

# Wisconsin Ag Climate Outlook

*Updated December 22, 2023*

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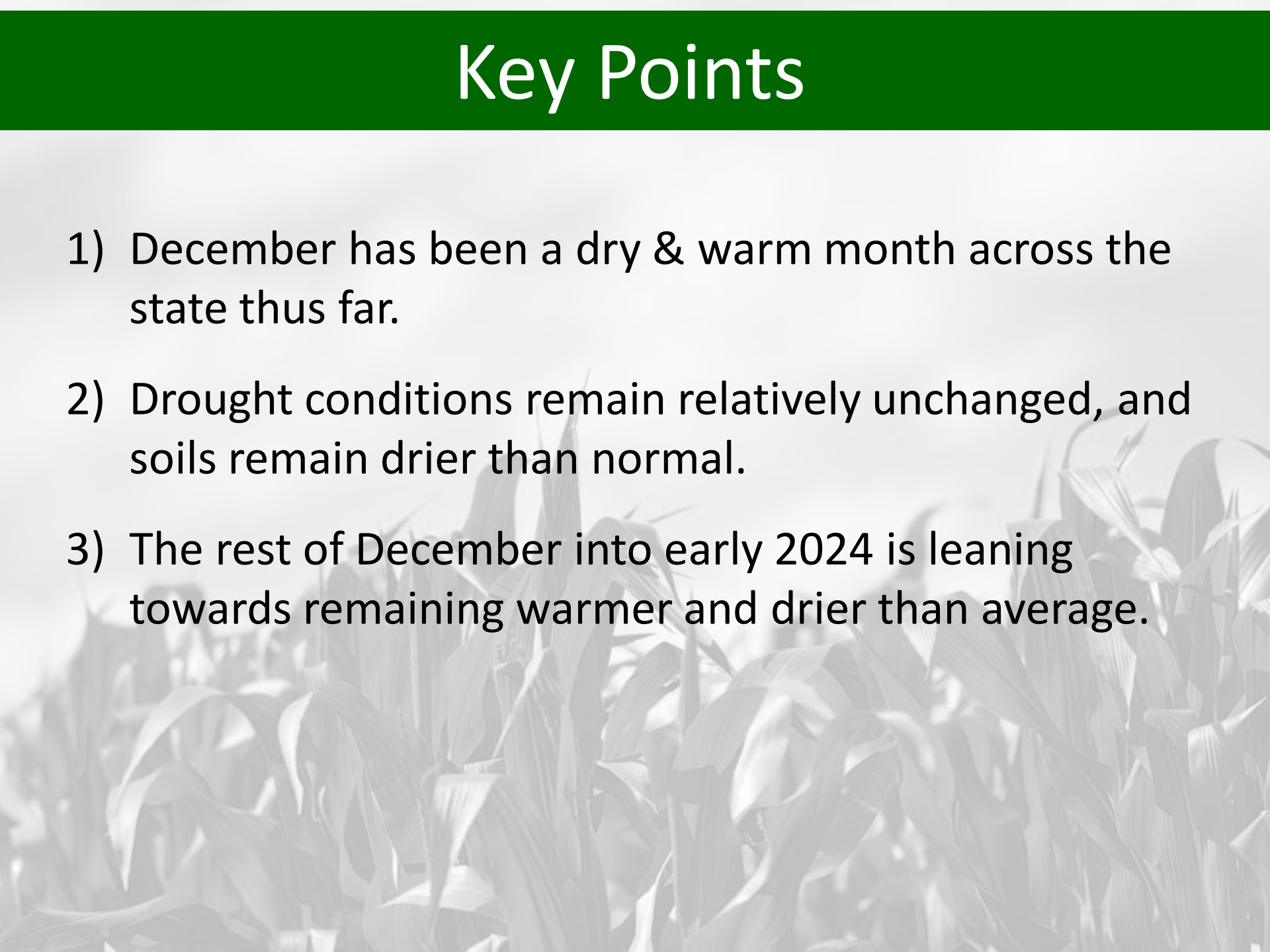
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# Key Points

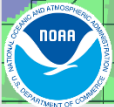
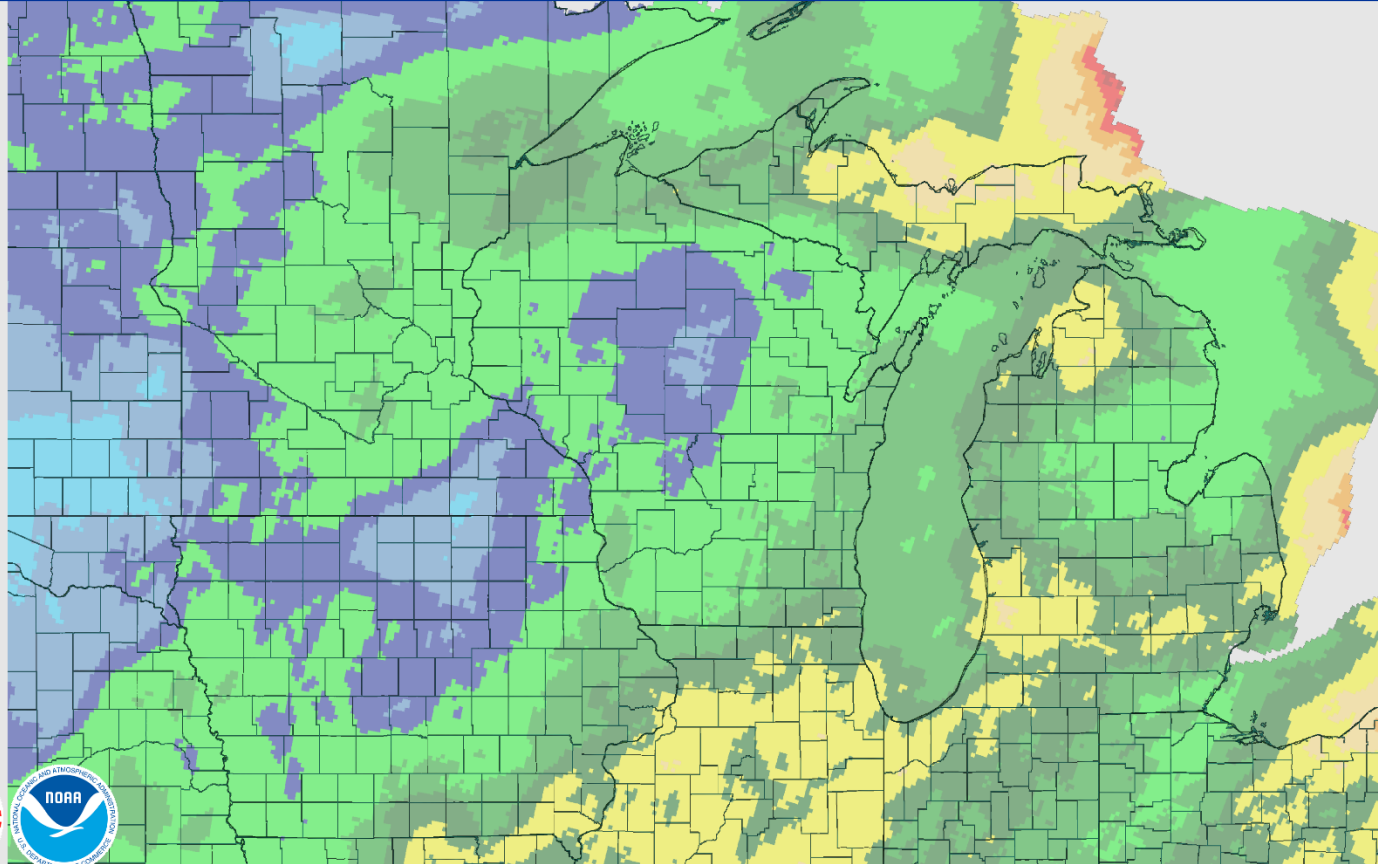
- 1) December has been a dry & warm month across the state thus far.
  - 2) Drought conditions remain relatively unchanged, and soils remain drier than normal.
  - 3) The rest of December into early 2024 is leaning towards remaining warmer and drier than average.
- 

# 30 Day Precip

## December 22, 2023 30-Day Observed Precipitation

Created on: December 22, 2023 - 15:53 UTC

Valid on: December 22, 2023 12:00 UTC

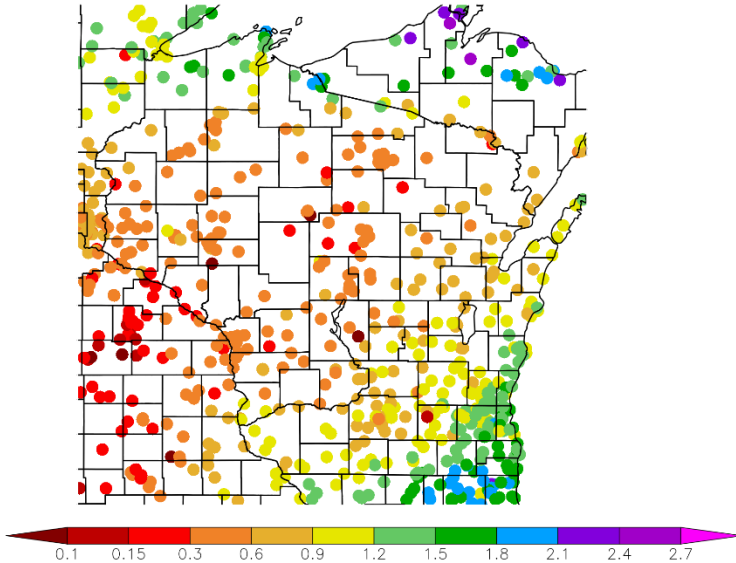


<https://water.weather.gov/precip/>

- Monthly totals of 2" or less statewide
- Central/NC region was the driest (<0.5")

