



Midwest Climate Hub
U.S. DEPARTMENT OF AGRICULTURE



Wisconsin State Climatology Office
University of Wisconsin-Madison



Extension
University of Wisconsin-Madison



Wisconsin Ag Climate Outlook

Winter Edition

February 2025

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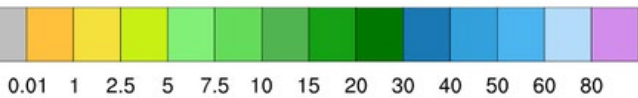
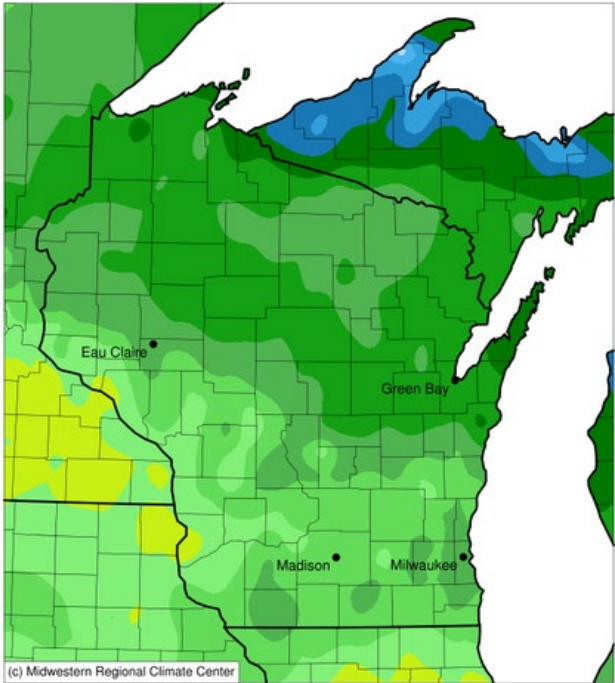
Key Points

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

- 1) The past 30 days have been [cooler](#) thanks to a recent blast of Arctic air, with below-normal [precip](#) and [snowfall](#).
 - 2) Soils largely remain [drier than normal](#), with recent precip + snowmelt spurring runoff & flooding. [Soil frost](#) is over 2 feet deep in areas but beginning to thaw.
 - 3) Precip chances statewide over the [next week](#), with an above normal lean for [the month of March](#).
- *For this week's agronomic recommendations from UW Extension, click [here](#).*

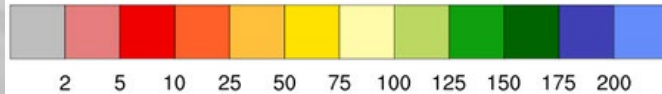
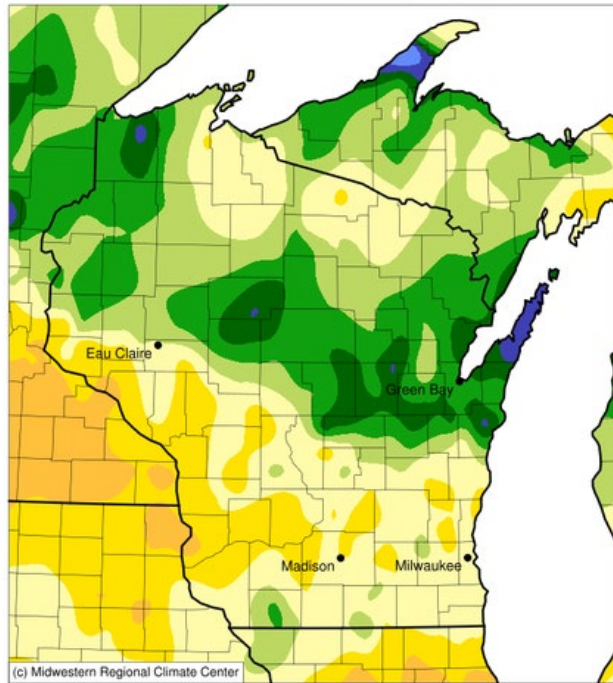
Snowfall Recap & Snow Depth

Accumulated Snowfall (in)
January 28, 2025 to February 24, 2025



- **Abundant snowpack** across the state Feb 13-23
- Above-freezing temps ate away at the snow Feb 24
- Currently, **no snow cover** for S WI and **quickly melting** in N WI

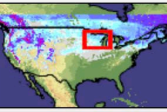
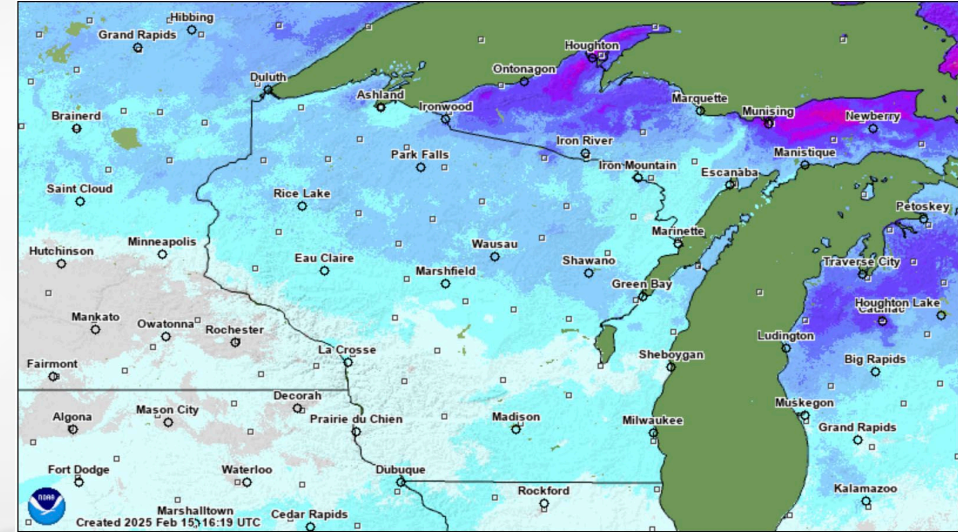
Accumulated Snowfall: Percent of 1991-2020 Normals
January 28, 2025 to February 24, 2025



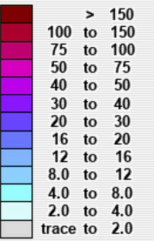
- Range from **10-30"** (**100-200% of normal**) in the far N to **5-10"** (**50-100% of normal**) in the S.

<https://mrcc.purdue.edu/>

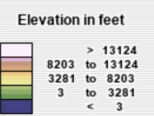
Modeled Snow Depth for 2025 February 15, 12:00 UTC
477.8 mi



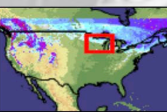
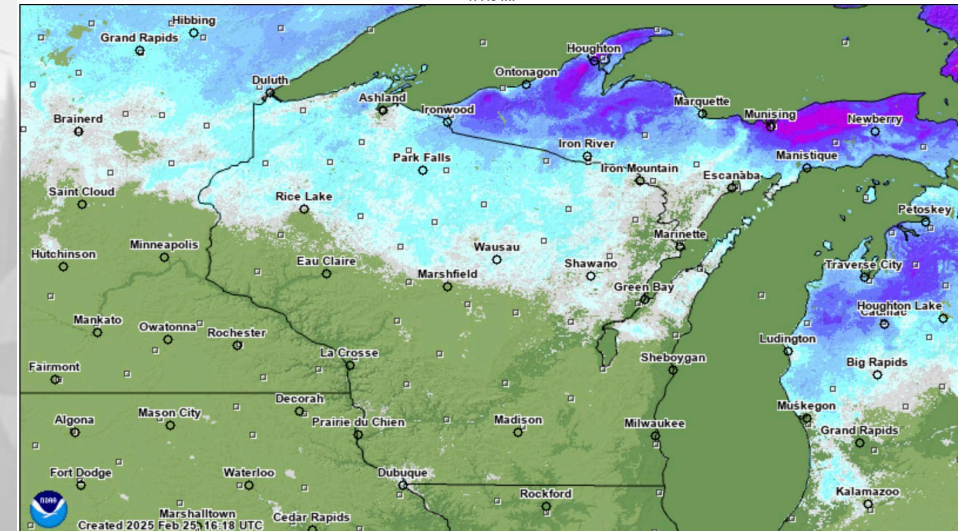
Inches of depth



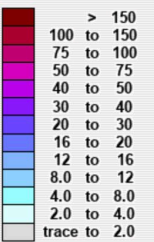
Elevation in feet



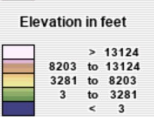
Modeled Snow Depth for 2025 February 25, 12:00 UTC
477.8 mi



Inches of depth



Elevation in feet



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

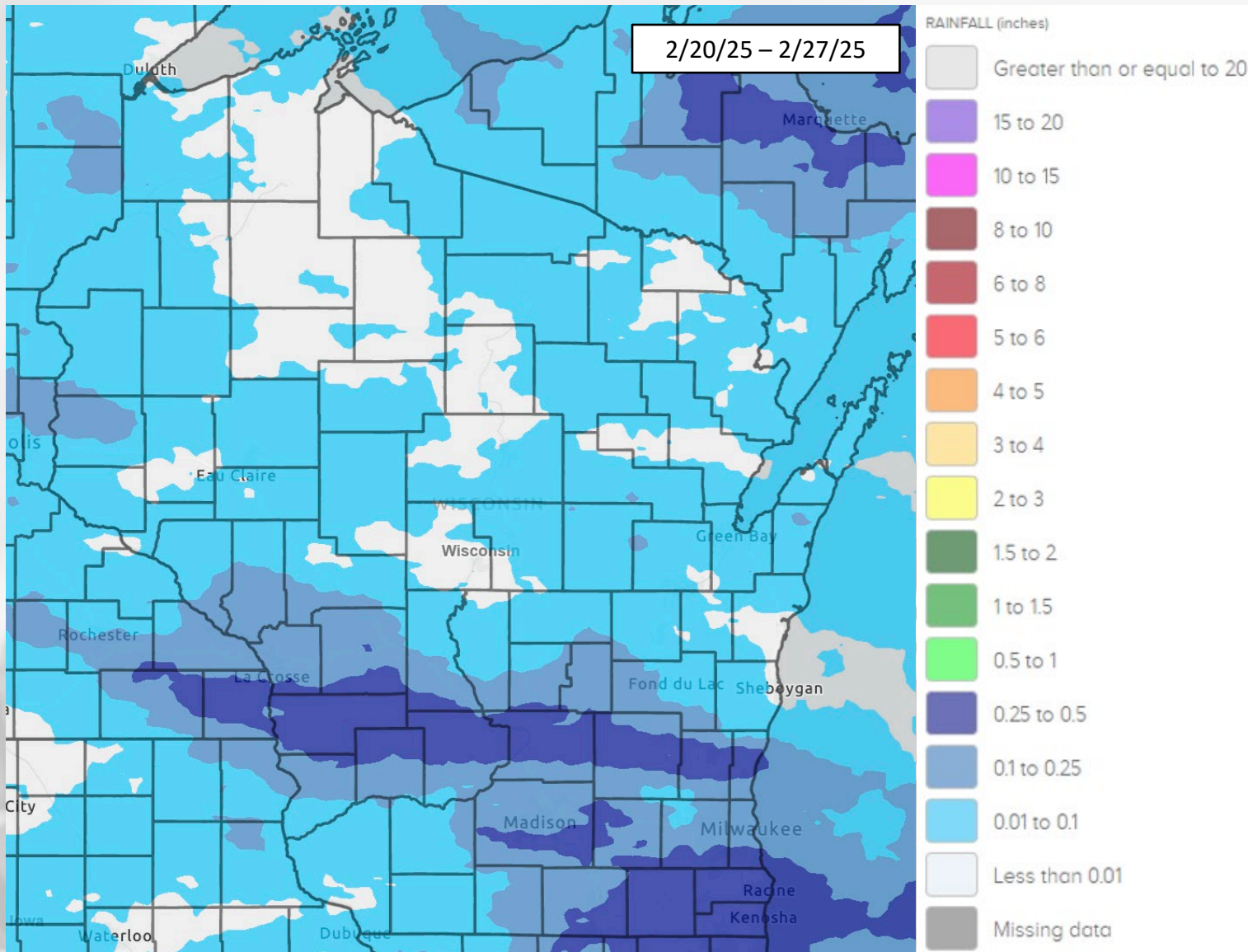
Winter Snow Recap (Dec. 1 – Feb. 24)

Station	Snowfall Total (in.)	Normal Snowfall (in.)*	Difference (in.)**
Madison	17.3	36.9	-19.6
Milwaukee	21.5	35.6	-14.1
La Crosse	15.8	31.1	-15.3
Wausau	31.3	40.2	-8.9
Green Bay	30.3	37.8	-7.5
Eau Claire	23.5	34.2	-10.7
Duluth, MN	33.6	48.3	-14.7
Twin Cities, MN	15.0	30.1	-15.1
Dubuque, IA	14.7	30.3	-15.6

