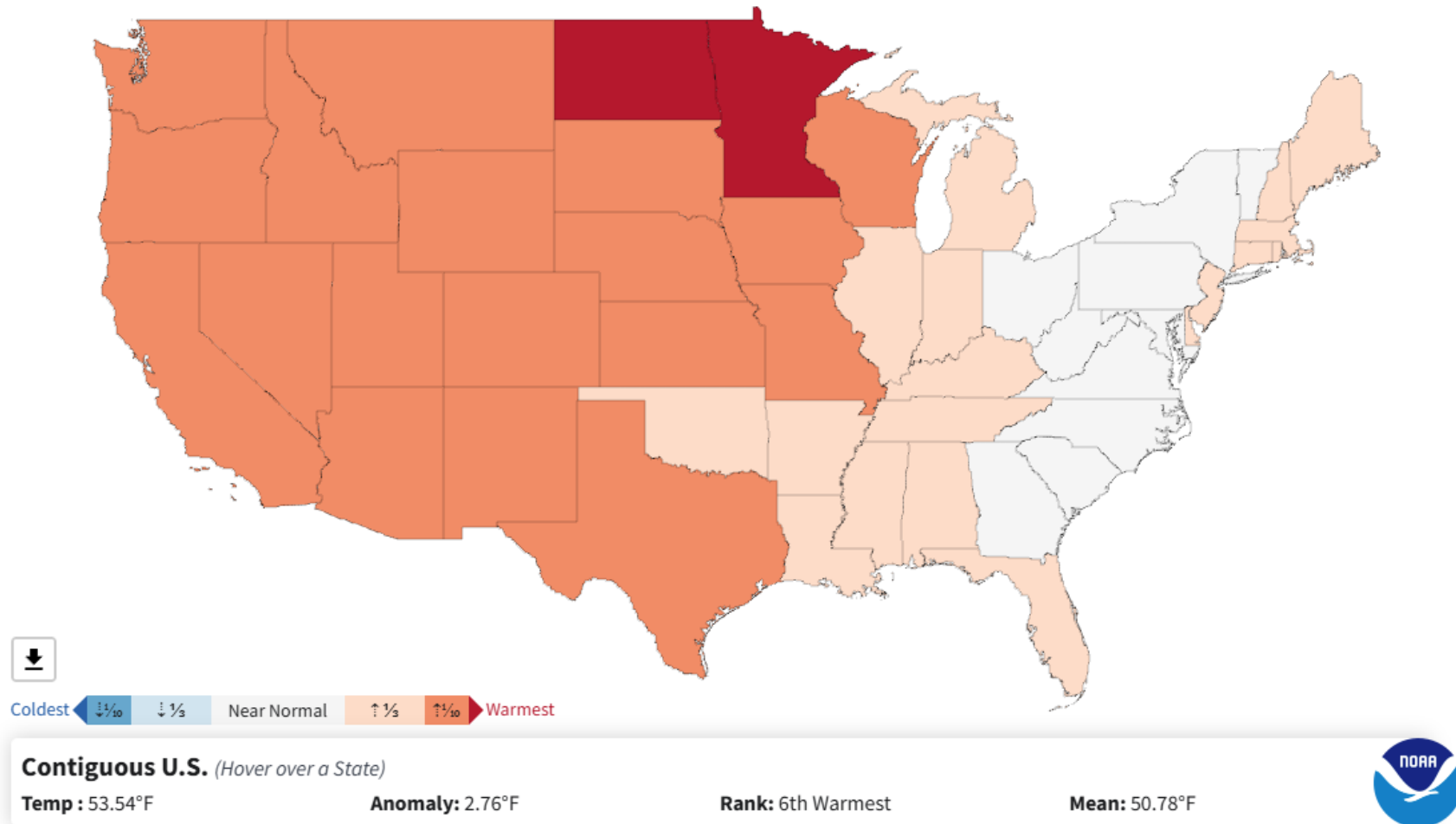
30 Sep 2025 ~7 AM till 31 Oct 2025 ~7 AM Total Precipitation Ranks by Climate District
Based on IEM Estimates, 1 is wettest out of 133 total years (1893-2025)



August-October min temperature rankings

Statewide Minimum Temperature Rank (131 years)

August - October 2025

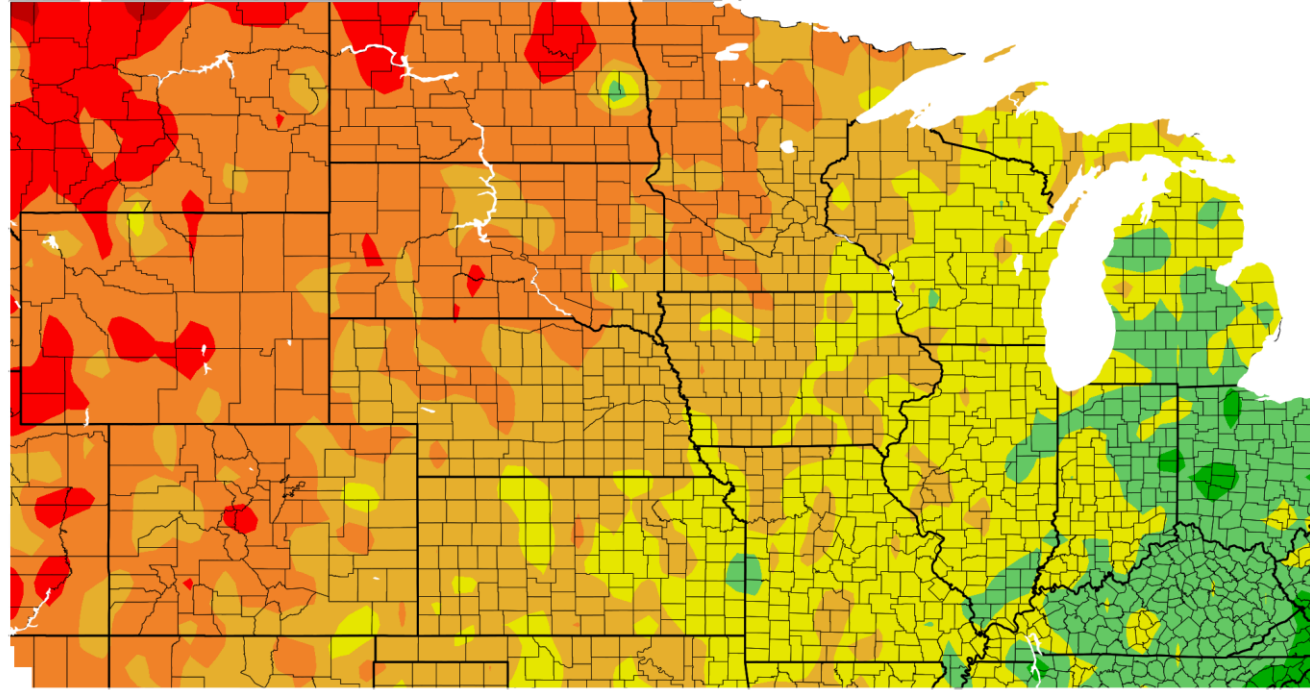


October temperature records

- 65 new daily high temperature records in Wisconsin were set at the beginning of October
 - The month's hottest temperature, 90 degrees, occurred in La Crosse (La Crosse County) on October 3 and Lodi (Columbia County), Brodhead (Green County), and Darlington (Lafayette County) on October 4.

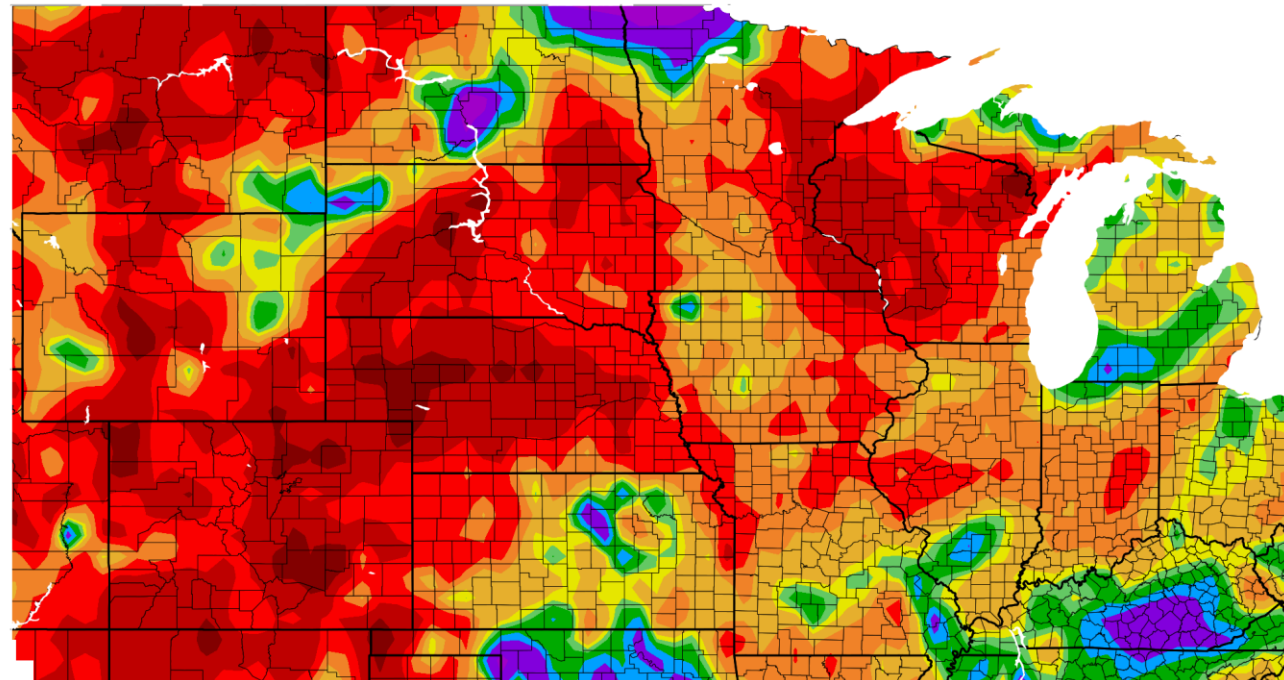
Last 30 Days Temperature

Departure from Normal Temperature (F)
10/18/2025 – 11/16/2025



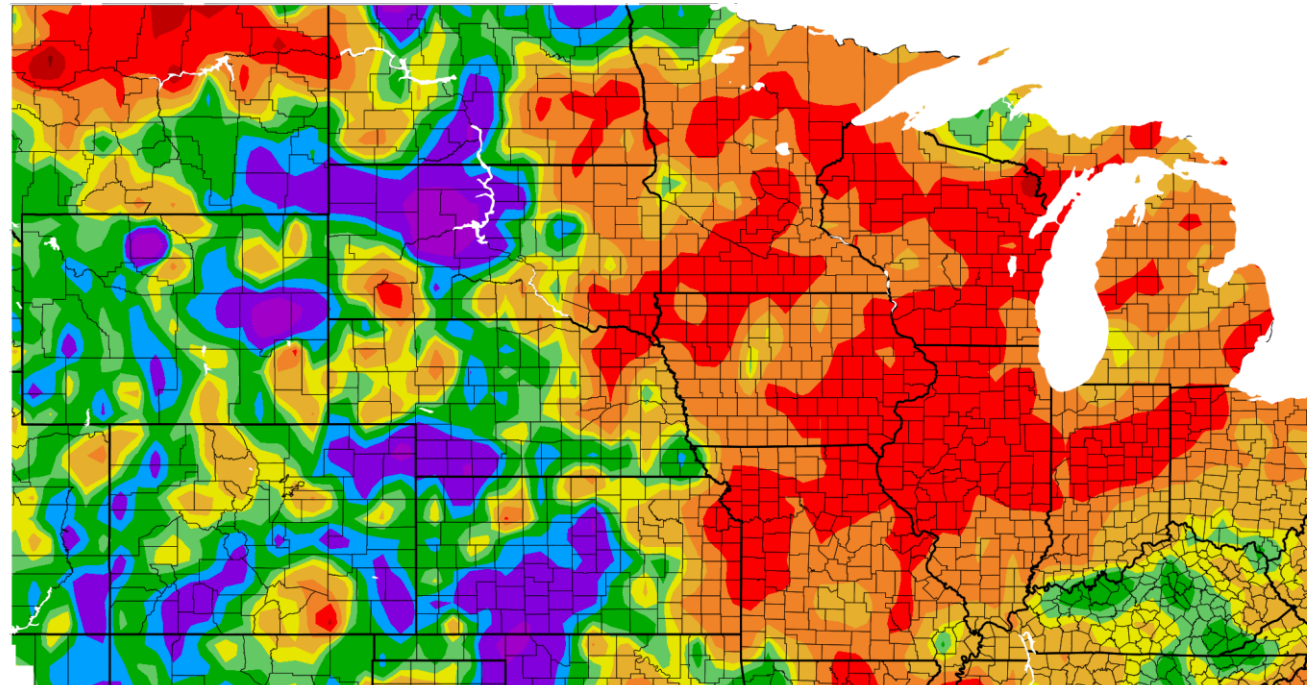
Last 30 Days Precipitation

Percent of Normal Precipitation (%)
10/18/2025 – 11/16/2025



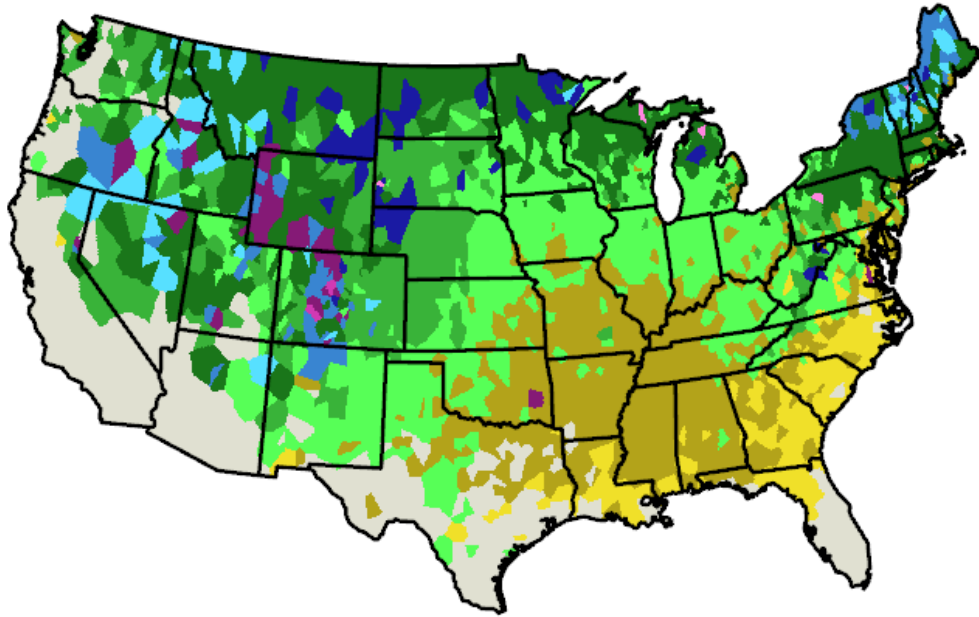
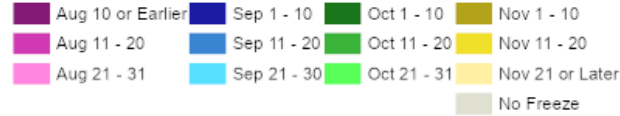
Last 90 Days Precipitation

Percent of Normal Precipitation (%)
8/21/2025 – 11/18/2025



First 32F fall frost data

Date of First 32°F Freeze
for period 7/1/25 to 11/18/25



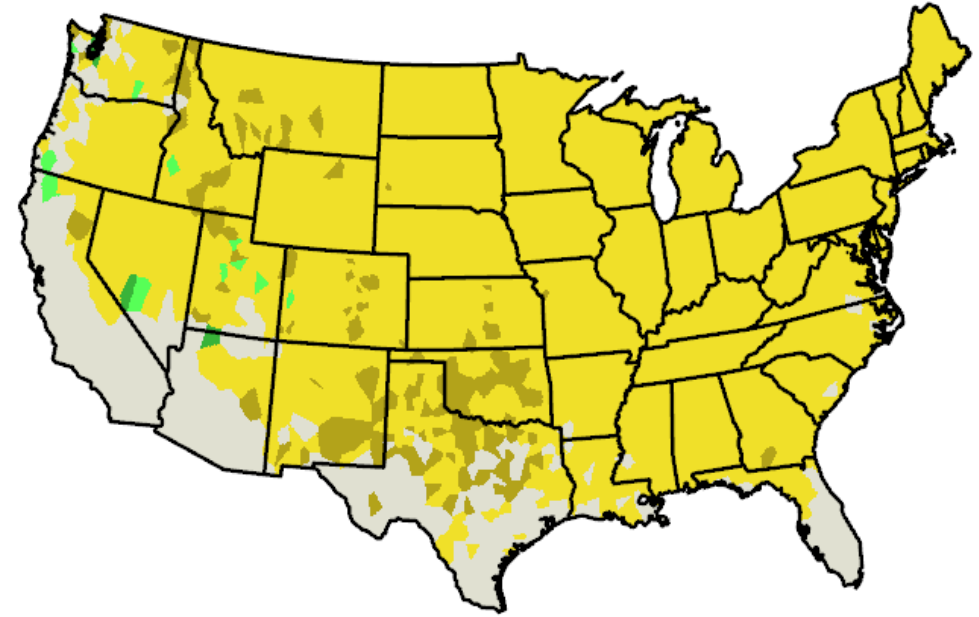
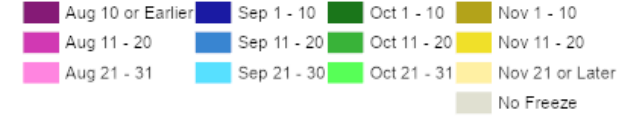
MRCC Experimental Freeze Guidance:
These experimental maps may be utilized as a guide to local and regional freeze conditions but should NOT be used by themselves for decision processes.