# 30 Day Precip Total/% Avg.

Precipitation (in)  
11/22/2023 – 12/21/2023

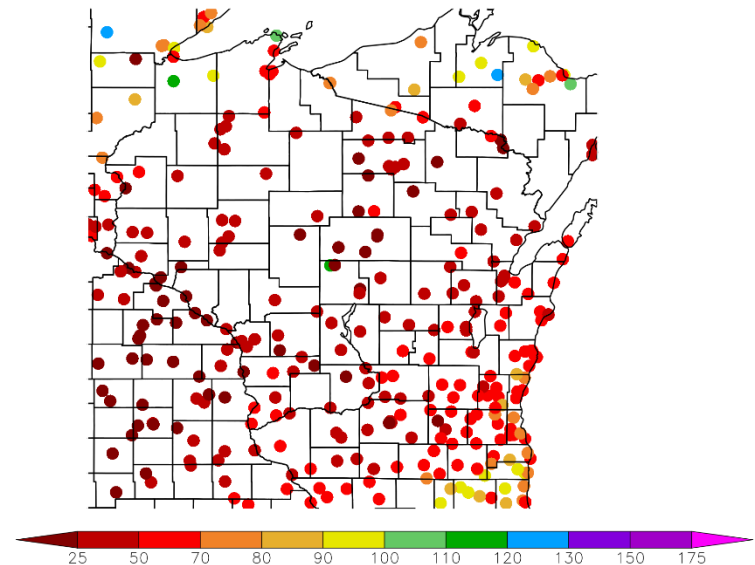


Generated 12/22/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

- December has been a dry month for most parts of the state
- Most stations reported  $\leq 50\%$  of normal 30-day total precipitation.
- Highest totals ( $\geq 1.2''$ ) in far NW and SE.

Percent of Normal Precipitation (%)  
11/22/2023 – 12/21/2023



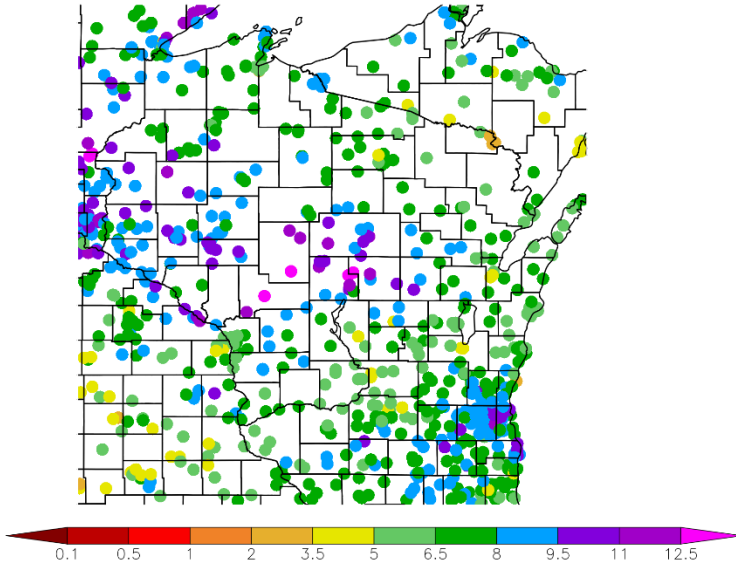
Generated 12/22/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

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

# 90 Day Precip Total/% Avg.

Precipitation (in)  
9/23/2023 - 12/21/2023

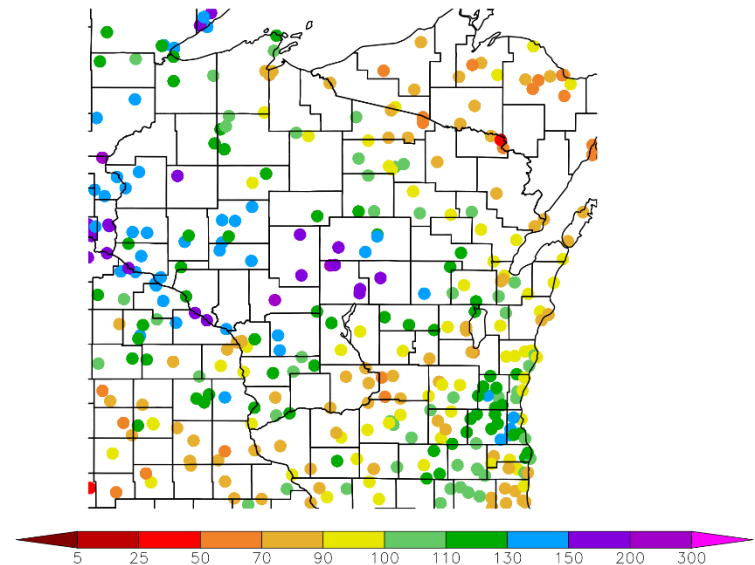


Generated 12/22/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

- Totals >5" are common statewide, with the highest totals in the SE, Central, and NW regions (stations >9.5").
- Percentages are a mixed bag:
  - <90% of normal in NE and SC.
  - >150% in Central and NW WI.

Percent of Normal Precipitation (%)  
9/23/2023 - 12/21/2023



Generated 12/22/2023 at HPRCC using provisional data.

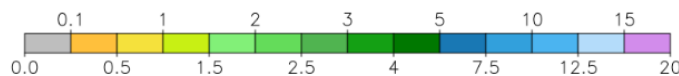
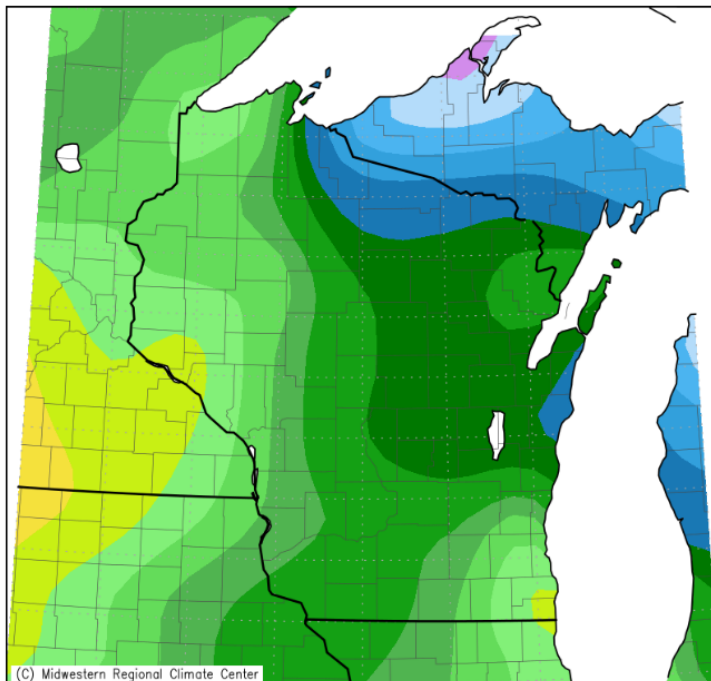
NOAA Regional Climate Centers

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

# December Snowfall

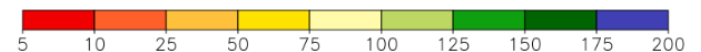
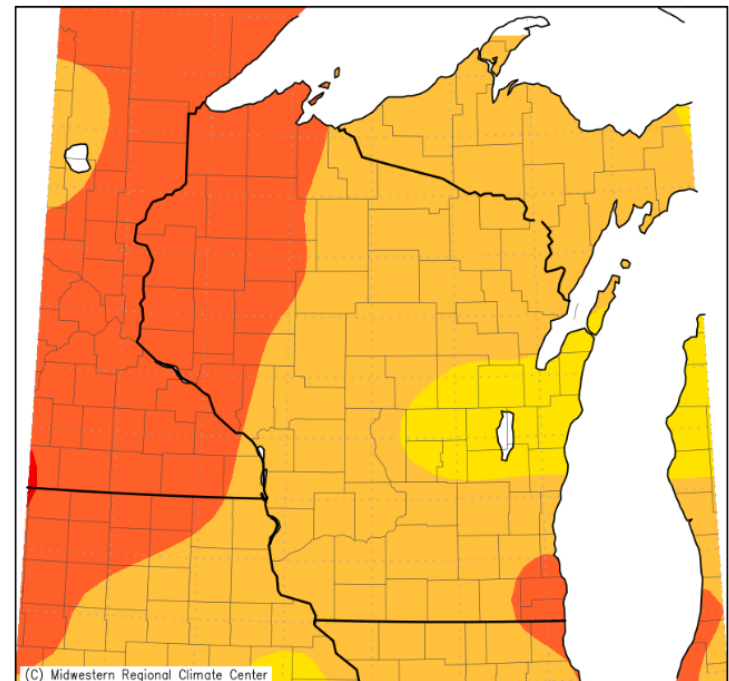
- Snow totals ranging from **<2"** (far SE, WC/NW) to **>5"** (far NC, Manitowoc area)
- Snowfall was below average statewide (**<50%** of average for most)