**Climate normals are for 1991-2020, December 1 – February 24.*

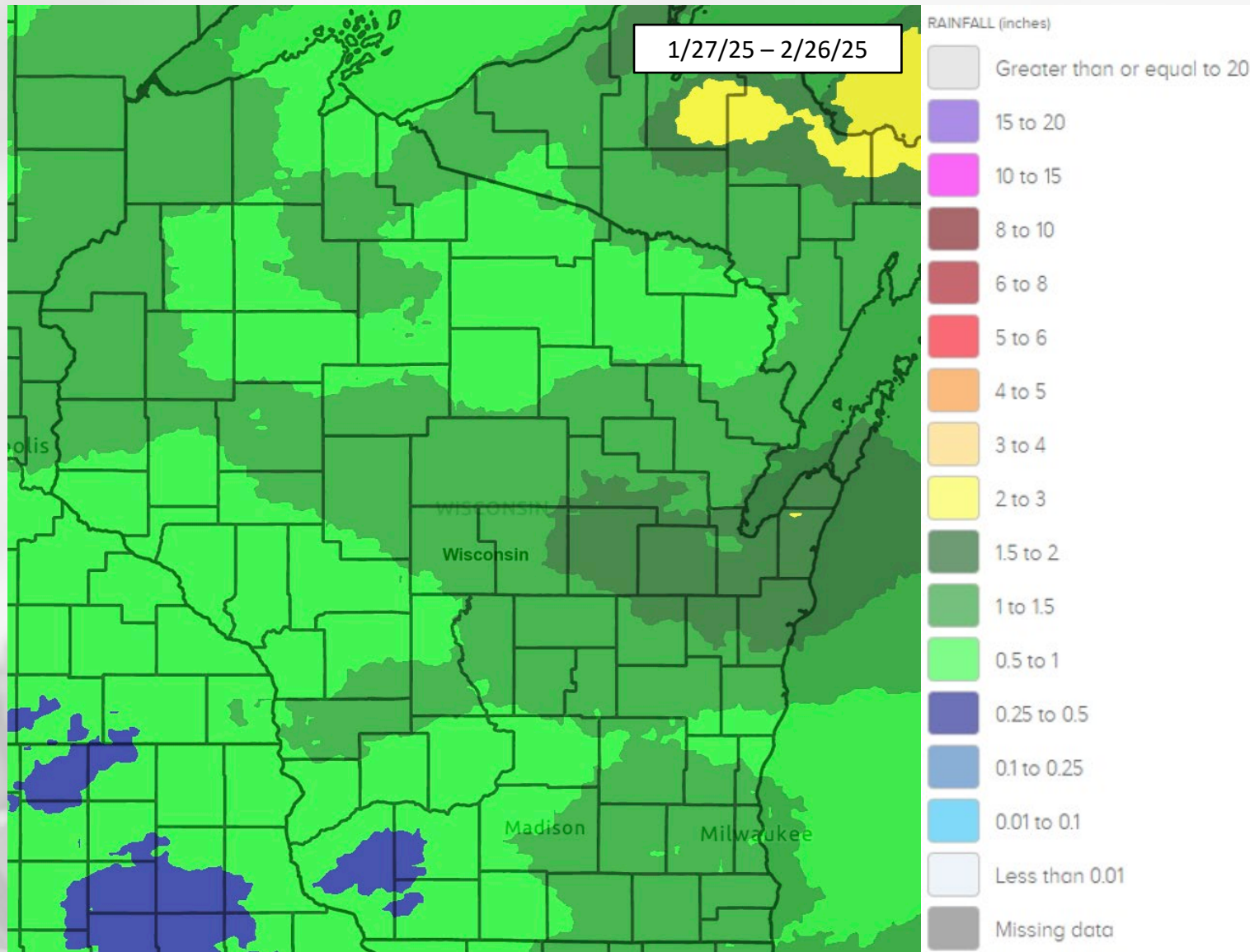
***Negative values mean that this year's snowfall totals are less than normal snowfall.*

7 Day Precip



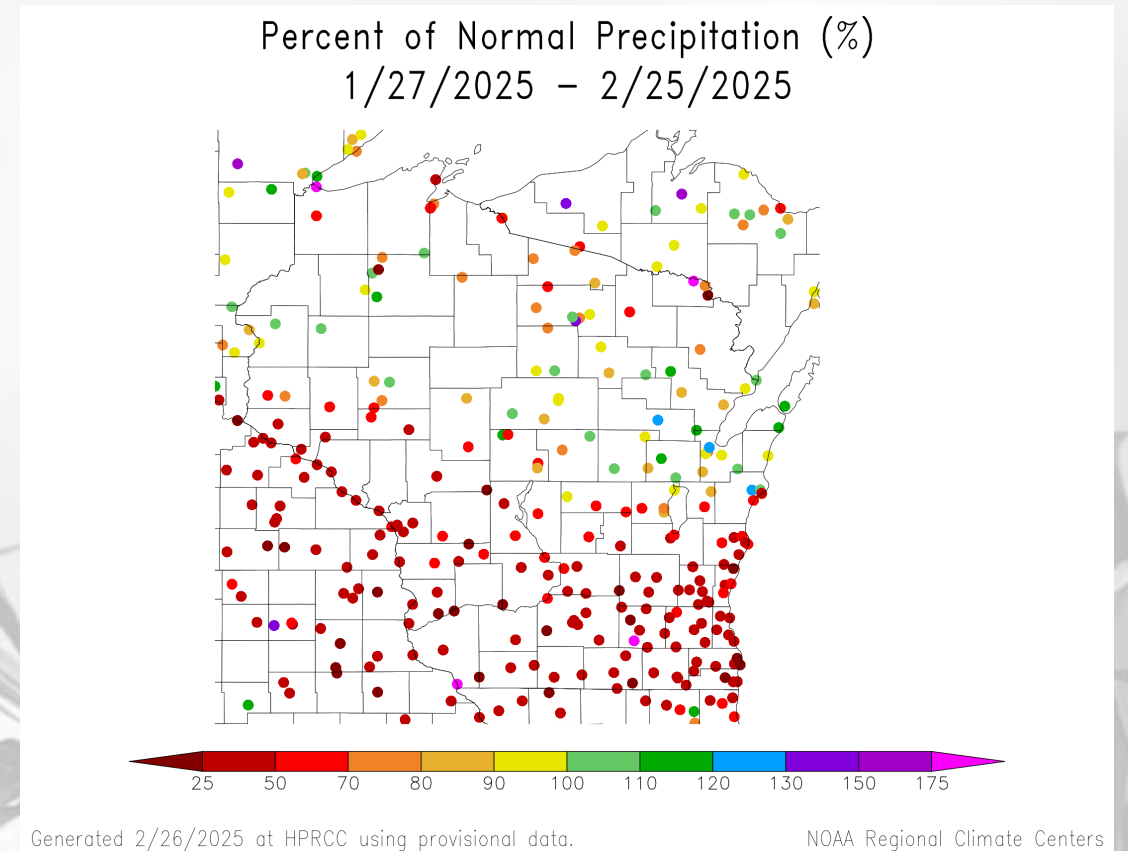
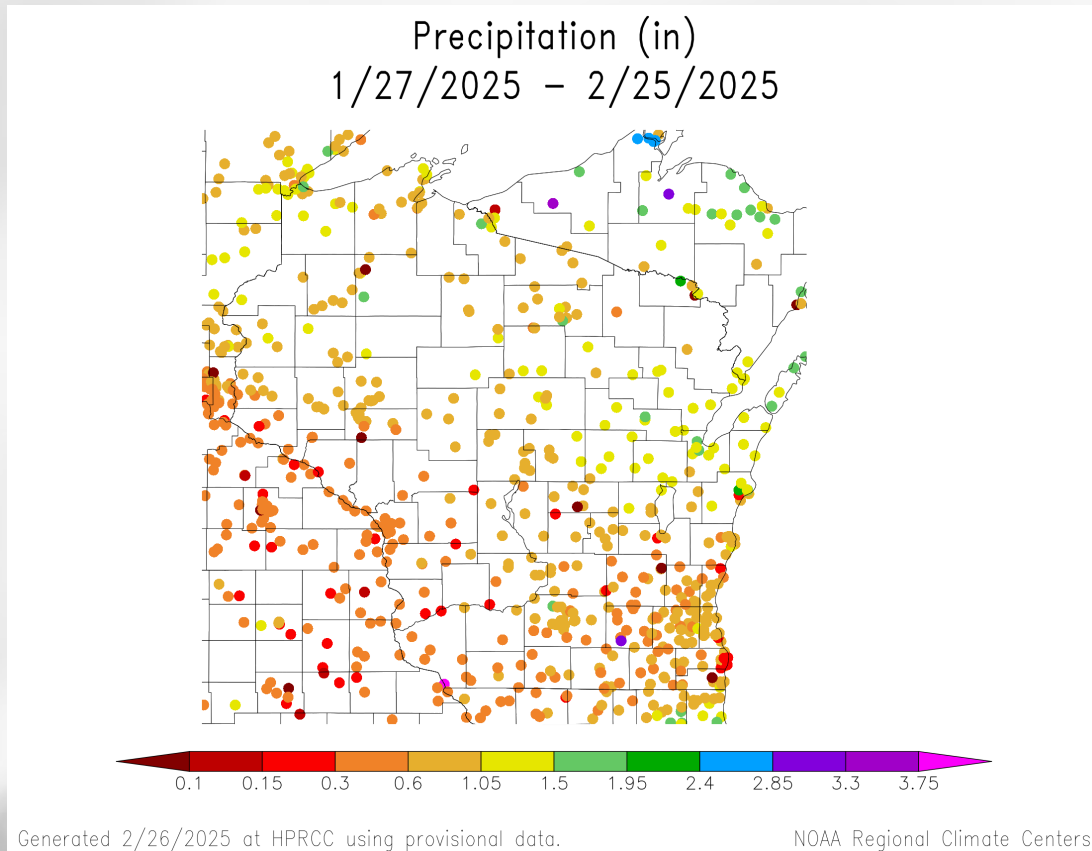
- **Relatively quiet week** for northern WI except for a few flurries.
- **Higher totals of rain** arrived Feb 25-26 for southern WI → 0.25-0.5" for many

30 Day Precip



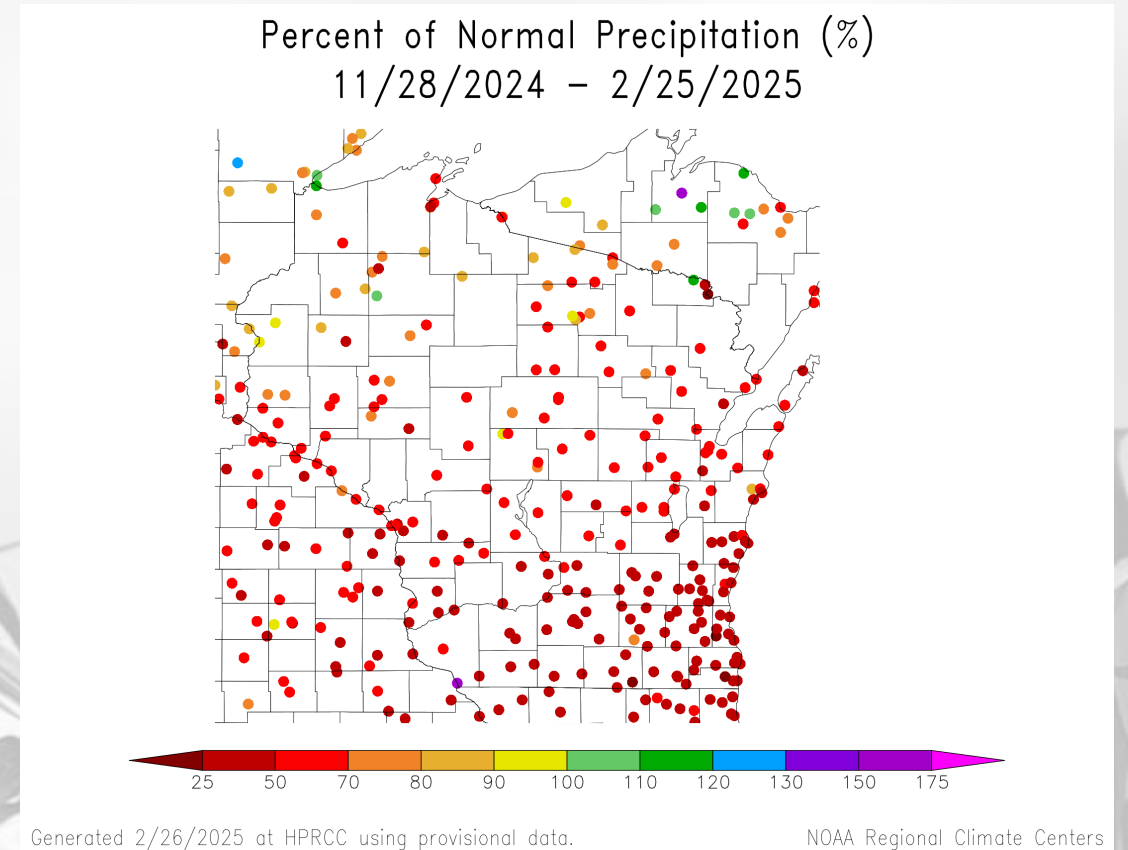
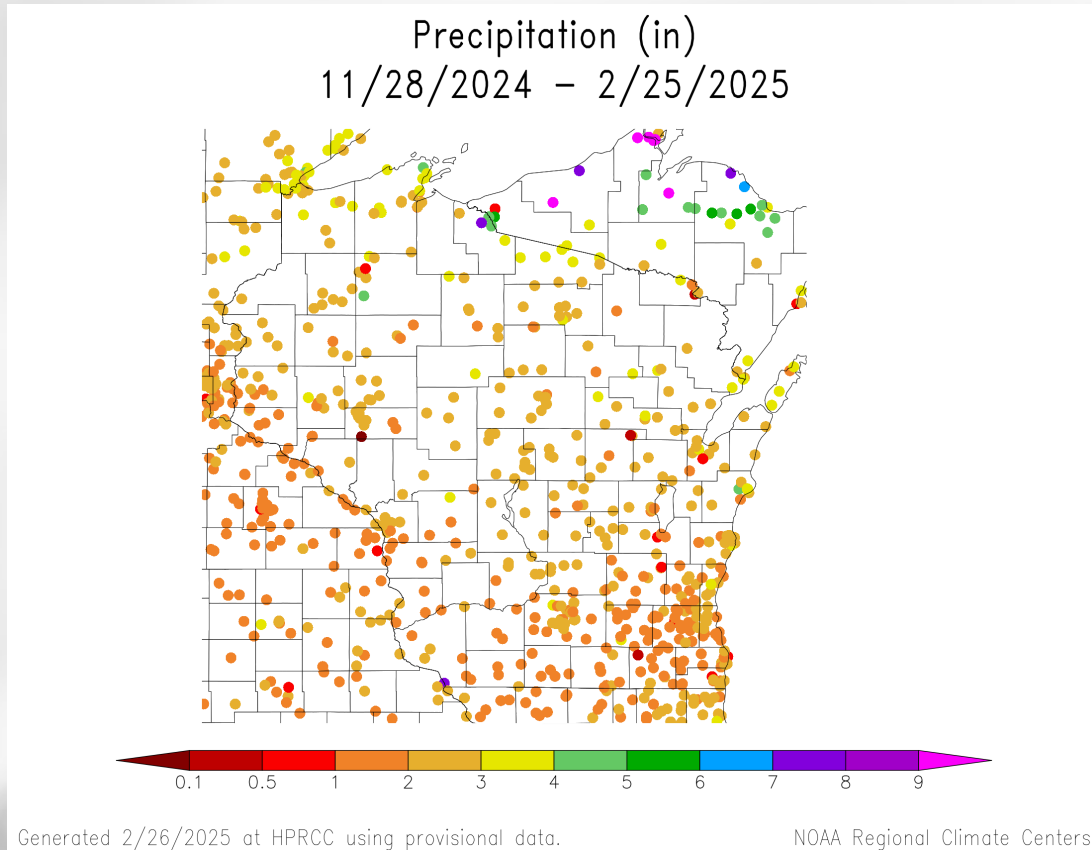
- **Statewide 0.5-1.5"** of precip (rain plus melted snowfall).
- **Higher totals** for east-central WI (1.5-2").
- **Lower totals** in SW WI (< 0.5").
- We are in a time of year that is **climatologically drier**.

