

Wisconsin Ag Climate Outlook

Week of October 21, 2024

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Key Points

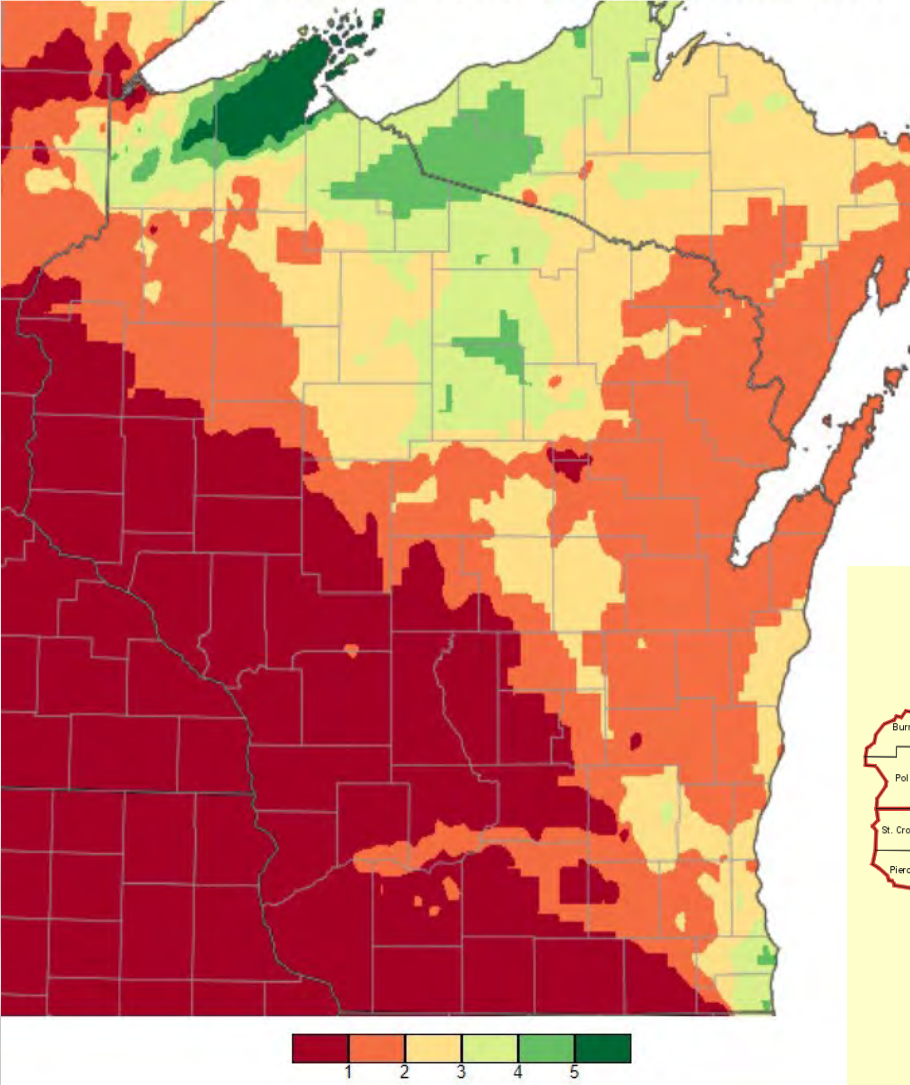
Navigate to select slides by clicking on the [links](#) below.

- 1) The [dry fall](#) that we have had continued [last week](#), with most receiving no precip. [Drought coverage](#) expanded yet again.
- 2) Temperatures have been [seasonal-to-mild](#), but we are now beginning to get [nights below freezing](#).
- 3) The warmth looks to continue into [early November](#), with statewide precip chances for [next week](#) and a wetter-than-normal lean for [8-14 days out](#).

- For this week's agronomic recommendations from UW Extension, click [here](#).
- For the latest GDD accumulation maps, click [here](#).
- For NASS crop progress & condition maps, click [here](#).