Accumulated Snowfall (in)  
November 23, 2023 to December 22, 2023



Midwestern Regional Climate Center  
cli-MATE: MRCC Application Tools Environment  
Generated at: 12/22/2023 11:18:40 AM EST

Accumulated Snowfall: Percent of Mean  
November 23, 2023 to December 22, 2023



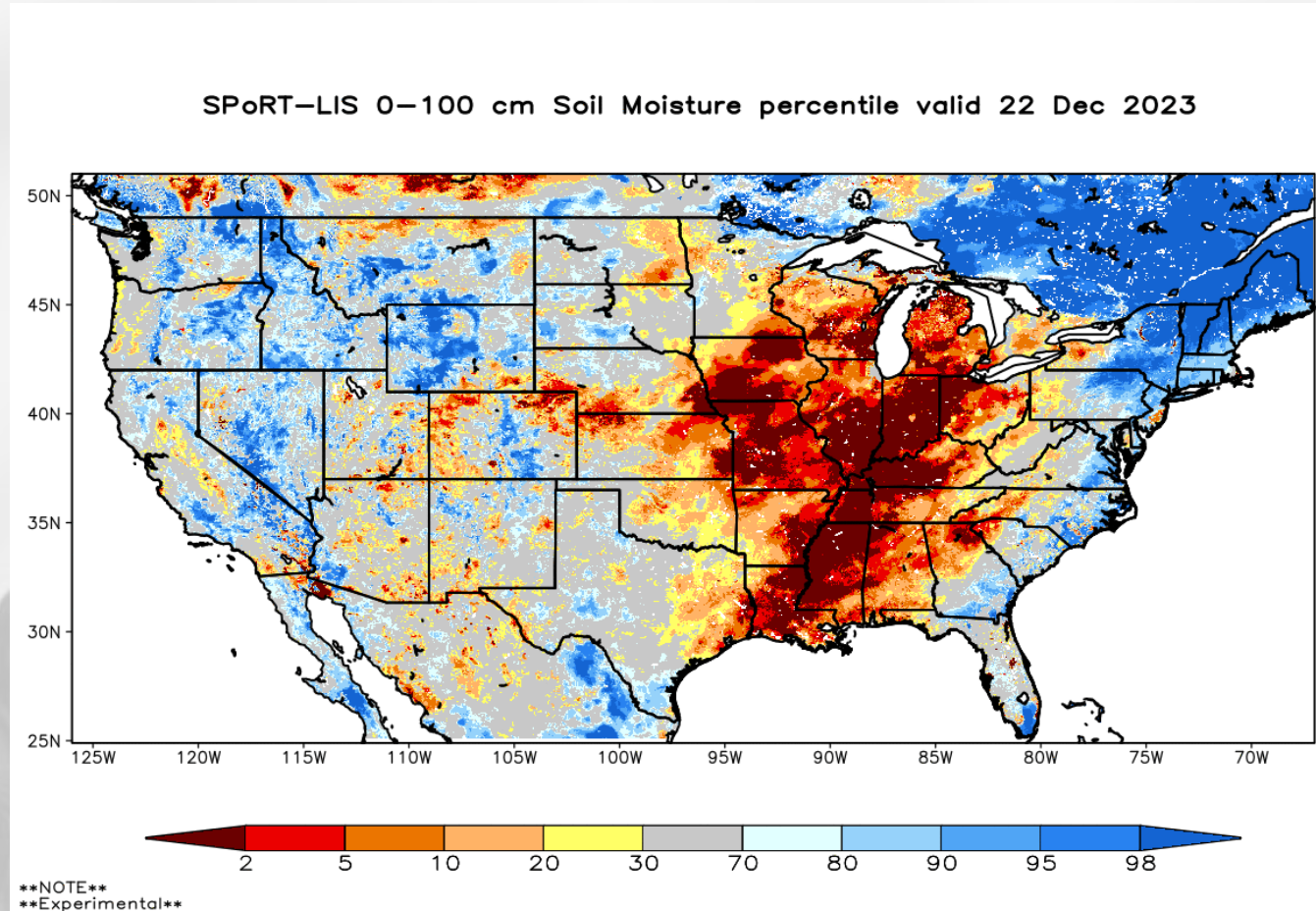
Midwestern Regional Climate Center  
cli-MATE: MRCC Application Tools Environment  
Generated at: 12/22/2023 11:19:40 AM EST

# Modeled Soil Moisture

- Little to no change in WI due to relatively low rainfall over last 30 days.
- Model indicates higher level of dryness in the E and SE parts of WI.

*Model Notes:*

*Red areas would be top 5 driest in 100 years. Dark red = top 2 driest.*



[https://weather.msfc.nasa.gov/sport/case\\_studies/lis\\_CONUS.html](https://weather.msfc.nasa.gov/sport/case_studies/lis_CONUS.html)

[https://www.cpc.ncep.noaa.gov/products/Soilmst\\_Monitoring/US/Soilmst/Soilmst.shtml](https://www.cpc.ncep.noaa.gov/products/Soilmst_Monitoring/US/Soilmst/Soilmst.shtml)

[https://www.cpc.ncep.noaa.gov/products/Drought/Monitoring/smp\\_new.shtml#](https://www.cpc.ncep.noaa.gov/products/Drought/Monitoring/smp_new.shtml#)

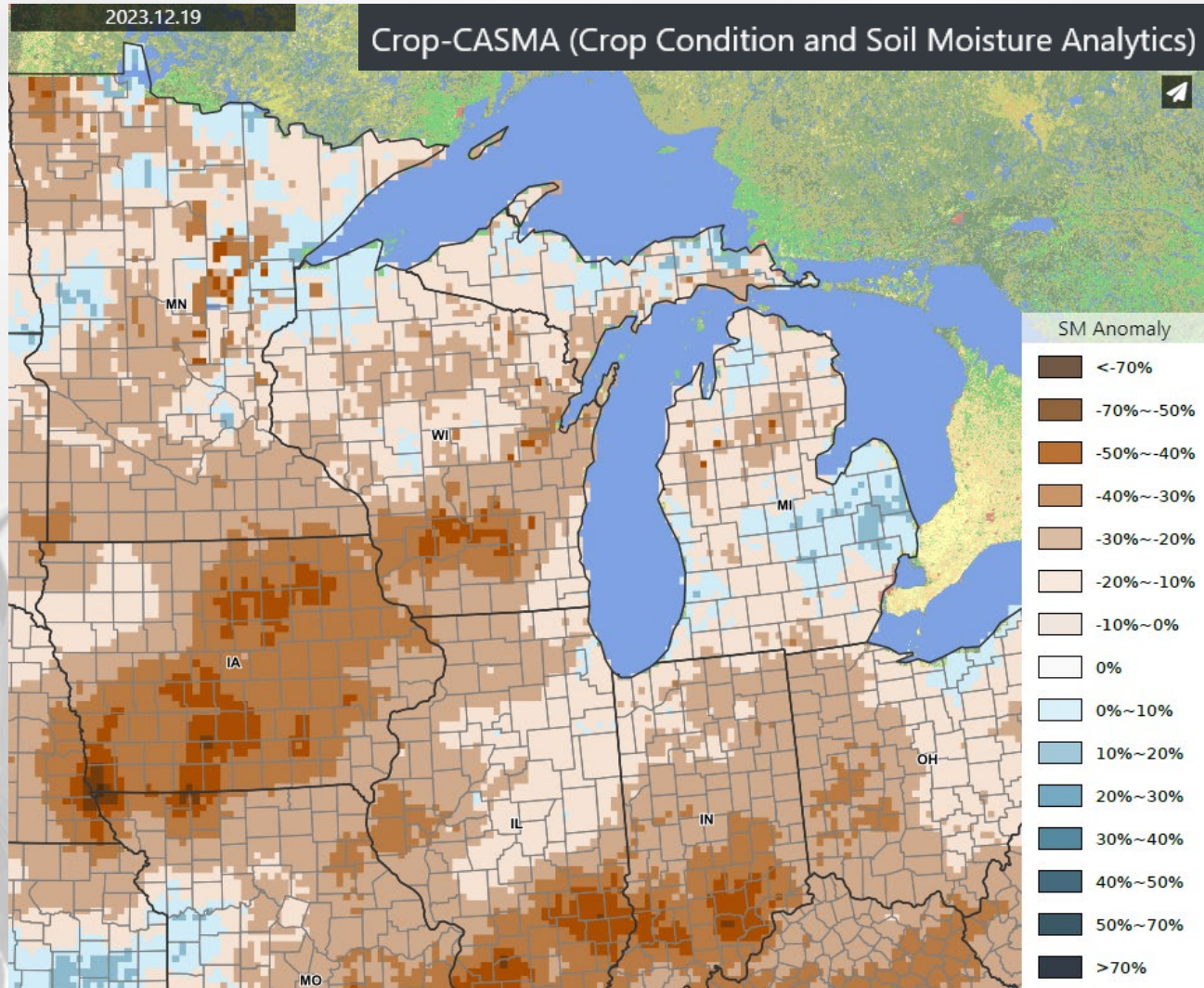
# Modeled Soil Moisture

**Alternate product from GMU and partners.**

- Soil conditions still remain drier than normal, with some improvements in the NC/NW.
- Most dry in the SW/SC region.
- Reductions in dryness to the west in IA and MN.

