



Wisconsin Ag Climate Outlook

Winter Edition

January 2025

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Key Points

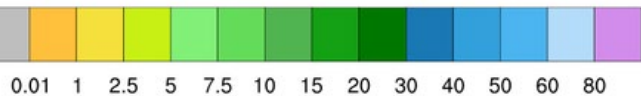
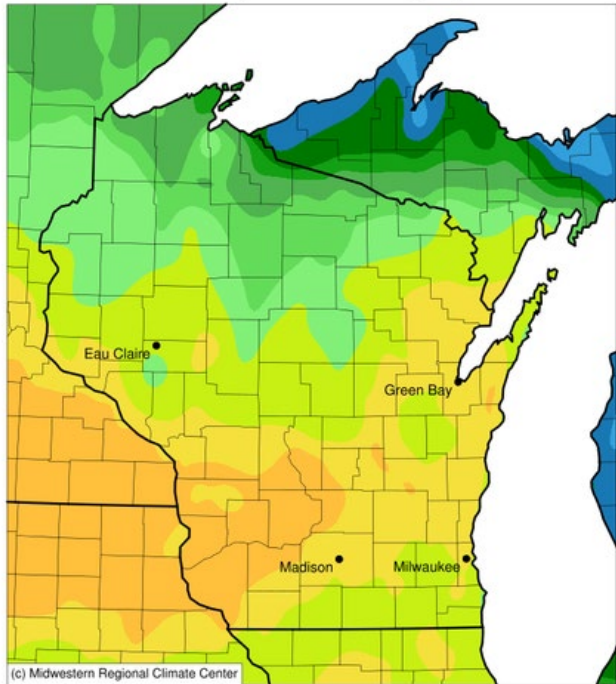
Navigate to select slides by clicking on the [links](#) below.

- 1) The past 30 days have been [very dry](#) across the state, with a major Arctic blast plunging the state well [below normal](#) last week.
 - 2) Soils in the south and west are trending [drier-than-normal](#) for this time of year. [Frost depth](#) is going down past 2 feet in the soil at some locations.
 - 3) Precip chances statewide this [next week](#), with an above-normal lean for [early February](#).
- *For this week's agronomic recommendations from UW Extension, click [here](#).*

Snowfall Recap & Snow Depth

Accumulated Snowfall (in)

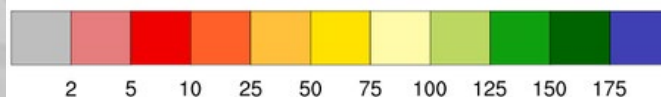
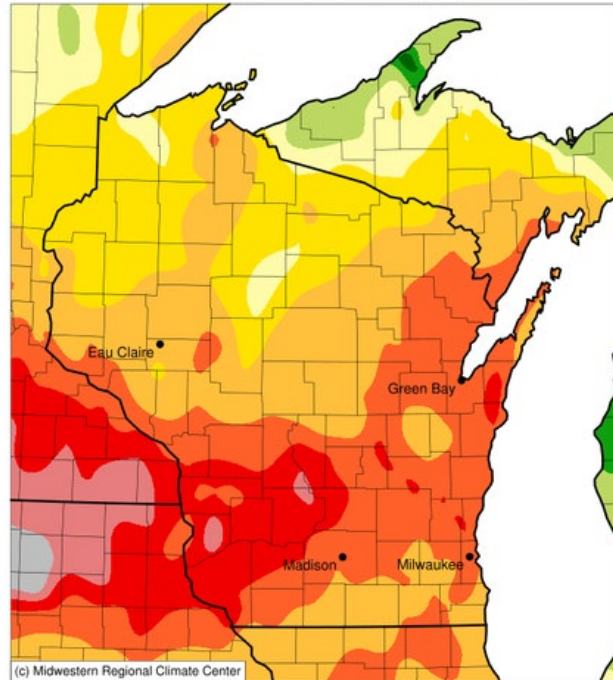
December 29, 2024 to January 27, 2025



- Current snow pack is limited to the **far north/NW**.
- However, still below-average in the north.

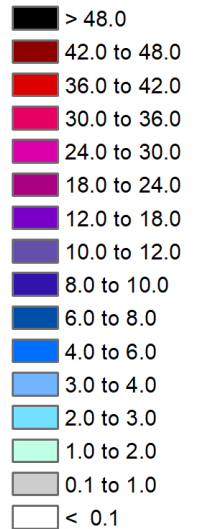
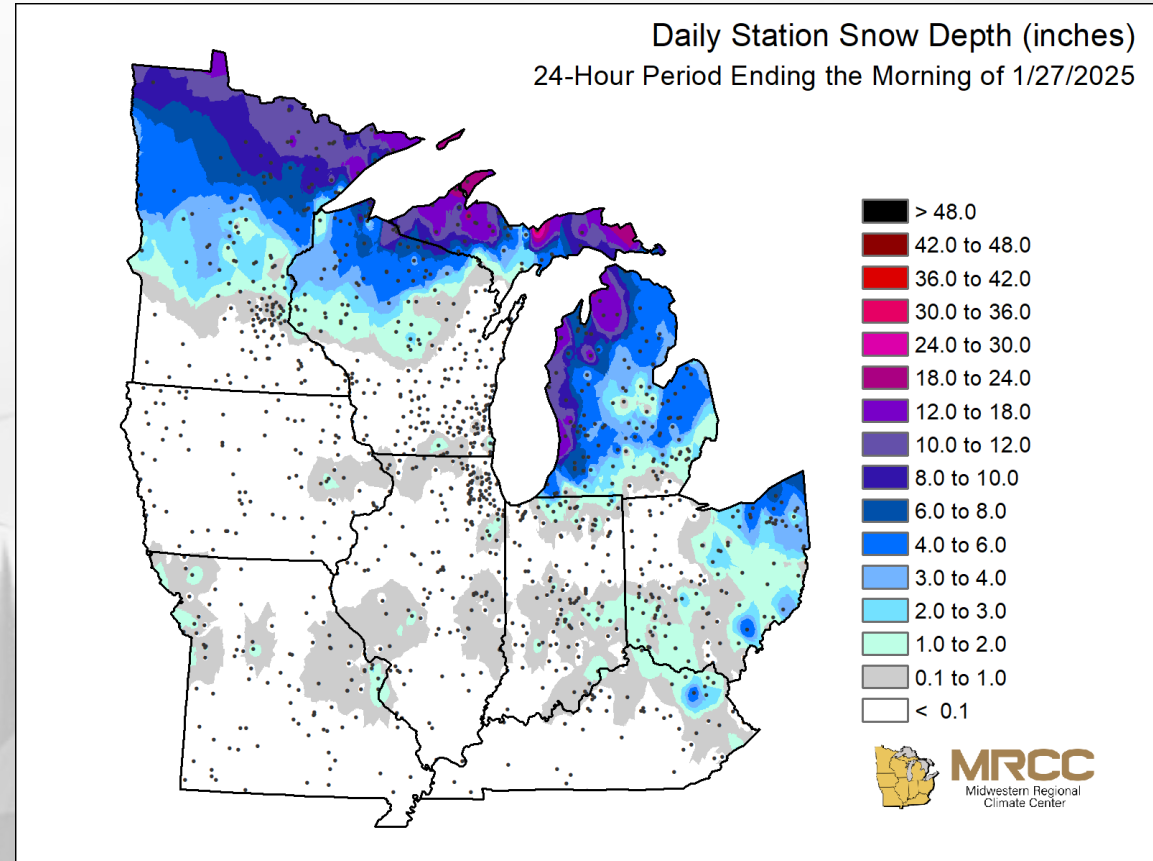
Accumulated Snowfall: Percent of 1991-2020 Normals

December 29, 2024 to January 27, 2025



- Range from **>10"** in the far N to **<1"** in the SW.
- **<10% of normal** for the 30-day period in the SW.

Daily Station Snow Depth (inches) 24-Hour Period Ending the Morning of 1/27/2025

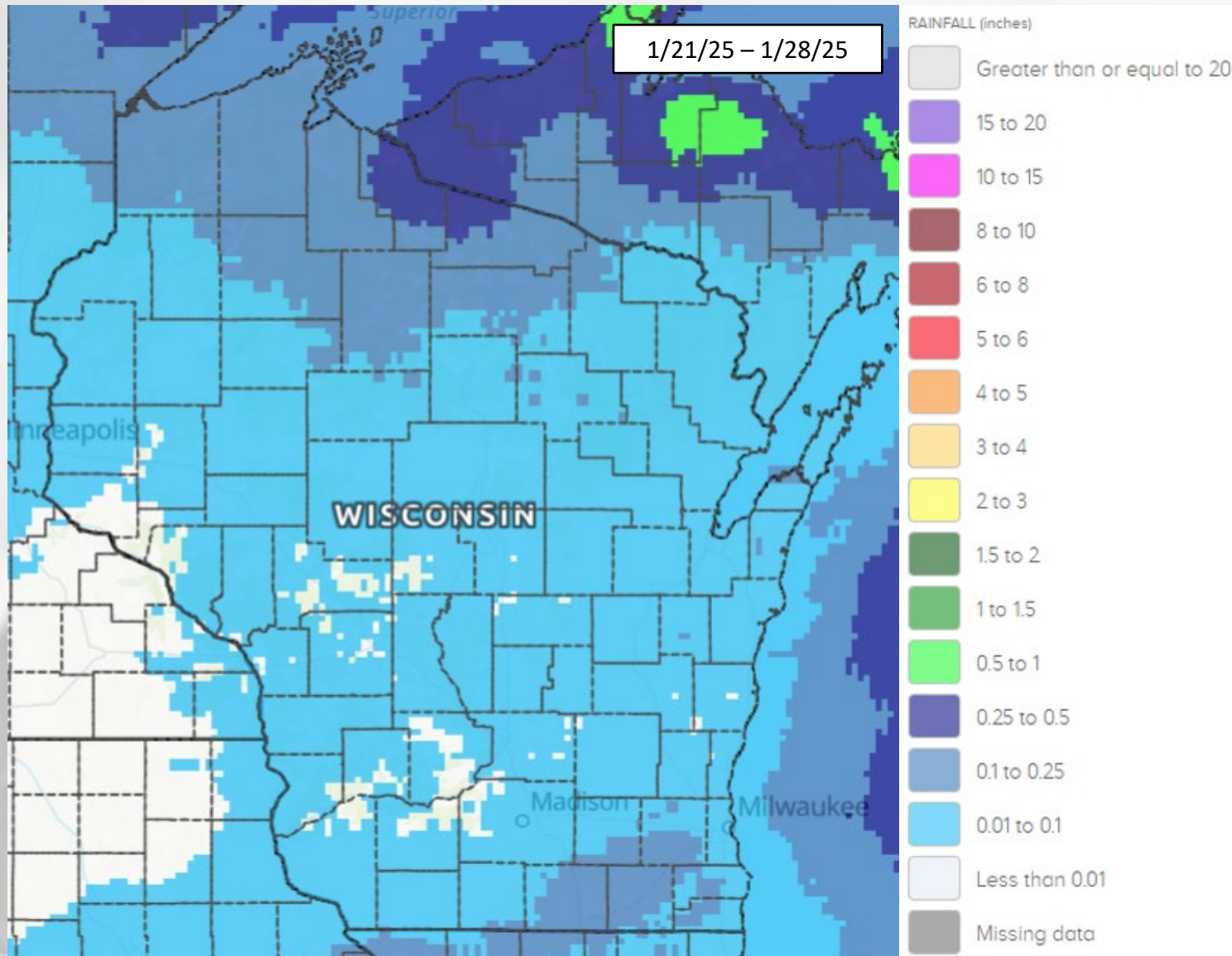


Winter Snow Recap (Dec. 1 – Present)

Station	Snowfall Total (in.)	Normal Snowfall (in.)*
Madison	8.7	25.7
Milwaukee	8.8	25.3
La Crosse	8.8	22.7
Wausau	12.0	28.9
Green Bay	10.3	27.4
Eau Claire	11.3	24.5
Duluth, MN	17.4	35.5
Twin Cities, MN	8.7	22.4
Dubuque, IA	5.6	21.0