30 Day Precip Total/% Avg.



- Low totals across the S half of WI and far N WI compared to the 30-year average → **70% or less of normal.**
- Near-normal precip for most of the N half of WI → **90-110% of normal.**
- A few stations above normal near Green Bay and scattered around the north → **110-130% of normal.**

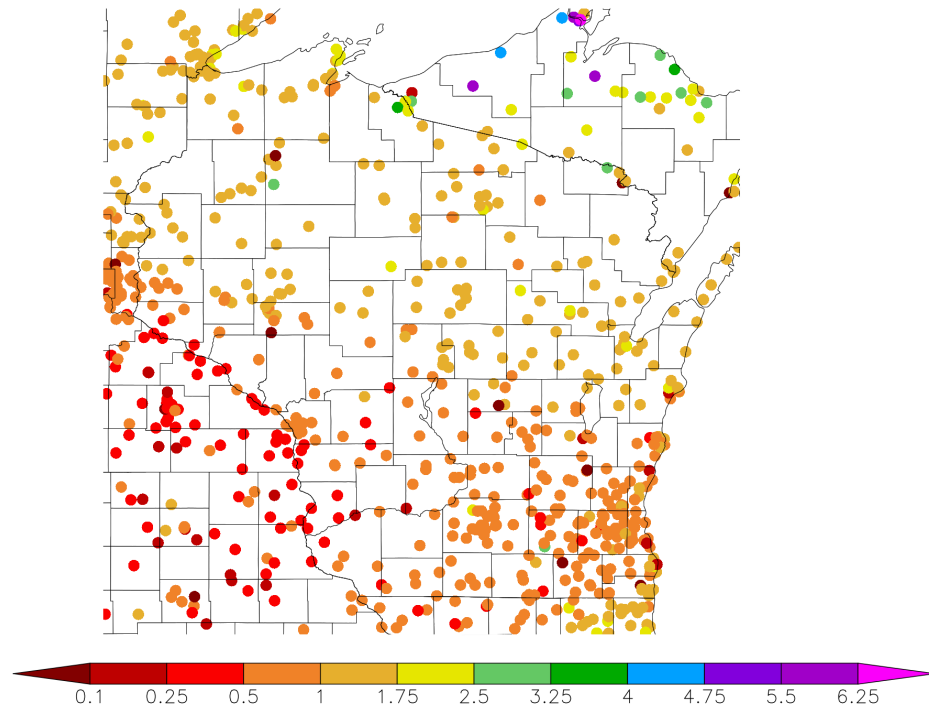
90 Day Precip Total/% Avg.



- Below the climatological average across the entire state → **70% or less of normal** for most.
- S WI largely precipitation deprived → **50% or less of normal**.
- N WI slightly less deprived, but still lacking → **70-90% or less of normal**.

2025 Precipitation (So far)

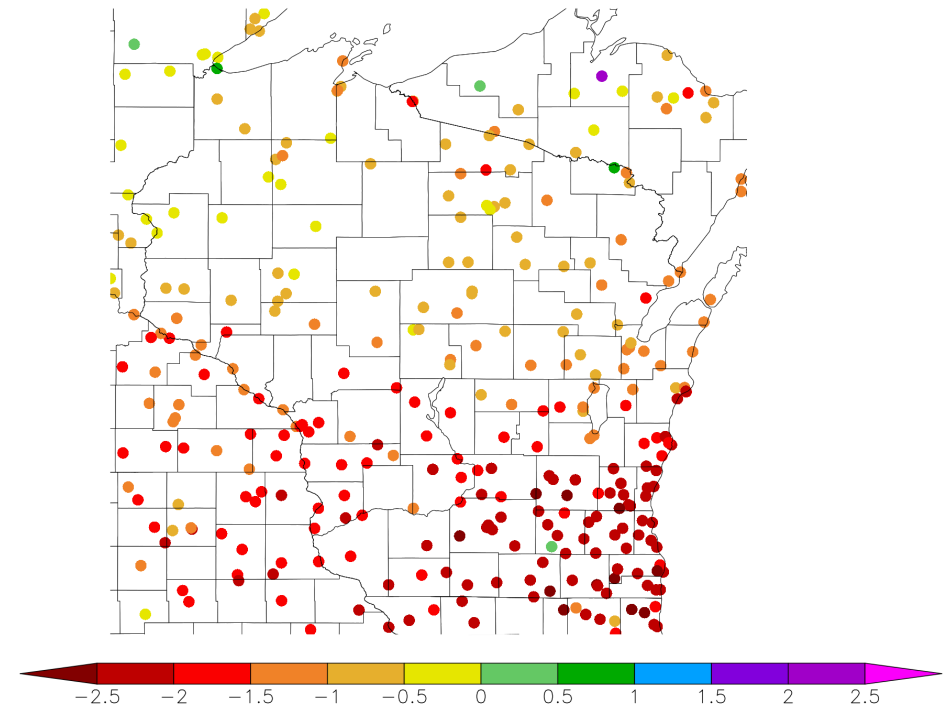
Precipitation (in)
1/1/2025 - 2/25/2025



Generated 2/26/2025 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Precipitation (in)
1/1/2025 - 2/25/2025



Generated 2/26/2025 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, with **near-normal conditions** for a majority of northern and central WI.
- The eastern shore and SE are still **trending very dry**. The SE has been **drier-than-normal** since October. Dryness is lingering along the W WI border.
- In areas where surface soils are not frozen, recent precip and snowmelt may begin to help alleviate surface soil moisture conditions. However, frost is preventing water from deeply infiltrating.
- 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.

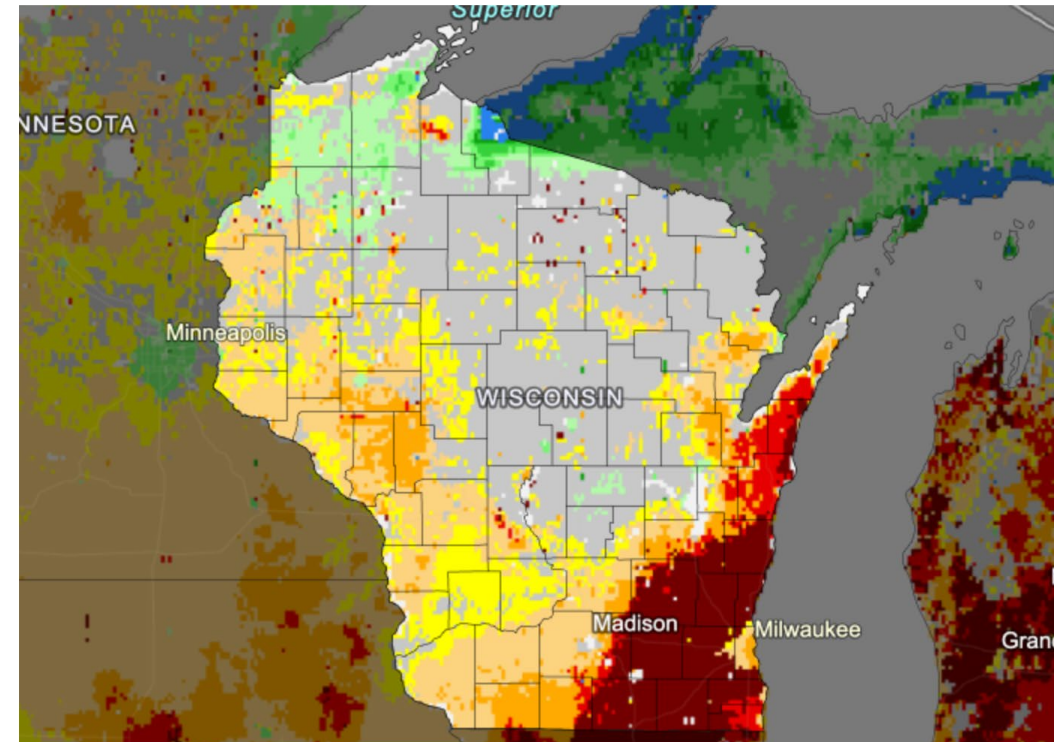
Dark red areas = top 2 driest in 100 years.

Blue areas = top 2 wettest in 100 years.

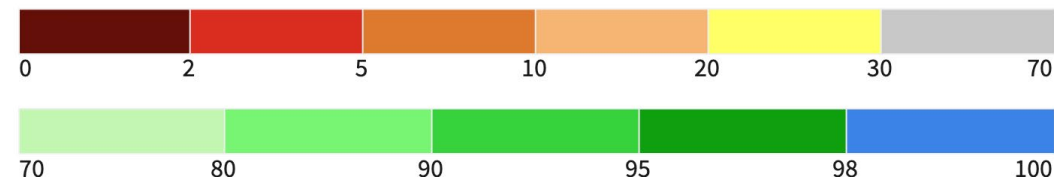
It's worth noting that each soil moisture model has their own characteristics and input variables, so there tends to be variation between models. Thus, it's worthwhile to look at multiple models opposed to just one.