Things remain dry

Number of Days Precipitation >= 0.1 - October 1, 2024 through October 21, 2024



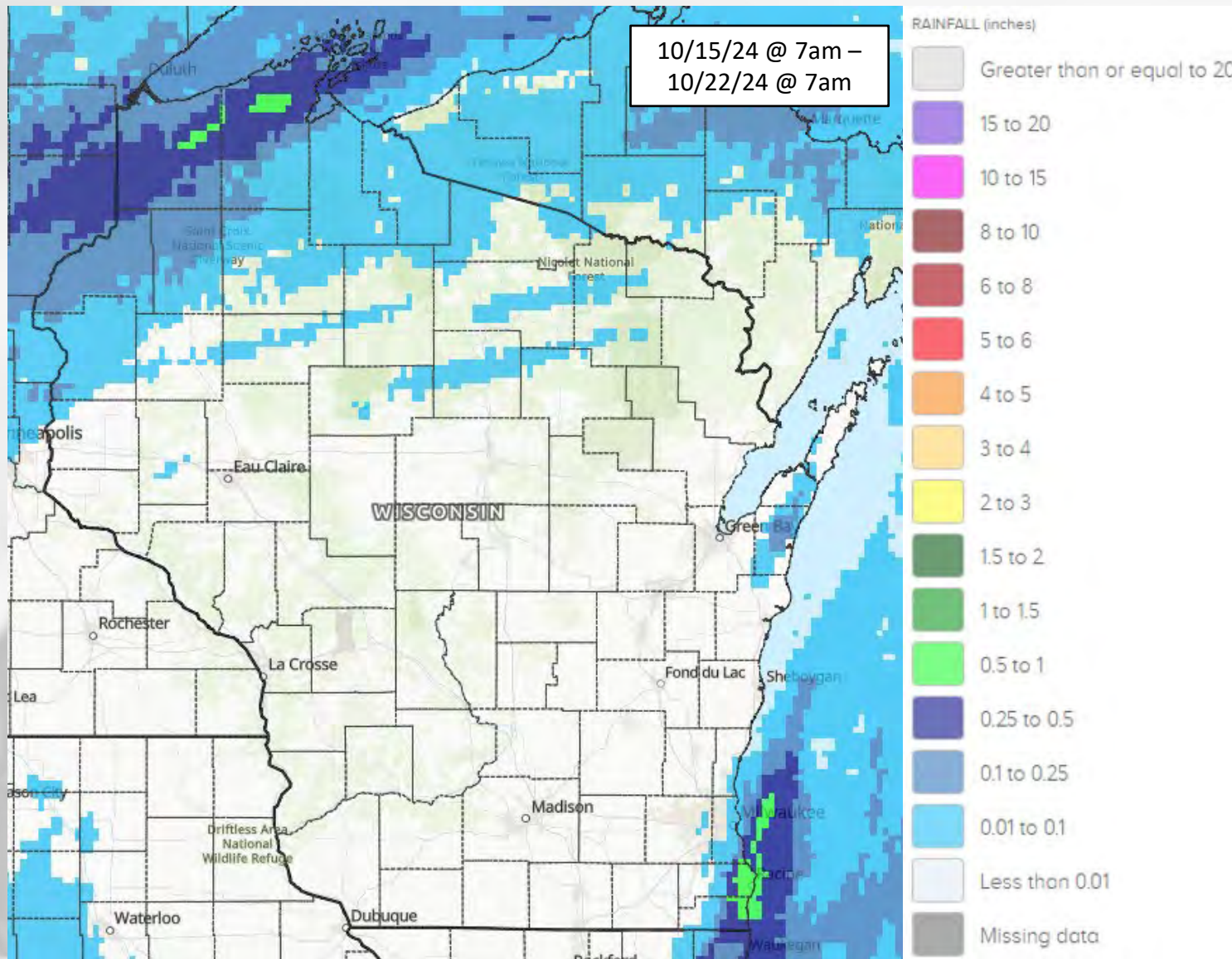
Days with rainfall of 0.1" or more between October 1-21



Climate Division	Stations w/no reported precip (10/1 – 10/21)
WI01	5
WI02	1
WI03	3
WI04	21
WI05	1
WI06	1
WI07	17
WI08	20
WI09	3