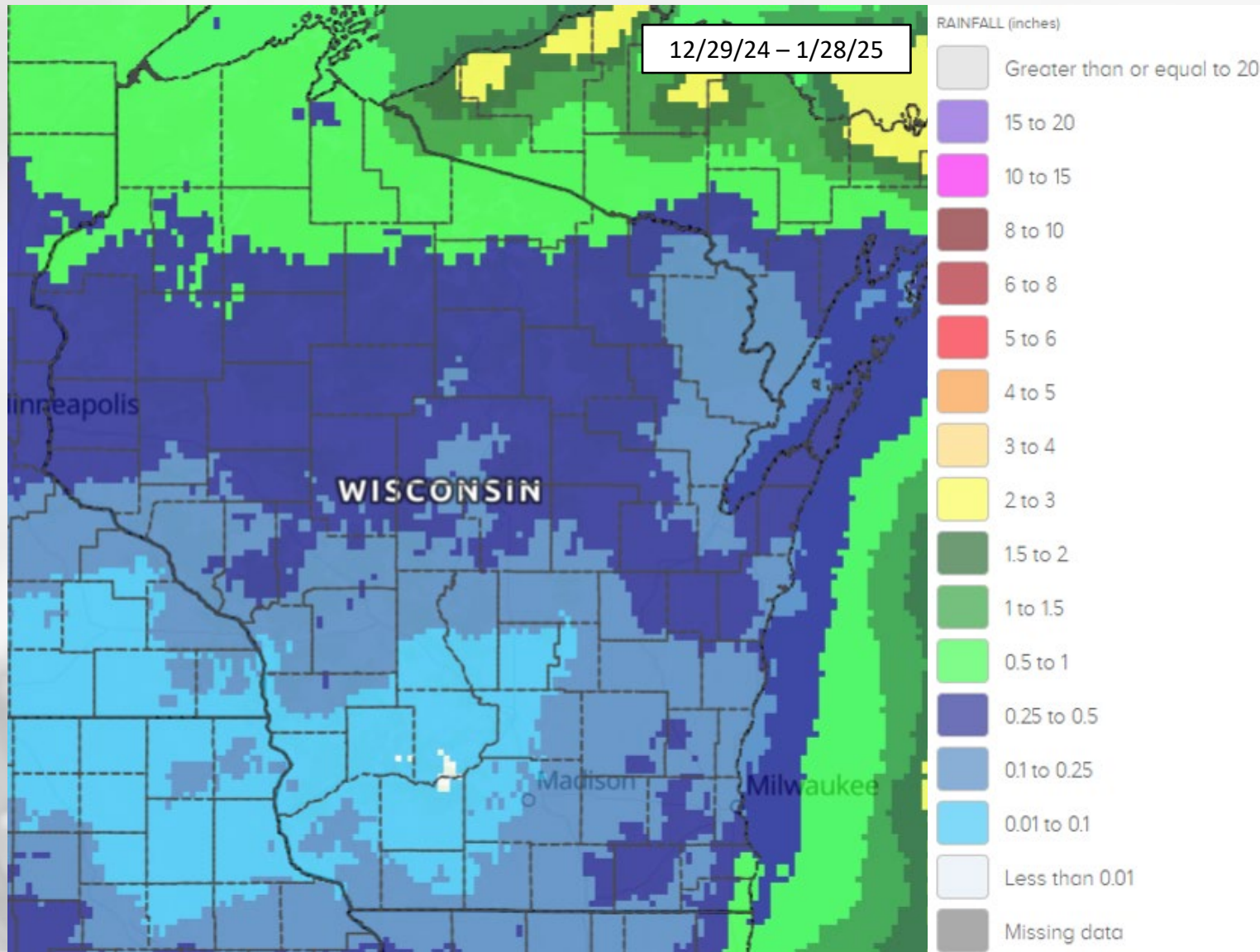
**Climate normals are for 1991-2020, December 1 – January 31.*

7 Day Precip



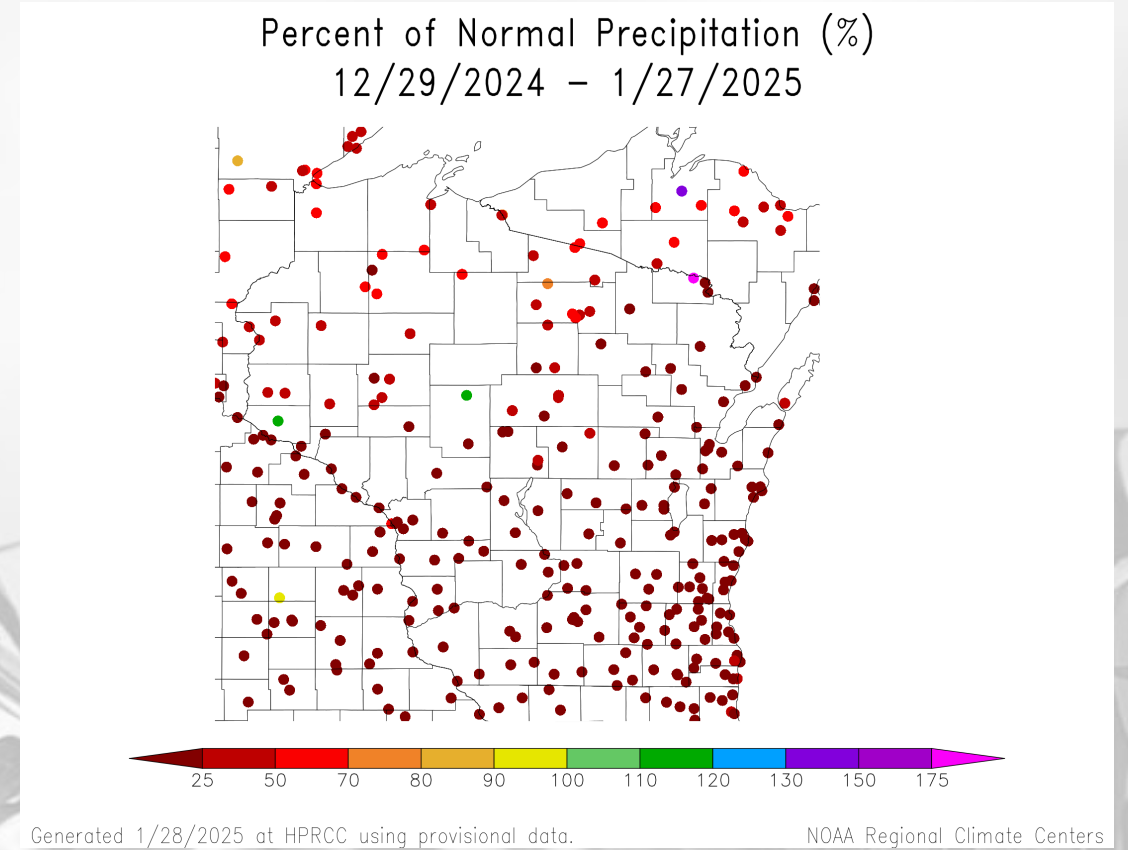
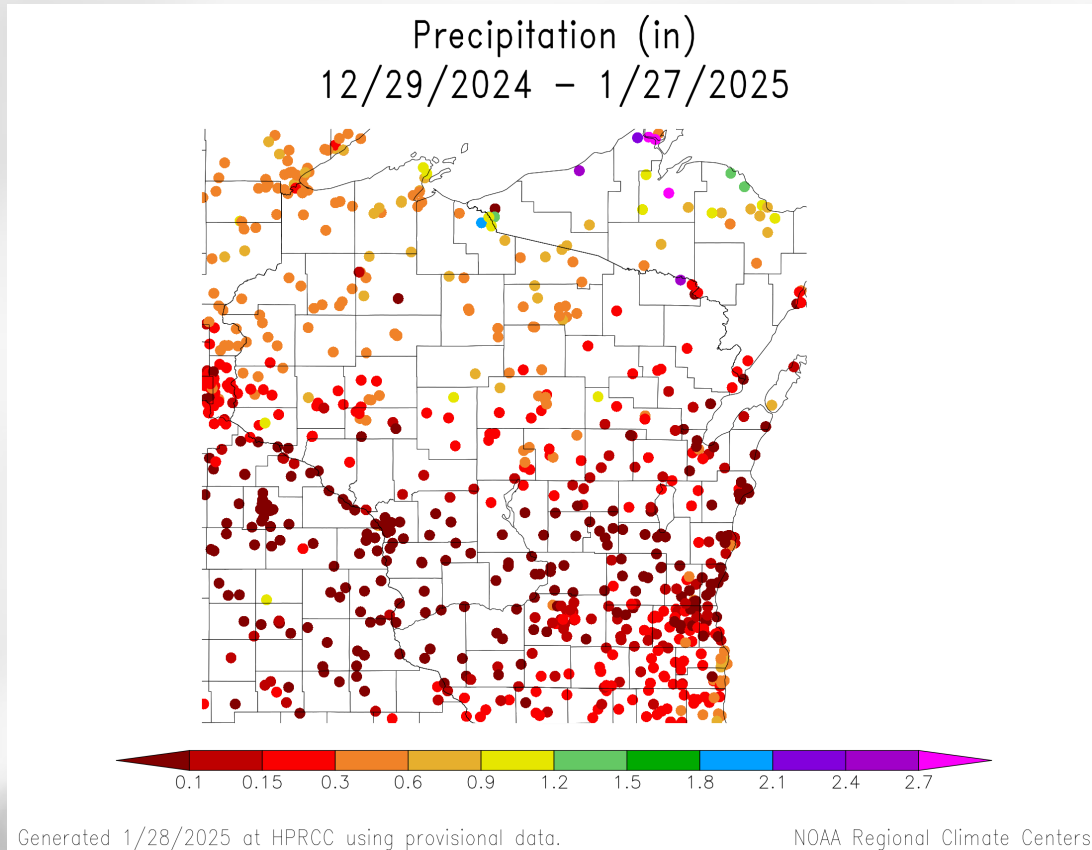
- **Quiet week** across most of the state with most of the state experiencing some light snow.
- **Higher totals** towards Lake Superior → 2-5+” of fresh snowfall.

30 Day Precip



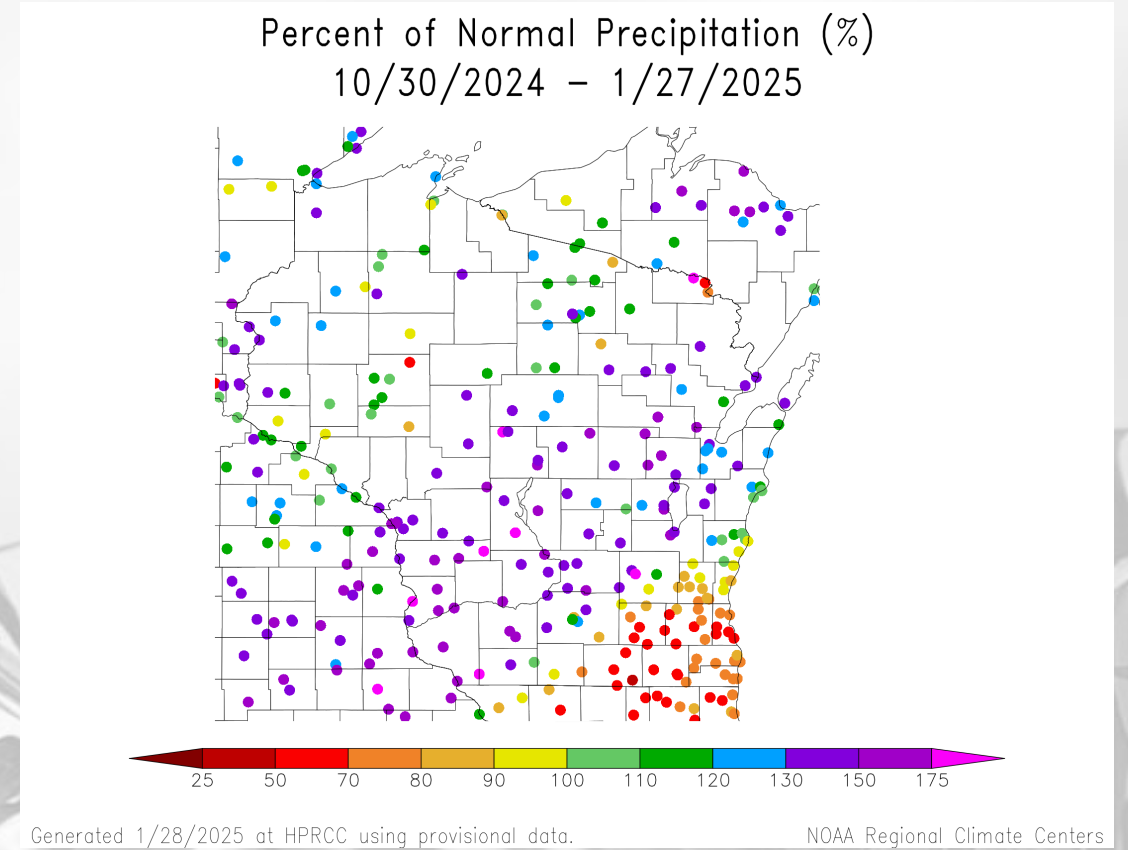
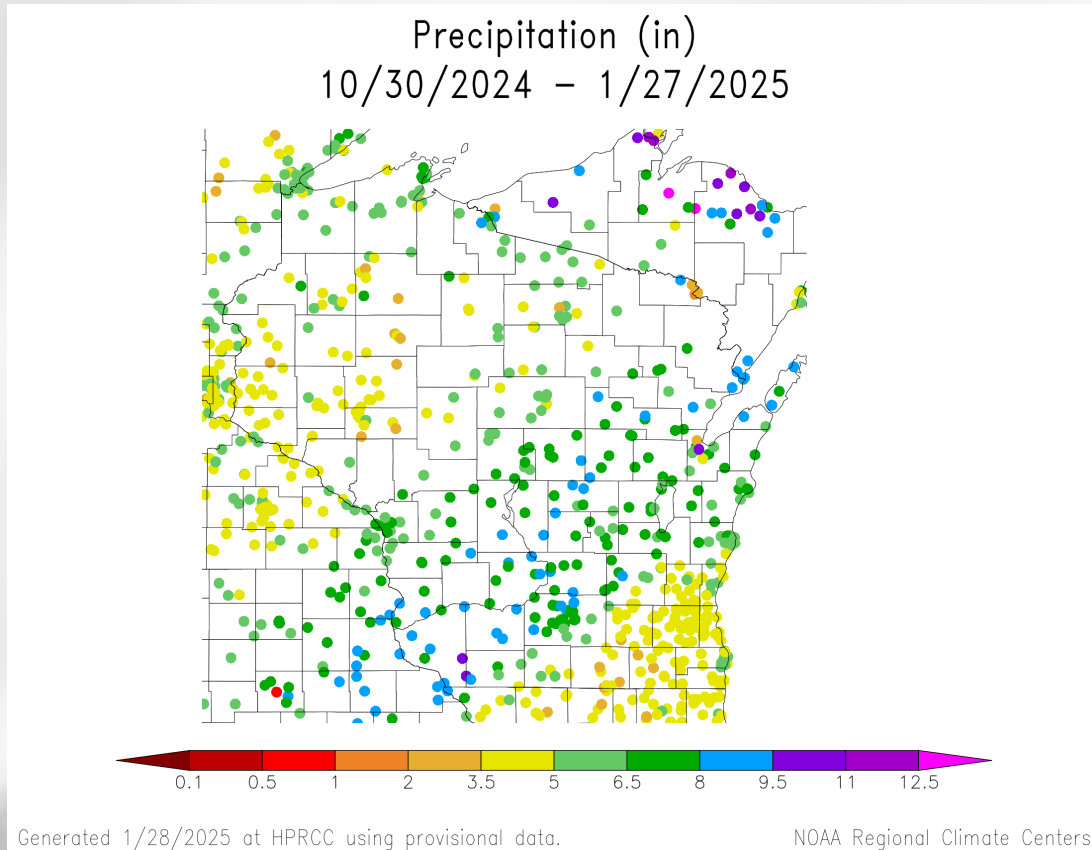
- **Less than a quarter inch** of precip (liquid equivalent) across the southern half of the state, with the **lowest totals in the SW**.
- Higher totals to the north → **>1" in the far N/NW**.
- We are in a time of year that is **climatologically drier**.