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

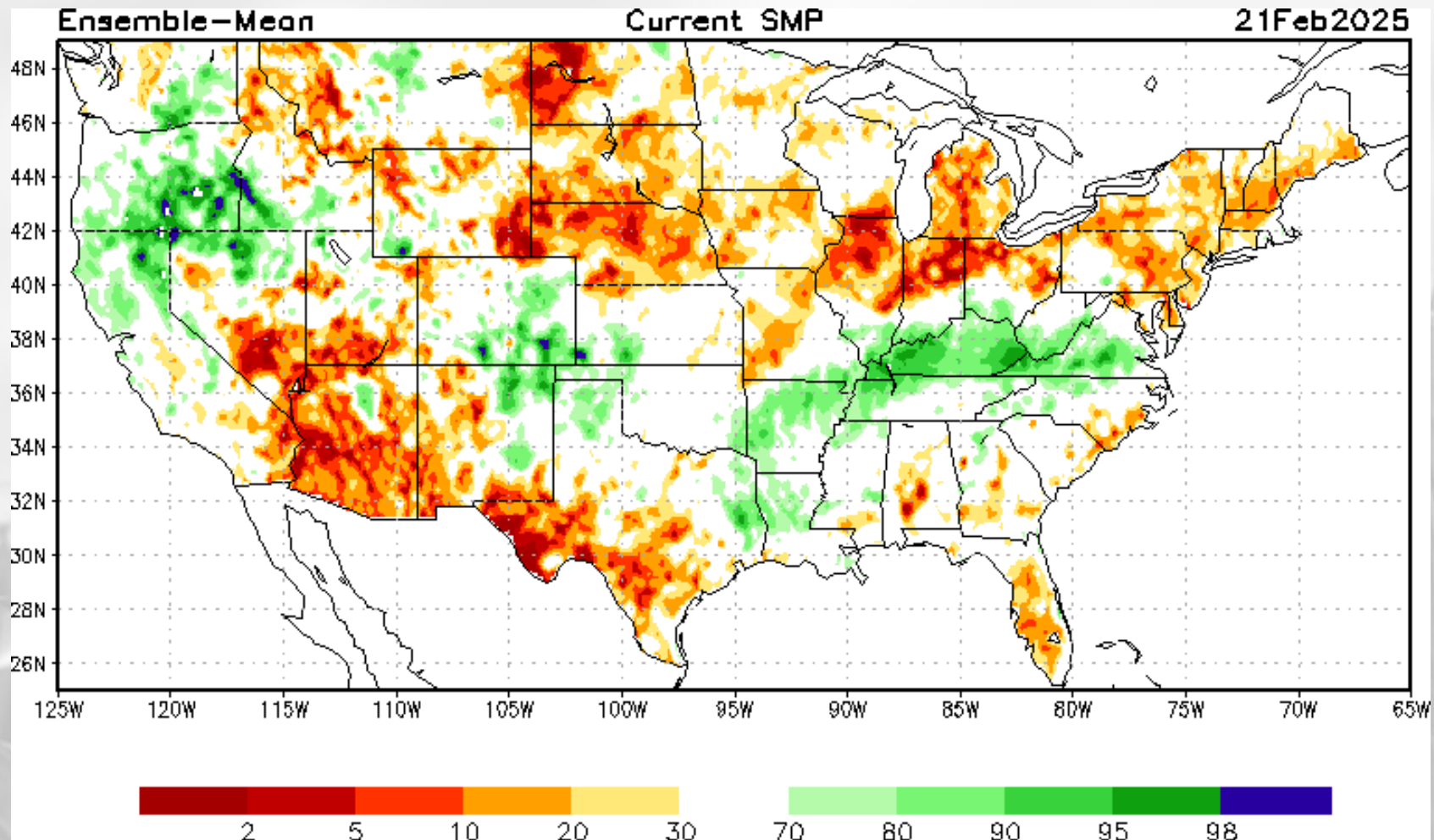


Source(s): NASA
Data Valid: 02/25/25

Drought.gov

Soil Moisture Models

NOTE: this map displays the soil moisture percentile for Feb 21. It was the most recent update as of Feb 26.

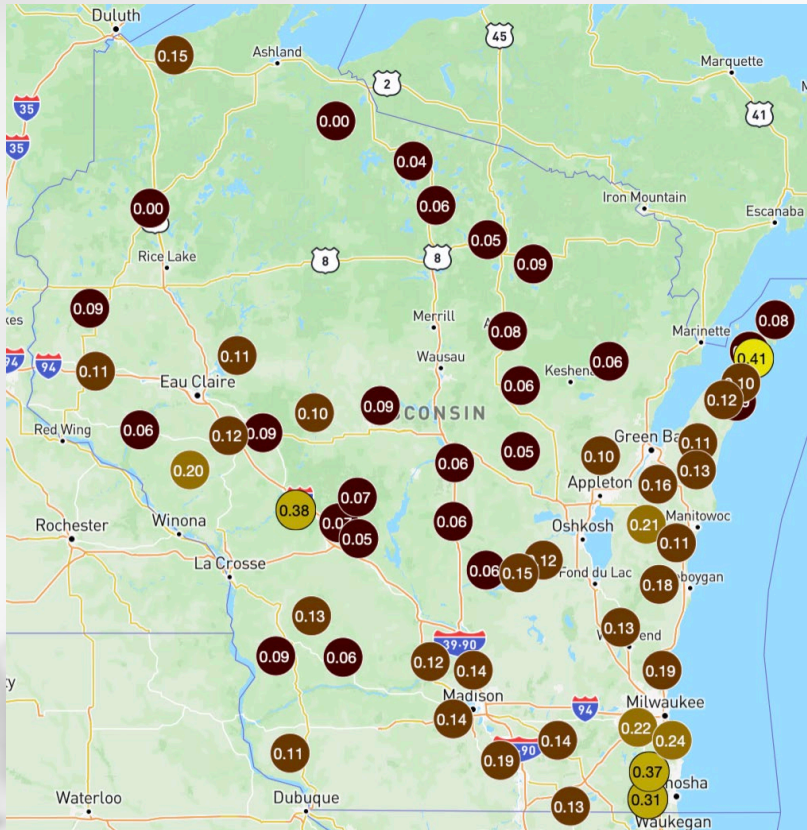


https://www.cpc.ncep.noaa.gov/products/Drought/Monitoring/smp_new.shtml

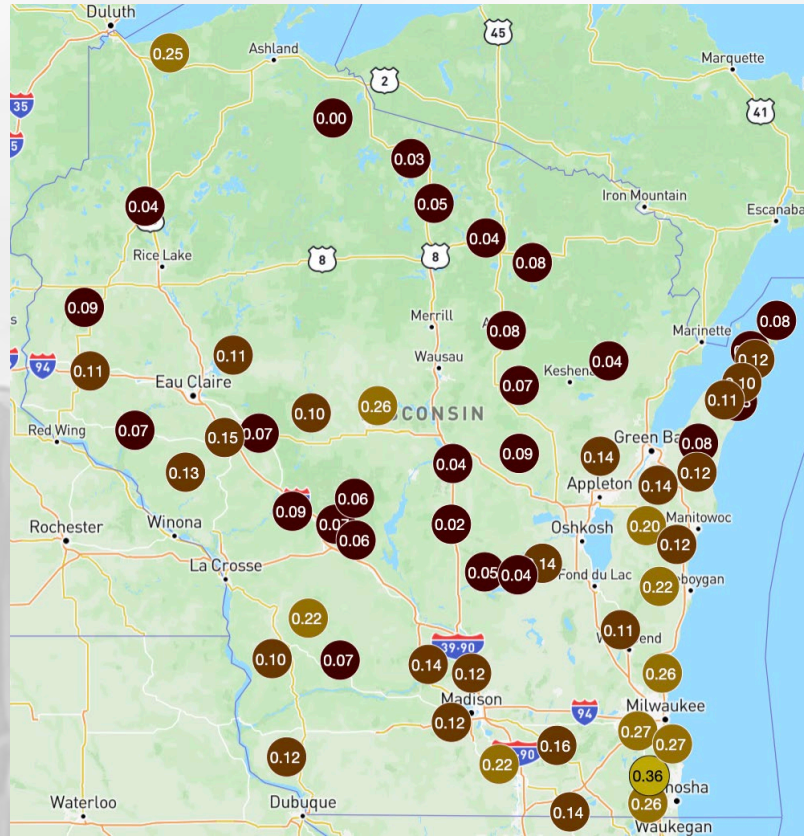
Wisconet Soil Moisture (Various Depths)

Maps Displayed: Wednesday February 26th @ 11:45 am

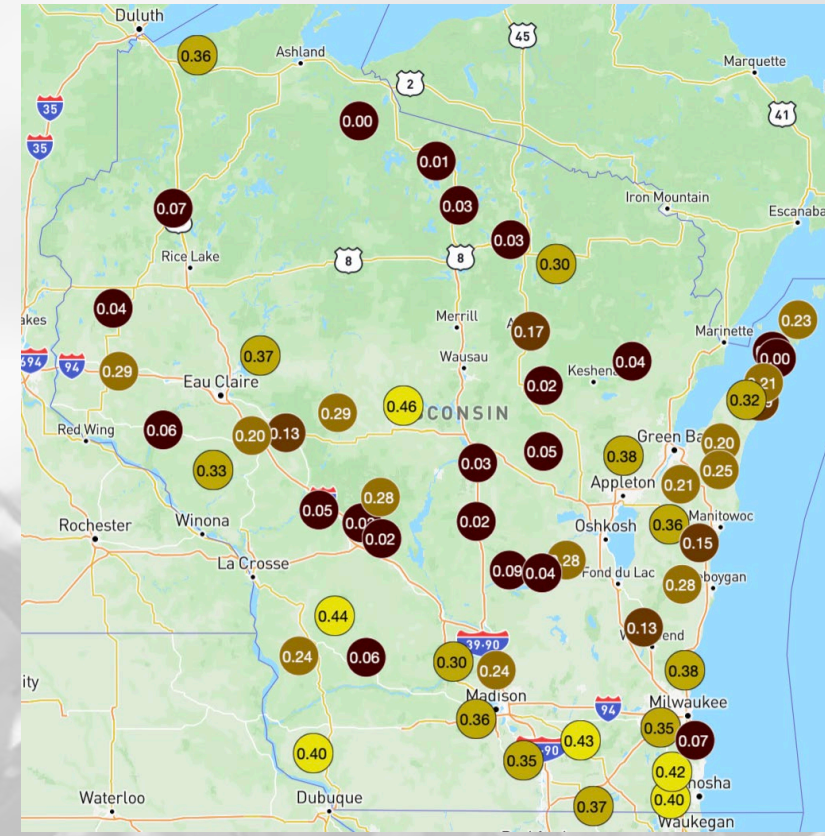
4" Depth



8" Depth



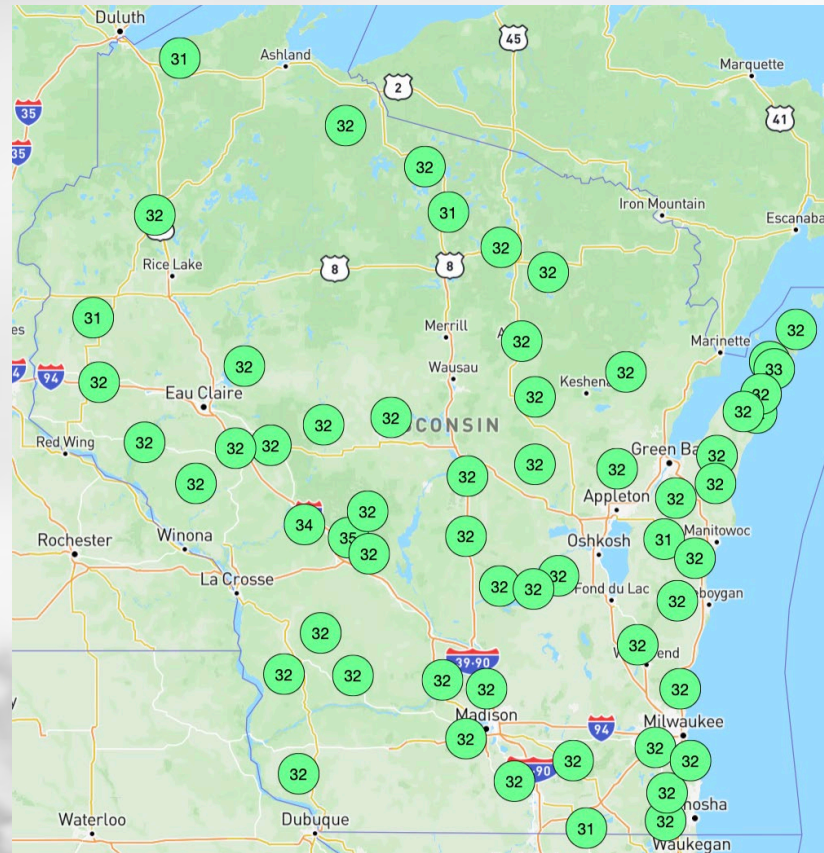
20" Depth



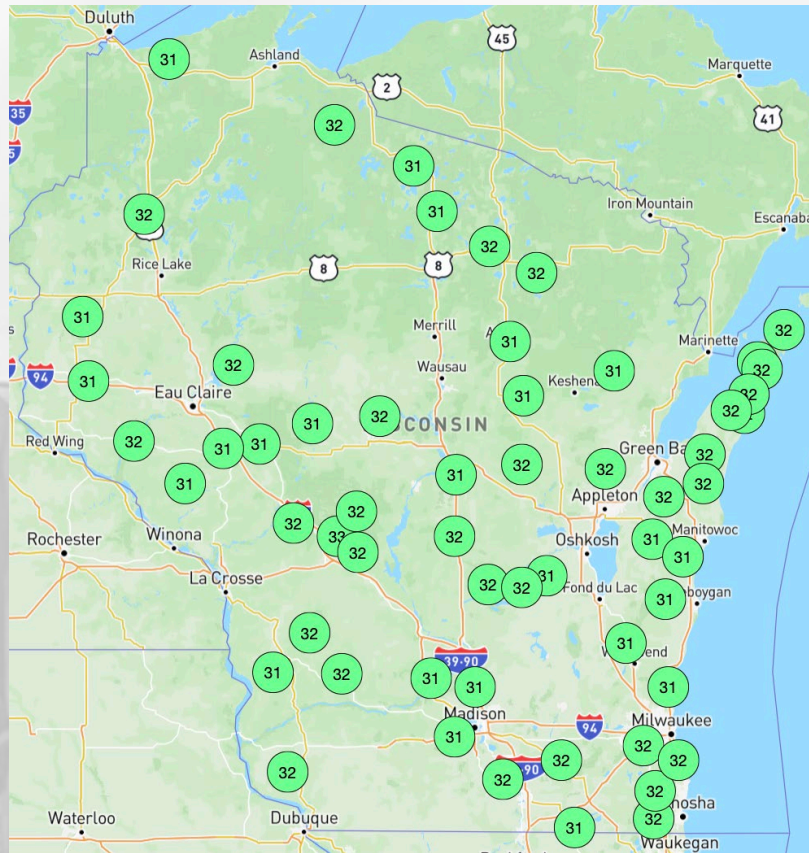
Wisconet Soil Temp (Various Depths)