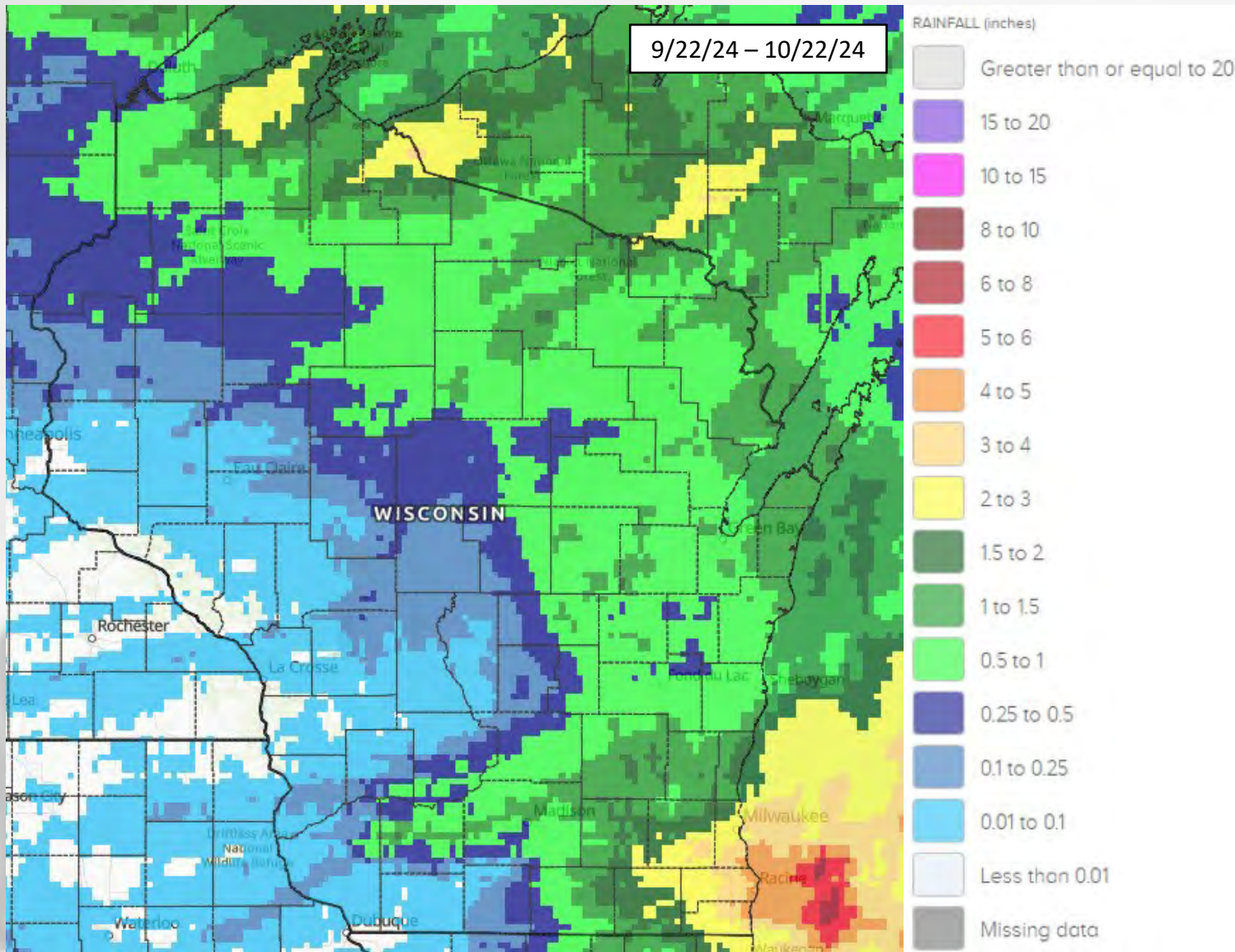
Data in the table represents the number of measuring stations with no reported precipitation between October 1-21, 2024. (Source: ACIS)