MRCC
Midwestern Regional
Climate Center



Date of Most Recent 32°F Freeze
for period 7/1/25 to 11/20/25



MRCC Experimental Freeze Guidance:
These experimental maps may be utilized as a guide to local and regional freeze conditions but should NOT be used by themselves for decision processes.

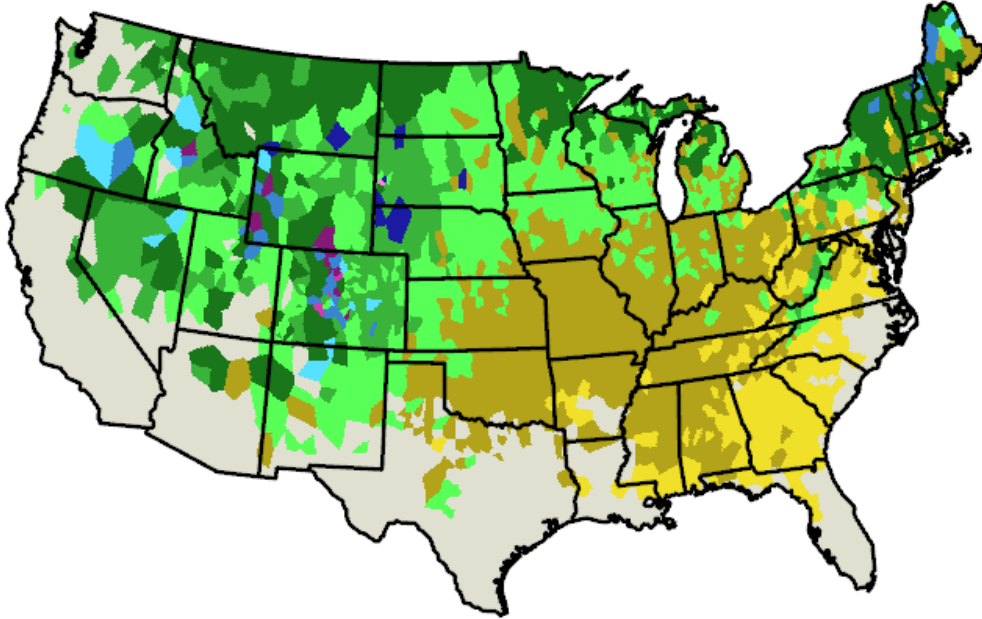
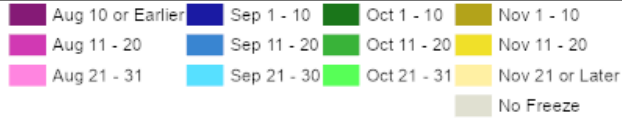


MRCC
Midwestern Regional
Climate Center



First 28F fall frost data

Date of First 28°F Freeze
for period 7/1/25 to 11/18/25



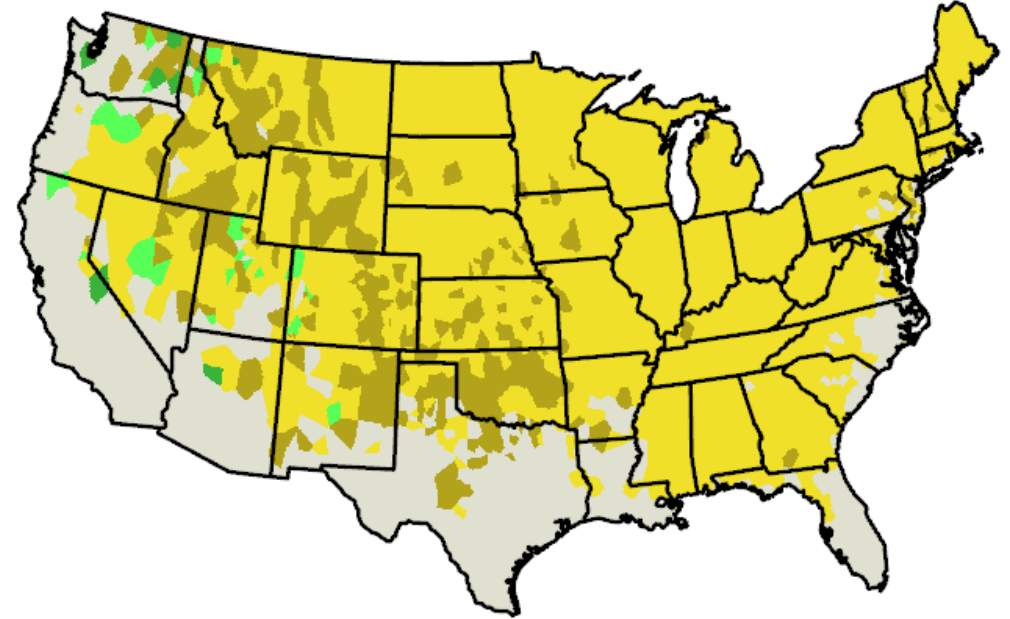
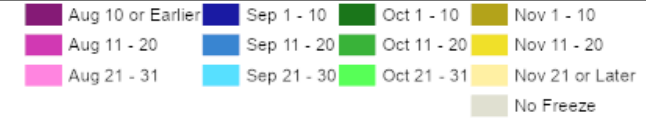
MRCC Experimental Freeze Guidance:
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MRCC
Midwestern Regional
Climate Center



Date of Most Recent 28°F Freeze
for period 7/1/25 to 11/18/25



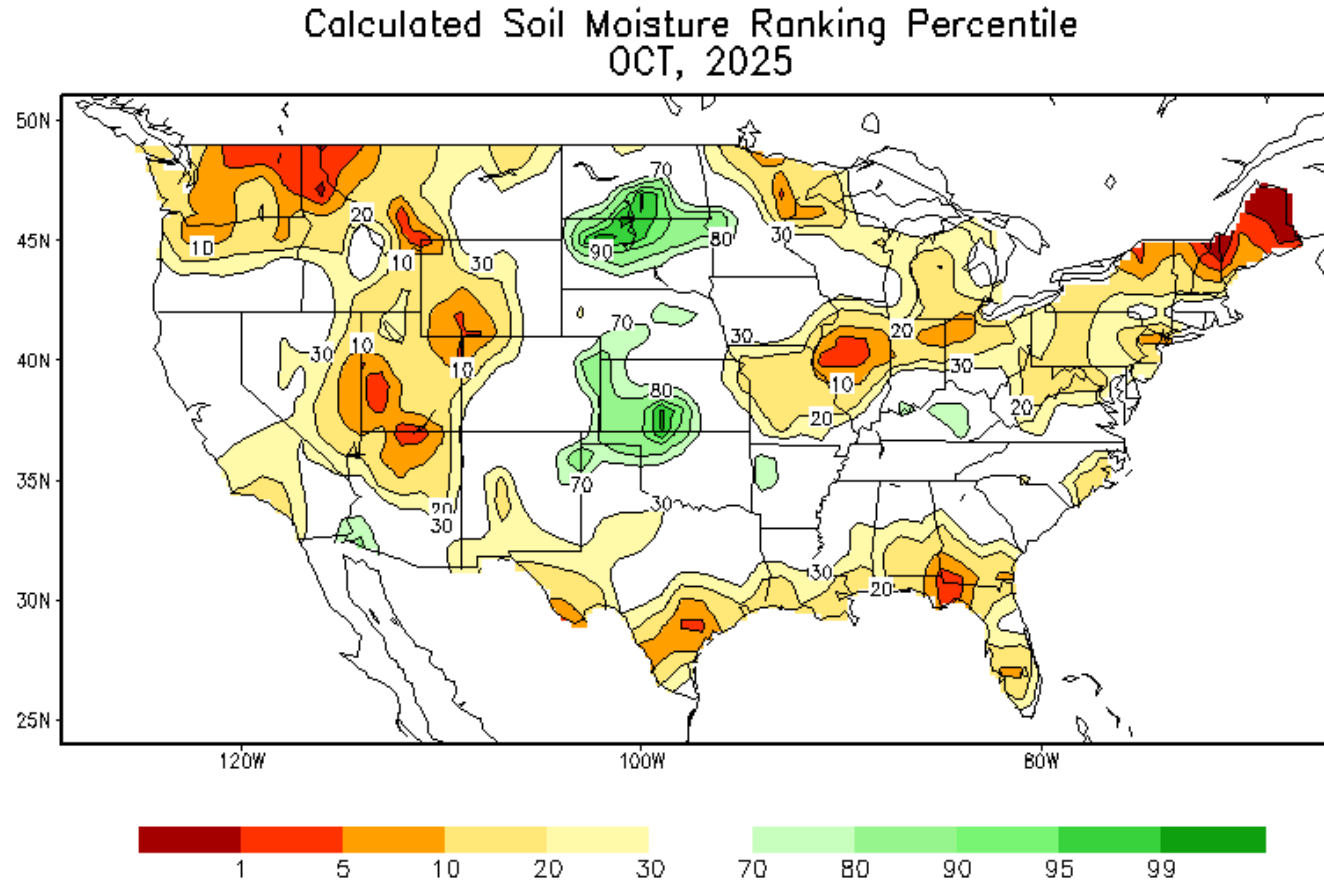
MRCC Experimental Freeze Guidance:
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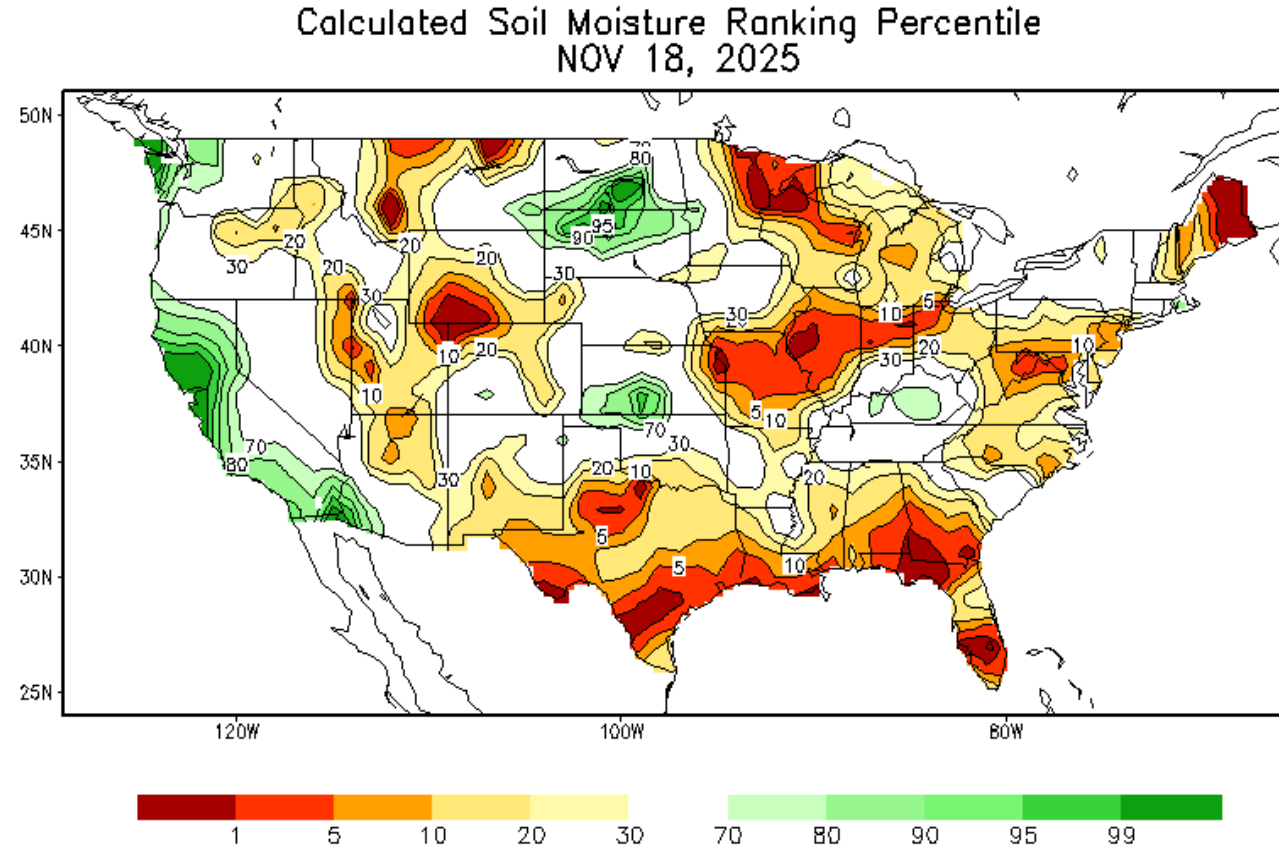
MRCC
Midwestern Regional
Climate Center