Maps Displayed: Wednesday February 26th @ 11:45 am

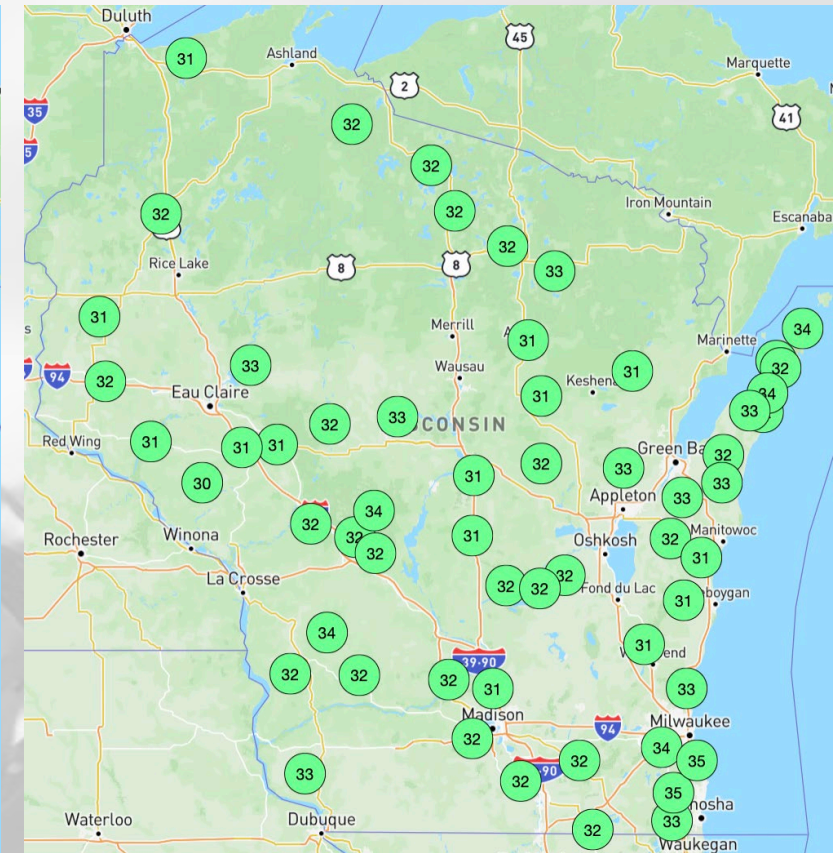
4" Depth



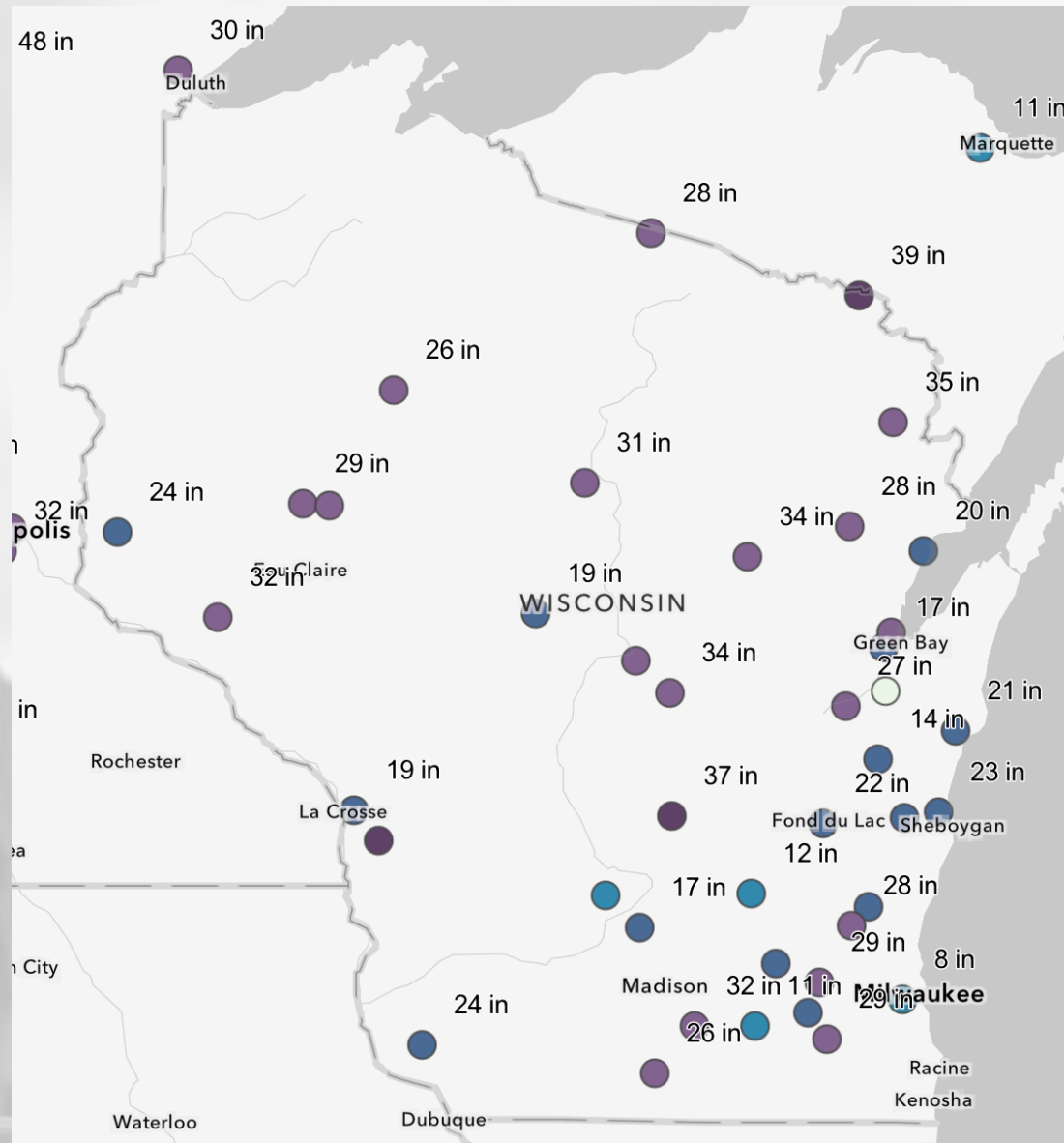
8" Depth



20" Depth



Frost Depth



- Prolonged **cold, dry soils** combined with the **lack of snow cover** allowed for frosts to penetrate deeply in January and the first half of February.
- Frost is **beginning to thaw** as of the end of February.

Soil Frost Depth (Inches)

FrostDepth

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

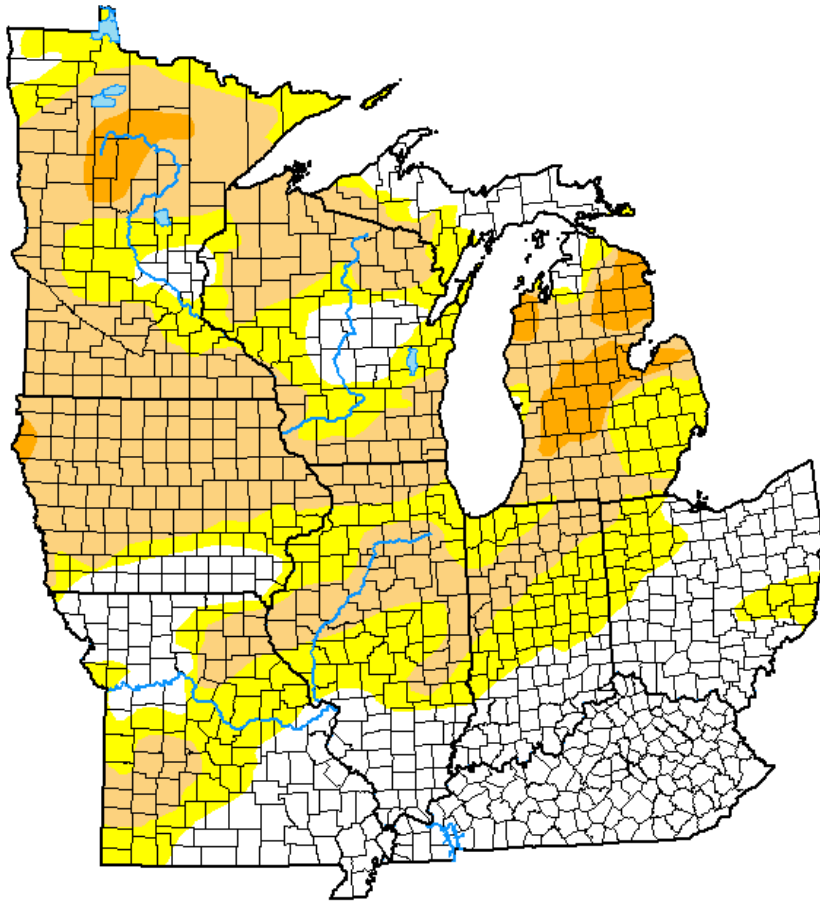
About This Map (from NOAA): "This map displays recent frost depth measurements in terms of inches below the soil surface. Frost depth reports are commonly from frost tube instruments, visual reports from construction or cemetery sites, or other types of electronic probes."

Map updated on 2/26/25

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

US Drought Monitor

U.S. Drought Monitor Midwest



February 25, 2025

(Released Thursday, Feb. 27, 2025)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	33.68	66.32	39.70	3.92	0.00	0.00
Last Week 02-18-2025	36.36	63.64	31.04	2.46	0.00	0.00
3 Months Ago 11-26-2024	30.32	69.68	43.38	7.17	0.57	0.00
Start of Calendar Year 01-07-2025	44.12	55.88	29.47	3.56	0.00	0.00
Start of Water Year 10-01-2024	21.78	78.22	28.15	6.40	1.46	0.66
One Year Ago 02-27-2024	26.53	73.47	33.99	10.76	2.14	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>

Author:

Brian Fuchs
National Drought Mitigation Center



droughtmonitor.unl.edu

Compared to last month:

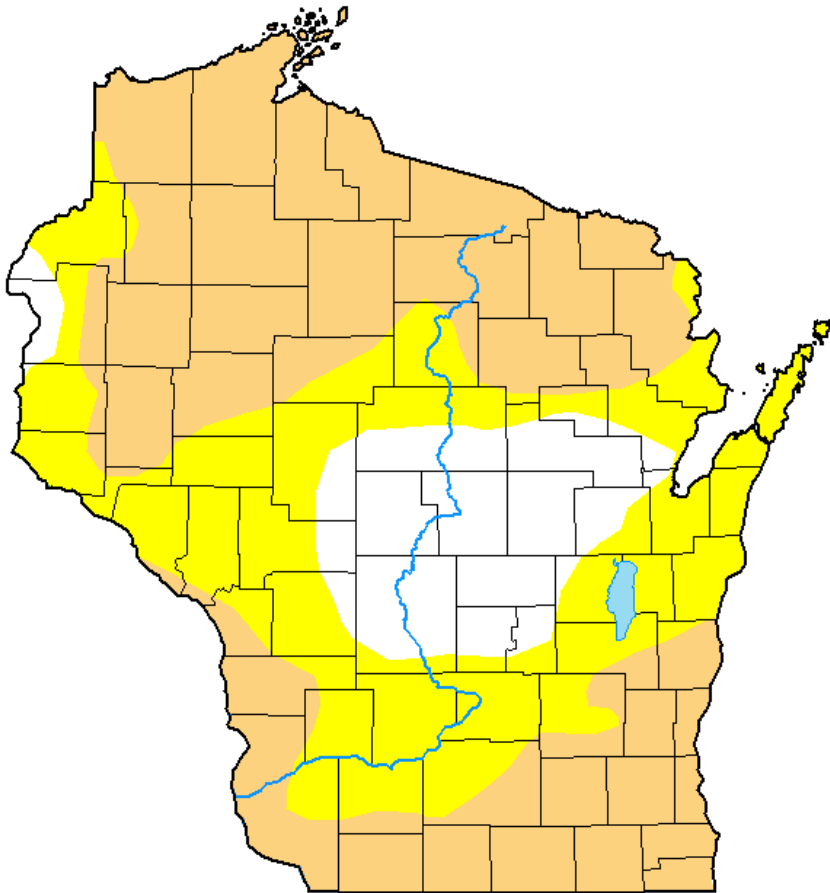
- **Decline (1-2 classes)** in drought status in every state, except KY, in areas where below-normal precipitation has been recorded in the last 4+ weeks.
- **D1 has expanded** across southern and southwestern WI, while **D0 is closing in** on central WI.
- Small areas of **improvement**, namely for MO, IL, OH, and KY, where above-normal precipitation was received over the last 30+ days. Remember, drought improvement is difficult during our driest time of the year.
- **No change** for much of the upper and western Midwest.