30 Day Precip Total/% Avg.



- Very low totals across the state compared to the 30-year average → **25% or less of normal.**
- In the south, totals ranging from **<0.1" to 0.3"**.
- A **half inch to an inch** further to the north.

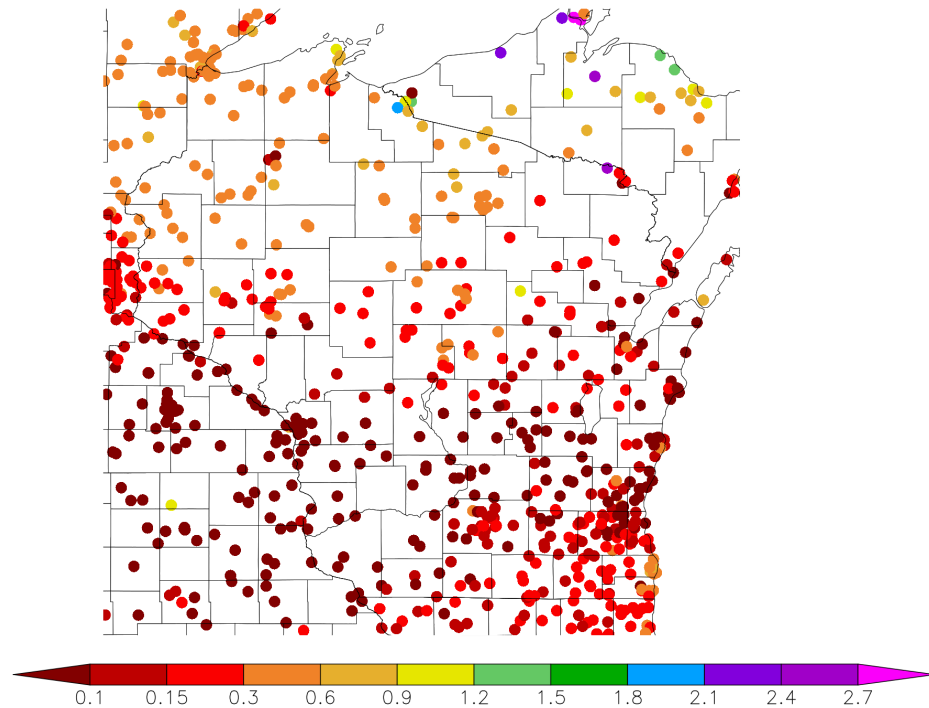
90 Day Precip Total/% Avg.



- **6-9+” of precip** across the SW-to-NE belt, most of which fell during the first part of November.
 - **Above** the climatological normal at most stations in this belt.
- **3-6”** in the SE and in the NW → **near-to-below** the climatological average.

2025 Precipitation (So far)

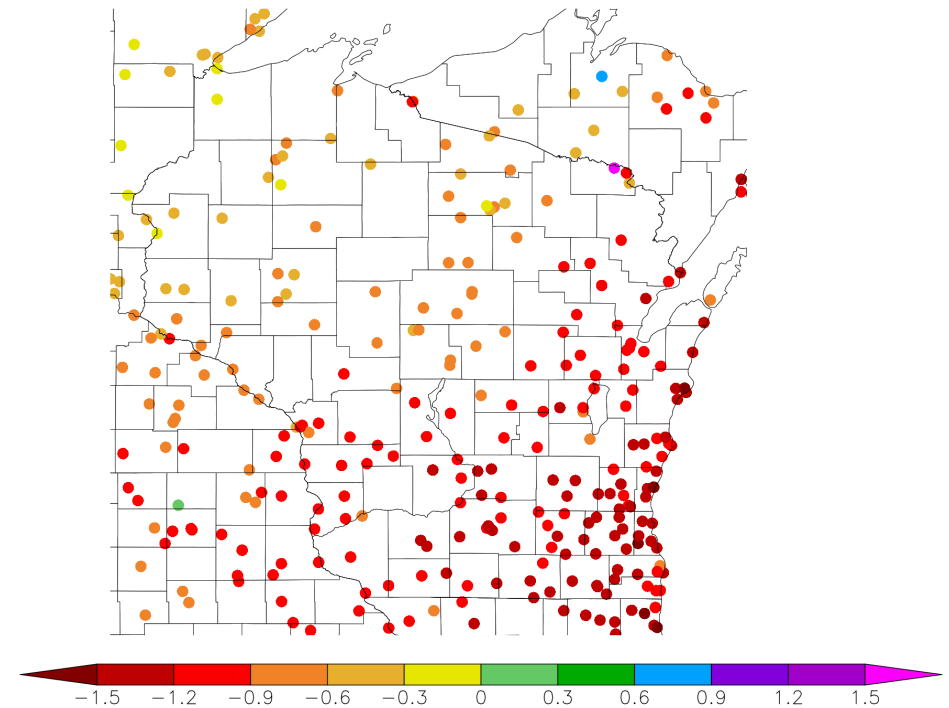
Precipitation (in)
1/1/2025 - 1/27/2025



Generated 1/28/2025 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Precipitation (in)
1/1/2025 - 1/27/2025



Generated 1/28/2025 at HPRCC using provisional data.

NOAA Regional Climate Centers

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

Soil Moisture Models

- **70th percentile or above** in the far NW and in pockets of the central region, with **near-normal conditions** common around the higher percentile regions.
- The eastern shore is still **trending very dry**. The SE has been **drier-than-normal** over the past 30 & 90 days. Dryness is also showing up along the Mississippi River.
- NOTE: moisture demand is not as high this time of year as compared to summer.

Model Notes:

Red areas = top 5 driest in 100 years.

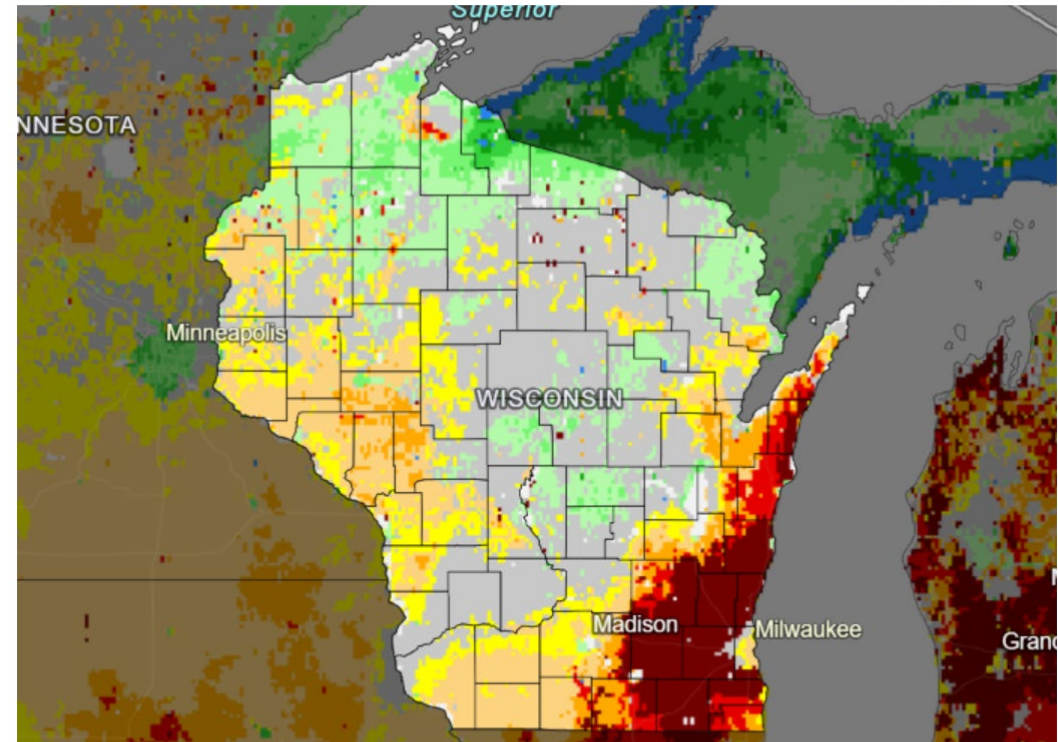
Dark red areas = top 2 driest in 100 years.

Blue areas = top 2 wettest in 100 years.