Model Notes:

*Model compares to time of year – suggests that soils are drier/wetter than is typical for this time of the season.*

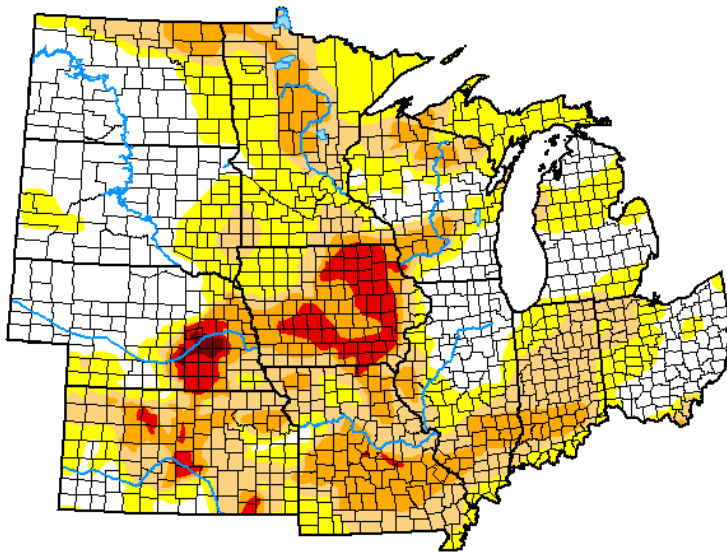


<https://nassgeo.csiss.gmu.edu/CropCASMA/>



# US Drought Monitor

## U.S. Drought Monitor North Central States



**December 19, 2023**

*(Released Thursday, Dec. 21, 2023)*

Valid 7 a.m. EST

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	32.69	67.31	40.21	19.03	4.30	0.26
<b>Last Week</b> <i>12-12-2023</i>	33.69	66.31	38.06	18.69	4.03	0.37
<b>3 Months Ago</b> <i>09-19-2023</i>	26.70	73.30	49.87	29.99	11.66	1.57
<b>Start of Calendar Year</b> <i>01-03-2023</i>	23.51	76.49	51.22	24.39	11.79	5.25
<b>Start of Water Year</b> <i>09-26-2023</i>	25.87	74.13	49.98	25.16	7.67	0.73
<b>One Year Ago</b> <i>12-20-2022</i>	21.21	78.79	54.71	24.56	12.85	5.73

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:

Curtis Riganti  
National Drought Mitigation Center



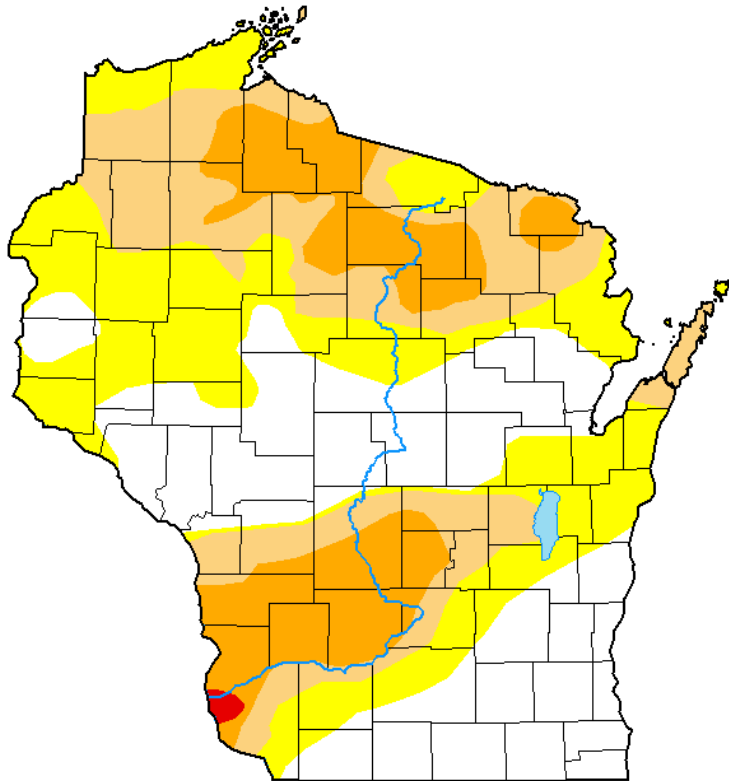
[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)

- Increases in regional D0-D3 area, with minimal decrease in D4 coverage.
- D3-D4 drought persists in IA, eastern NE, and localized parts of KS & MO.
- Expansion of D3 coverage in southern IA.

*Note: D0 is not considered drought.*

# US Drought Monitor

## U.S. Drought Monitor Wisconsin



**December 19, 2023**  
(Released Thursday, Dec. 21, 2023)  
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	33.10	66.90	37.43	16.80	0.26	0.00
<b>Last Week</b> 12-12-2023	33.10	66.90	37.43	16.80	0.26	0.00
<b>3 Months Ago</b> 09-19-2023	2.04	97.96	86.91	63.44	24.27	3.29
<b>Start of Calendar Year</b> 01-03-2023	67.99	32.01	5.71	1.84	0.00	0.00
<b>Start of Water Year</b> 09-26-2023	2.04	97.96	80.86	37.74	6.77	0.00
<b>One Year Ago</b> 12-20-2022	67.99	32.01	7.73	1.84	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>

Author:

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National Drought Mitigation Center



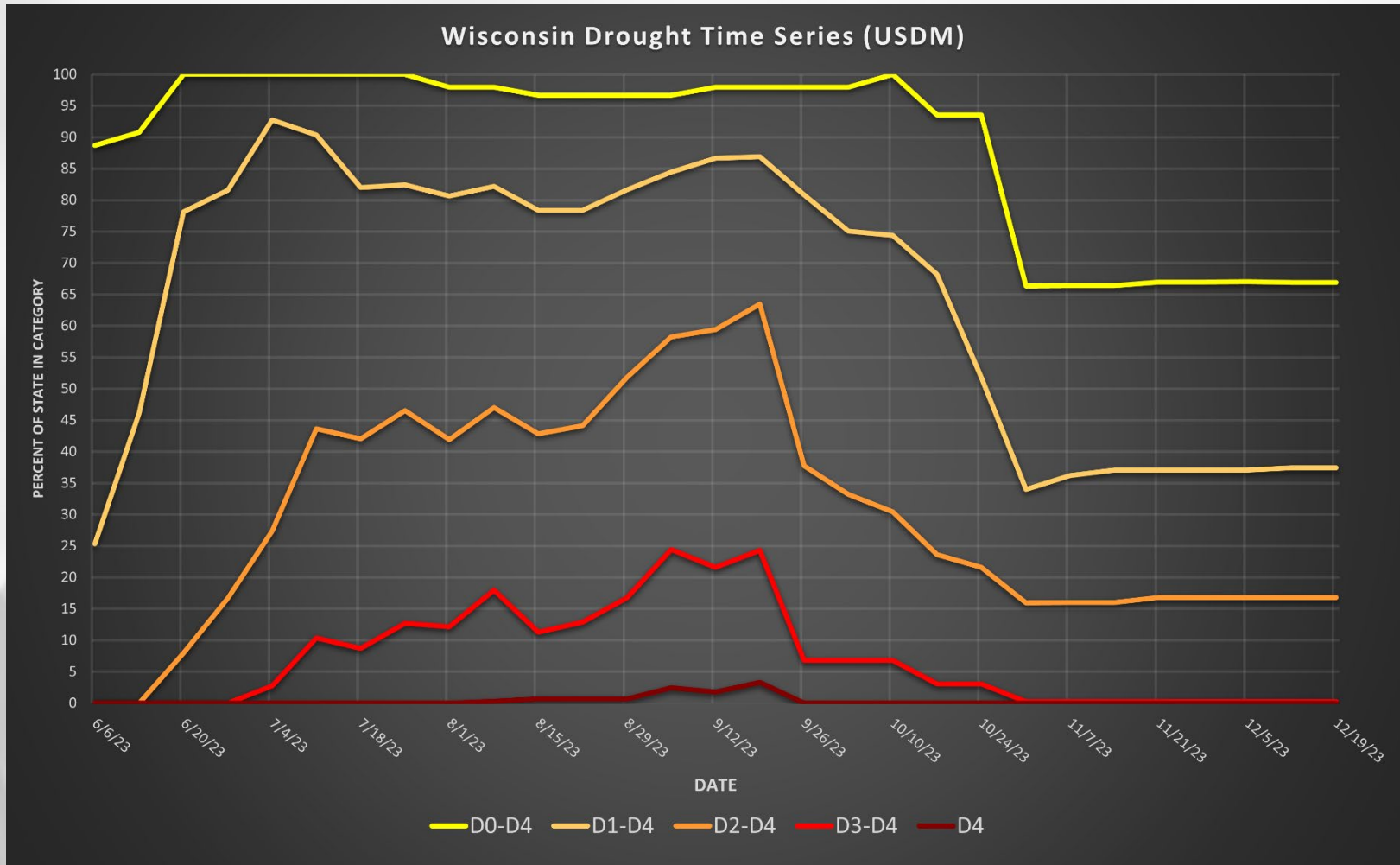
[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)

Amount of state in:

- **D1-D4** – 37.4% ↑
- **D2-D4** – 16.8% --
- **D3-D4** – 0.3% --
- **D4** – 0.0% --

*Note:* ↑ ↓ indicate change from November 21<sup>st</sup>. Red up arrows indicate increase in drought area; vice-versa for green arrows.