Note: D0 is not considered drought.

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

US Drought Monitor

U.S. Drought Monitor Wisconsin



February 25, 2025

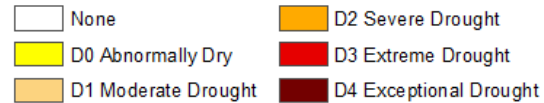
(Released Thursday, Feb. 27, 2025)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	15.27	84.73	50.50	0.00	0.00	0.00
Last Week 02-18-2025	15.27	84.73	43.00	0.00	0.00	0.00
3 Months Ago 11-26-2024	34.79	65.21	43.90	3.27	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 02-27-2024	9.03	90.97	65.65	17.07	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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National Drought Mitigation Center



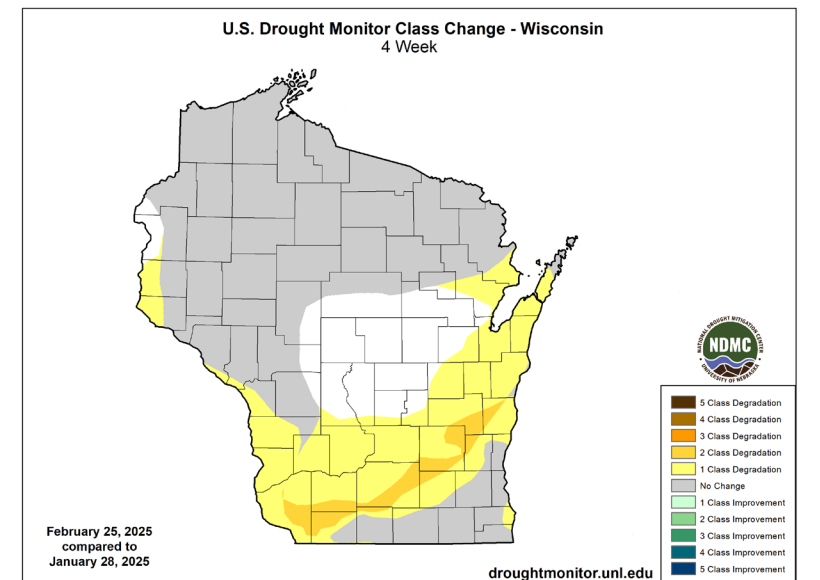
droughtmonitor.unl.edu

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

Amount of state in:

- **D1-D4** – 50.5% ↑
- **D2-D4** – 0.0% --
- **D3-D4** – 0.0% --
- **D4** – 0.0% --

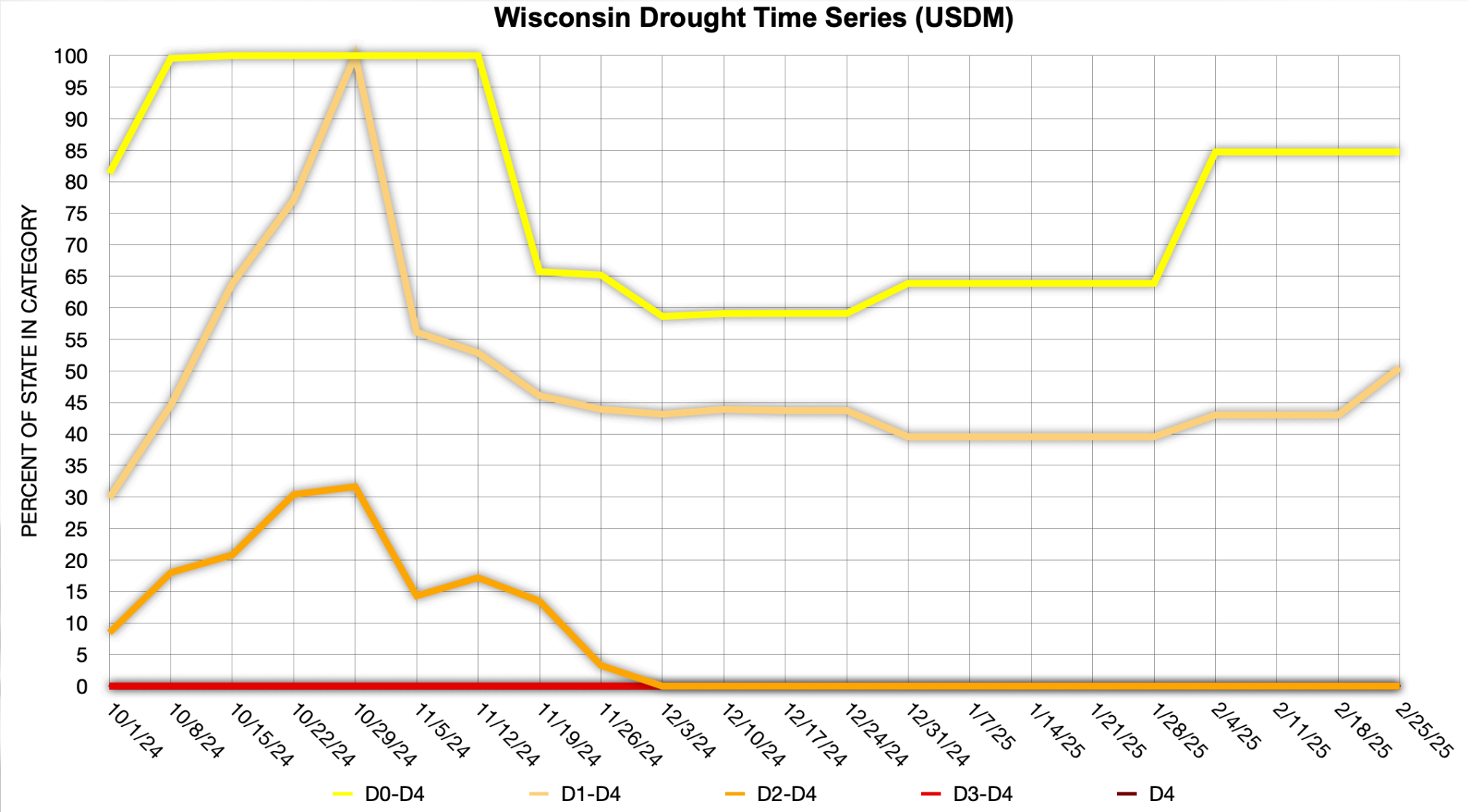
Note: ↑ ↓ indicate change from last month. Red up arrows indicate increase in drought area; vice-versa for green arrows.



February 25, 2025
compared to
January 28, 2025

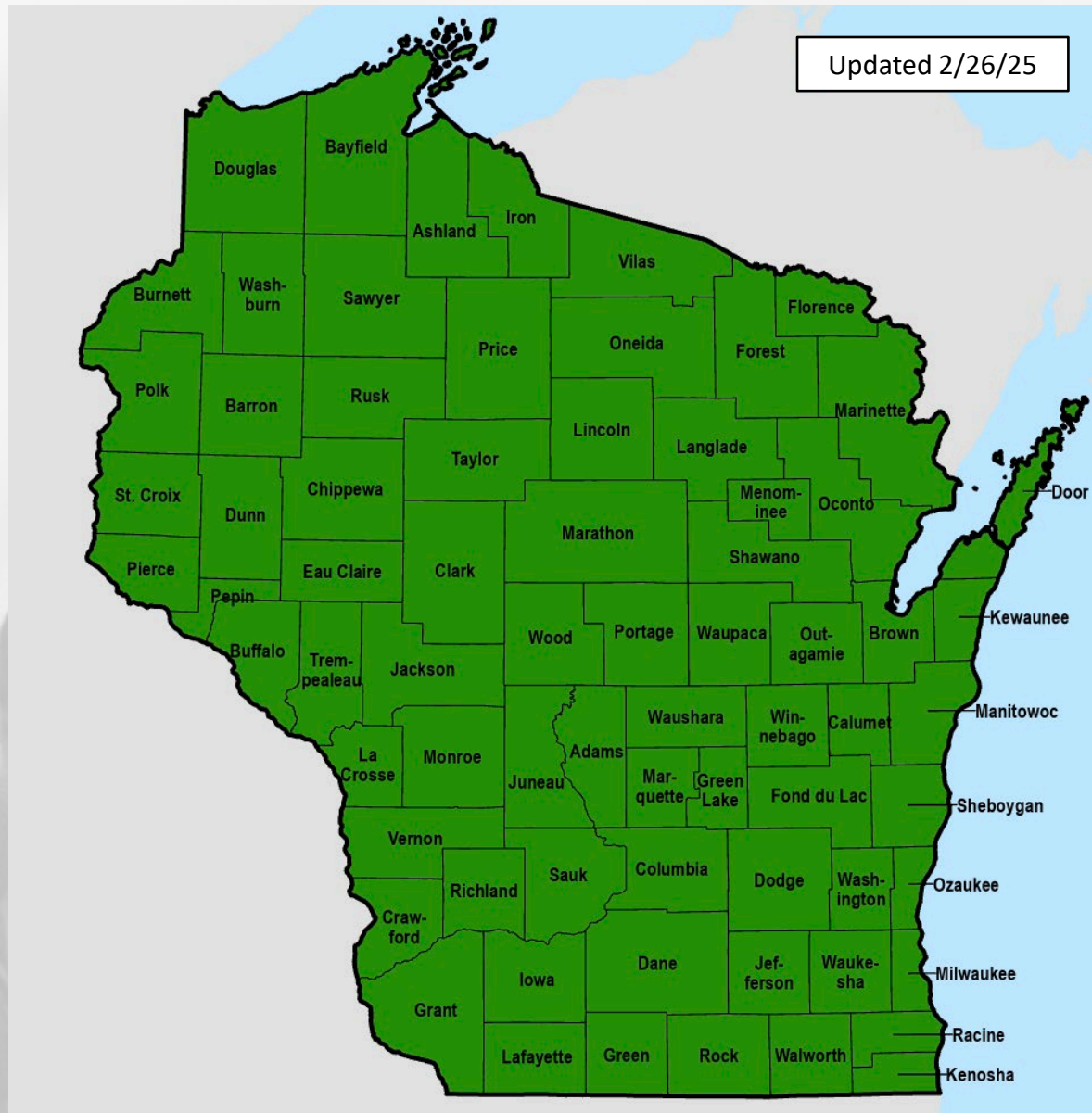
droughtmonitor.unl.edu

USDM Time Series



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

Wildfire Risk



Fire Danger

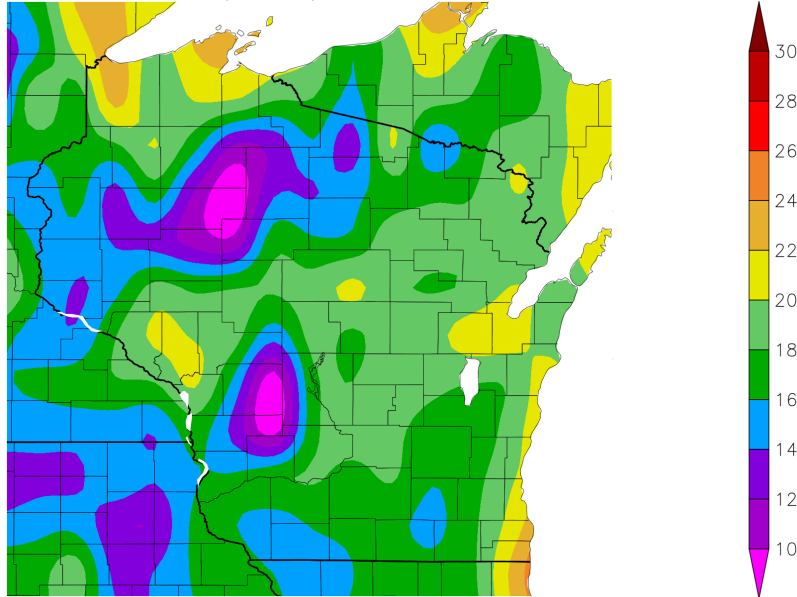
- Low
- Moderate
- High
- Very High
- Extreme

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

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

7 Day Temperatures

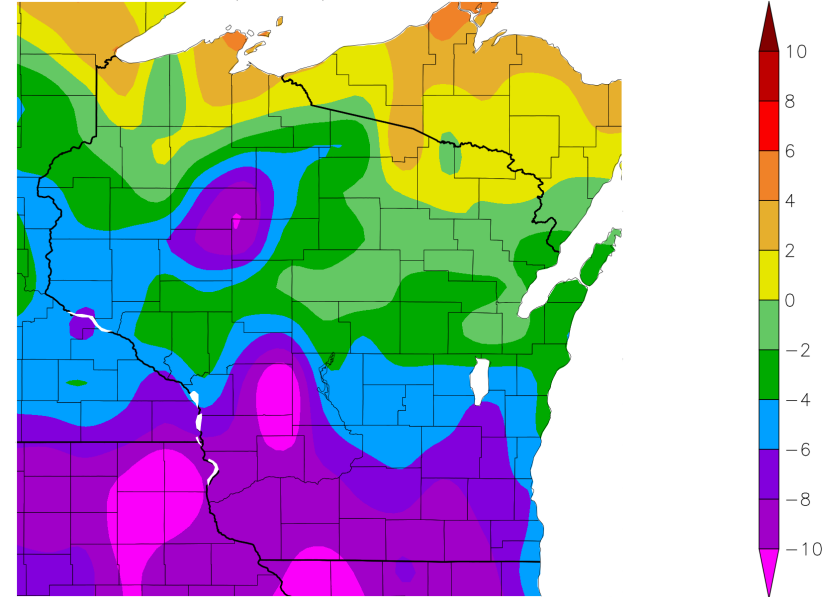
Temperature (F)
2/19/2025 – 2/25/2025



Generated 2/26/2025 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Temperature (F)
2/19/2025 – 2/25/2025