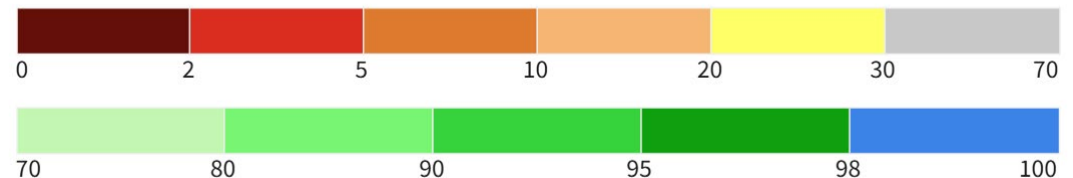
It's worth noting that each soil moisture model has their own characteristics and input variables, so there tends to be variation between models. Thus, it's worthwhile to look at multiple models opposed to just one.

https://weather.msfc.nasa.gov/sport/case_studies/lis_CONUS.html
<https://www.drought.gov/states/wisconsin>

NASA SPoRT-LIS 0-100 cm Soil Moisture Percentile



0-100 cm Soil Moisture Percentile

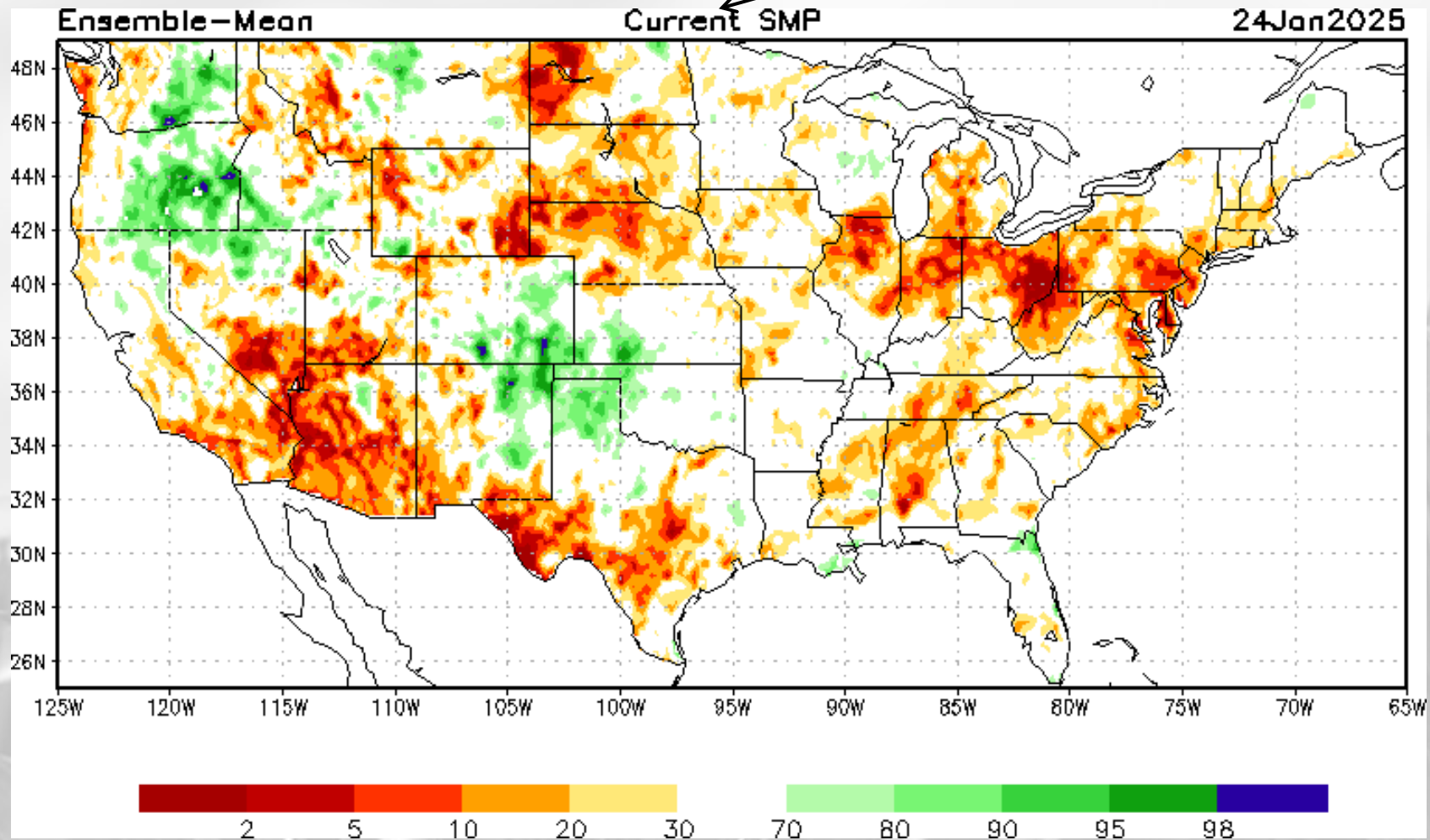


Source(s): NASA
Data Valid: 01/28/25

Drought.gov

Soil Moisture Models

NOTE: this map displays the soil moisture percentile for Jan. 24. It was the most recent update on Jan. 28.

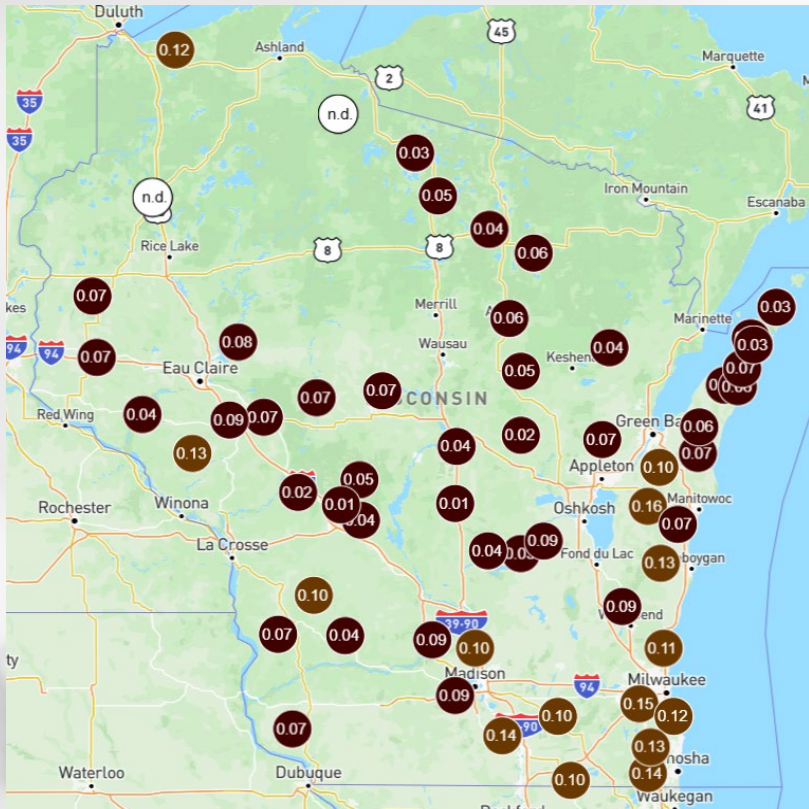


https://www.cpc.ncep.noaa.gov/products/Drought/Monitoring/smp_new.shtml

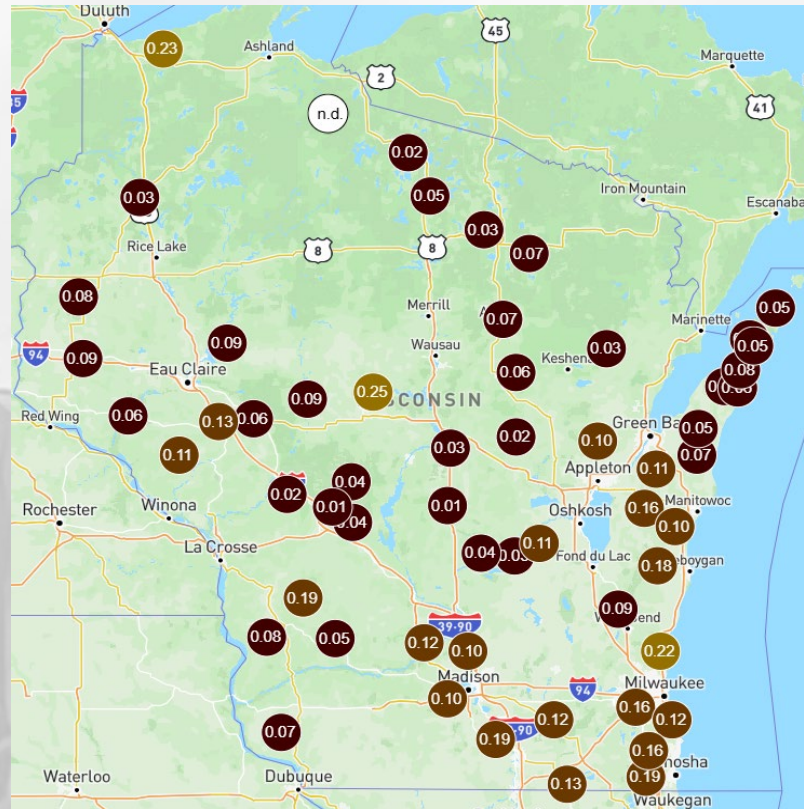
Wisconet Soil Moisture (Various Depths)

Maps Displayed: Tuesday January 28th @ Midday

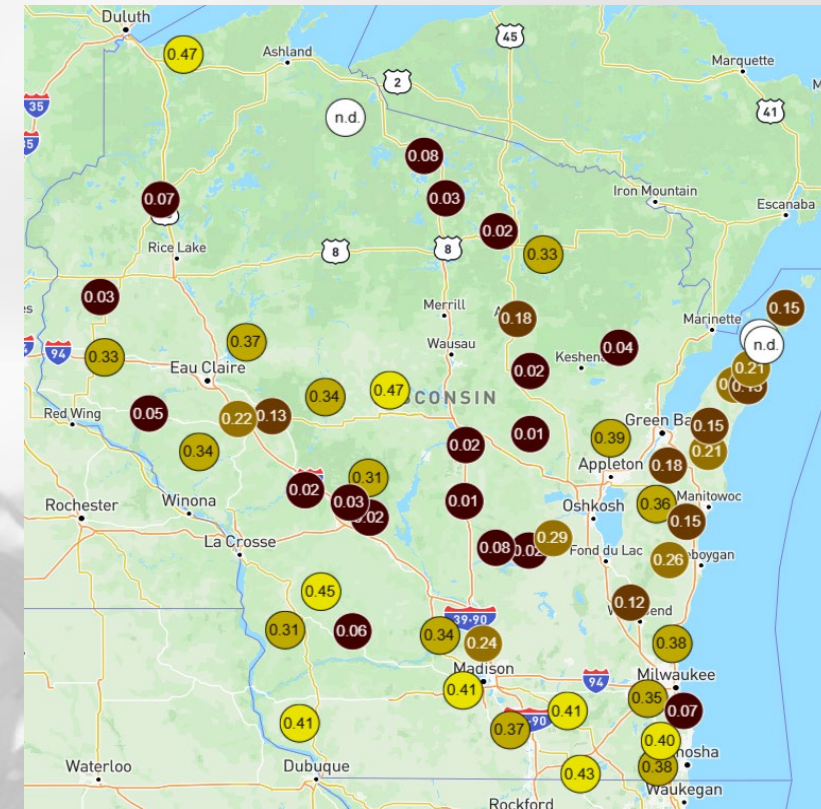
4" Depth



8" Depth



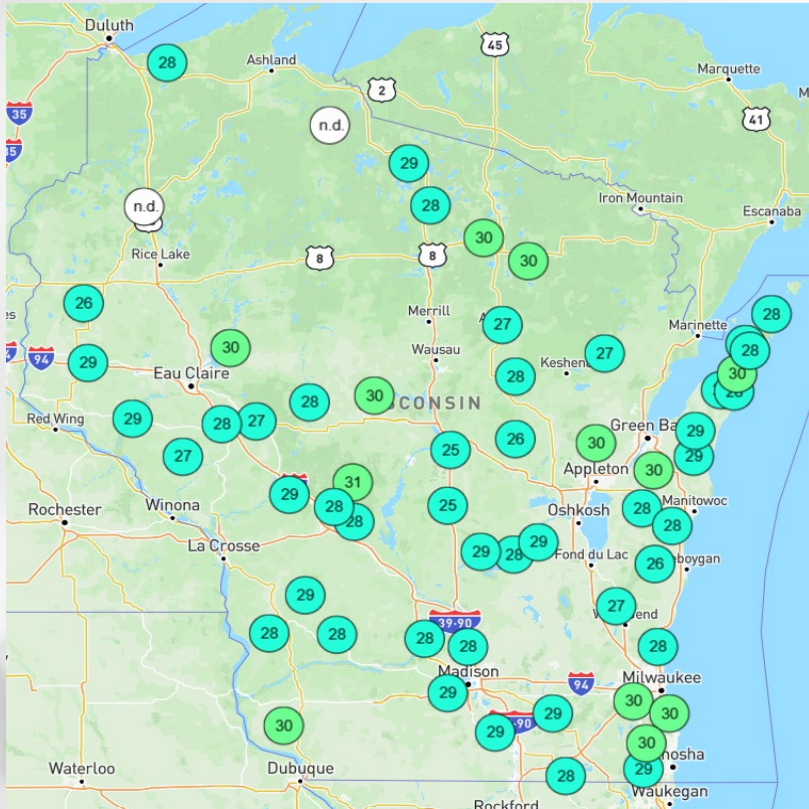
20" Depth



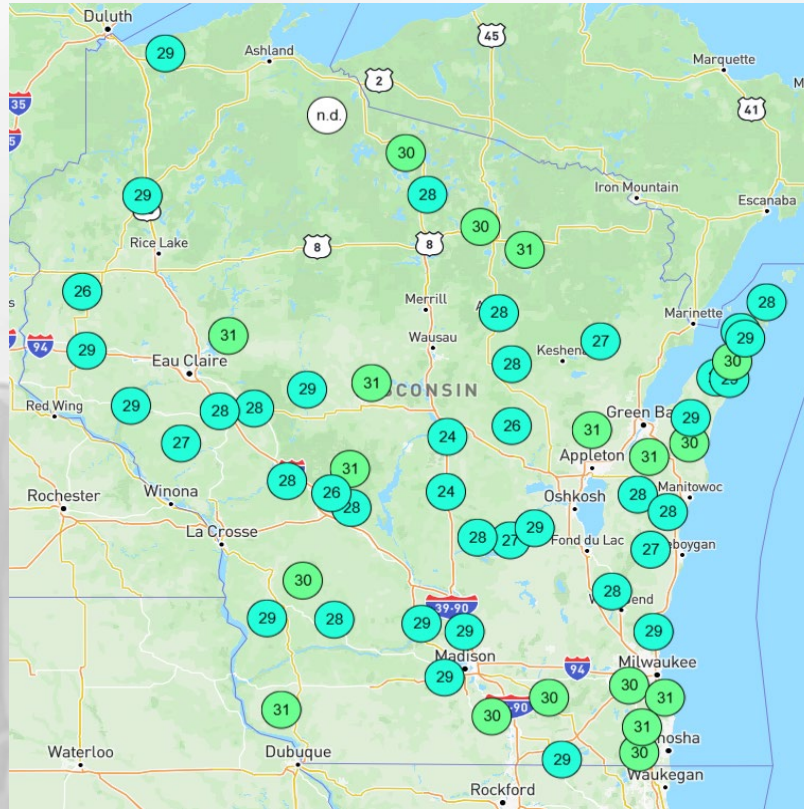
Wisconet Soil Temp (Various Depths)