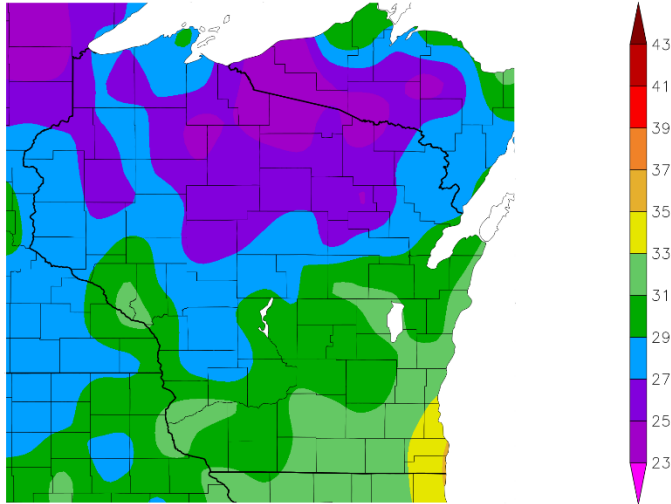
# Drought in WI – Last 6 months



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

# 30 Day Temperatures

Temperature (F)  
11/22/2023 - 12/21/2023

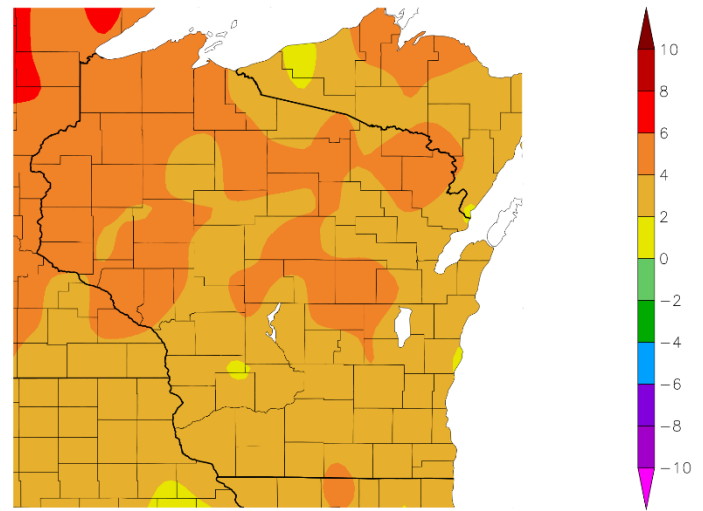


Generated 12/22/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

- Highest average T in the far SE (33-35°F).
- Lowest averages in NC WI (≤25°F).
- Monthly averages across the state were above normal for all (2-6°F)
  - 4-6°F above normal common in the north.

Departure from Normal Temperature (F)  
11/22/2023 - 12/21/2023



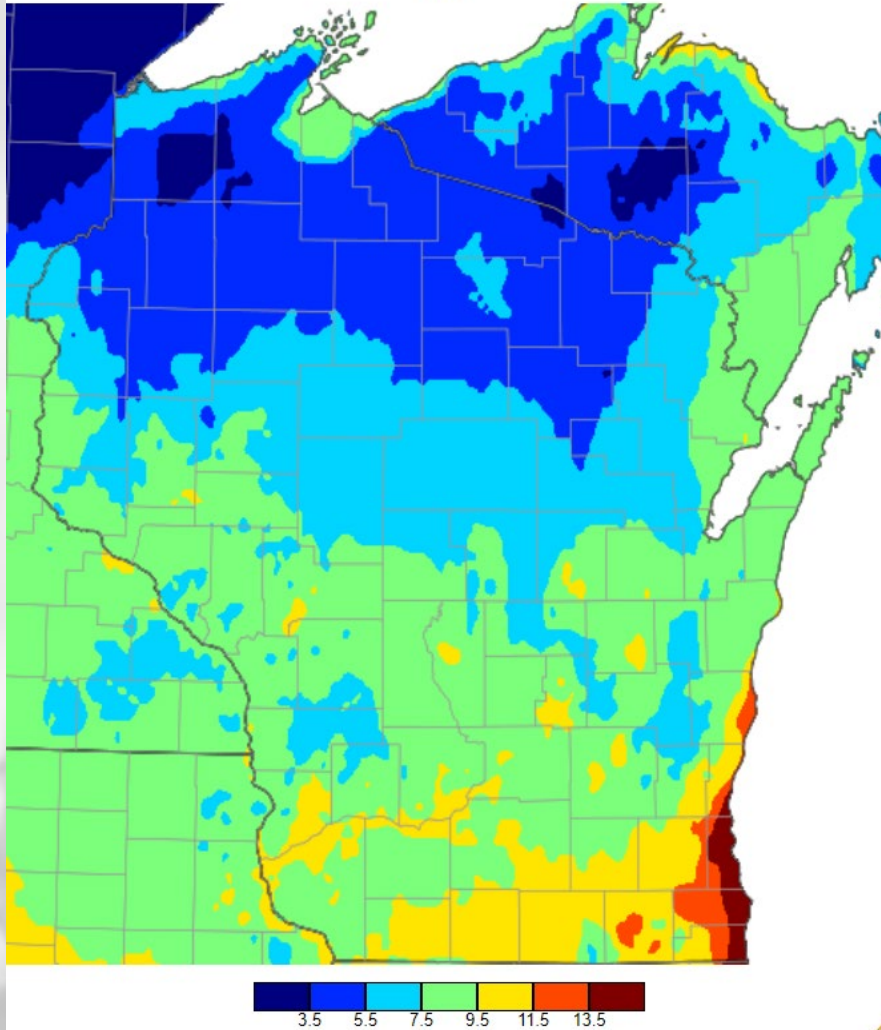
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NOAA Regional Climate Centers

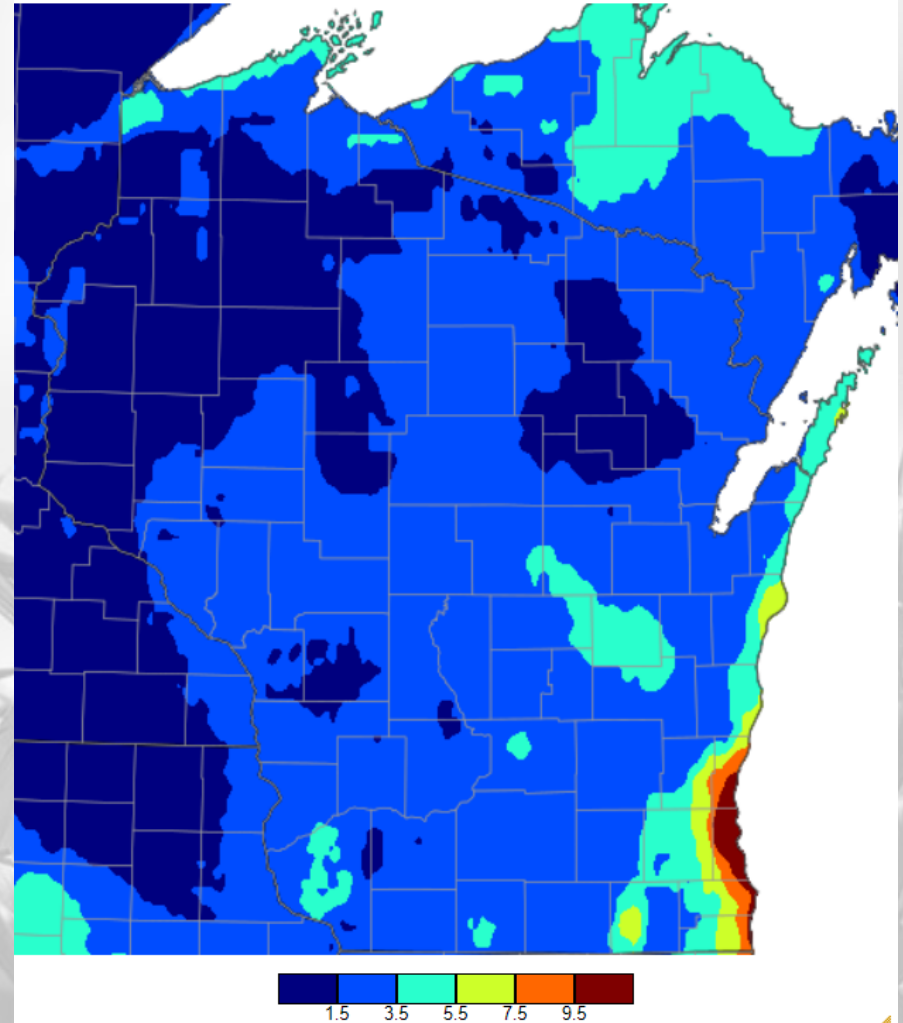
<https://hprcc.unl.edu/maps.php?map=ACISClimateMaps>