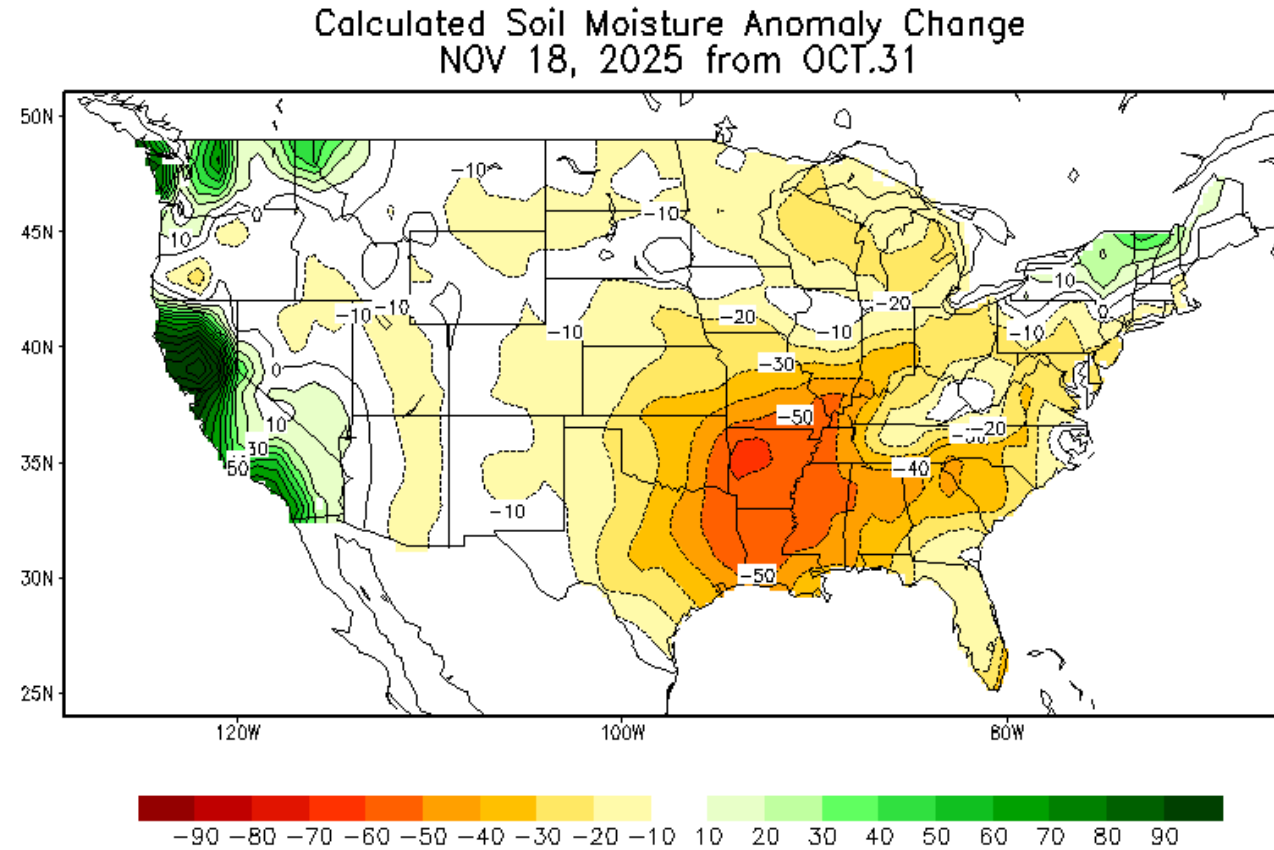
Soil Moisture Percentile



Soil Moisture Percentile



Soil Moisture Anomaly Change



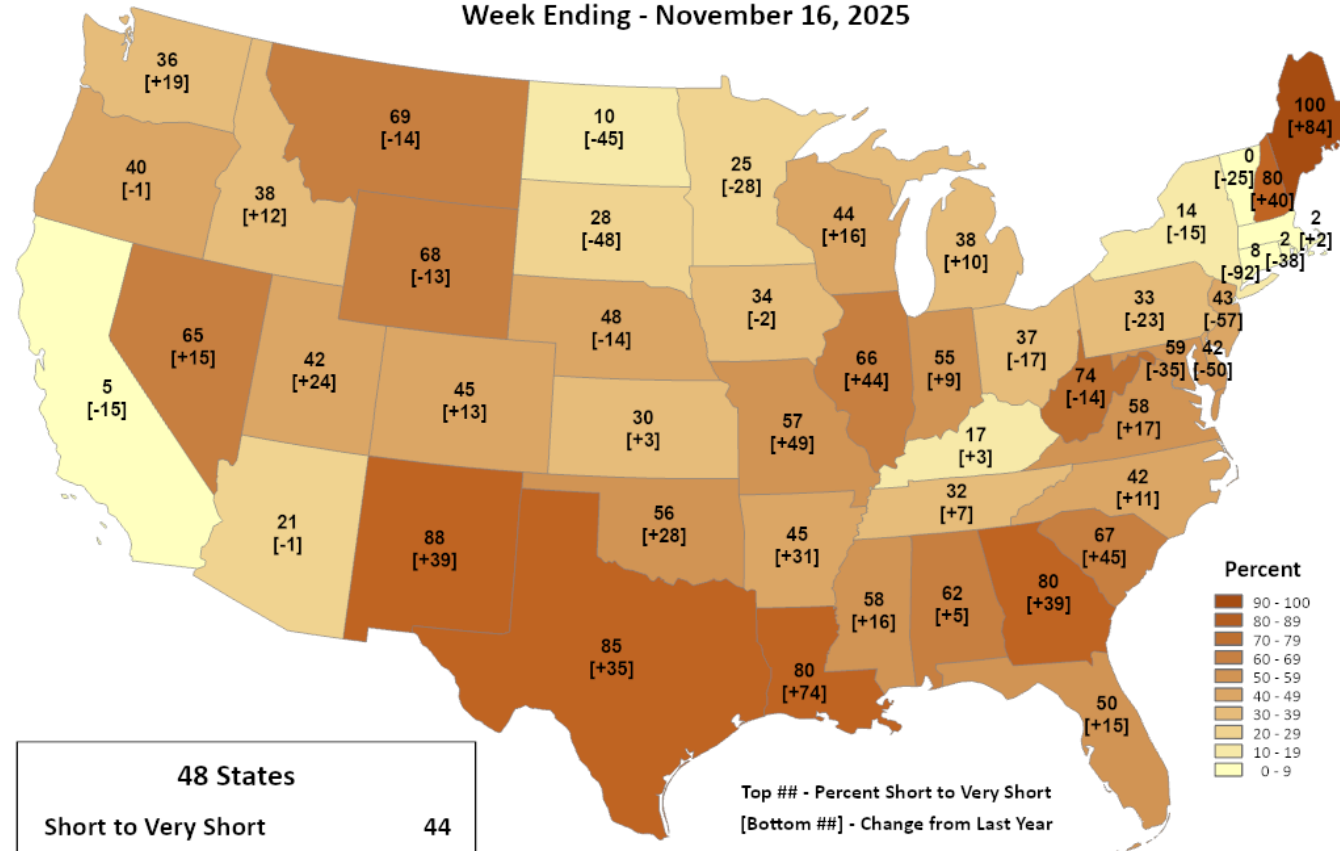
Topsoil moisture



United States
Department of
Agriculture

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

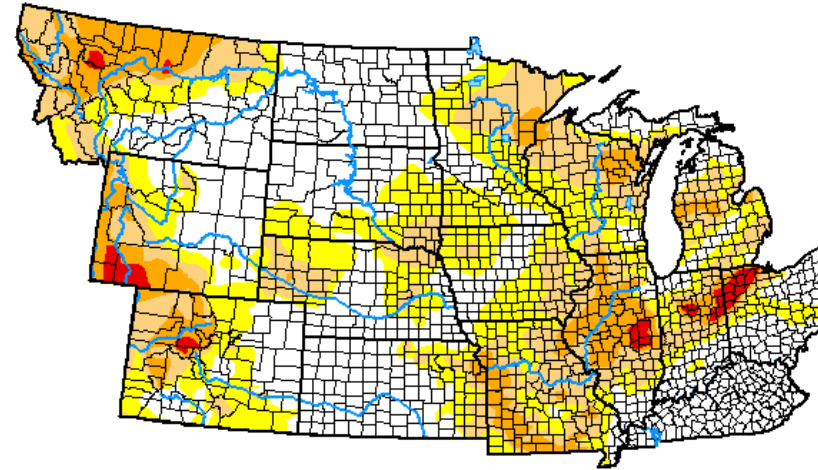
Topsoil Moisture Percent Short to Very Short Week Ending - November 16, 2025



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

U.S. Drought Monitor

- Wetter in the Plains at this time compared to last year
- Wetter in eastern OH
- Drier in IL and IN



U.S. Drought Monitor NWS Central

November 18, 2025
(Released Thursday, Nov. 20, 2025)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	41.80	58.20	32.49	12.16	1.44	0.00
Last Week 11-11-2025	45.63	54.37	30.01	11.08	1.35	0.00
3 Months Ago 08-19-2025	64.43	35.57	18.68	9.84	5.03	0.64
Start of Calendar Year 01-07-2025	31.02	68.98	45.49	19.38	5.80	0.00
Start of Water Year 09-30-2025	45.92	54.08	28.92	14.16	3.88	0.00
One Year Ago 11-19-2024	20.64	79.36	56.39	23.92	7.19	0.28

Intensity:

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

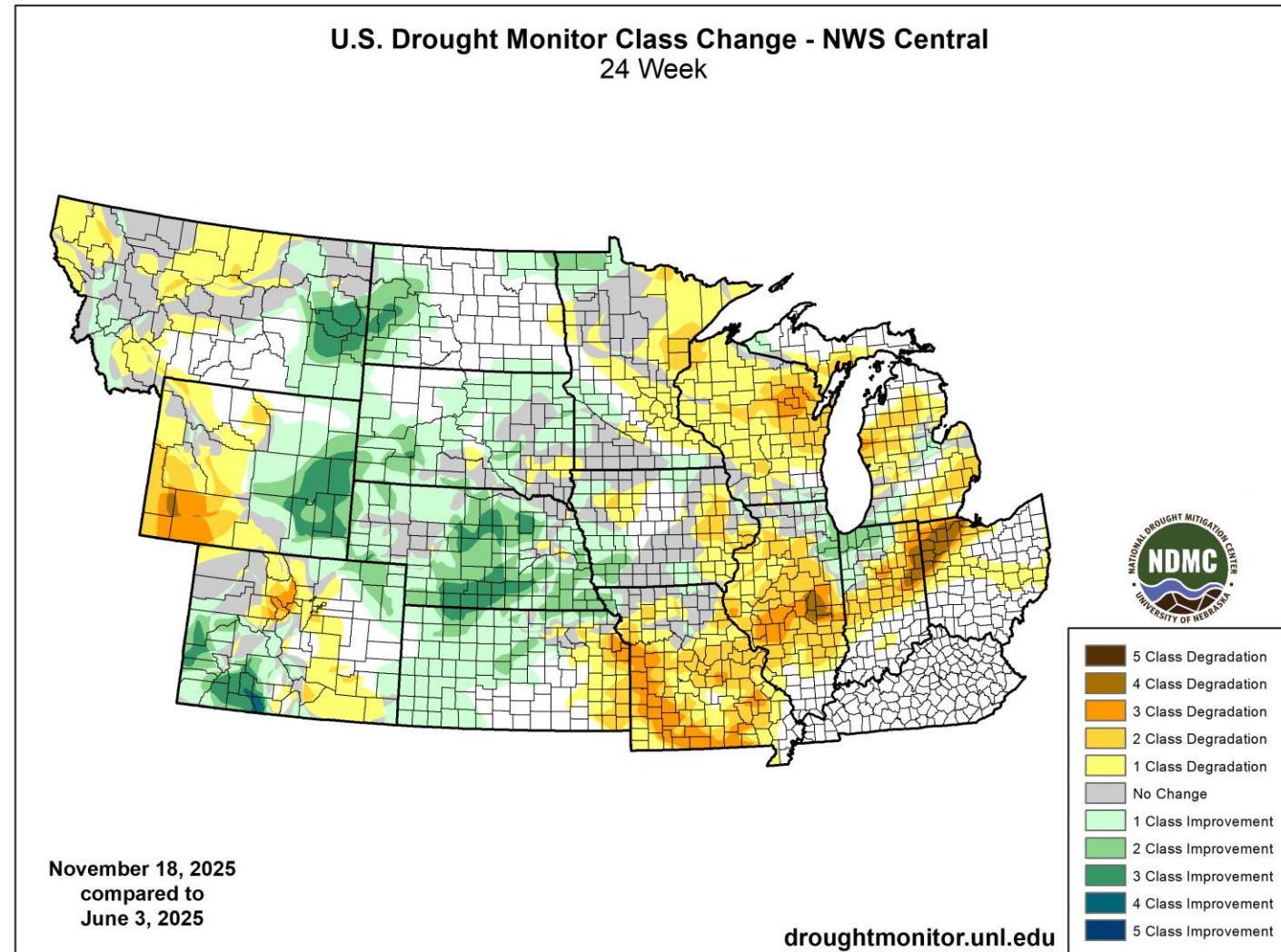
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

Curtis Riganti
National Drought Mitigation Center

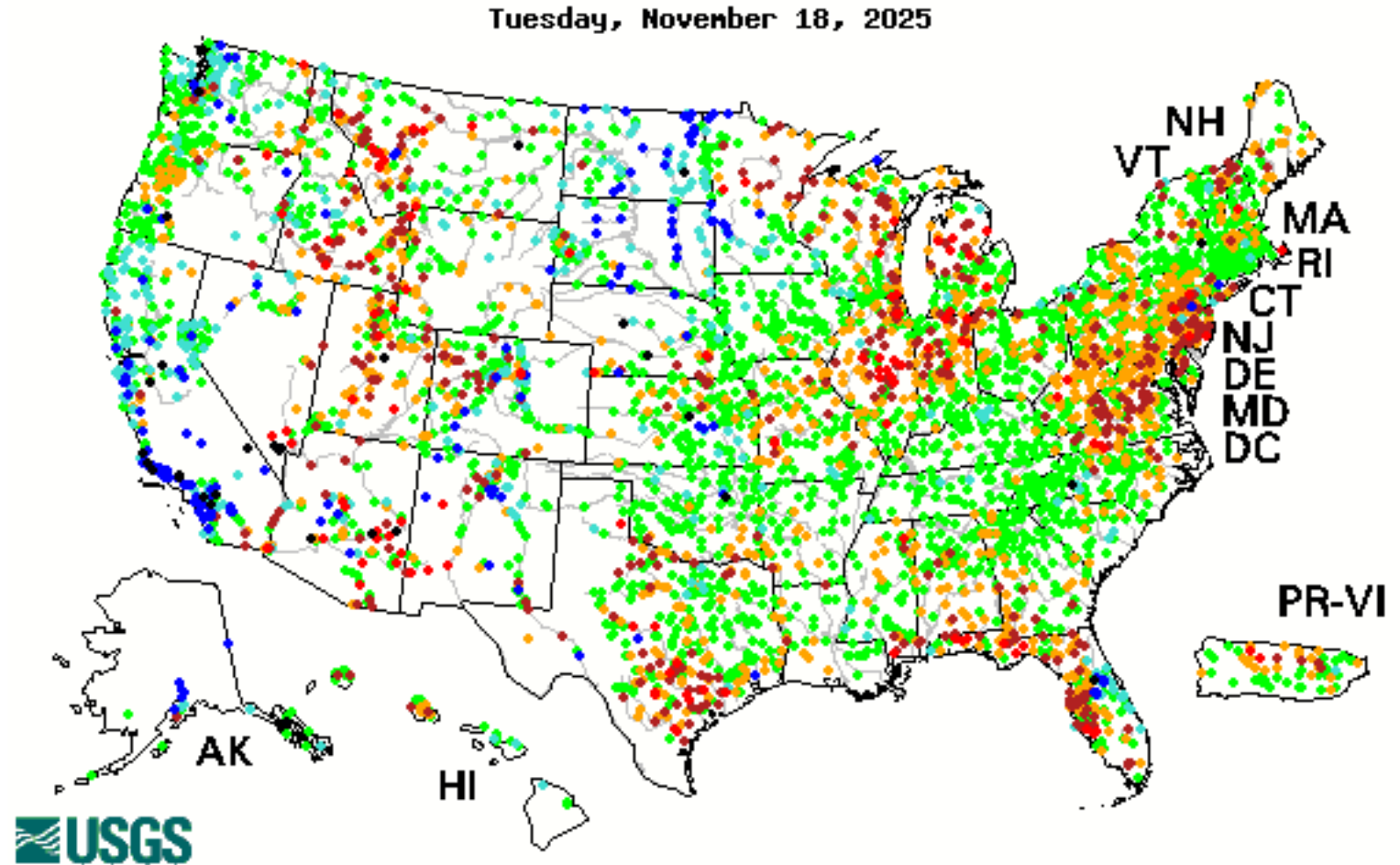


U.S. Drought Monitor

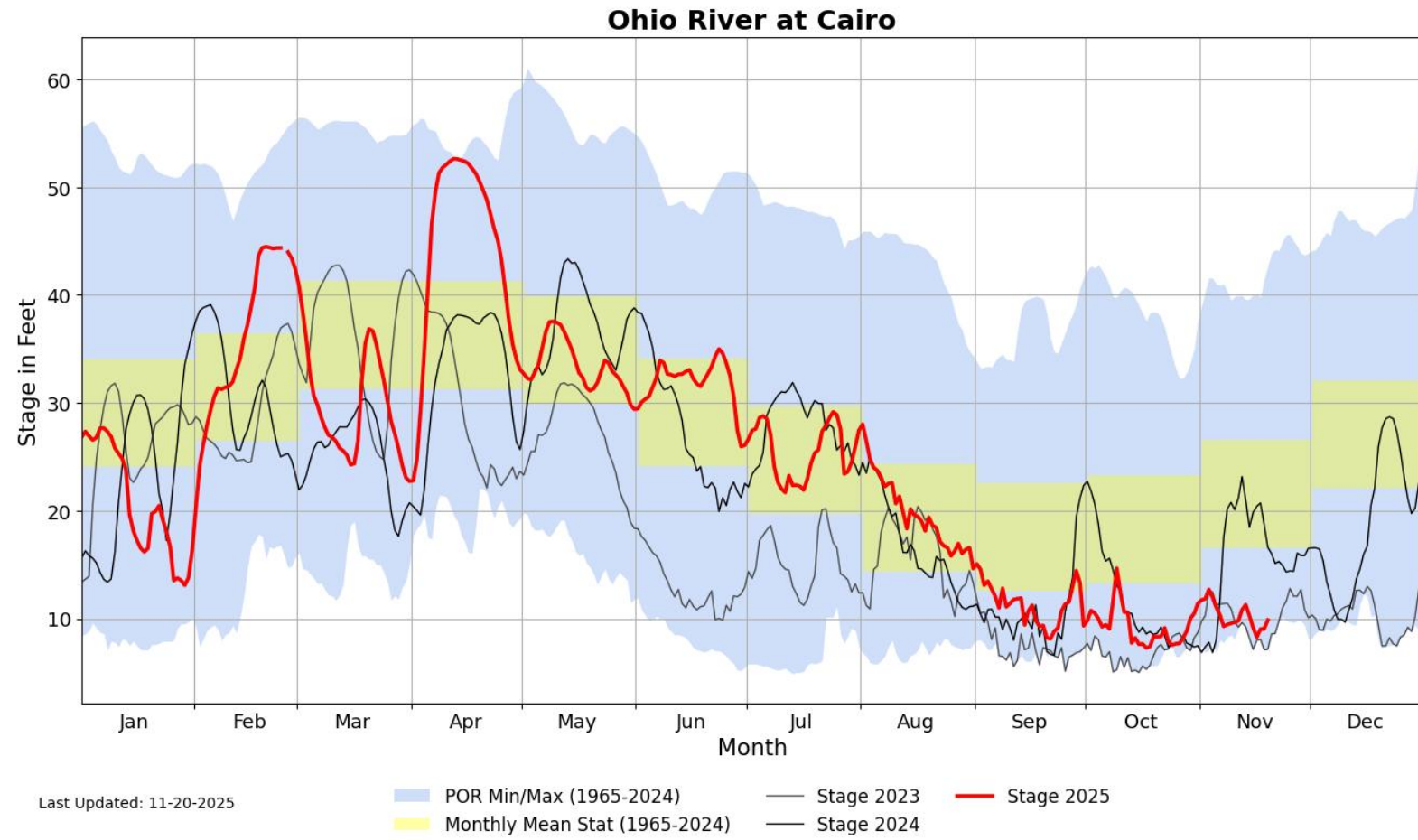


Streamflow

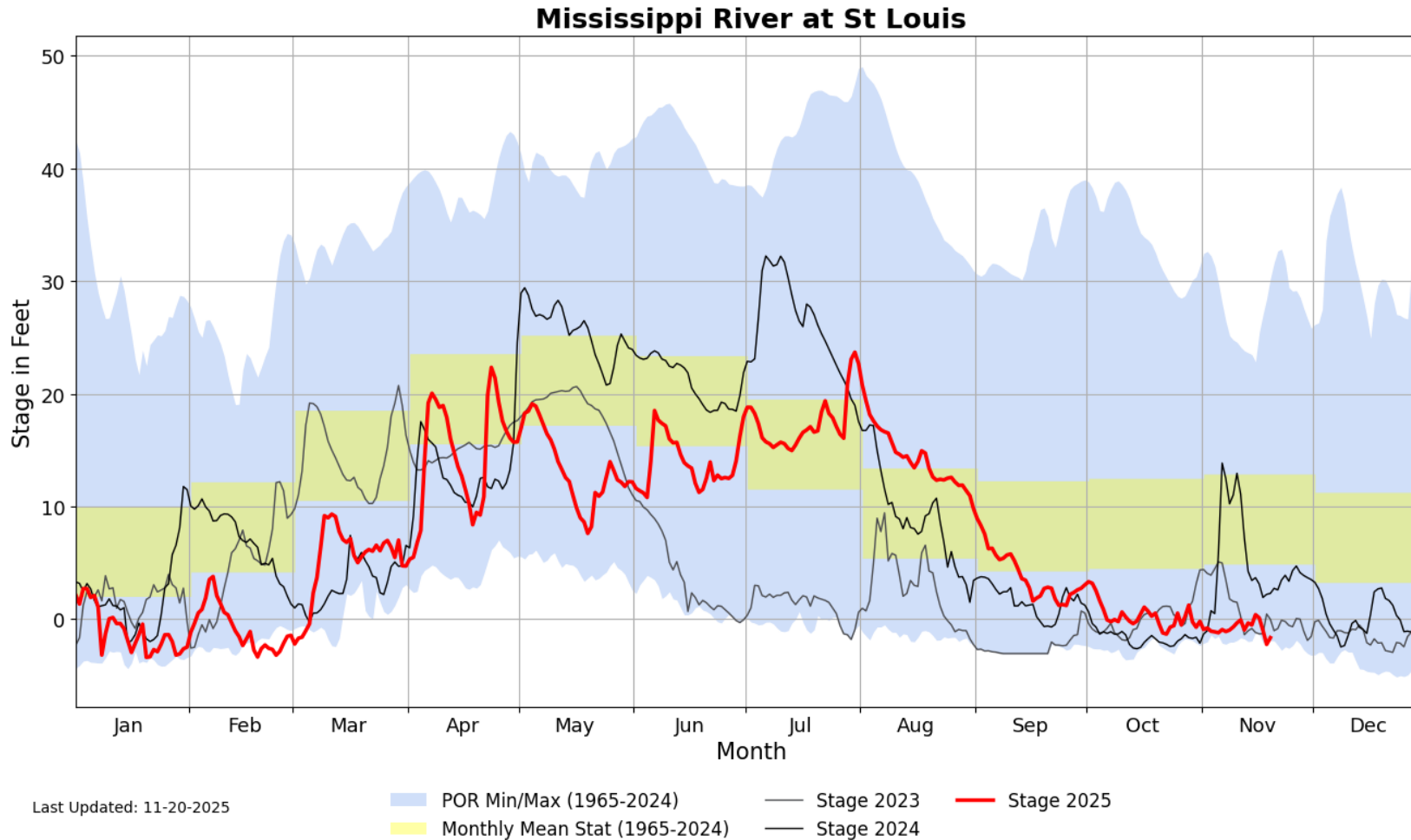
- Low flow in Illinois, Indiana, Michigan
- Aligns with long-term (90-day) precipitation departures