7 Day Precip



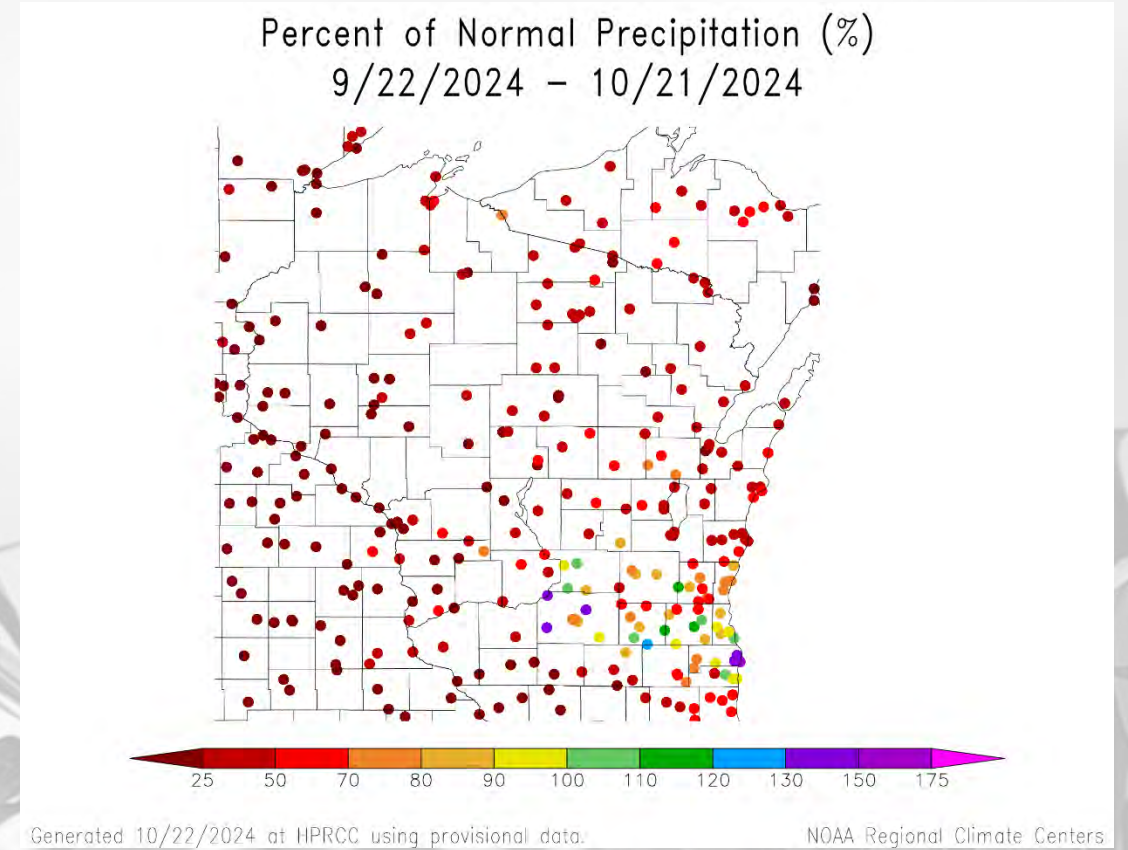
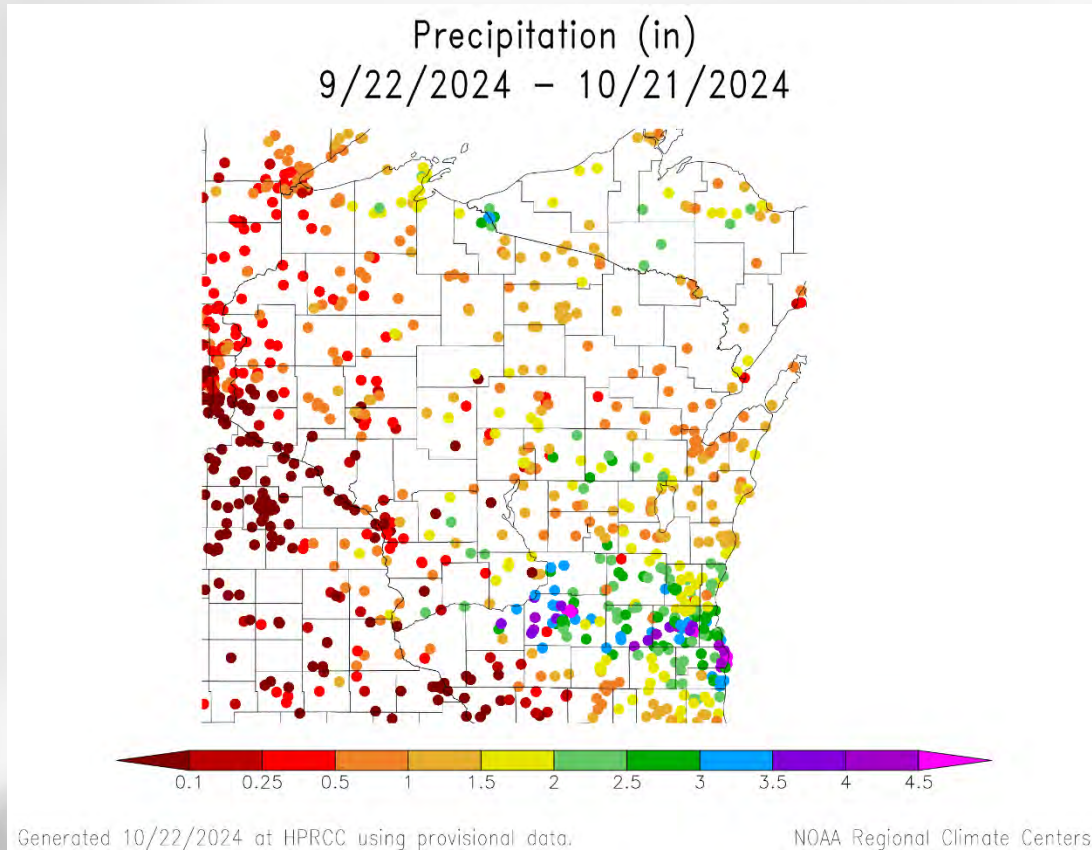
- Precip was concentrated in the **far NW corner of the state** last week, as well in the **far SE**.
- Highest precip amounts were **1" or less**.
- **Little to no precip** across the majority of the state.