# December Warmth

Number of Days Max Temperature  $\geq 40$  - December 1, 2023 through December 22, 2023

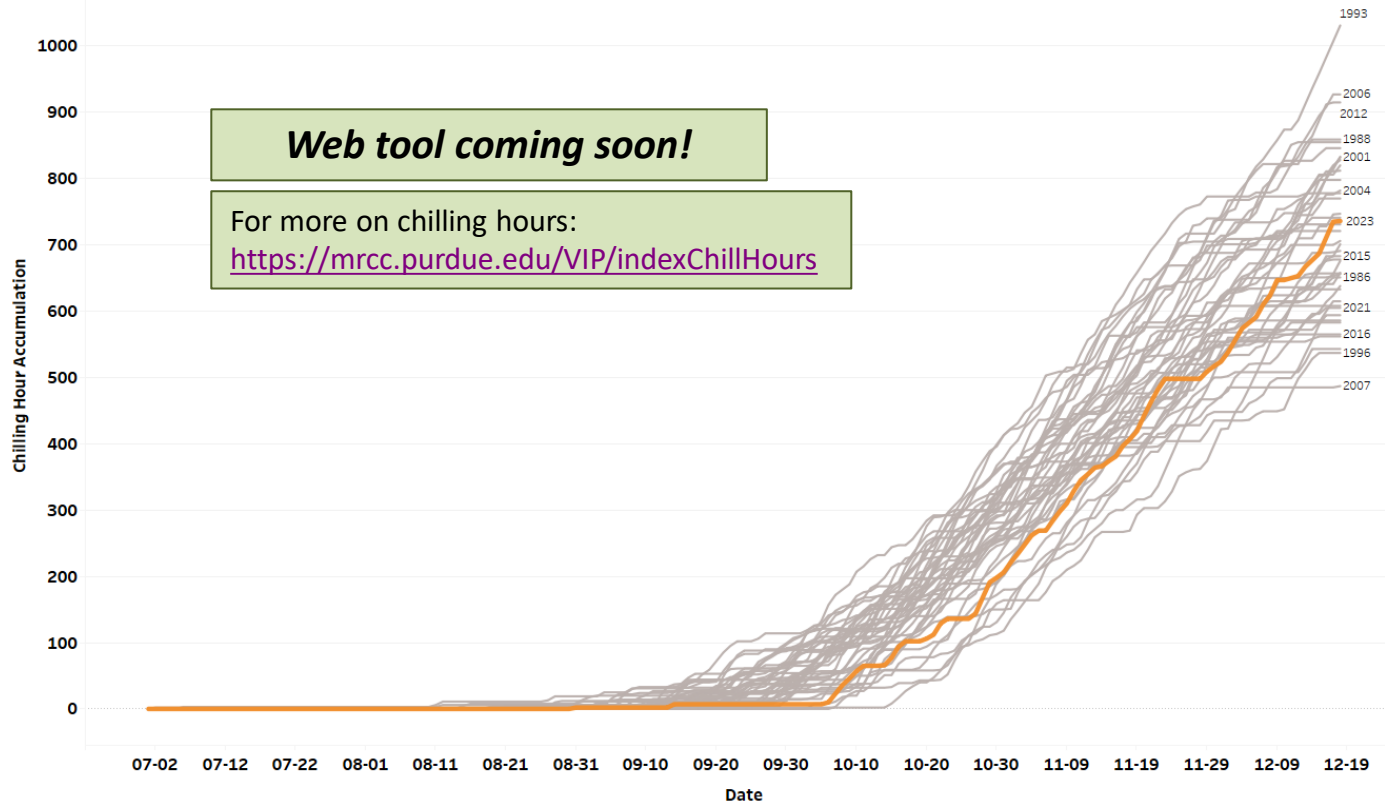


Number of Days Min Temperature  $> 32$  - December 1, 2023 through December 22, 2023



# Fruit -- Chilling Hours

Running Chill Hour Accumulation over All Seasons in Period of Record  
MADISON DANE COUNTY REGIONAL AP, WI  
Years shown on plot are in reference to the selected Start Date.



Lower Temperature Bound (°F)  
32

Temperature Upper Bound (°F)  
45

Start Date  
7/1/2023

End Date  
12/18/2023

Go Back to Map View

About



USDA Climate Hubs  
U.S. DEPARTMENT OF AGRICULTURE

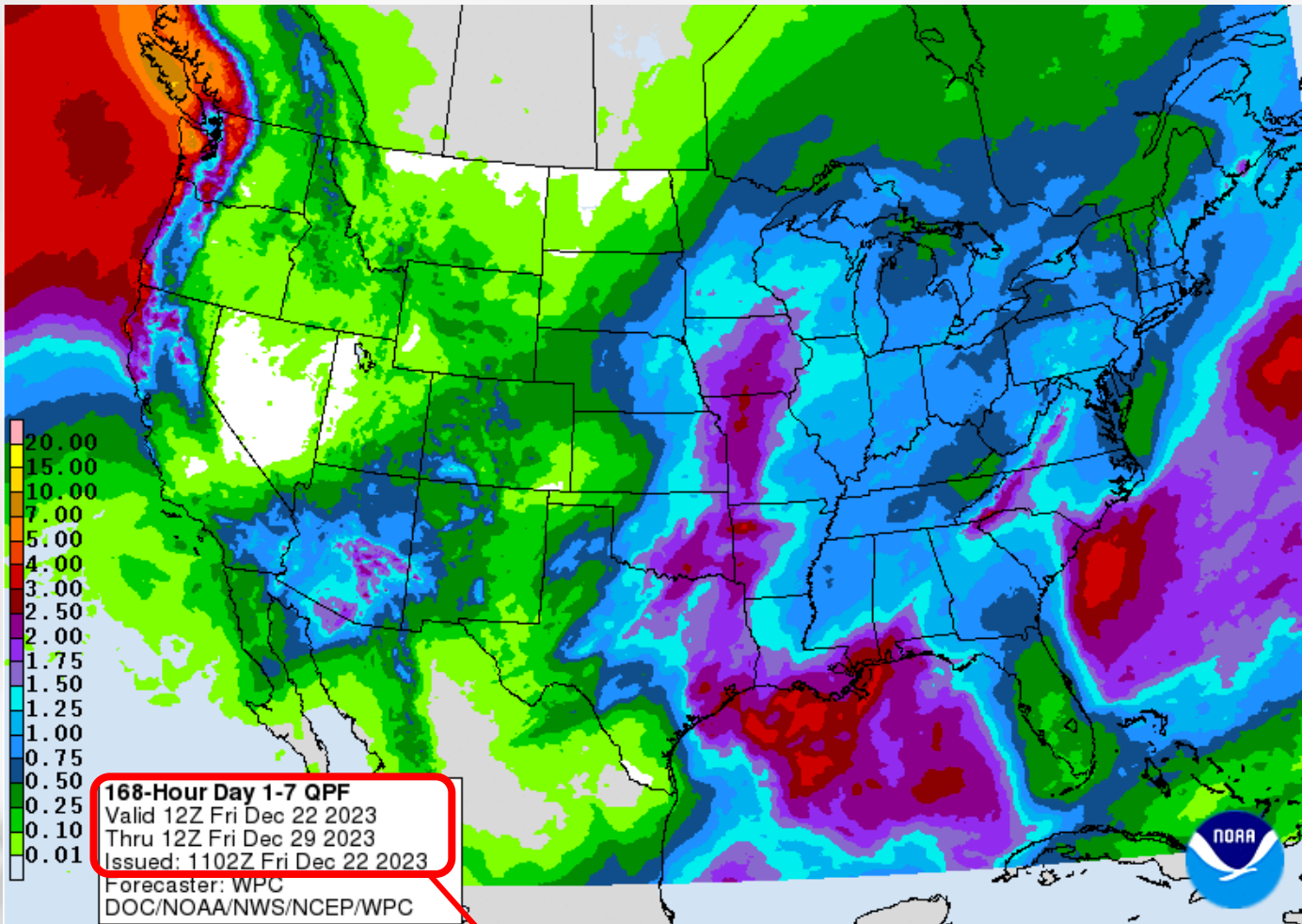


This tool was funded by the NOAA National Centers for Environmental Information (NCEI) and USDA-Agricultural Research Service (ARS) Midwest Climate Hub/National Program 216 Sustainable Agriculture

- Dane County Airport – 736 chill hours accumulated (as of 12/18)
- Middle-of-the-road compared to prior years (grey lines)

# 7 Day Forecast Precip

- Chances for precipitation exist statewide for the week of Christmas.
- Precip may fall as frozen precip for some (see next slide).
- Highest totals forecasted across WC/SW WI.