Ohio River



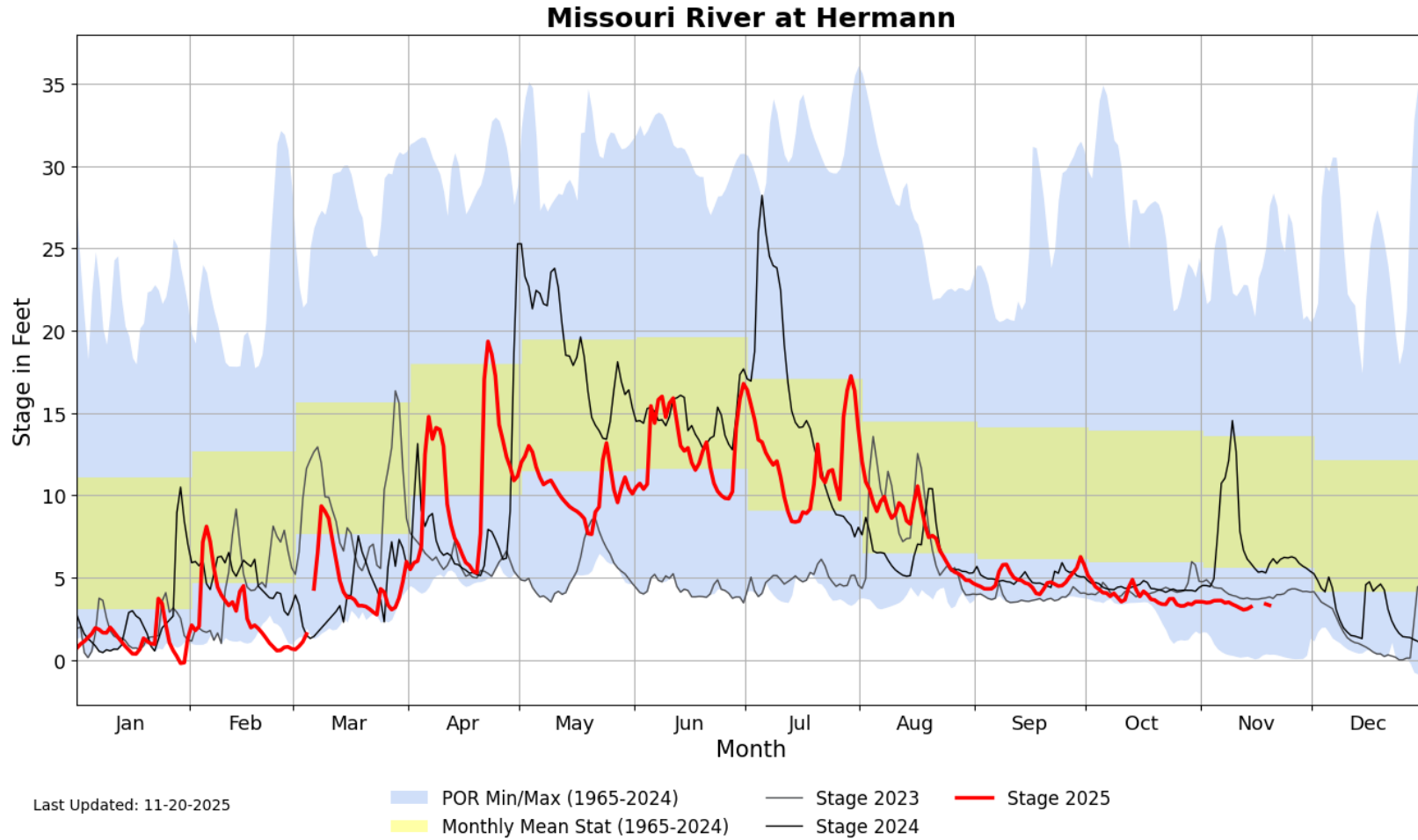
Mississippi River



Mississippi River Update

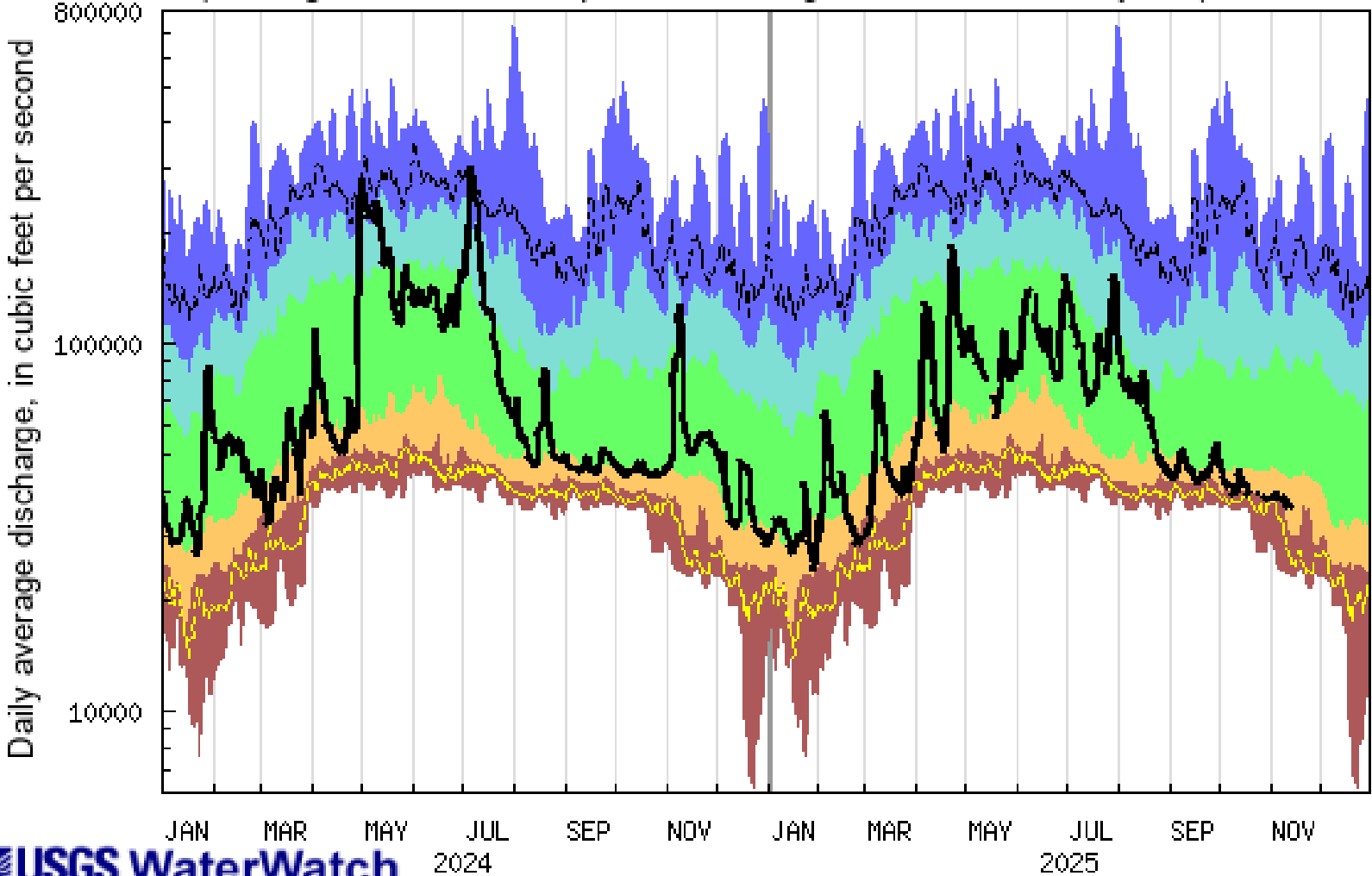
- No imminent threats to navigation, but monitoring for any prolonged cold snaps that might freeze the river and cause stages to drop quickly.

Missouri River



Missouri River Update

USGS 06934500 Missouri River at Hermann, MO
(Drainage area: 522500 square miles, length of record: 66 - 67 years)



Daily average discharge, in cubic feet per second

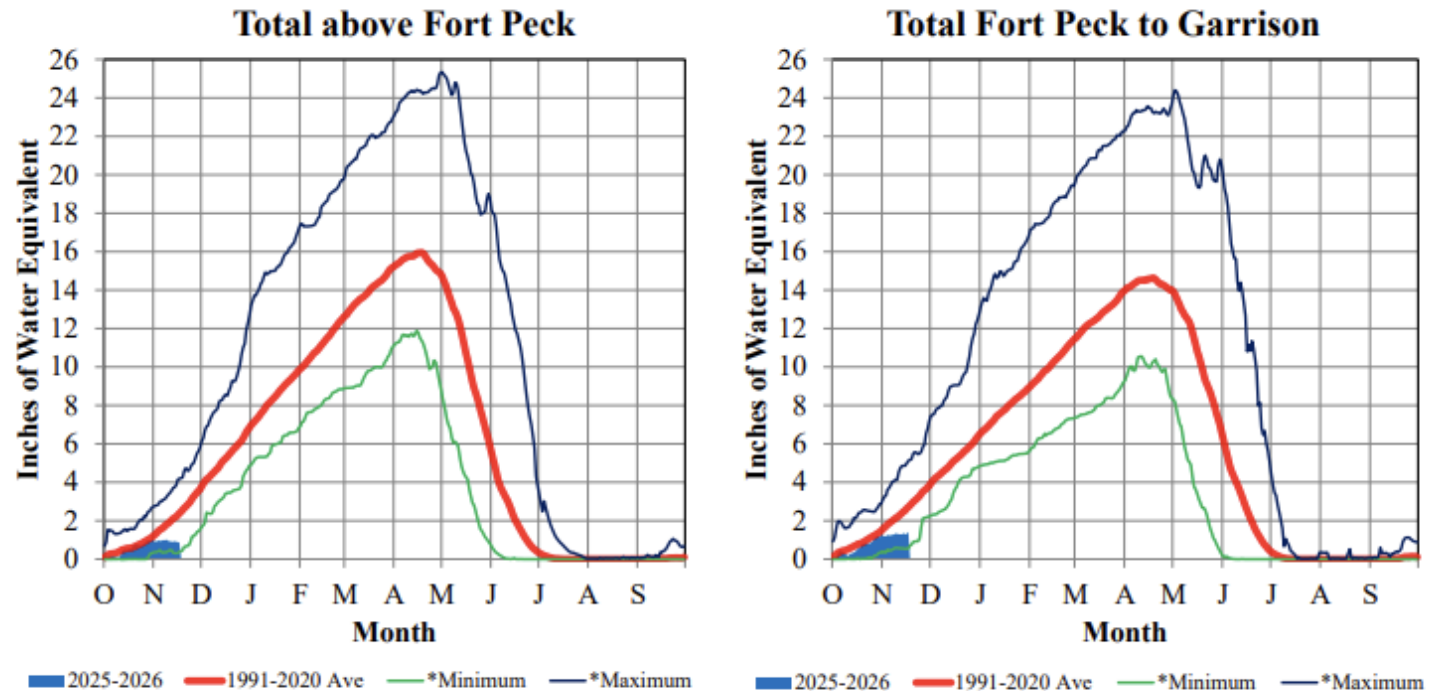
Explanation - Percentile classes						Flow
lowest-10th percentile	5	10-24	25-75	76-90	95	
					90th percentile - highest	
Much below Normal	Below normal	Normal	Above normal	Much above normal		

Missouri River Update

- Keep an eye on this throughout the winter as snow totals increase as we move into winter

Missouri River Basin – Mountain Snowpack Water Content 2025-2026 with comparison plots from recent high and low years

17-Nov-2025

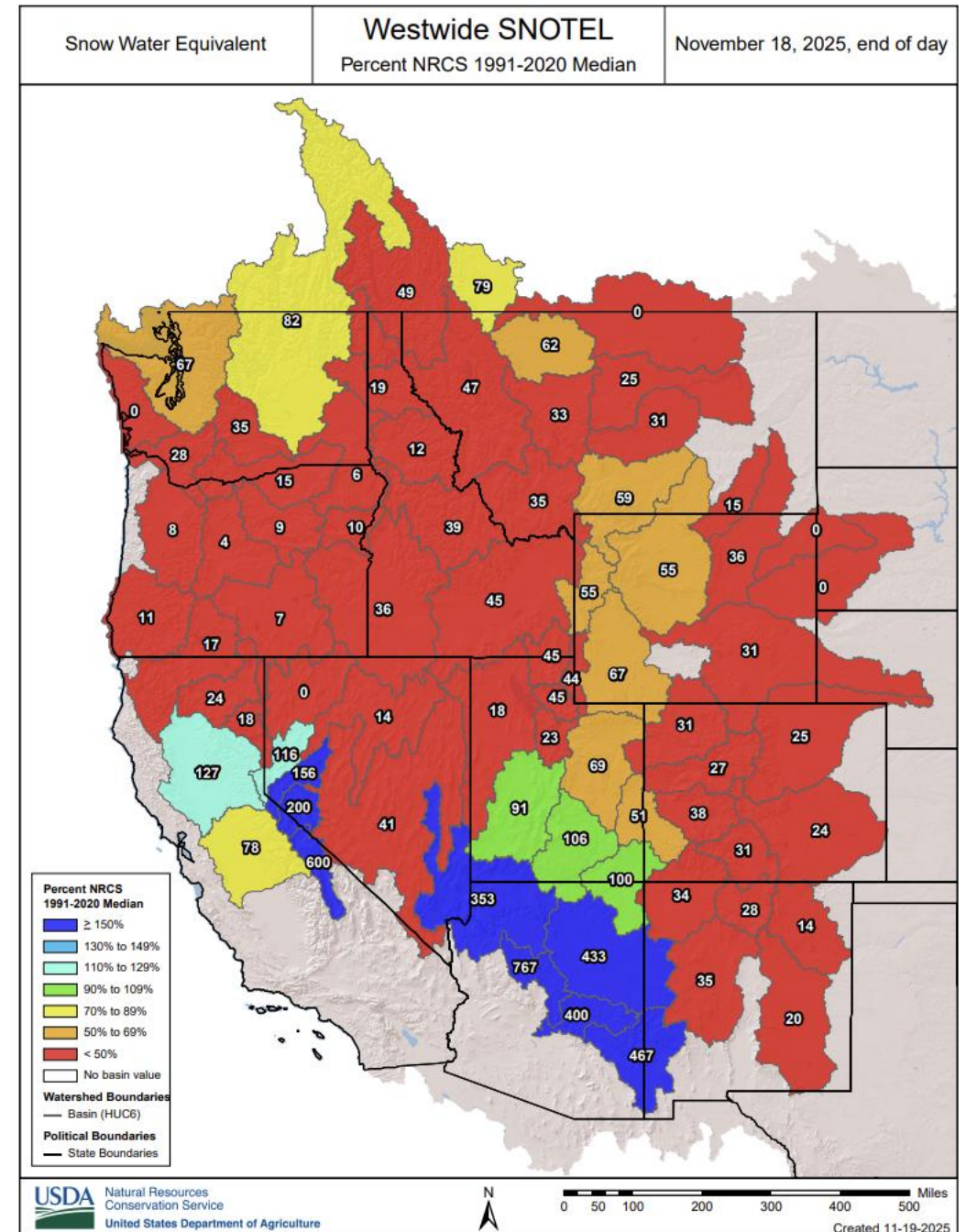


On November 17, 2025 the mountain Snow Water Equivalent (SWE) in the "Total above Fort Peck" reach is 0.9" and 36% of the (1991-2020) average. The mountain SWE in the "Fort Peck to Garrison" reach is 1.4" and 52% of the (1991-2020) average. The normal peak for both reaches occurs near April 17.