Maps Displayed: Tuesday January 28th @ Midday

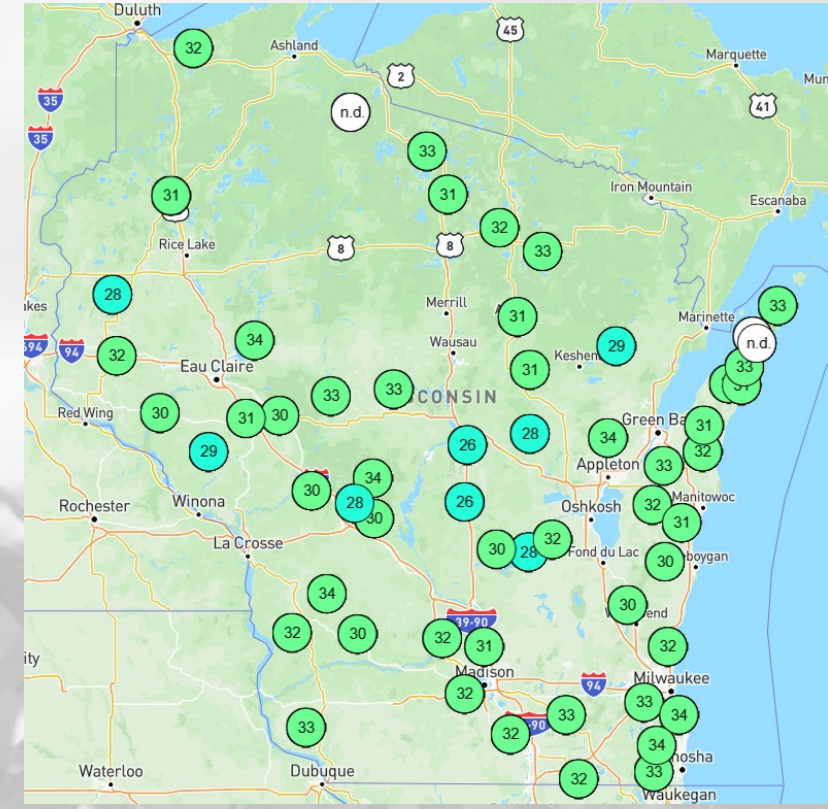
4" Depth



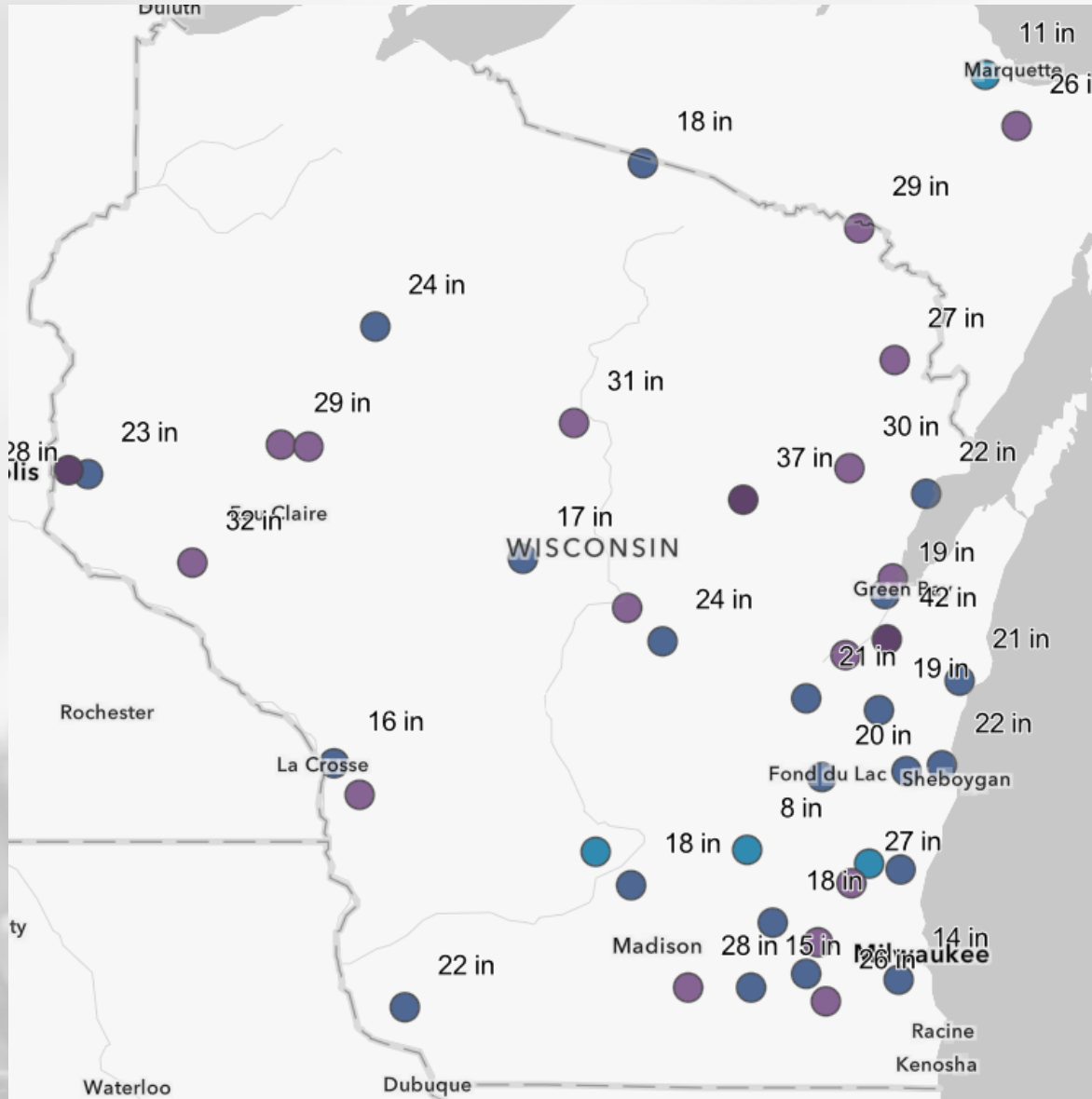
8" Depth



20" Depth



Frost Depth



About This Map (from NOAA): “This map displays recent frost depth measurements in terms of inches below the soil surface. Frost depth reports are commonly from frost tube instruments, visual reports from construction or cemetery sites, or other types of electronic probes.”

Map updated on 1/28/25

Soil Frost Depth (Inches)

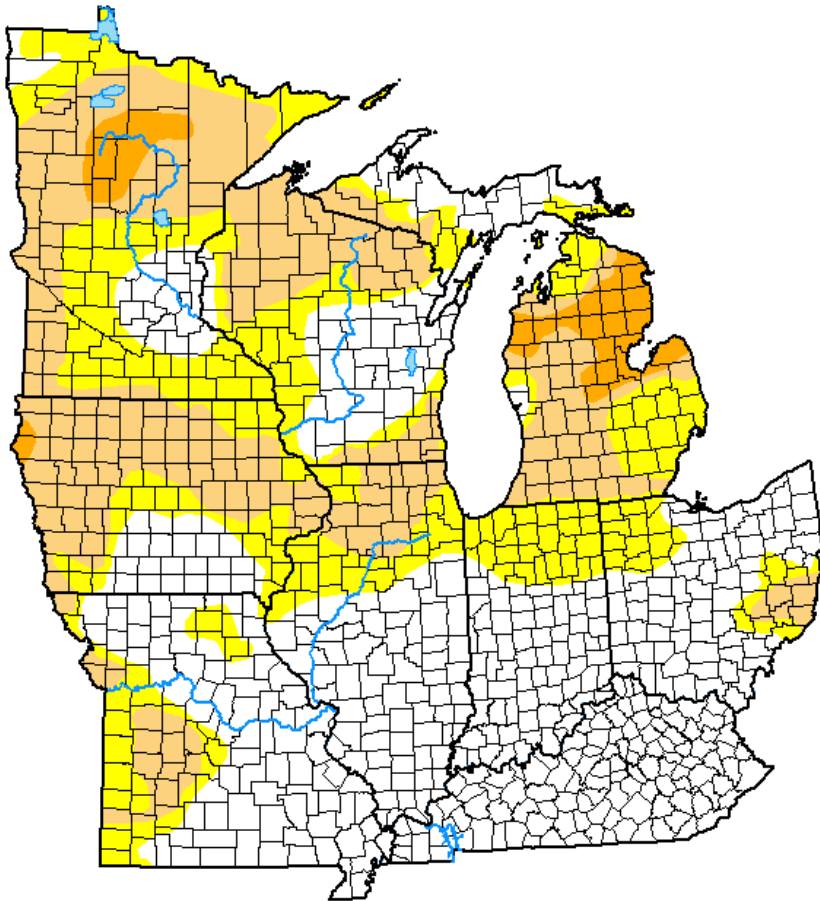
FrostDepth

- > 36" - 60"
- > 24" - 36"
- > 12" - 24"
- > 6" - 12"
- > 0" - 6"
- 0"

https://www.weather.gov/ncrfc/lmi_frost_depthmap/

US Drought Monitor

U.S. Drought Monitor Midwest



January 21, 2025

(Released Thursday, Jan. 23, 2025)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	46.74	53.26	29.29	3.56	0.00	0.00
Last Week <i>01-14-2025</i>	45.82	54.18	29.29	3.56	0.00	0.00
3 Months Ago <i>10-22-2024</i>	11.85	88.15	65.96	24.06	2.45	0.66
Start of Calendar Year <i>01-07-2025</i>	44.12	55.88	29.47	3.56	0.00	0.00
Start of Water Year <i>10-01-2024</i>	21.78	78.22	28.15	6.40	1.46	0.66
One Year Ago <i>01-23-2024</i>	30.48	69.52	33.53	12.64	2.76	0.00

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:

Brian Fuchs
National Drought Mitigation Center



droughtmonitor.unl.edu

- Compared to last month:

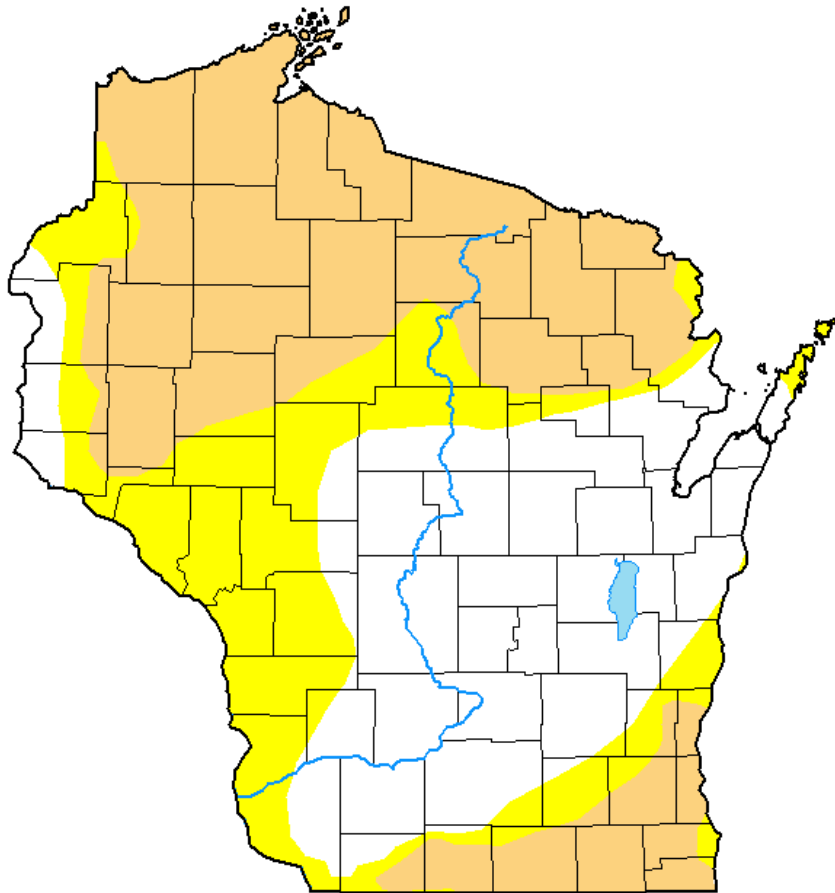
- **Improvements (1-3 classes)** from central IL over through northern IN and OH from above-normal 30-day precip.
- Western WI has been **added to D0** in the south and **removed from D0** closer to the Twin Cities.
- **Improvements** across all drought category coverage region-wide.