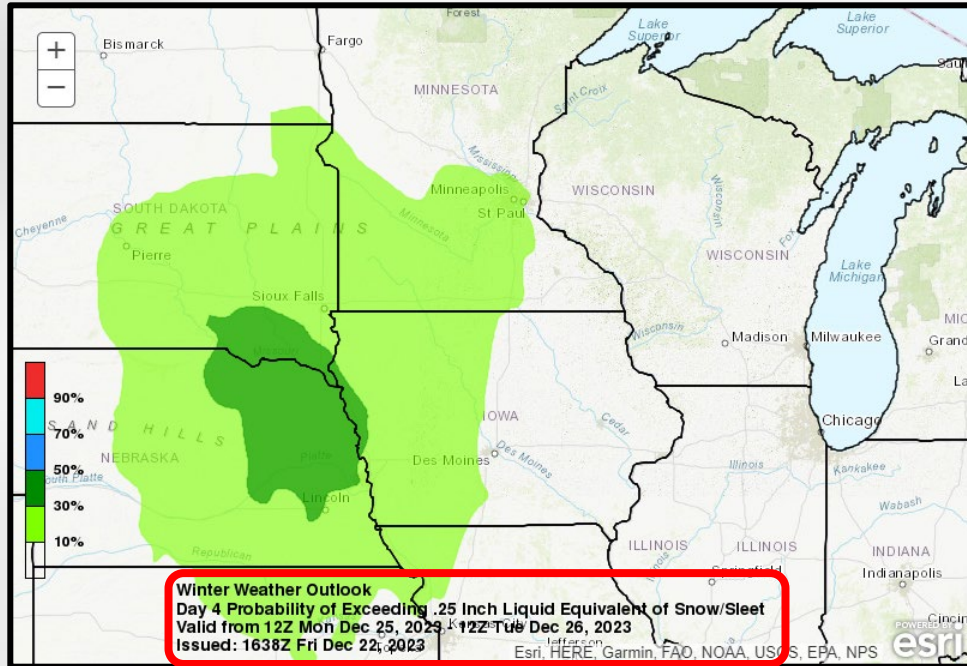
Forecast for 12/22/23 thru 12/28/23

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

# Snow/Sleet Chances

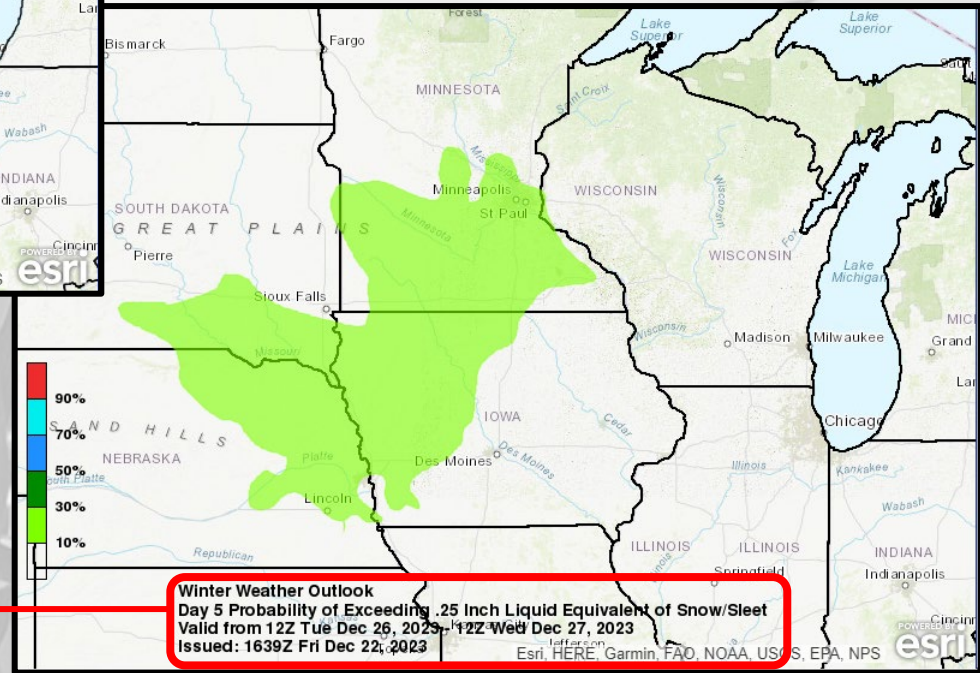
- Snow/sleet chances for 12/25 and 12/26.
- Stronger chances to the W.

*How to interpret maps: probability of an impactful snow and/or sleet event.*



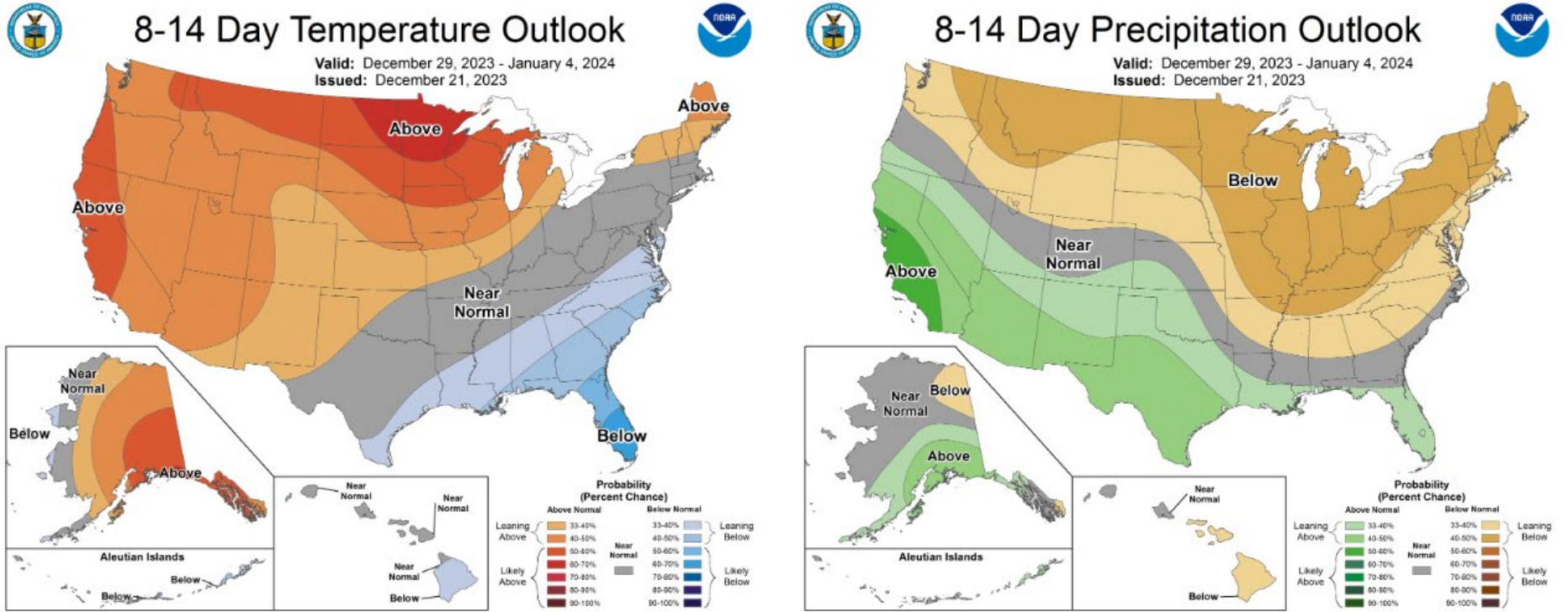
**Dec 25-26**  
(7am-7am CST)