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

Snow pack

- Missouri Basin at 70-80% of normal
 - Going into winter with lower reservoirs
 - Been dry and warm for upper MO basin, so below normal snow
- Just starting the snow accumulation period



Drought impacts

- D3 in Illinois, Indiana, and Ohio
 - Relying on longer-term indicators
 - Decatur, IL initiated Stage 1 water rationing for the first time since 2012 in response to dropping lake levels and water supply concerns next spring
- Low surface water, especially smaller ponds and creeks, in Missouri
- Drought completely out of Kentucky as of early November. First time 100% of KY has had no D0 (or greater) since end of July.

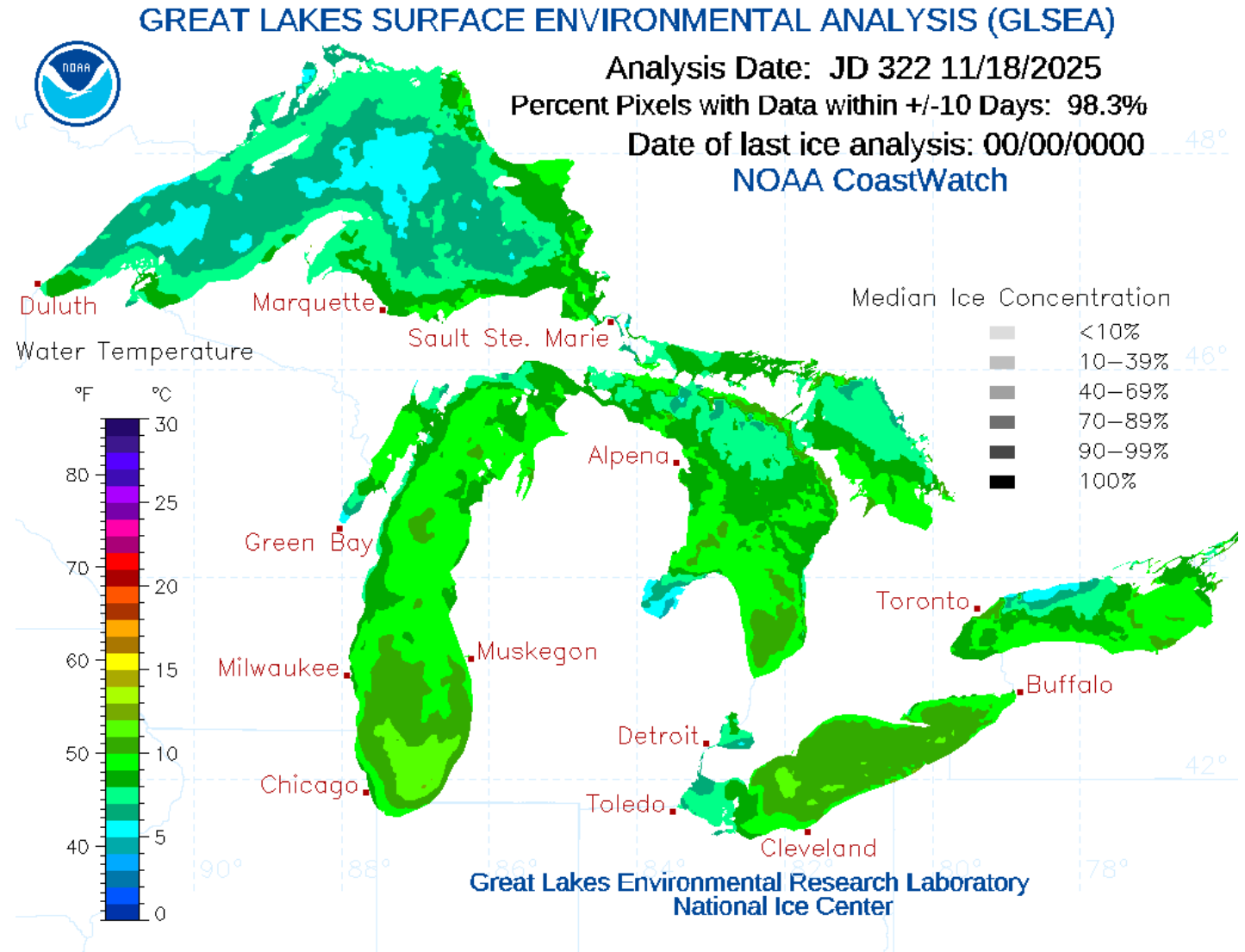
Sangamon River

- Near Monticello, IL
- Only a few mollusks left
- This river supplies water for the city of Decatur
- 3rd time in history this river has dried



Great Lakes

- Lakes tracking slightly above normal
 - Superior
 - Michigan
- Lakes tracking near normal
 - Ontario
 - Erie
 - Huron



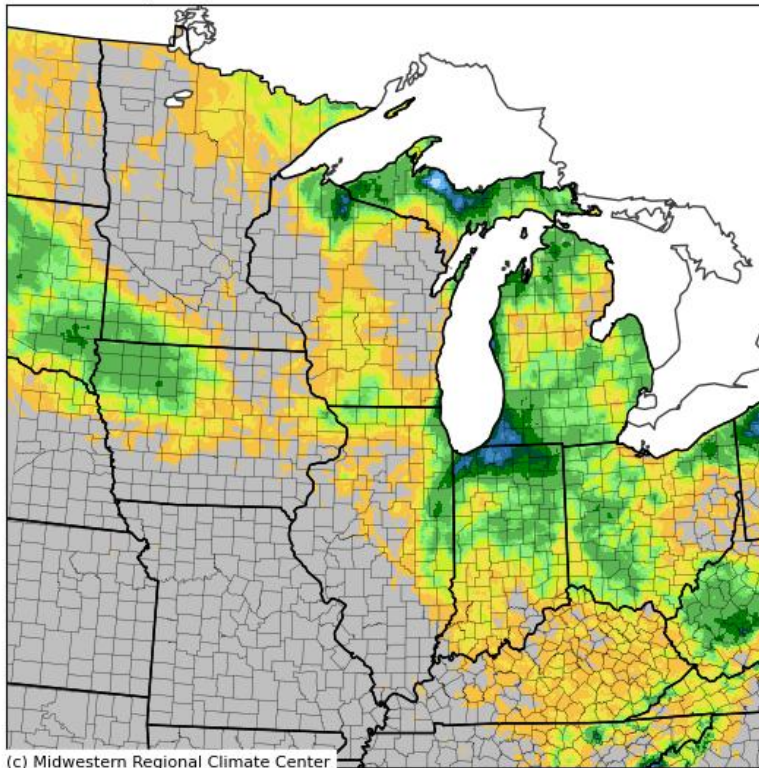
Lake-effect snow event



NWS Local Storm Report & CoCoRaHS Snowfall Total Analysis

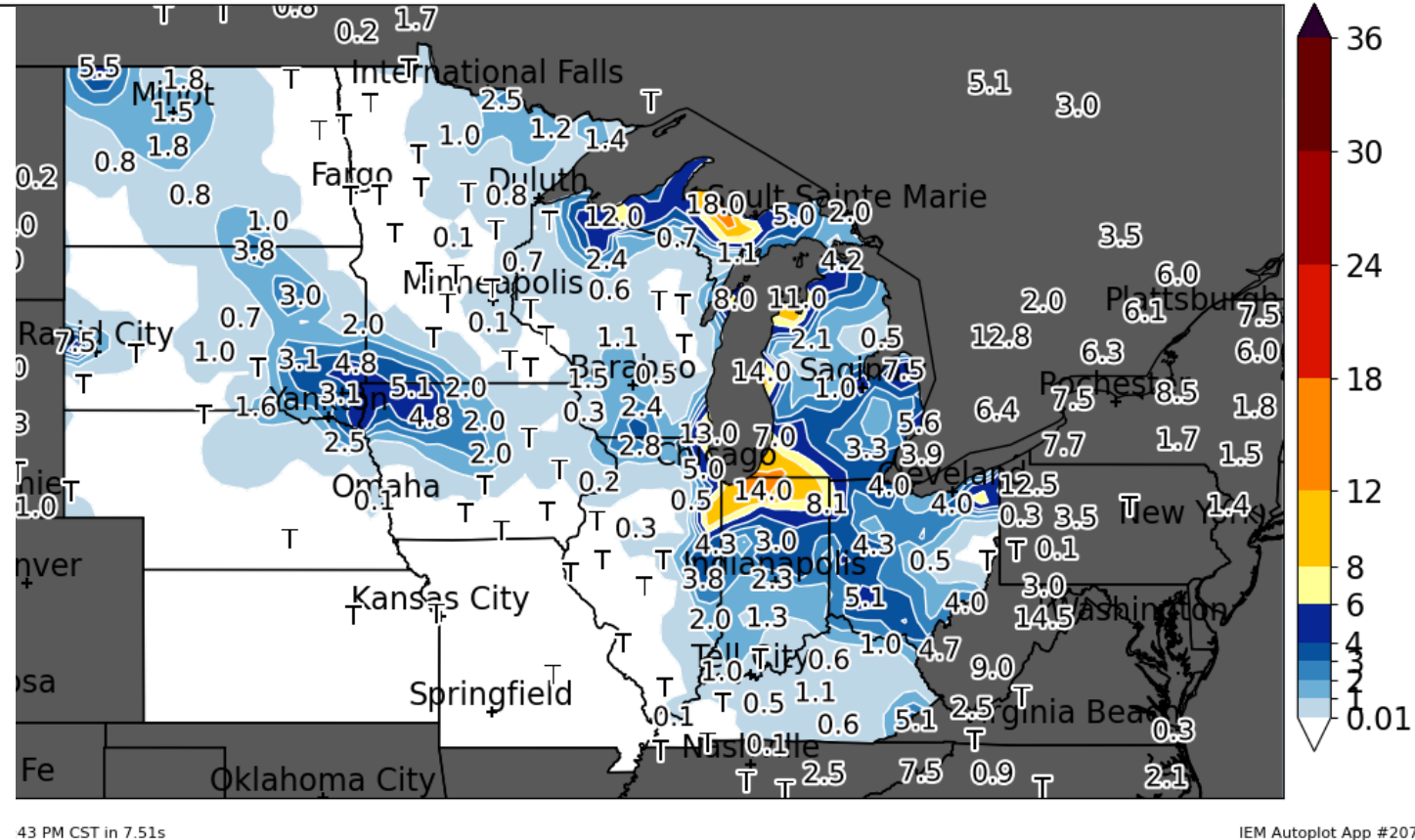
3825 reports over past 96 hours till 11 Nov 2025 10:30 AM, grid size: 50km, Rbf: linear

Accumulated Snowfall (in)
September 01, 2025 to November 18, 2025



Source: NOHRSC Gridded Snowfall Analysis

Generated on: Wed Nov 19, 2025 12:12:54 EST



<https://mesonet.agron.iastate.edu/plotting/auto/?q=207>

<https://mrcc.purdue.edu/files/cliwatch/mtd/season.s.png>

Aurora Borealis

 **Severe Geomagnetic Storm WATCH for Nov 12 UTC-day** **G4** Updated: Tue, 11 Nov, 2025 17:15 UTC

WHAT: A CME will likely arrive at Earth and lead to highly elevated geomagnetic activity



Harvest updates

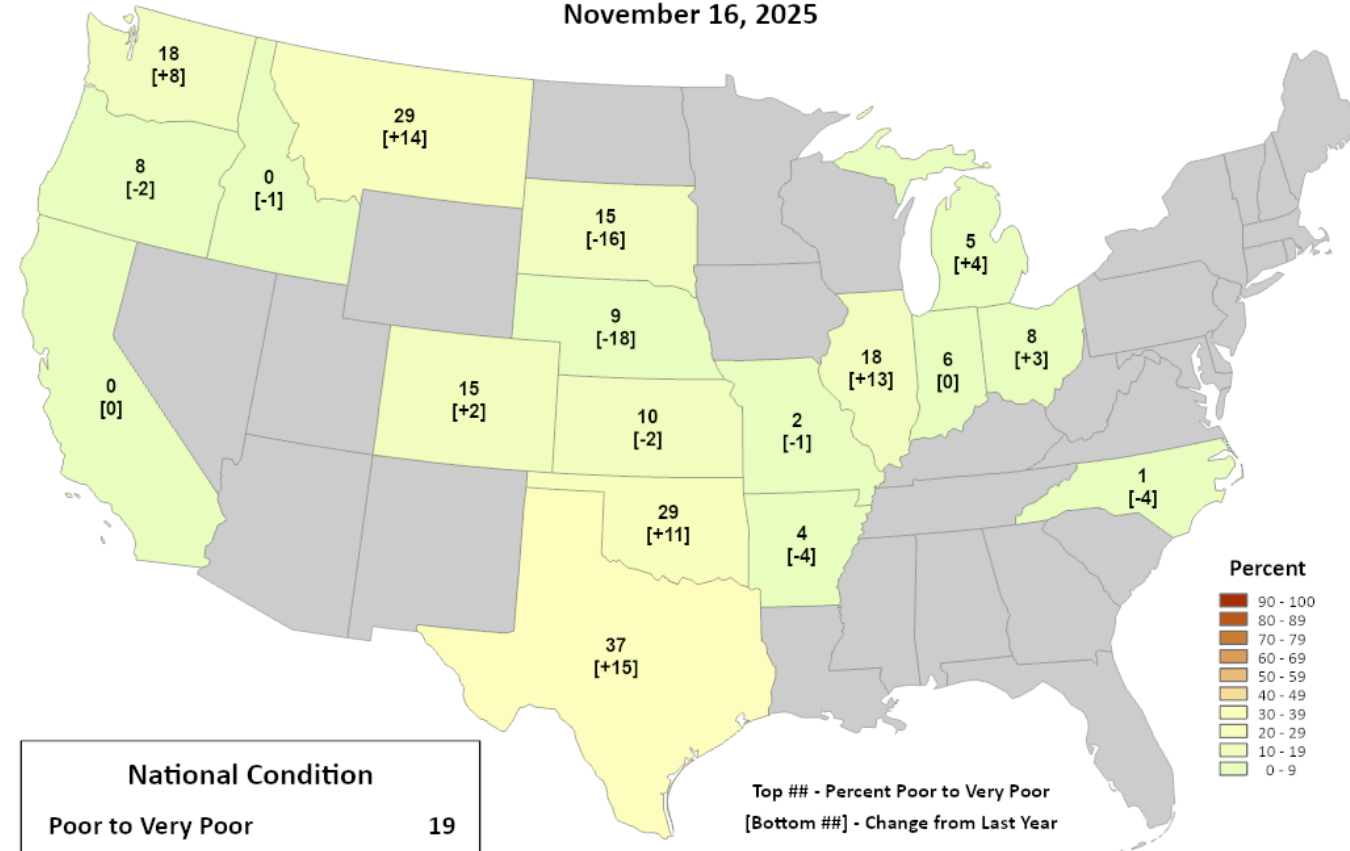


This product was prepared by the
USDA Office of the Chief Economist (OCE)
World Agricultural Outlook Board (WAOB)

Winter Wheat Conditions

Percent Poor to Very Poor

November 16, 2025



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

Harvest updates

- South Dakota, Iowa, Wisconsin, Illinois, and Indiana are expecting a record corn yield

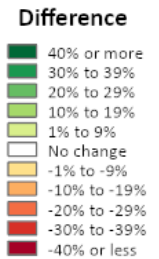
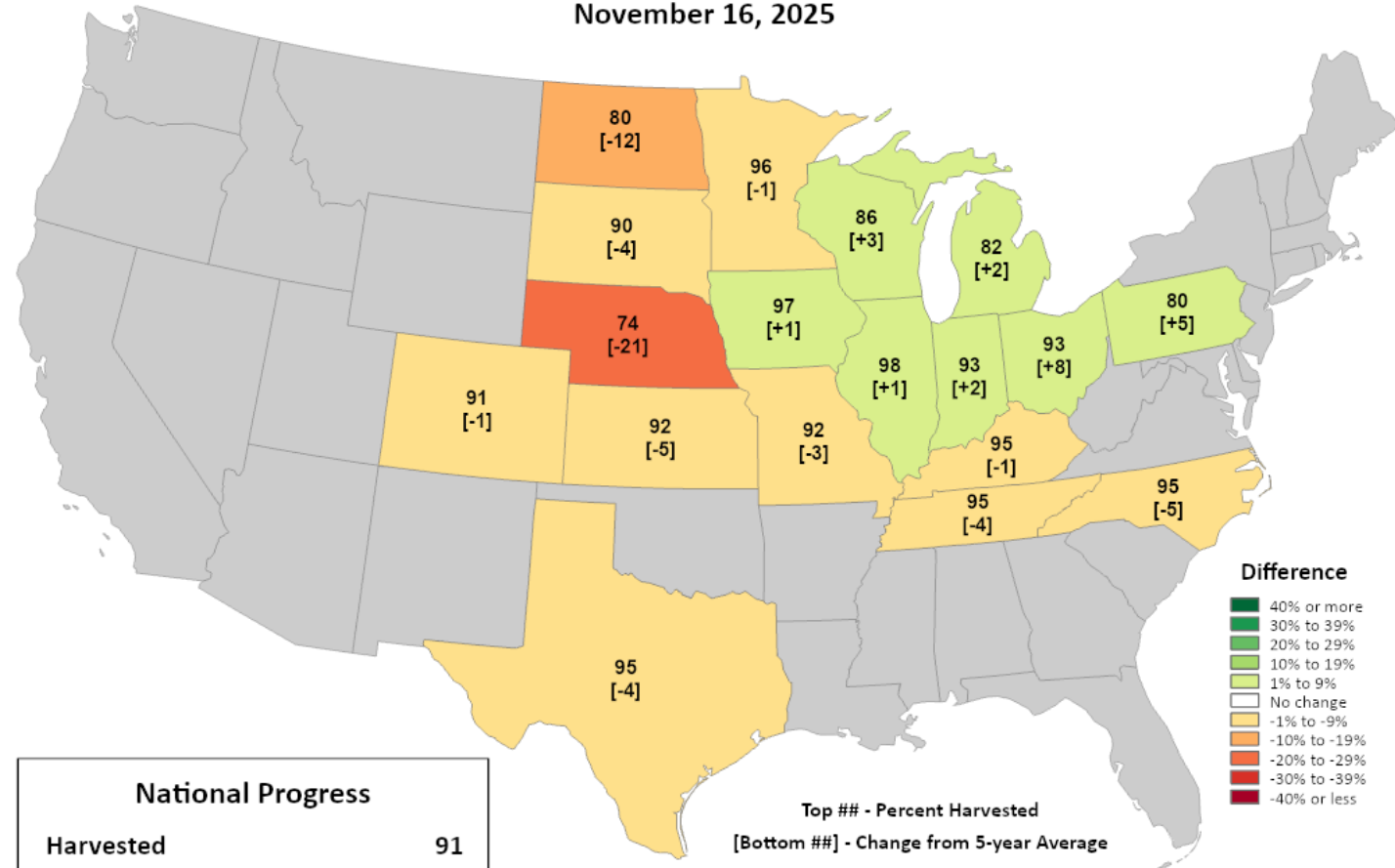