Note: D0 is not considered drought.

<http://droughtmonitor.unl.edu/>

US Drought Monitor

U.S. Drought Monitor Wisconsin



January 21, 2025

(Released Thursday, Jan. 23, 2025)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	36.12	63.88	39.54	0.00	0.00	0.00
Last Week 01-14-2025	36.12	63.88	39.54	0.00	0.00	0.00
3 Months Ago 10-22-2024	0.00	100.00	77.11	30.39	0.00	0.00
Start of Calendar Year 01-07-2025	36.12	63.88	39.54	0.00	0.00	0.00
Start of Water Year 10-01-2024	18.68	81.32	29.83	8.45	0.00	0.00
One Year Ago 01-23-2024	33.63	66.37	35.52	14.93	0.00	0.00

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>

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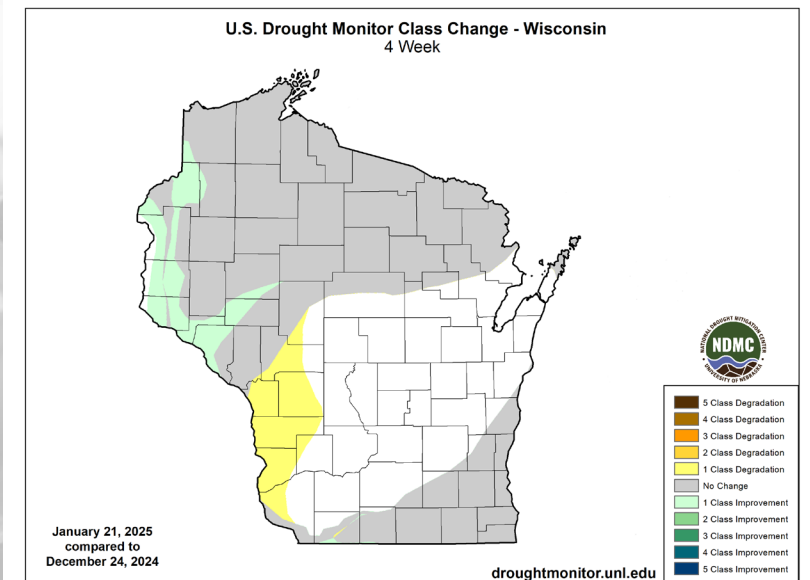
droughtmonitor.unl.edu

<http://droughtmonitor.unl.edu/>

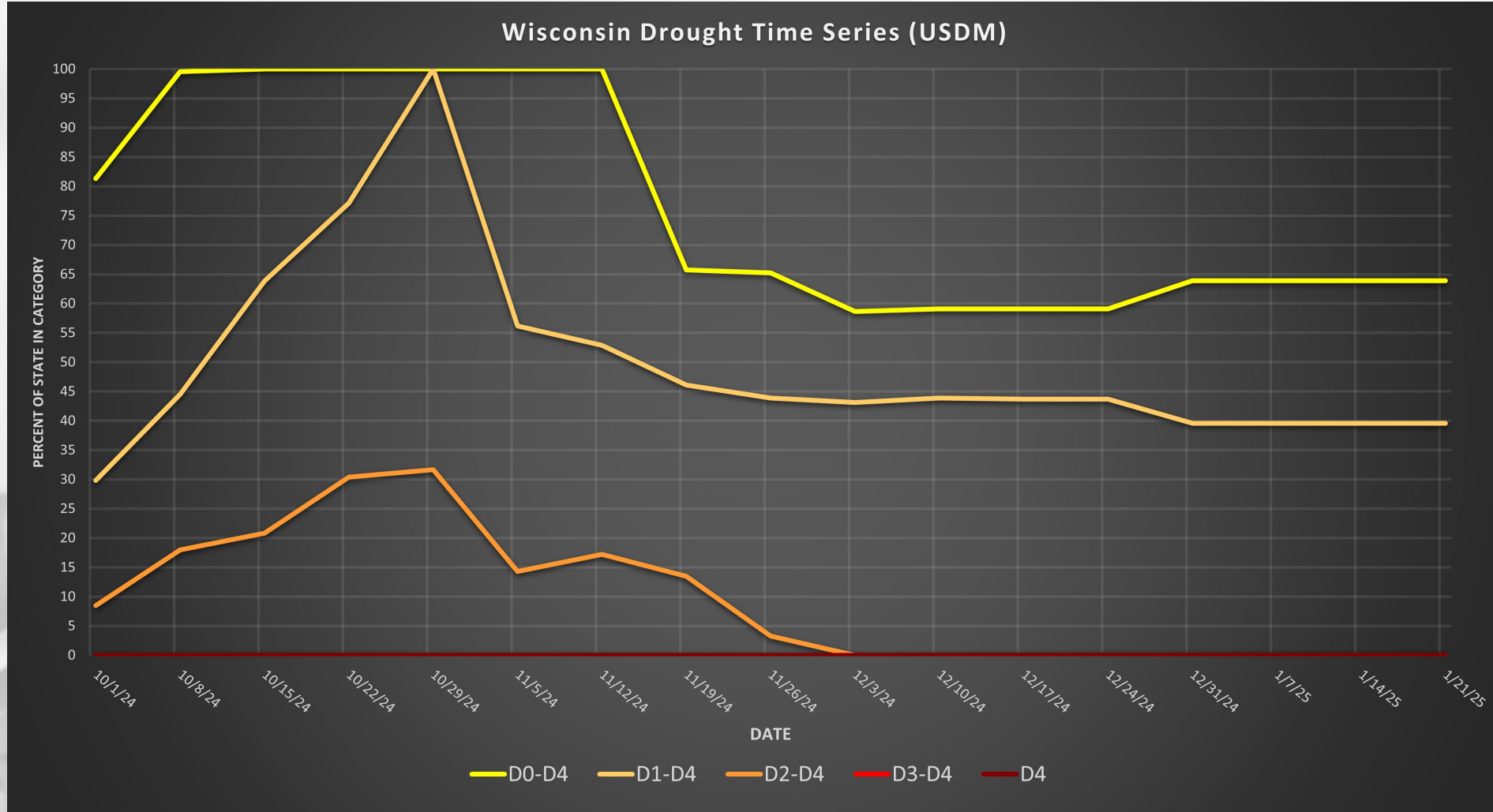
Amount of state in:

- D1-D4 – 39.5% ↓
- D2-D4 – 0.0% --
- D3-D4 – 0.0% --
- D4 – 0.0% --

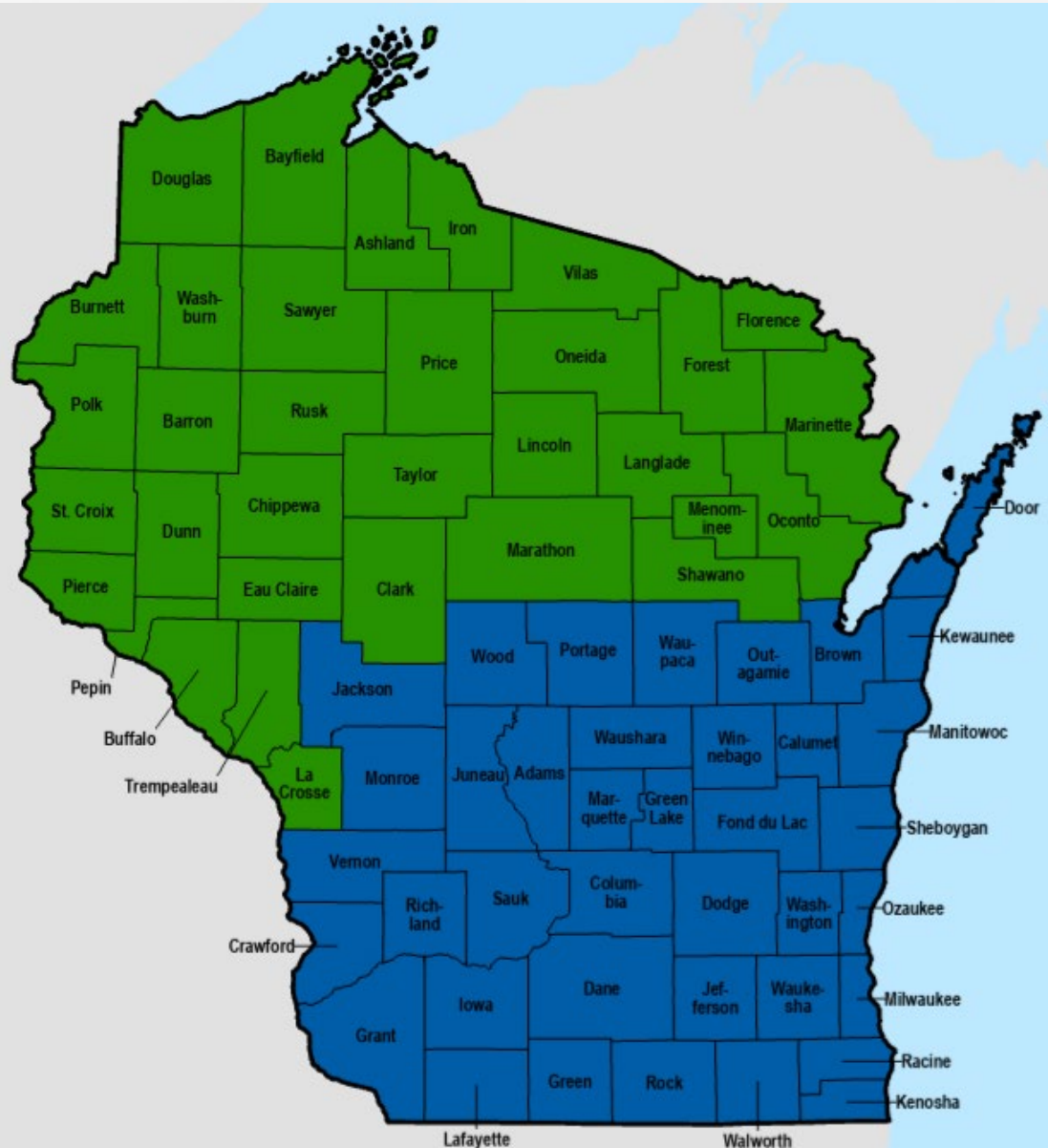
Note: ↑ ↓ indicate change from last month. Red up arrows indicate increase in drought area; vice-versa for green arrows.