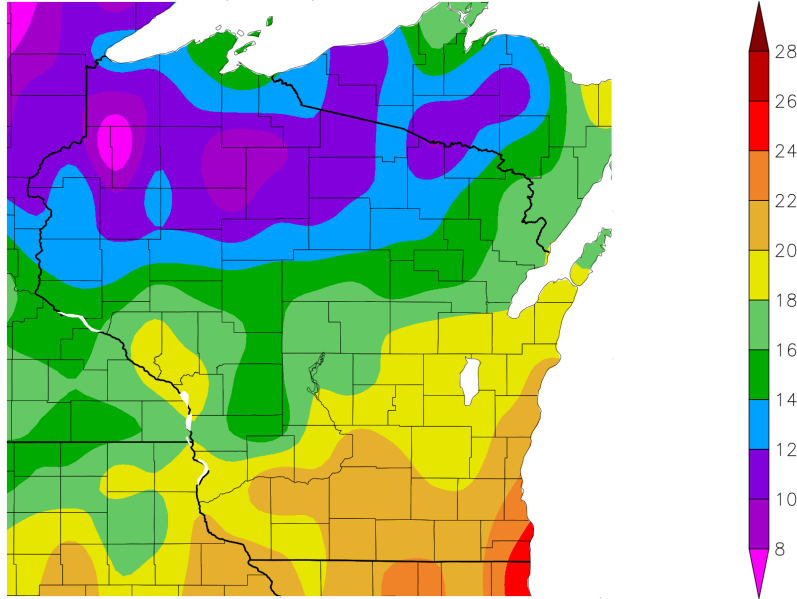
Generated 2/26/2025 at HPRCC using provisional data.

NOAA Regional Climate Centers

- Temperatures for the past week averaged **16-20°F** across most of the state.
- Temps slightly warmer (**20-24°F**) along Lakes Michigan & Superior; patches of **10-16°F** around Monroe & Rusk Cos.
- **1-10°F below normal** for most in the state because of Arctic air toward the beginning of the 7-day window *and* the presence of snow on the ground, which tends to keep air temperatures lower.

30 Day Temperatures

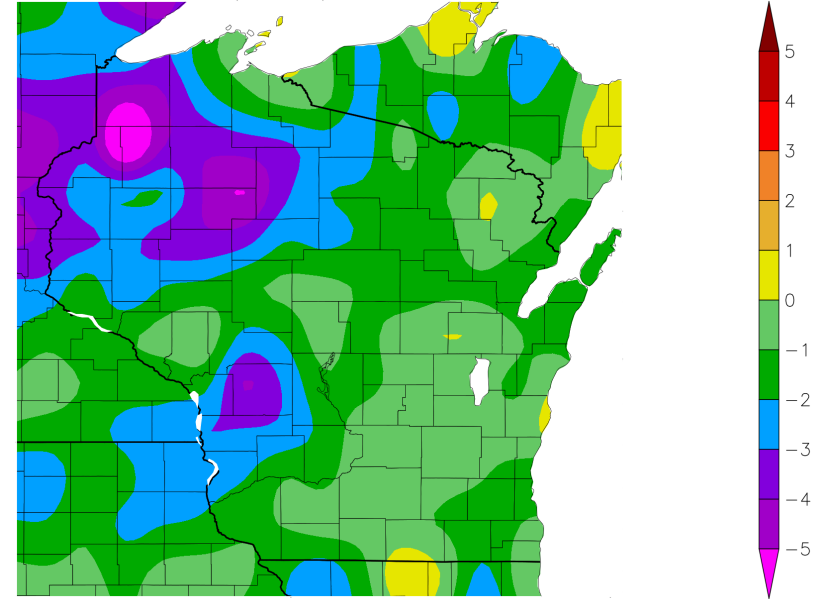
Temperature (F)
1/27/2025 - 2/25/2025



Generated 2/26/2025 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Temperature (F)
1/27/2025 - 2/25/2025



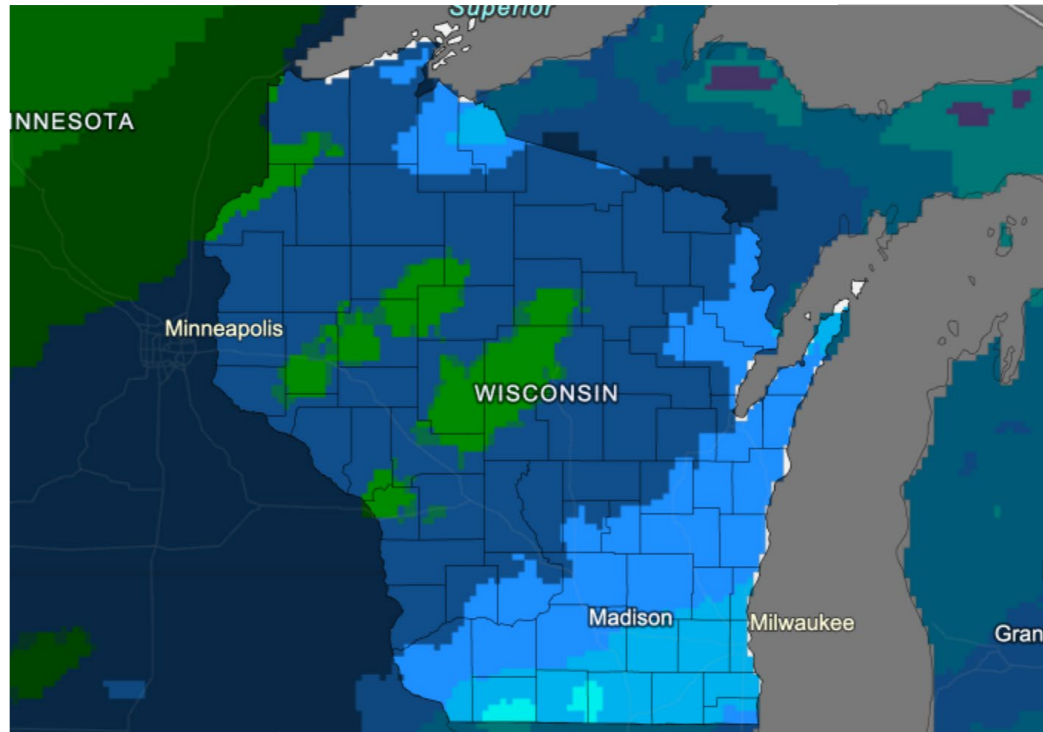
Generated 2/26/2025 at HPRCC using provisional data.

NOAA Regional Climate Centers

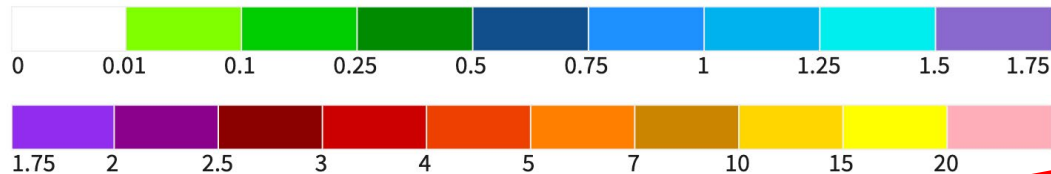
- Temperatures for the past month ranged from **18-24°F** in the S to **8-18°F** in the N.
- **1-3°F below normal** for most in the state, with a colder pocket in the NW; cooler temps aided by snow cover.

7 Day Precip Forecast

7-Day Quantitative Precipitation Forecast for
February 27-March 6, 2025



Predicted Inches of Precipitation



Source(s): National Weather Service Weather Prediction Center

Last Updated: 02/27/25

Drought.gov

- **Statewide chances** for precip during the next 7 days.

- Location: Statewide, but higher chances for southern, east-central, & far north-central WI.
- Timing: Chance for sprinkles & flurries **Friday**. Wintry mix **Tue. morning through Wed.**

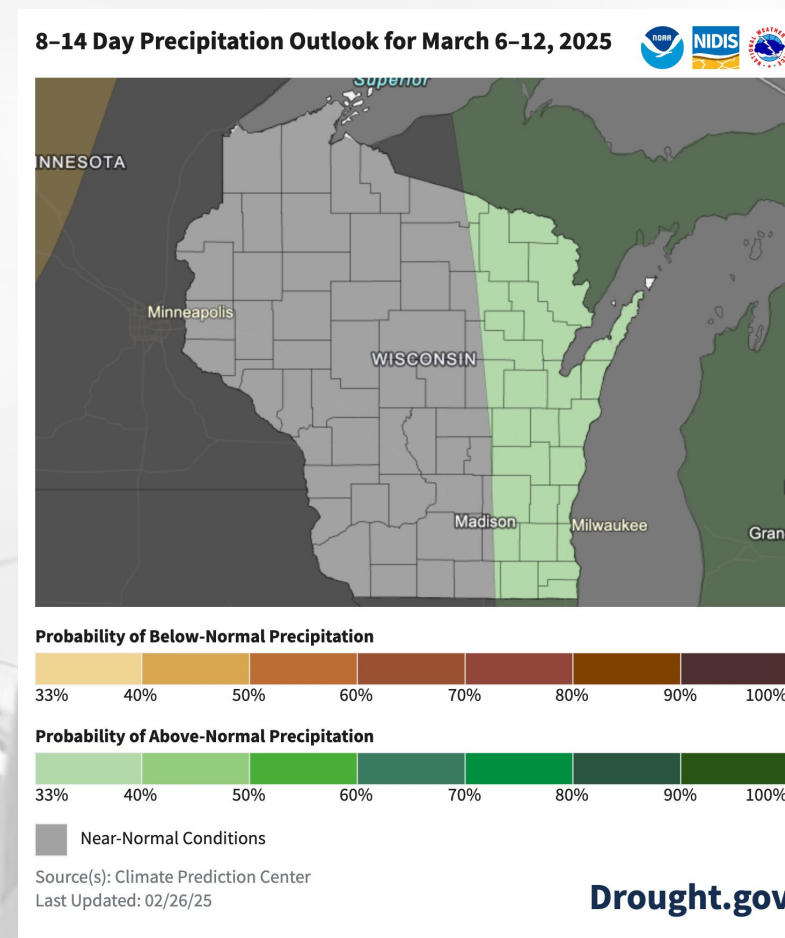
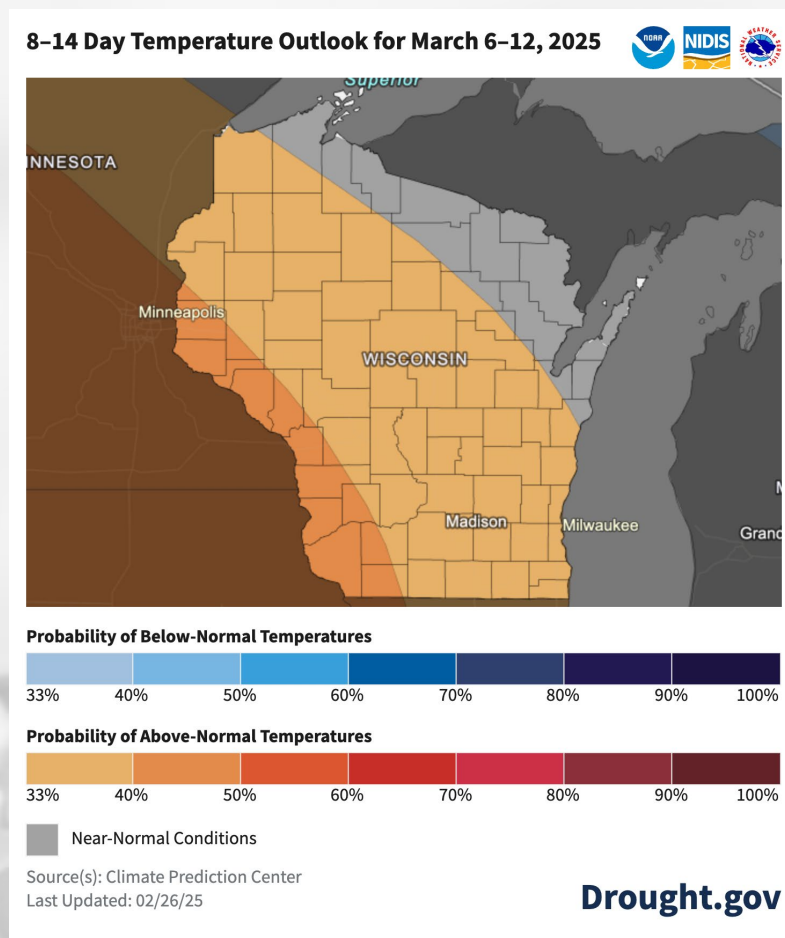
NOTE: This map shows liquid-equivalent precipitation (i.e., rain plus melted snowfall).