This product was prepared by the
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World Agricultural Outlook Board (WAOB)

Corn Progress

Percent Harvested

November 16, 2025



National Progress	
Harvested	91
Change from 5-year Average	-3

Top ## - Percent Harvested
[Bottom ##] - Change from 5-year Average

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

Harvest updates

- Iowa, Illinois, Nebraska, and Wisconsin are expecting record soybean yields

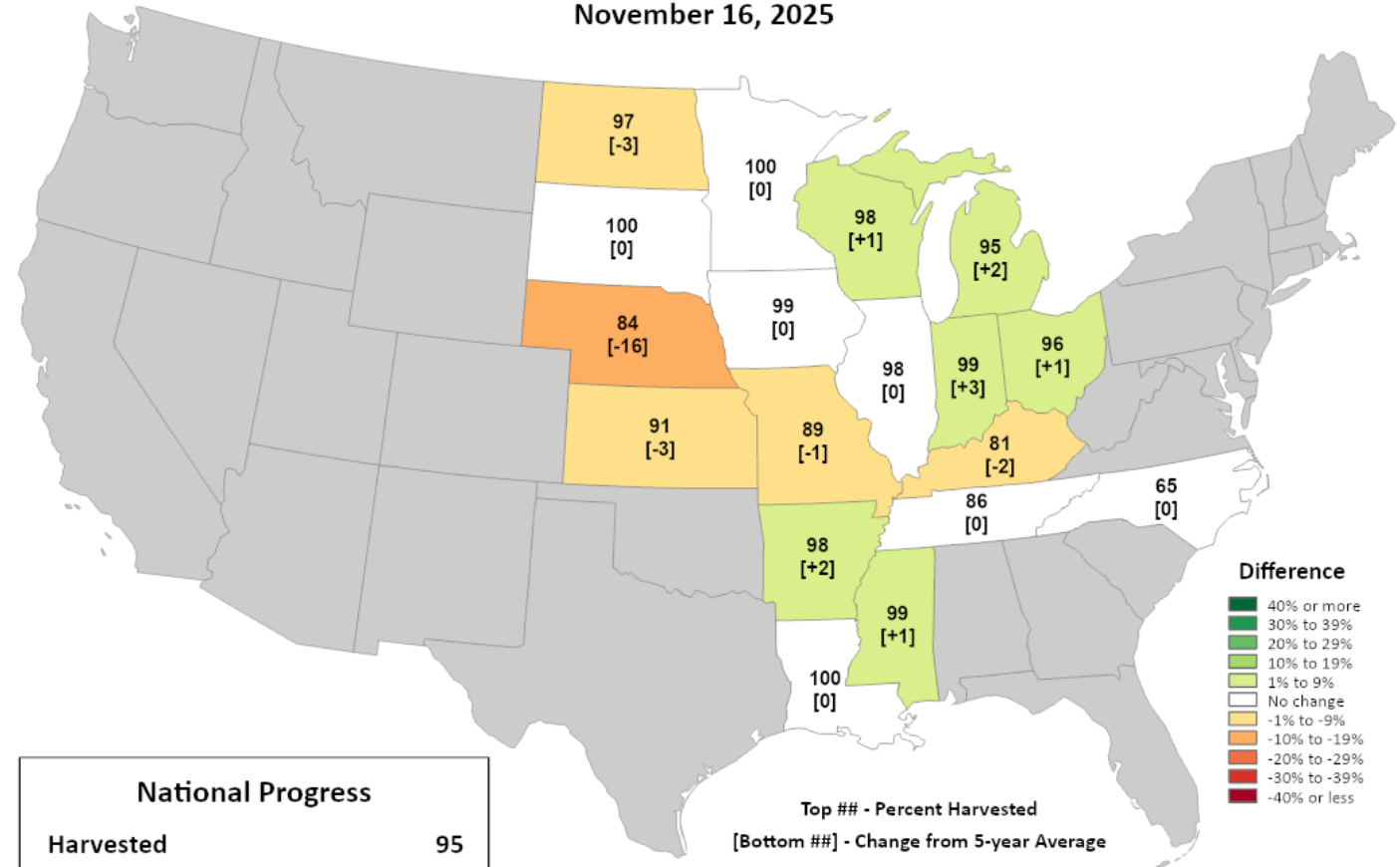


This product was prepared by the
USDA Office of the Chief Economist (OCE)
World Agricultural Outlook Board (WAOB)

Soybeans Progress

Percent Harvested

November 16, 2025



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

Agricultural impacts

- Apples and pumpkins had good production year
 - Low disease pressure because of warm and dry conditions
- Warm fall great for agritourism
- Warm conditions also good for winter wheat getting started; could use some moisture, but mostly looking good
- Corn and soybean yields only slightly lower than expected
 - However, individual yields may be variable
- Early frost (Sept 6-7) in October significantly reduced corn yield in South Dakota

ENSO outlook

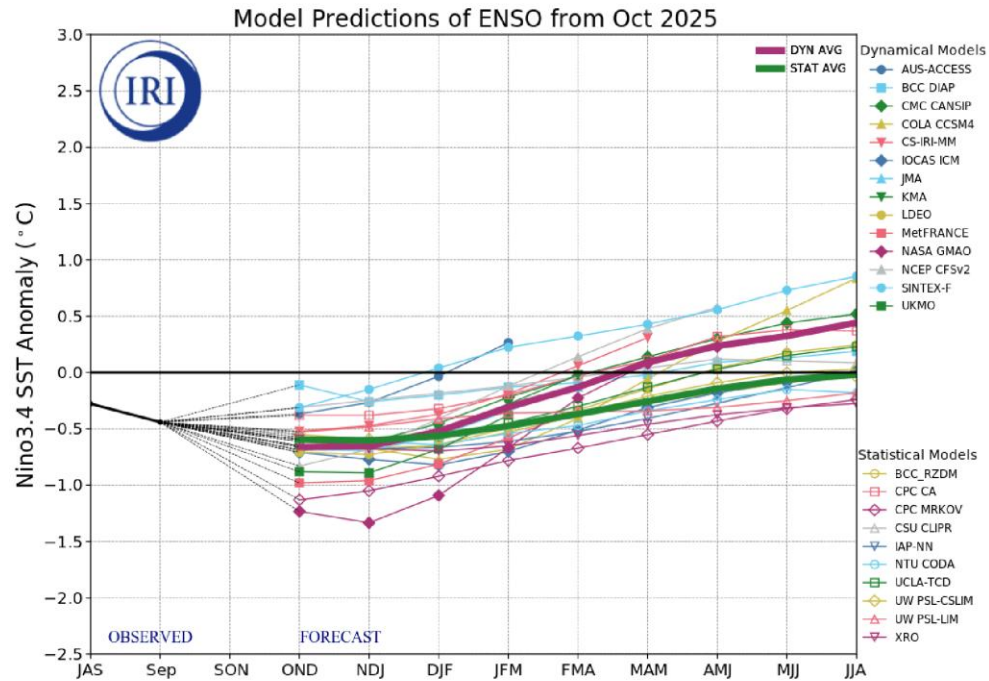


Figure 6. Forecasts of sea surface temperature (SST) anomalies for the Niño 3.4 region (5°N-5°S, 120°W-170°W). Figure updated 20 October 2025 by the International Research Institute (IRI) for Climate and Society.

Official NOAA CPC ENSO Probabilities (issued November 2025)

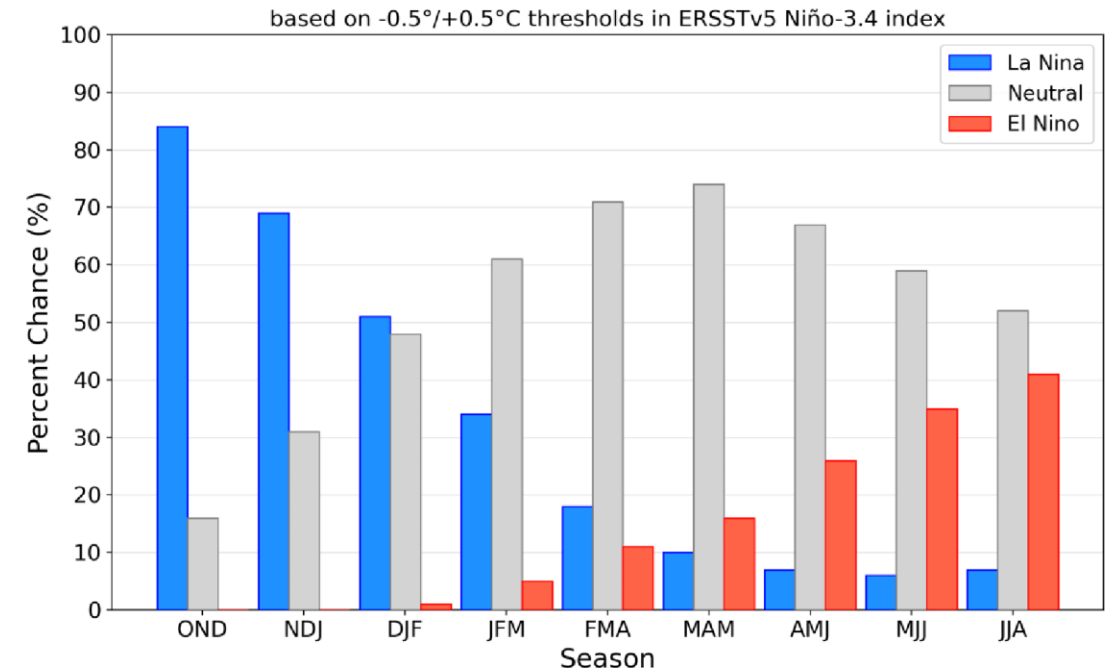
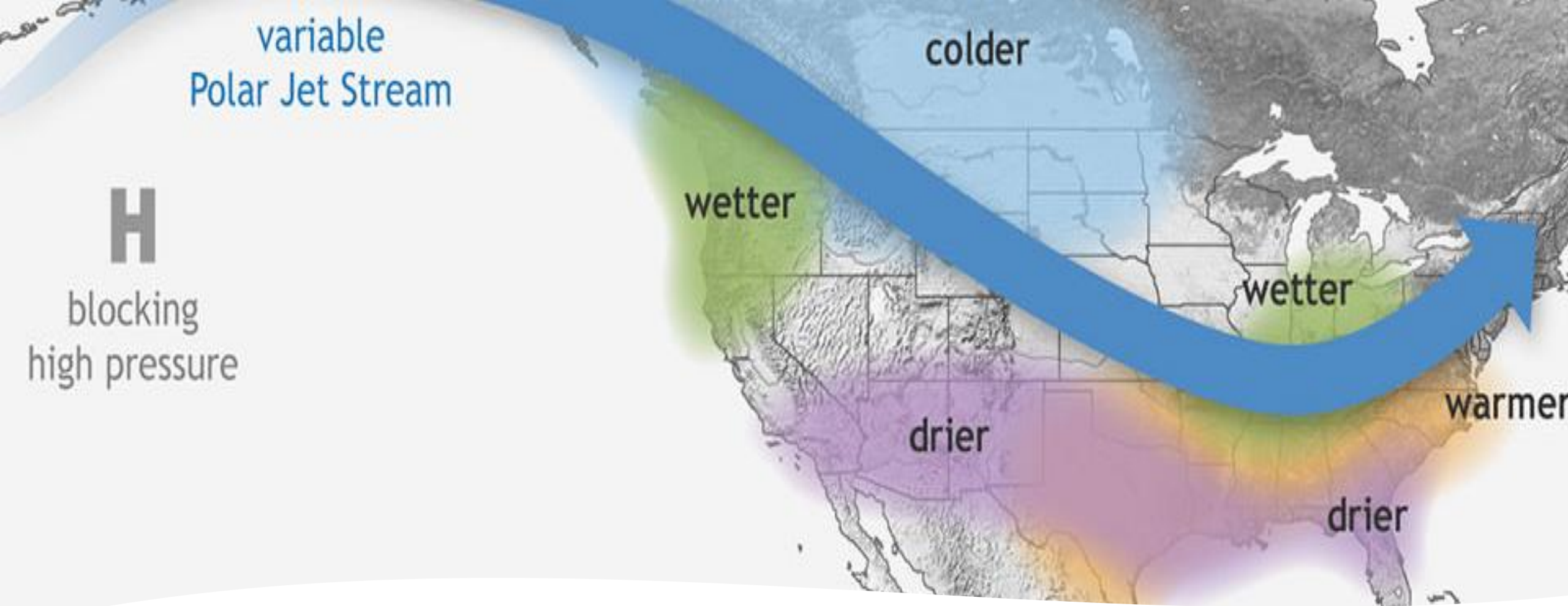


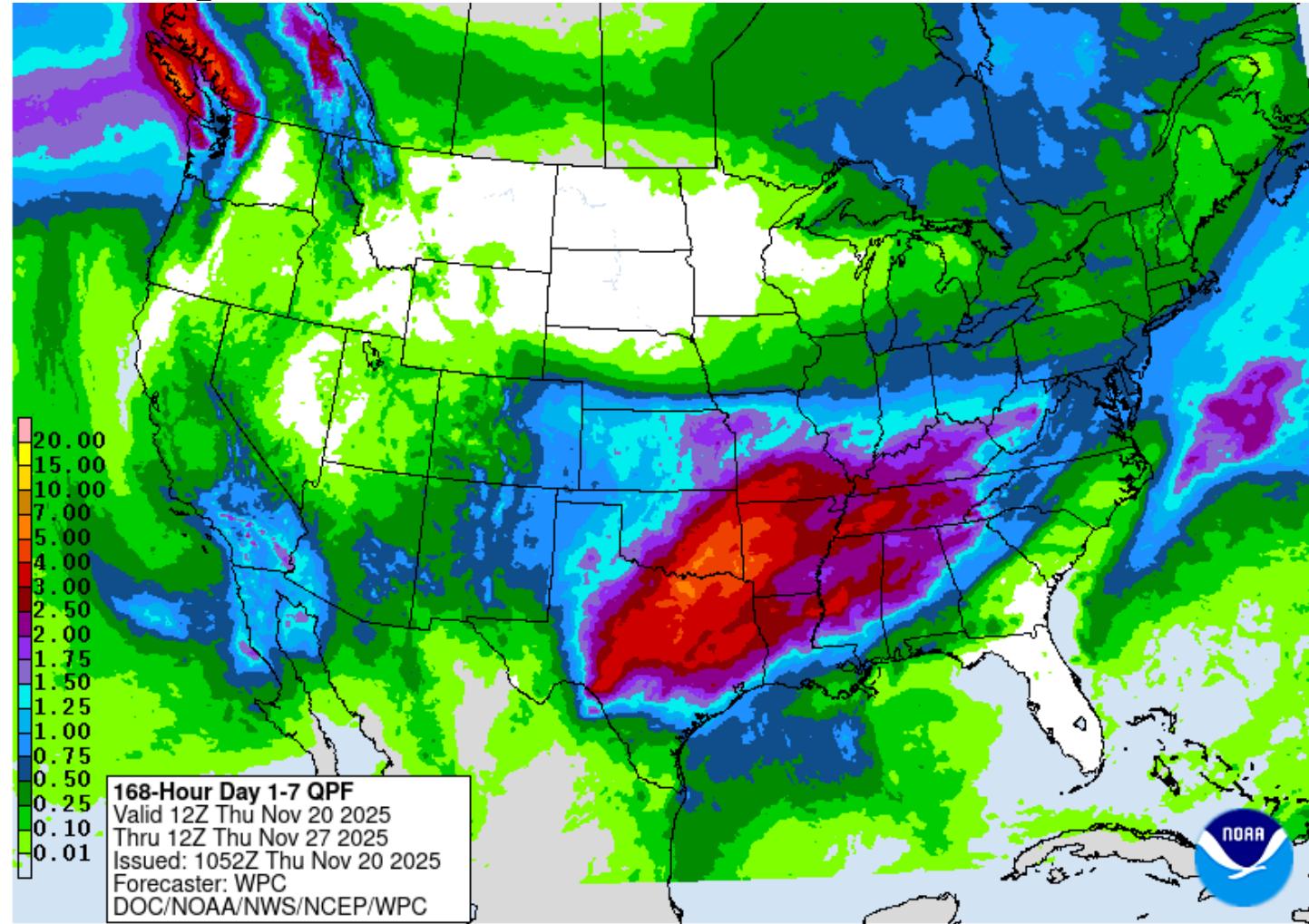
Figure 7. Official ENSO probabilities for the Niño 3.4 sea surface temperature index (5°N-5°S, 120°W-170°W). Figure updated 13 November 2025.