USDM Time Series



Wildfire Risk



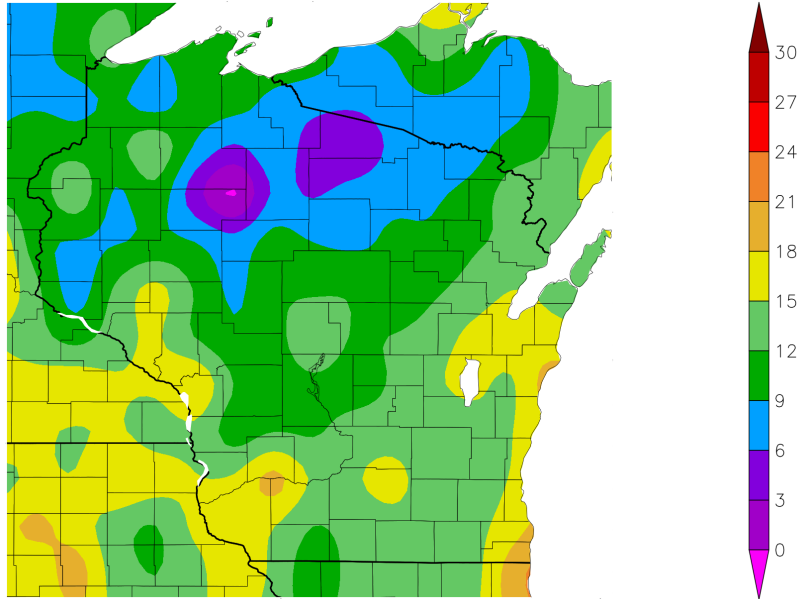
<https://apps.dnr.wi.gov/wisburn/#/>

A fire danger of **MODERATE** means wildfires can ignite and will spread but are relatively easy to contain.

A fire danger of **LOW** means wildfires do not easily ignite and will spread slowly.

7 Day Temperatures

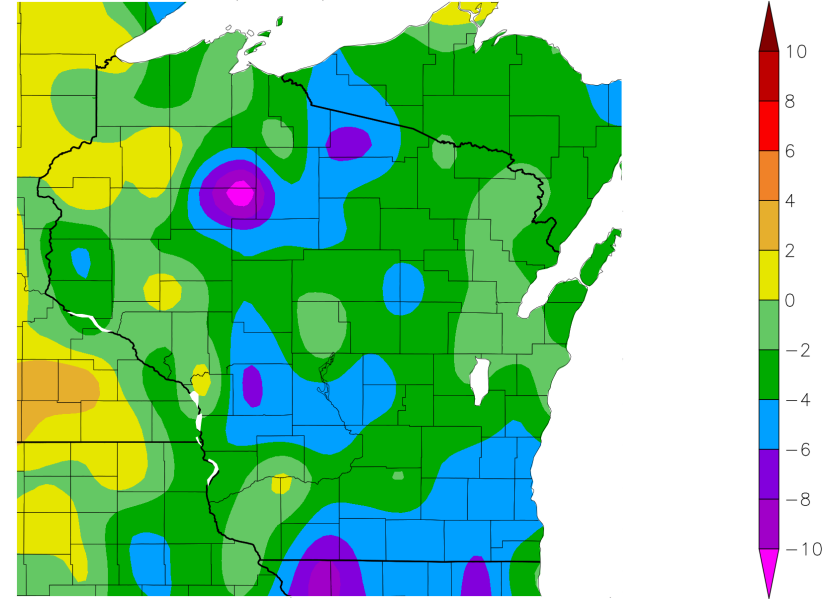
Temperature (F)
1/22/2025 - 1/28/2025



Generated 1/29/2025 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Temperature (F)
1/22/2025 - 1/28/2025



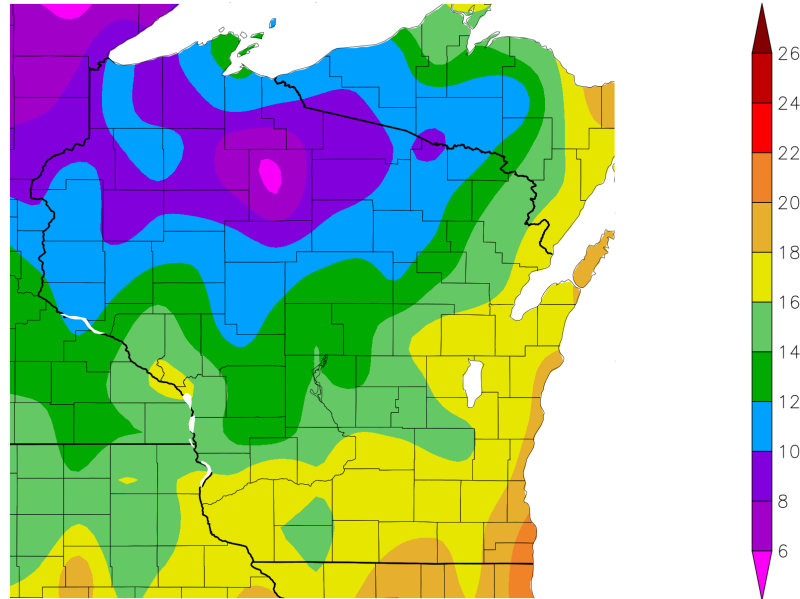
Generated 1/29/2025 at HPRCC using provisional data.

NOAA Regional Climate Centers

- Temperatures for the past week ranged from **15-21°F** in the E/SE to **<10°F** in the N/NW.
- **Below normal** for most in the state as we dealt with Arctic air for a few days.
- **4°F or more below average** in pockets, with near normal in the W.

30 Day Temperatures

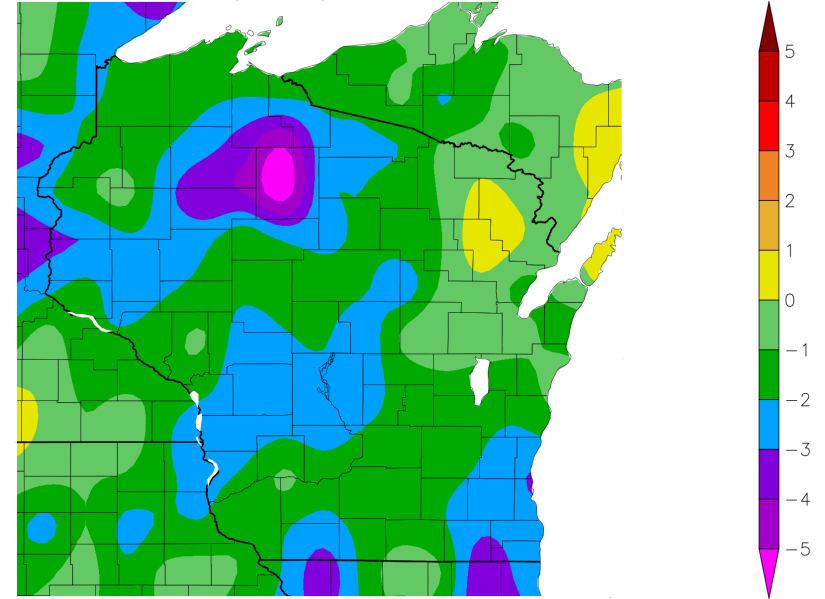
Temperature (F)
12/30/2024 – 1/28/2025



Generated 1/29/2025 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Temperature (F)
12/30/2024 – 1/28/2025



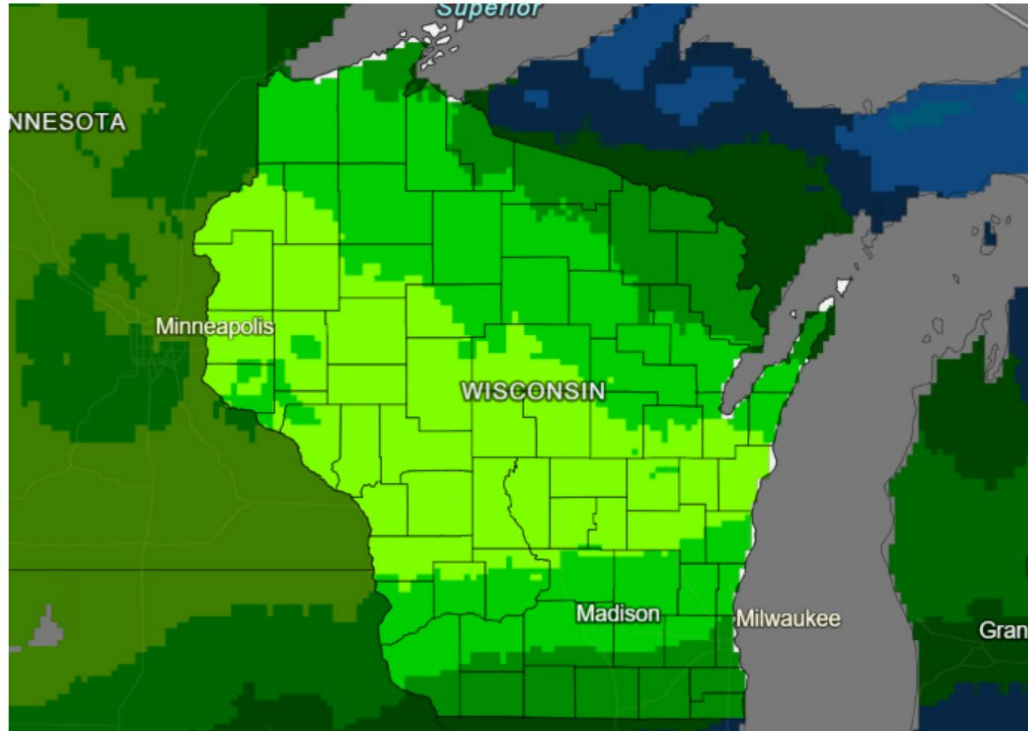
Generated 1/29/2025 at HPRCC using provisional data.

NOAA Regional Climate Centers

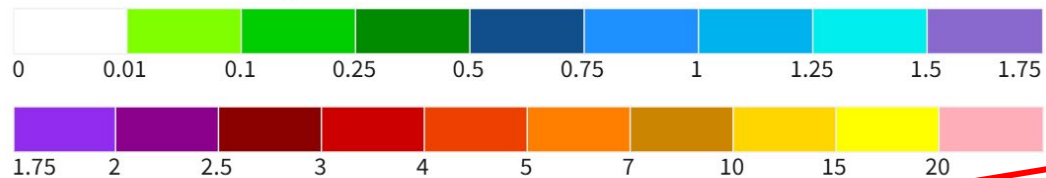
- Temperatures for the past month ranged from **16-20°F** in the E/SE to **8-12°F** in the N/NW.
- **1-3°F below normal** for most in the state, with colder pockets.
- Near normal in the **northeast**.

7 Day Precip Forecast

7-Day Quantitative Precipitation Forecast for
January 28–February 4, 2025



Predicted Inches of Precipitation



Source(s): National Weather Service Weather Prediction Center
Last Updated: 01/28/25

Drought.gov

- **Statewide chances** for precip during the next 7 days.
 - Location: Statewide, with better chances along the **IL border** and in the **far north**.
 - Timing: Rain in the south on **Thu. night into Friday**, & snow in the north/central **Sat. evening thru Sunday**.

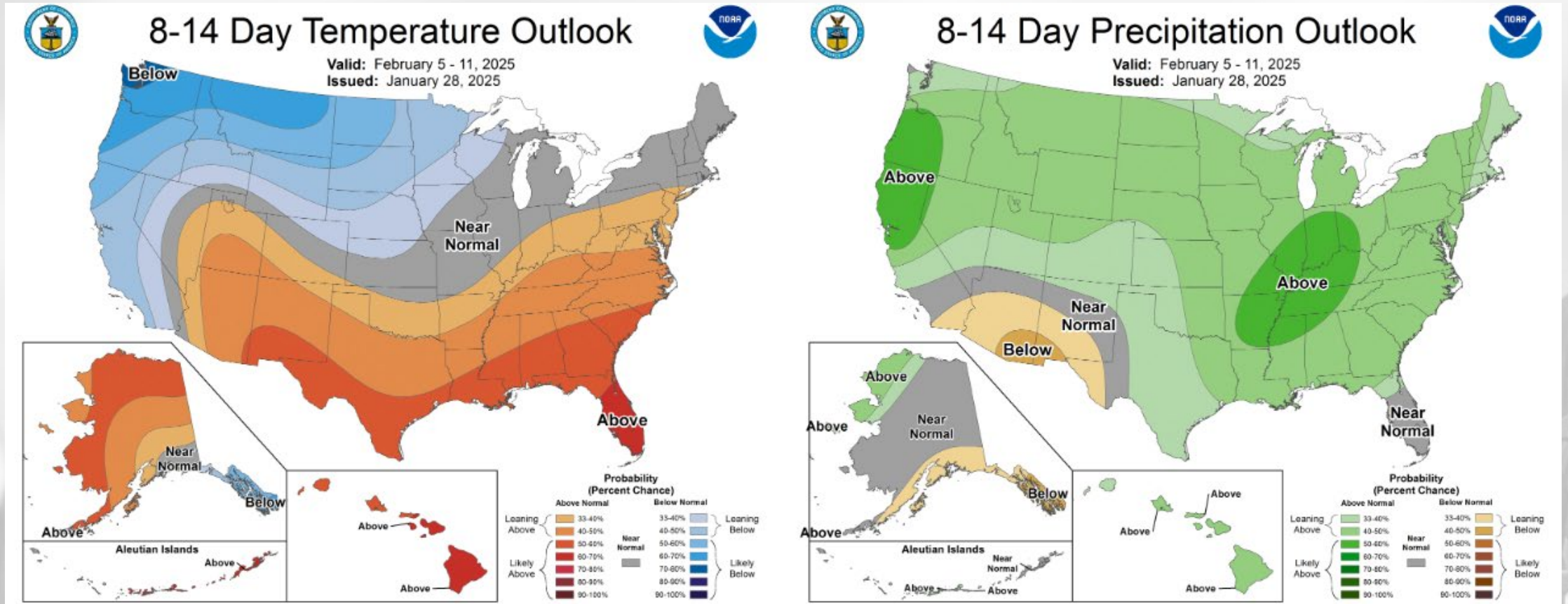
NOTE: this map shows liquid equivalent precipitation (i.e., frozen precip melted into liquid).