**Dec 26-27**  
(7am-7am CST)





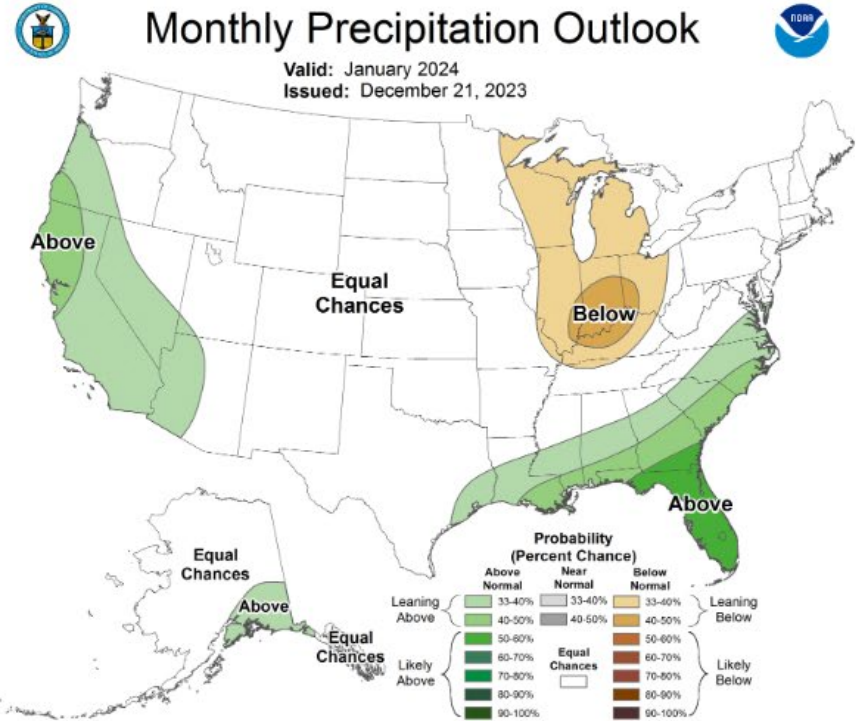
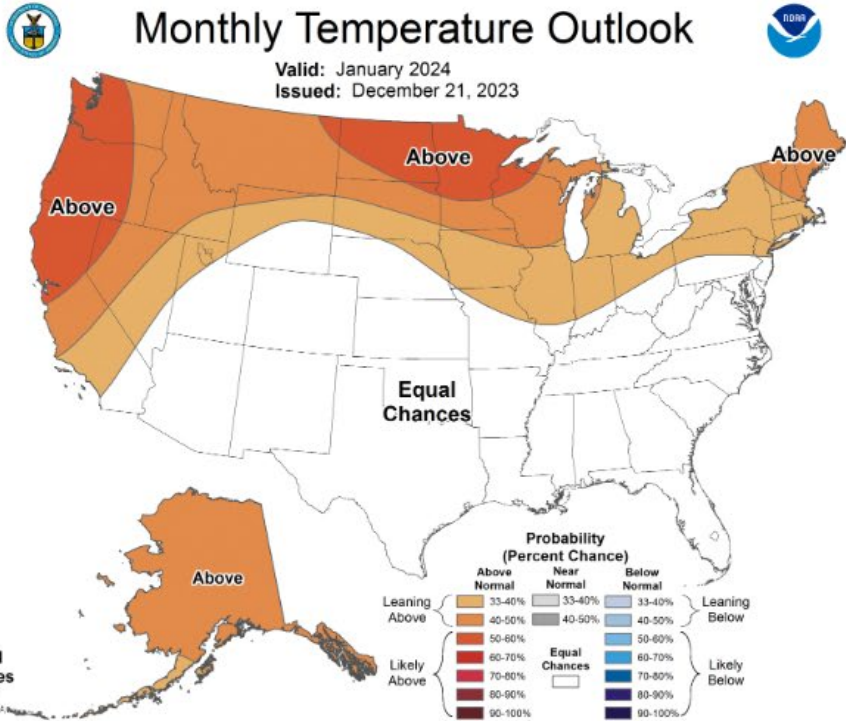
# 8-14 Day Temp & Precip Outlook



**Late Dec. – Early Jan.:** Temperatures likely to be above normal. Precipitation is leaning below normal.

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

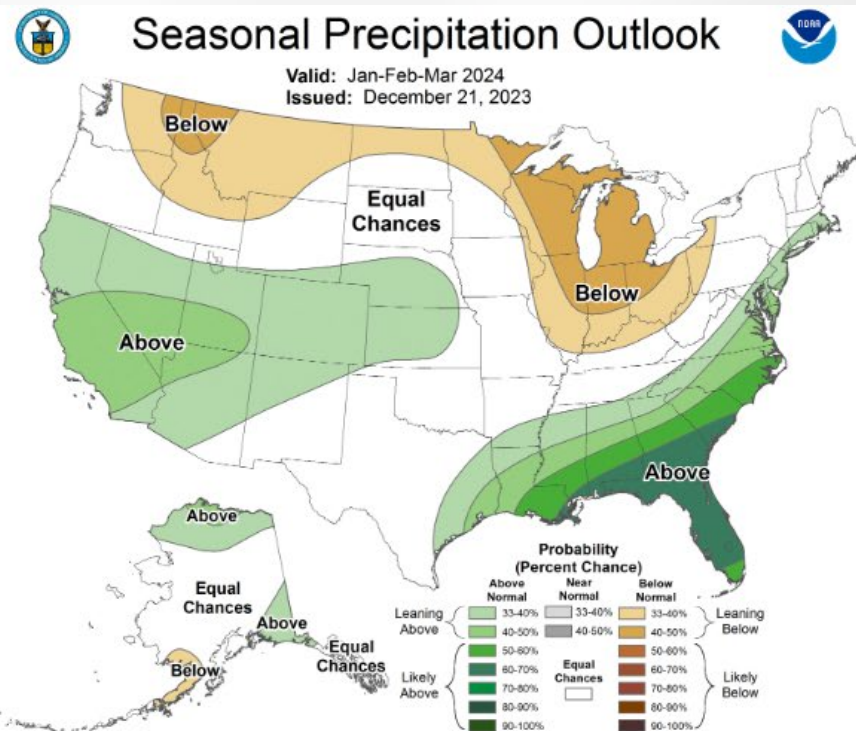
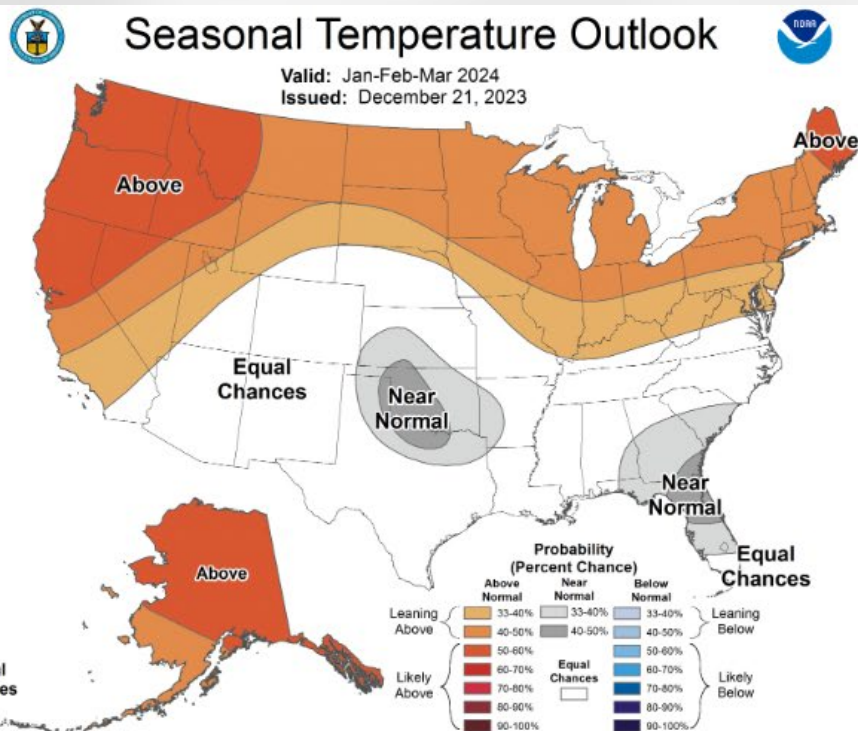
# 30 Day Temp & Precip Outlook



The month of **January**: Temperatures are leaning above normal. Precipitation is leaning below normal.

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

# 90 Day Temp & Precip Outlook



**January – March:** Temperatures leaning towards above average. Precipitation is leaning below average. *El Nino* is a major driver of these conditions.

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

# Take Home

- **Current conditions:**
  - December has been dry thus far in WI, with drought conditions remaining mostly unchanged.
  - December has been warmer-than-average for everyone in the state, and snowfall totals are behind average for this time of year.
- **Impact:**
  - Soil moisture conditions remain drier than normal with the low precipitation totals for the month.
  - Chilling hours accumulated (for perennial fruit) at Madison are middle-of-the-road compared to previous years.
- **Outlook:**
  - The week of Christmas into the first days of 2024 is leaning towards being warmer and drier than average.
  - The warm and dry conditions have a higher probability to persist into the month of January and for the rest of the winter season.

# *Important Reminder*

- During the winter months, the Wisconsin Ag Climate Outlook (WACO) will be updated **once a month** as opposed to once a week.
- With corn and soybean harvest nearing completion in the state, the WACO will shift to monthly updates on climate and soil conditions as we approach the 2024 growing season.
- As planting season nears in the spring of 2024, we will once again begin updating the WACO slides weekly to provide farmers with up-to-date climate & environmental data as they prepare to begin field work.
- Please feel free to reach out to the team at anytime with questions or feedback on our slides. We are always looking for ways to improve WACO to better serve our farmers!

# For More Information

Photo Credit: USDA



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