Check your area's [NWS forecast](#) for local predictions.

Forecast for 2/27/25 thru 3/6/25
(Begins at 6am CST)

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

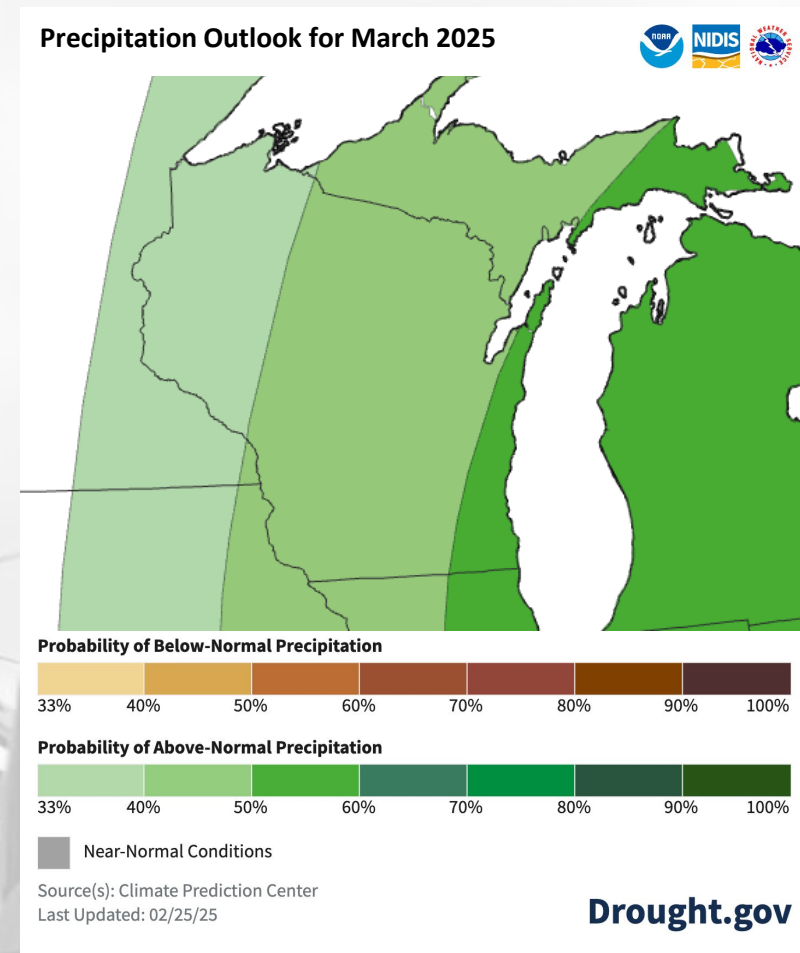
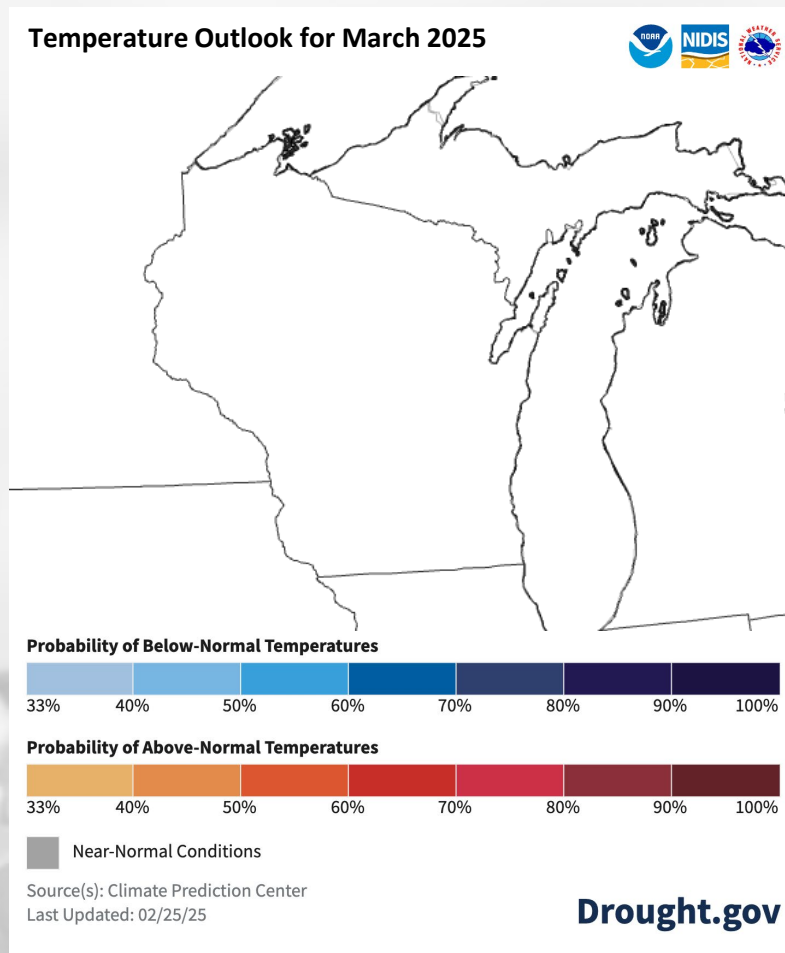
8-14 Day Temp & Precip Outlook



Start of March: Temperatures anticipated to be **near normal** for N/NE WI with a slight tendency toward **above normal** for the rest of WI. Precipitation **near normal** for most, except for the potential for **above normal** for E WI.

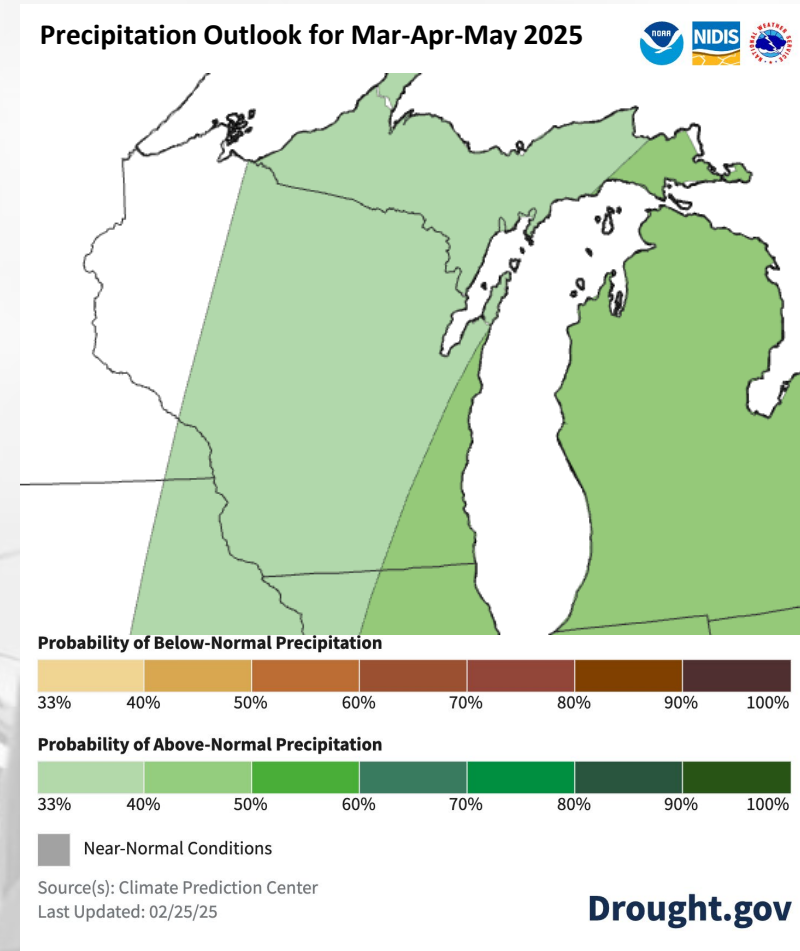
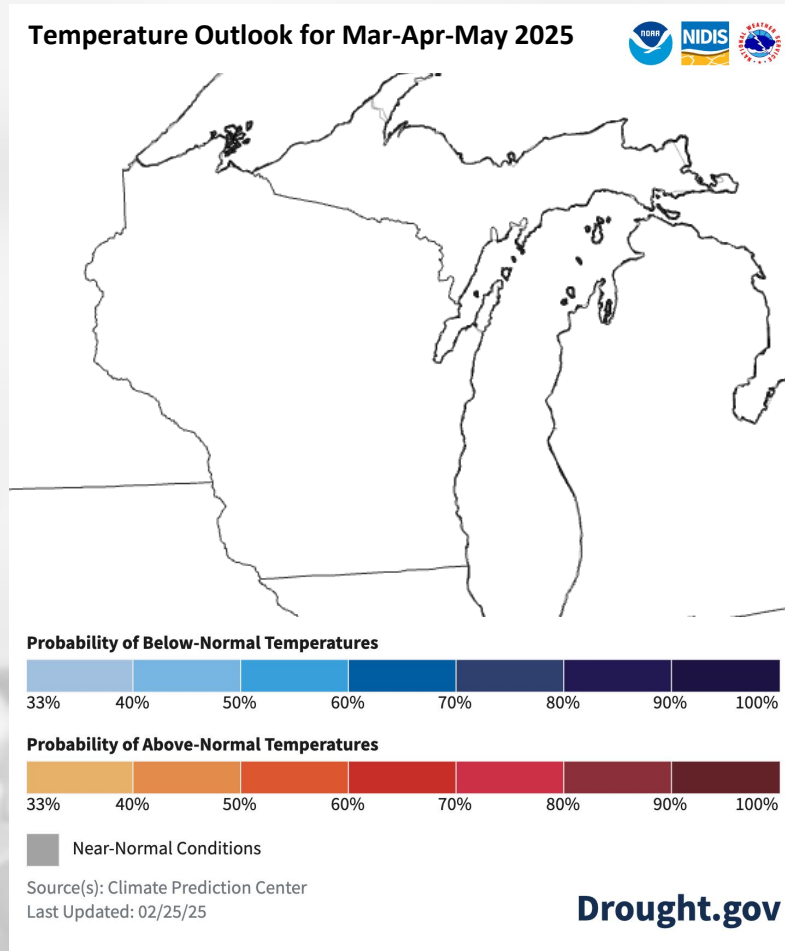
<http://www.cpc.ncep.noaa.gov/>

30 Day Temp & Precip Outlook



Month of March: Equal chances for above-, near-, or below-normal temperatures. Leaning toward **above-normal** precipitation with lingering influence from La Niña.

90 Day Temp & Precip Outlook



Spring: Temperatures **uncertain with equal chances**, while precipitation shows a slight lean towards **above normal** with lingering influence from La Niña.

Take-Home Points

Current Conditions:

- February was a slightly **colder-than-normal month**, aided by an Arctic blast that impacted the state the week of February 17.
- February has been **drier-than-normal**, in terms of both precipitation (rain+melted snow) and snowfall.
- As of the end of February, snow cover across the state is **limited to the Northwoods** (which is quickly melting).

Impact:

- Soil moisture estimates in the south are **drier than normal** due in part to minimal precip over the past several months.
 - Closer to **normal or above normal percentiles** in the central and northwest.
 - End-of-Feb precip + snowmelt may help alleviate some dryness; frost is preventing deep moisture infiltration.
- USDM drought severity coverage **increased** from last month, mainly in S WI.
- Soil frost depth goes down more than **2 feet** across central & northern WI, and slightly shallower for some in southeast WI. Wisconet soil temp measurements at 20" depth are starting to creep **above freezing** in areas.

Outlook:

- Statewide chances for 7-day precip; more so for **S & EC WI**. Potential for impactful **wintry mix Tue-Wed**.
- Temperature probabilities for the beginning of March are leaning **near-to-above normal**, with **near-normal** precip for most with the potential for **above normal** in E WI.
- March as a whole and the rest of spring are more **uncertain for temperatures** with a lean towards **above normal precip**.

Agronomic Considerations

Field Work

- Deeply frozen soils shouldn't delay planting.
- Drier soils may allow for earlier access to fields, pending additional precipitation.
- Thawed, moist soils on top of frozen soils can lend themselves to compaction and rutting, be cautious about trafficking in fields.
- Avoid fertilizer applications in wet conditions, especially with nitrogen as fertilizer loss is greater under wet conditions.
- Current temperature cycles could lend themselves to frost seeding in pastures or winter wheat. See resources [here](#), [here](#), and [here](#).

Manure Applications

- Reminder of [Wisconsin's NR 151 Runoff Rules](#) with the timing of manure spreading and current runoff levels. Check [DATCP Runoff Risk Advisory Forecast](#).

Livestock Considerations

- Keep livestock out of critical and sensitive areas with soft, muddy ground, see [this article](#) on the value of keeping cattle clean.
- Regulate body temperature and wetness of calves. Make sure dry bedding (e.g., hay, grass) is available to keep calves dry.

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