Check your local [NWS forecast](#) for local snowfall predictions.

Forecast for 1/28/25 thru 2/4/25
(Begins at 6am CST)

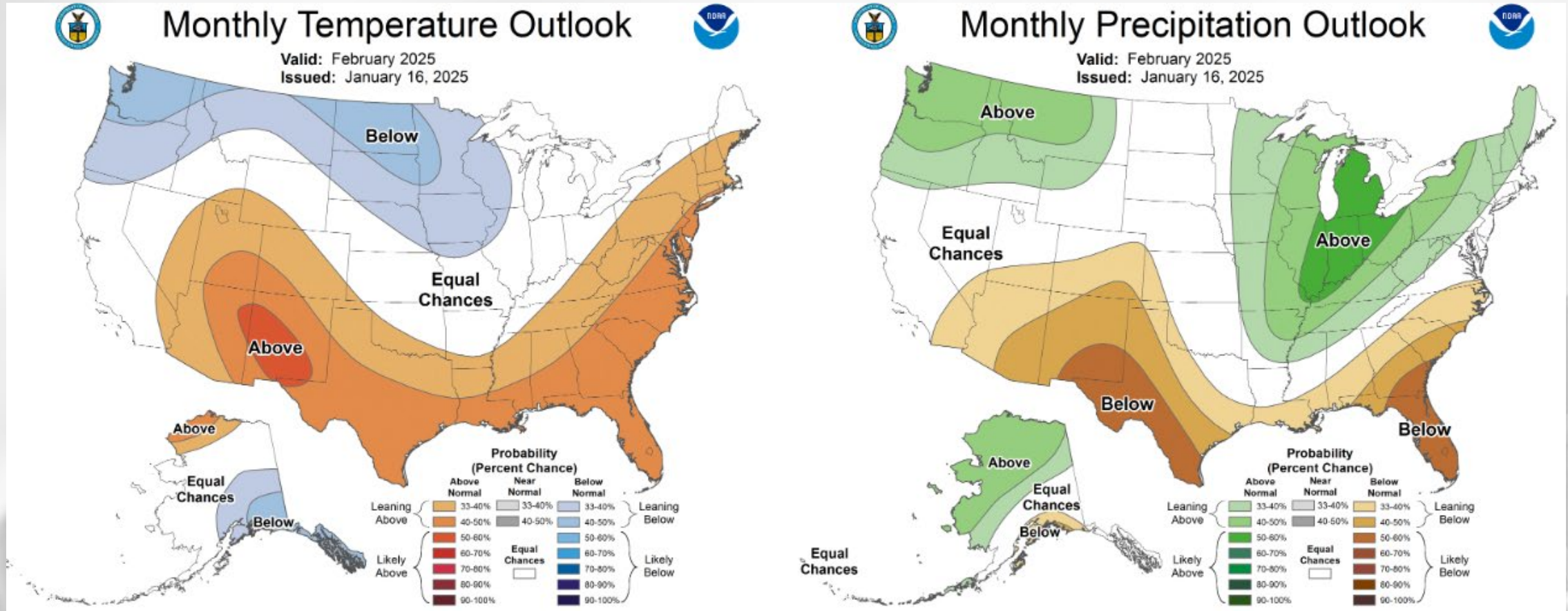
<https://www.wpc.ncep.noaa.gov/qpf/p168i.gif>
<https://www.drought.gov/states/wisconsin>

8-14 Day Temp & Precip Outlook



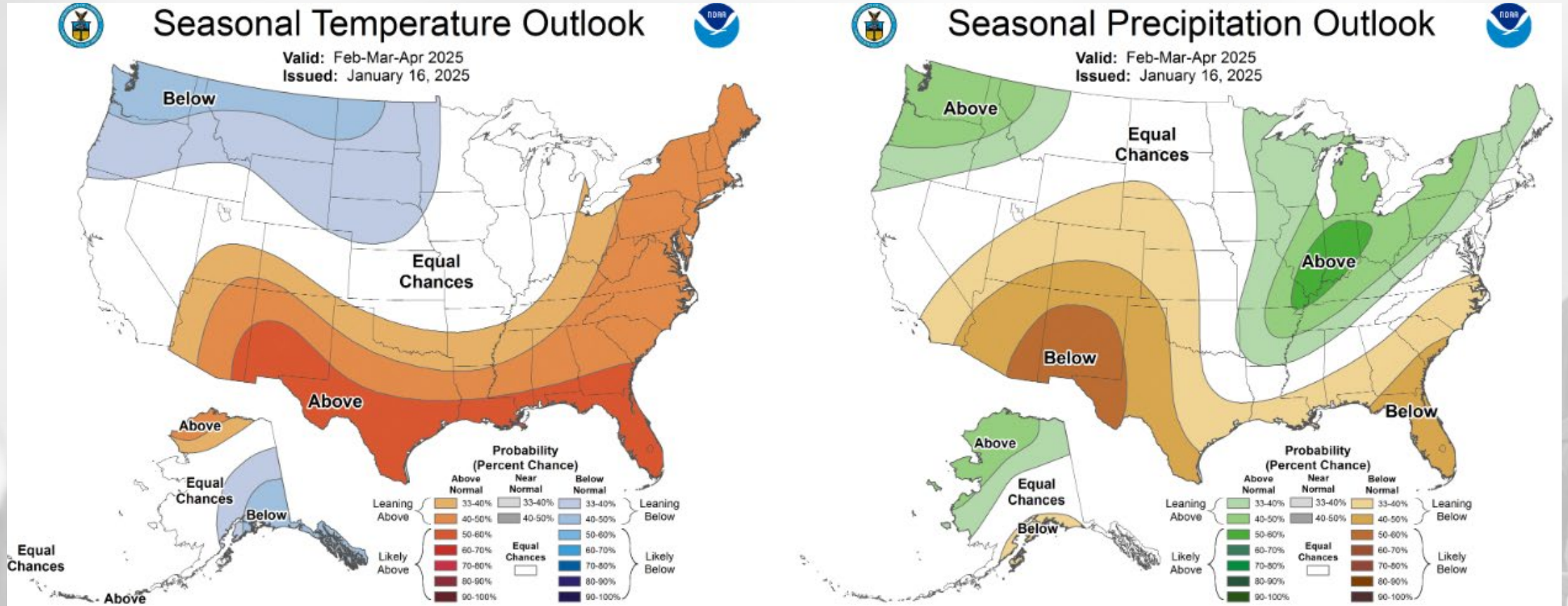
Start of February: Temperatures leaning towards near-to-below normal, with more likely to be below normal in the NW. Precipitation is leaning towards above normal.

30 Day Temp & Precip Outlook



Month of February: Temperatures leaning towards below normal, with precipitation leaning towards above normal.

90 Day Temp & Precip Outlook



Late Winter into Spring: Temperatures uncertain with equal chances, with precipitation leaning towards above normal.

Take-Home Points

Current Conditions:

- January was a colder-than-normal month across most of the state, aided by an Arctic blast that impacted the state last week.
- January has been quite **drier-than-normal**, especially in the south. Snowfall totals since December 1st are **<50% of climatological normal** at some stations.
- Snow depth/coverage across the state is mainly **limited to the Northwoods**.

Impact:

- Soil moisture estimates in the south are **drier than normal** due in part to minimal precip over the past 30-to-90 days.
 - Closer to **normal or above normal percentiles** in the central and north.
- USDM drought severity coverage areas **decreased slightly** from last month, mainly in NW WI.
- Soil frost depth goes down more than **1-2 feet** across the state after a cold stretch of weather with minimal/no snow cover. Wisconet soil temp measurements at 20" depth are **at or below freezing**.

Outlook:

- Best 7-day chances for precip exist along the **IL border and in the north**; southern precip is looking more likely to be **rain**.
- Temperatures probabilities for mid-January are leaning **near-to-below-normal**. After a dry January, early February is showing a lean towards **above-normal precip**.
- February is leaning towards **below normal** in temperature and **above normal** in precip.
- The rest of winter into spring is more **uncertain for temperatures** with a lean towards **above normal precip**.

Agronomic Considerations

Crop Development

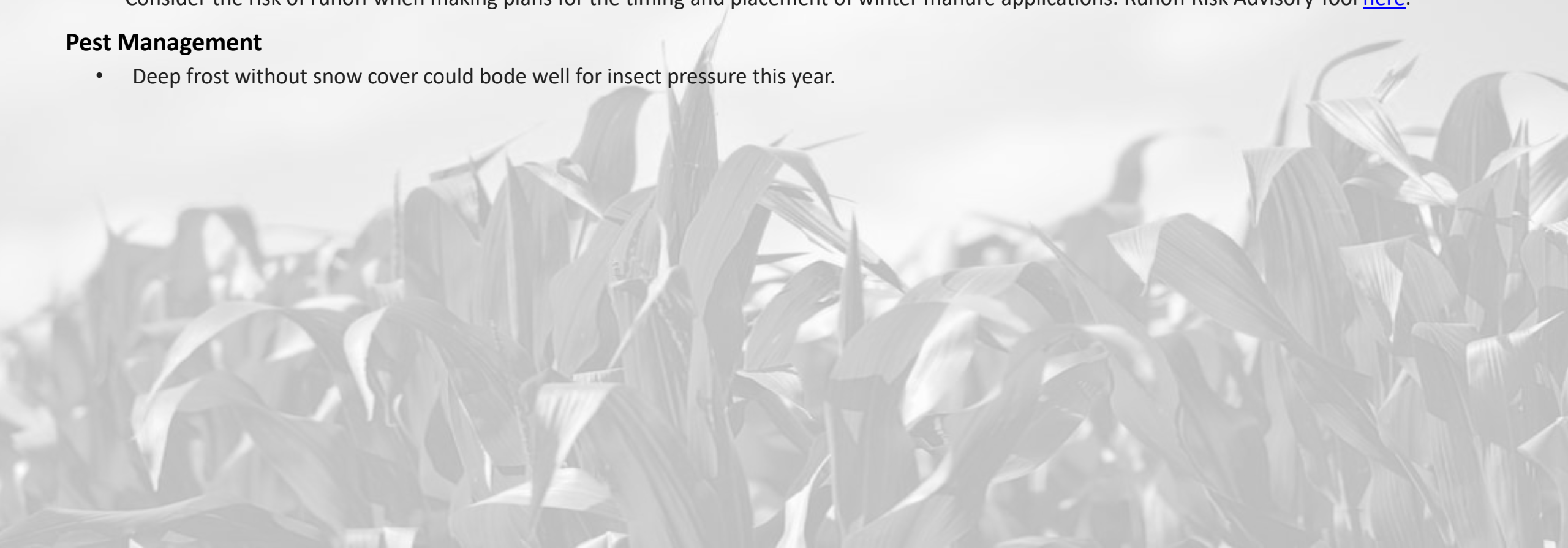
- Extreme cold and no cover leave the fate of winter wheat uncertain. It's too early to assess entire fields, but an early indicator is to pull plants and place them in a warm environment like a milk house or kitchen. If the plant is alive, roots will regrow as vibrant white roots.
- When preparing for the season, the last frost is an indicator of readiness, check historical freeze dates for your county [here](#).

Manure Applications

- Consider the risk of runoff when making plans for the timing and placement of winter manure applications. Runoff Risk Advisory Tool [here](#).

Pest Management

- Deep frost without snow cover could bode well for insect pressure this year.



User Survey

Are you a regular user of the Wisconsin Ag Climate Outlook (WACO)? Or maybe you are viewing these slides for the first time this week? Either way, we want to hear **your** feedback on this new resource! Please take a few minutes and fill out this survey:

[LINK TO SURVEY](#)

Your feedback will help us better serve your ag-climate data needs through WACO.

If you have any trouble accessing or filling out the survey, please email Josh Bendorf at Joshua.Bendorf@usda.gov.

Thank you!!

-The WACO Team

Contact Info

Photo Credit: USDA



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