La Niña Winter

- Pacific jet stream moves north and becomes more variable
- Colder and wetter
- More severe hurricane season

7-day Precipitation

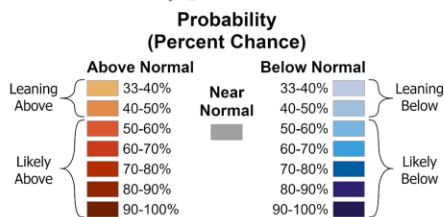
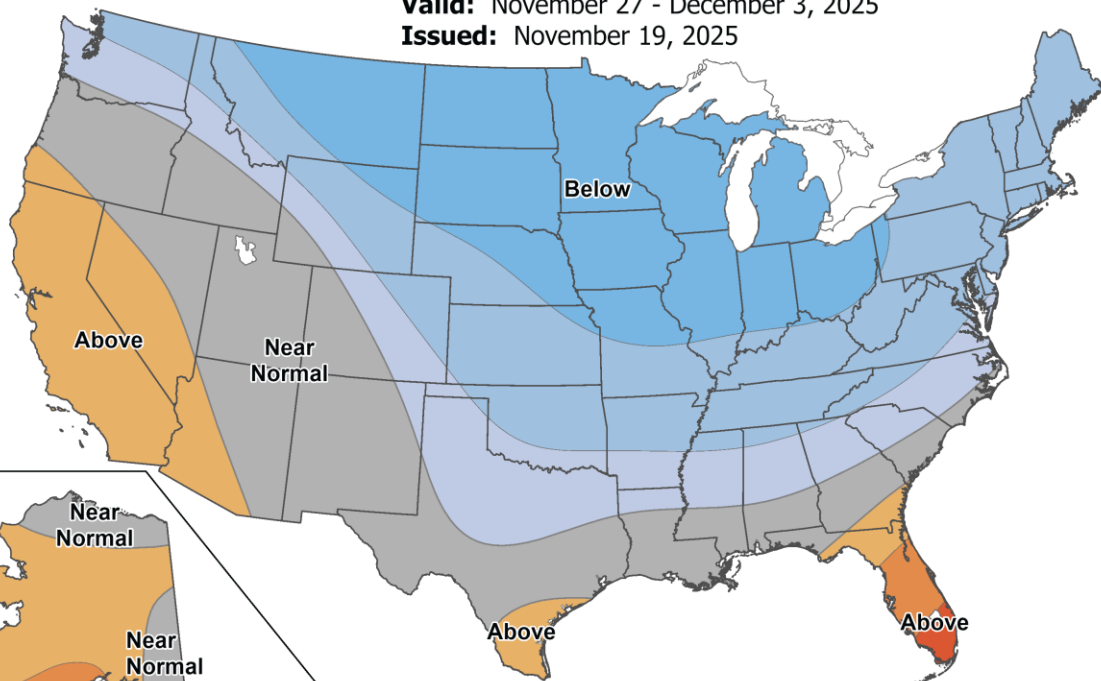


8-14 day outlook

8-14 Day Temperature Outlook

Valid: November 27 - December 3, 2025

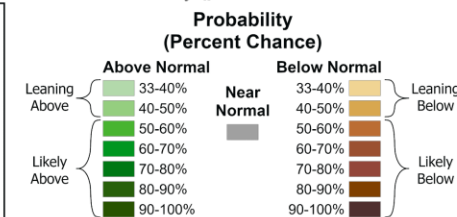
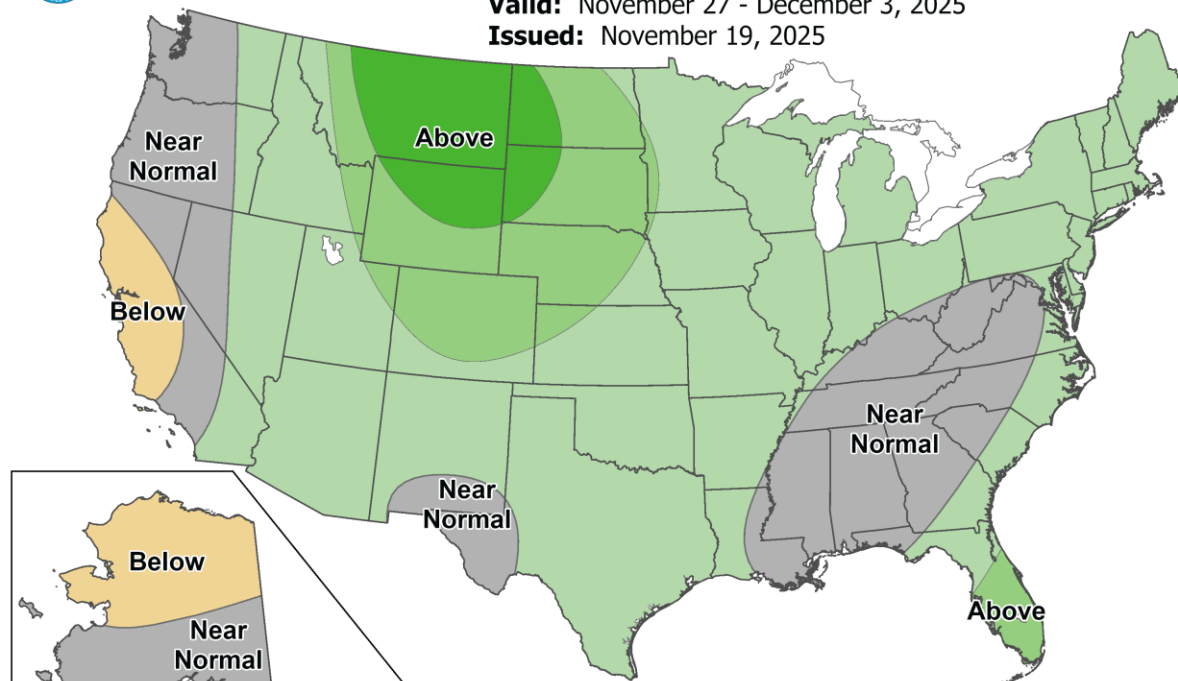
Issued: November 19, 2025



8-14 Day Precipitation Outlook

Valid: November 27 - December 3, 2025

Issued: November 19, 2025



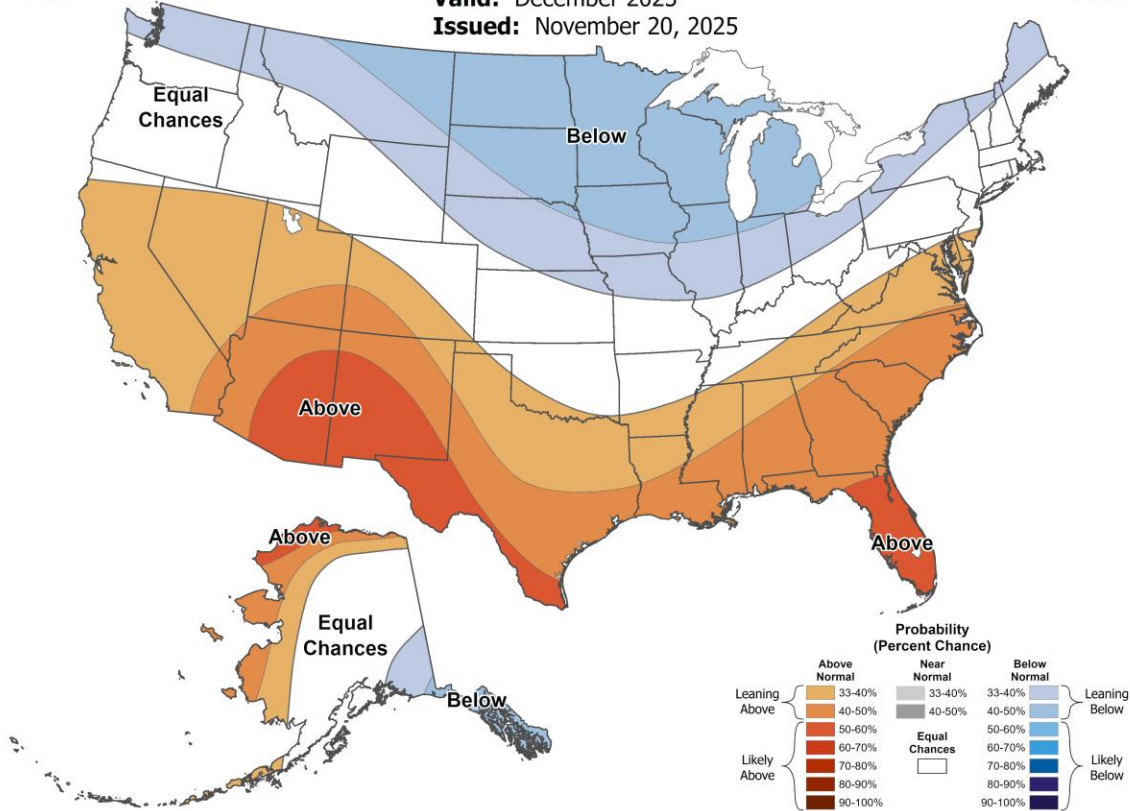
December outlook



Monthly Temperature Outlook

Valid: December 2025

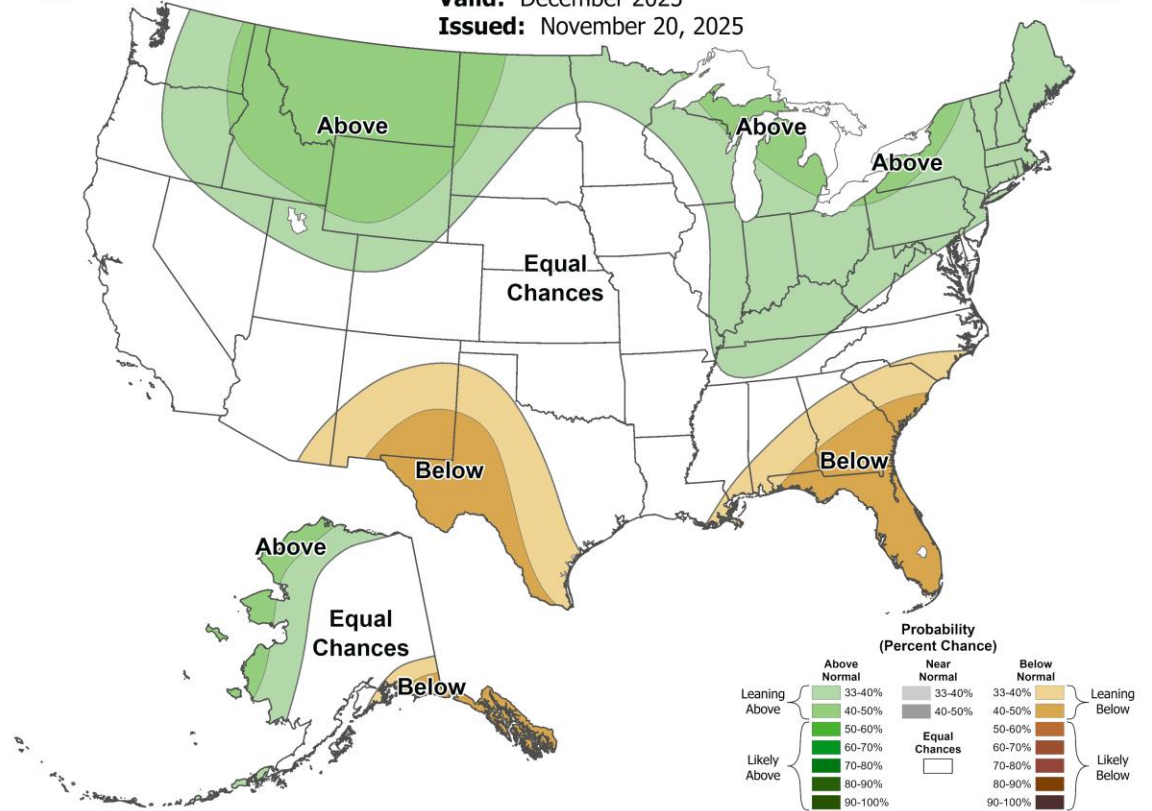
Issued: November 20, 2025



Monthly Precipitation Outlook

Valid: December 2025

Issued: November 20, 2025

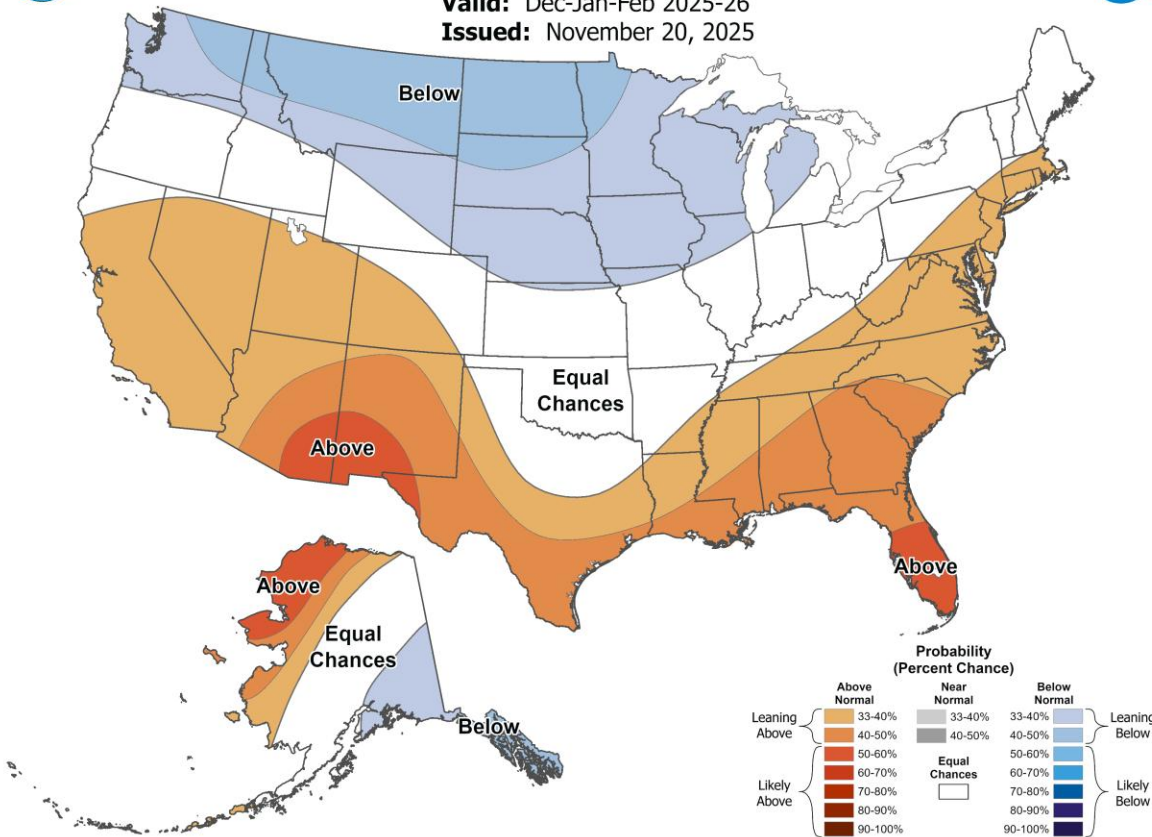


Seasonal outlook



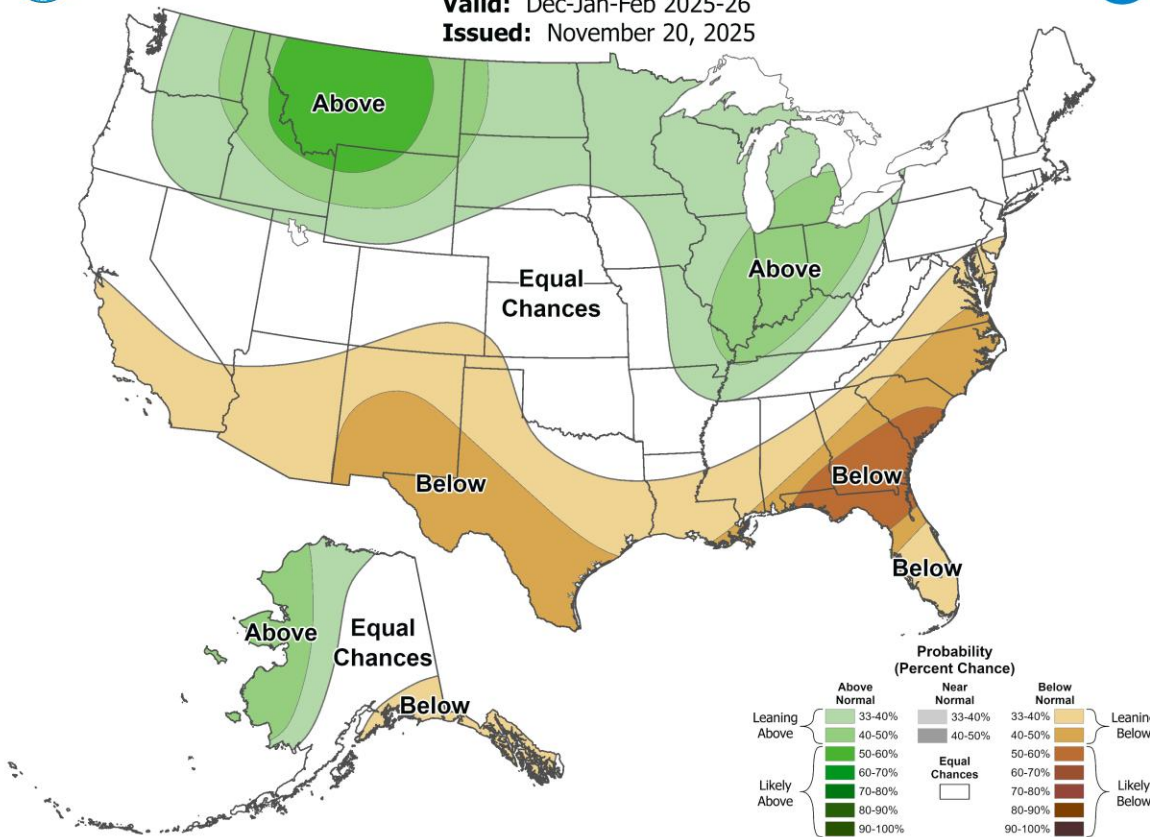
Seasonal Temperature Outlook

Valid: Dec-Jan-Feb 2025-26
Issued: November 20, 2025



Seasonal Precipitation Outlook

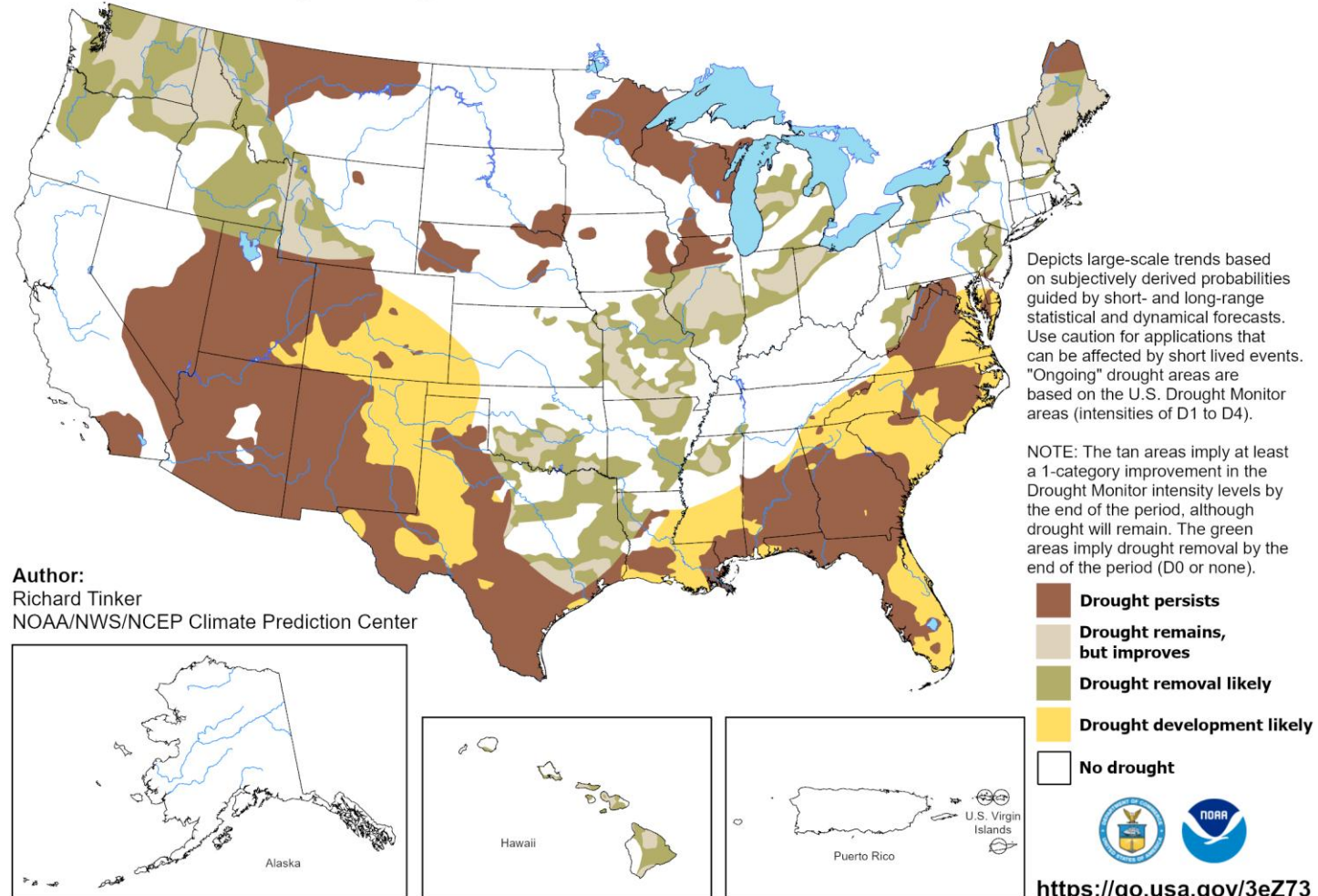
Valid: Dec-Jan-Feb 2025-26
Issued: November 20, 2025



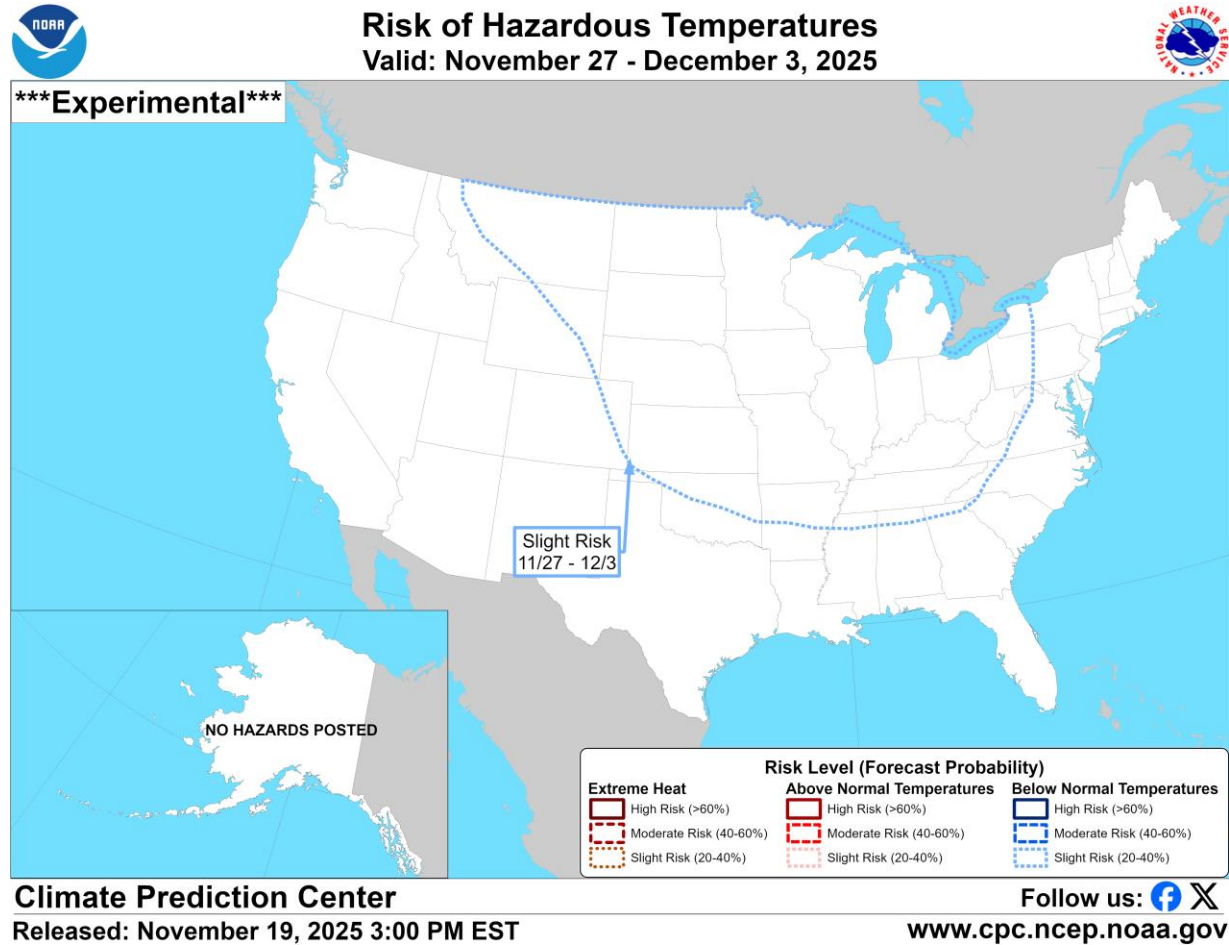
Seasonal drought outlook

U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

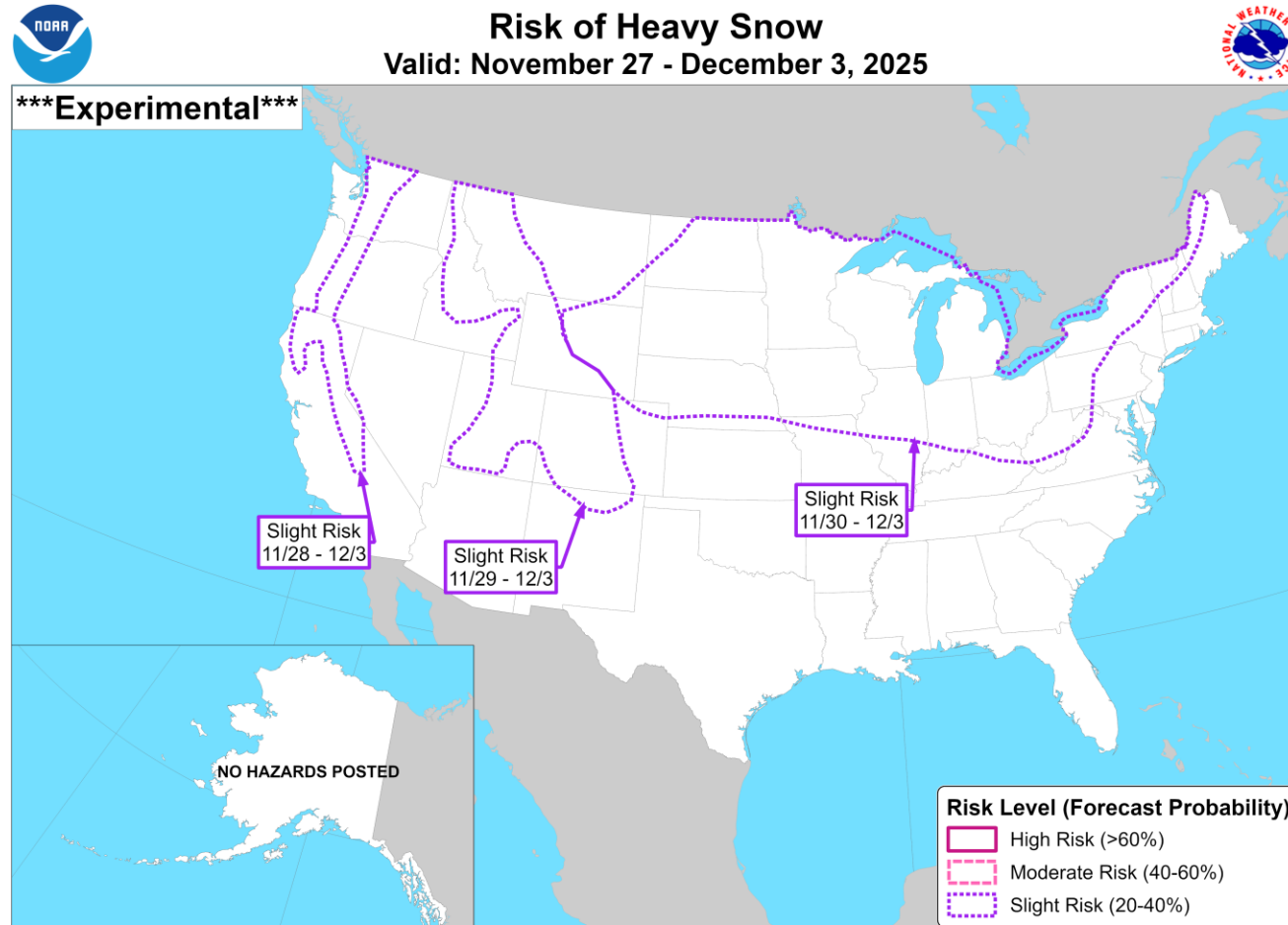
Valid for November 20, 2025 - February 28, 2026
Released November 20, 2025



8-14 day hazards



8-14 day hazards



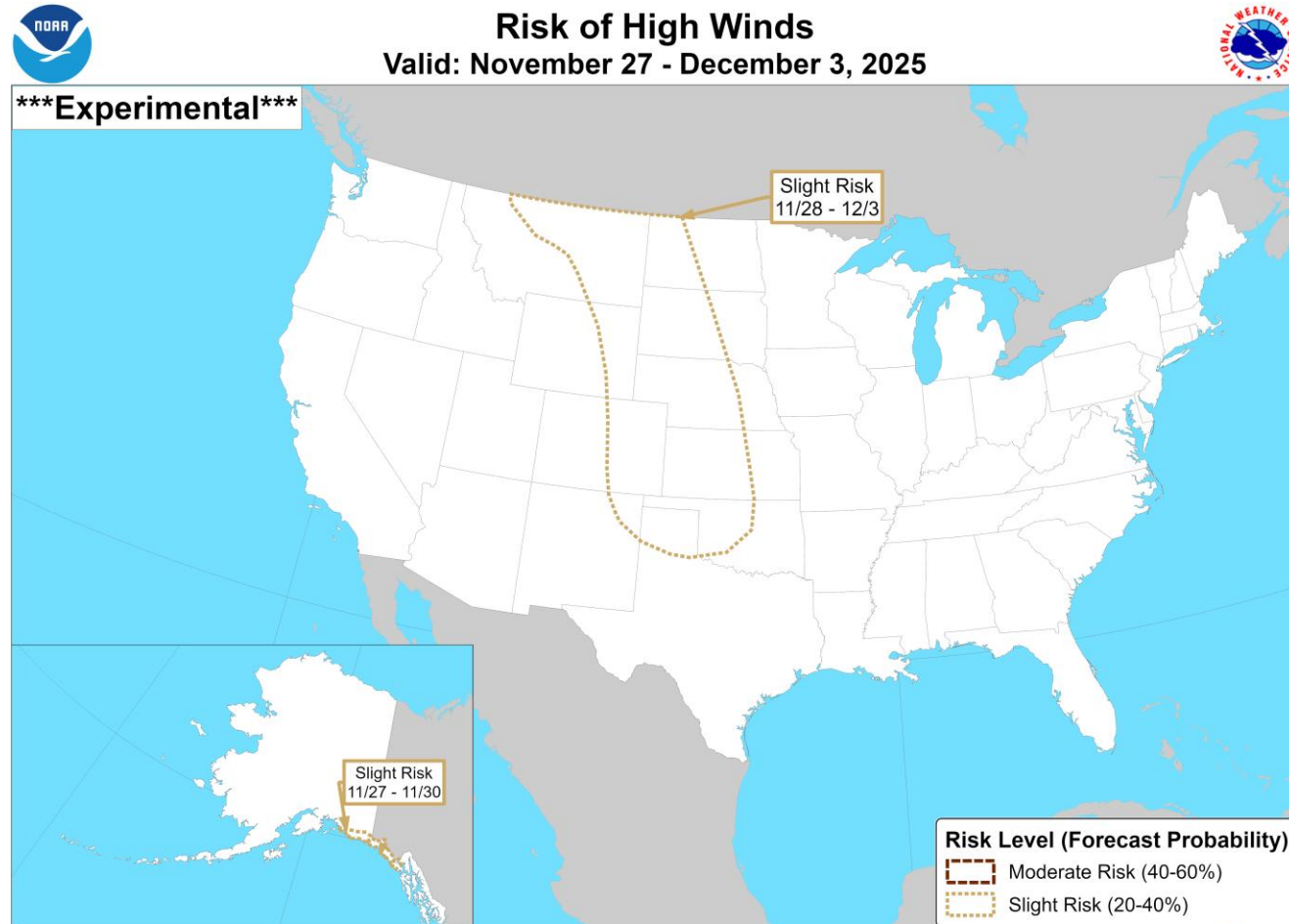
Climate Prediction Center

Released: November 19, 2025 3:00 PM EST

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www.cpc.ncep.noaa.gov

8-14 day hazards



Climate Prediction Center

Released: November 19, 2025 3:00 PM EST

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Key messages

- Sudden stratospheric warming (SSW)
 - Could lead to polar vortex potential
 - Weakening of the polar vortex
 - November SSW events are very rare
 - Only one other in history
- Exact timing, location, and amount of snow still unknown
 - General timing: early December
- Outlooks are La Niña influenced

Thank you!

- Questions
 - Climate
 - Madelynn Wuestenberg: mjwues@iastate.edu, 515-294-6014
 - 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.rippy@usda.gov
 - Weather
 - crhroc@noaa.gov
 - Today's and past recorded presentations
 - <https://mrcc.purdue.edu/webinars>
 - <https://hprcc.unl.edu/webinars.php>