30 Day Precip



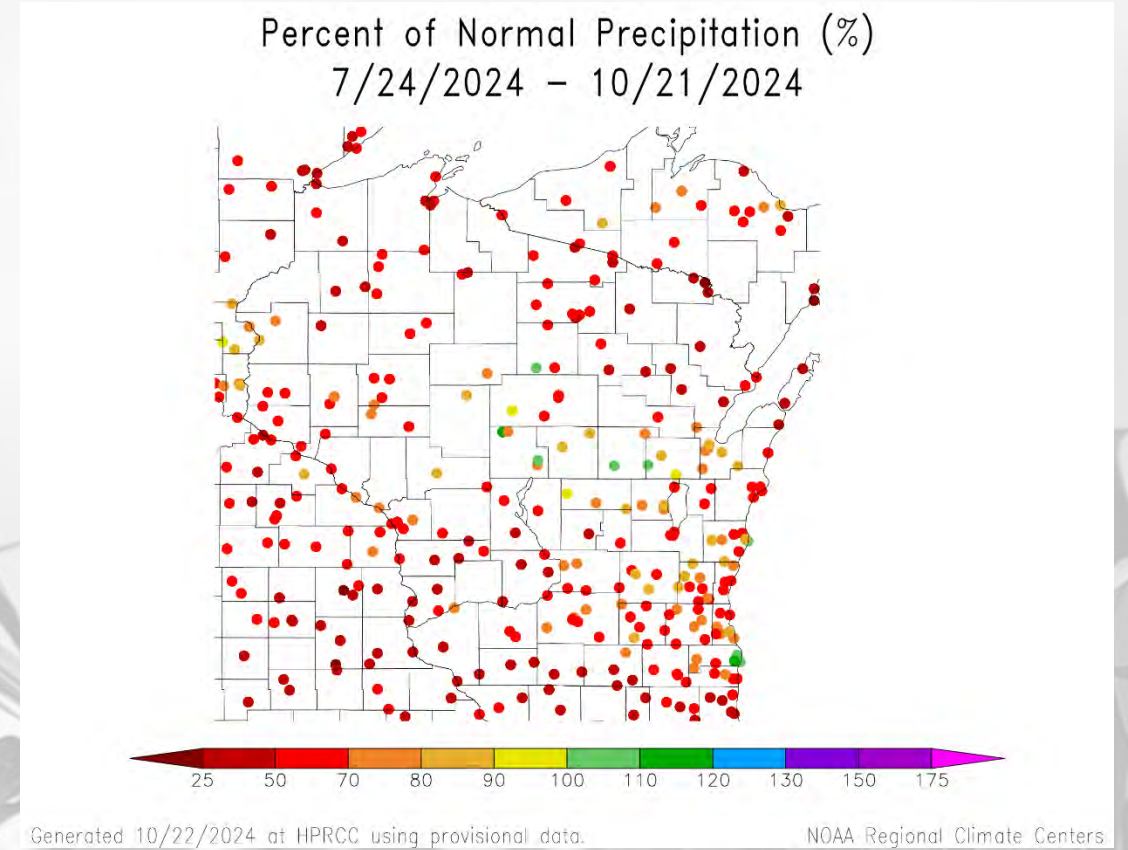
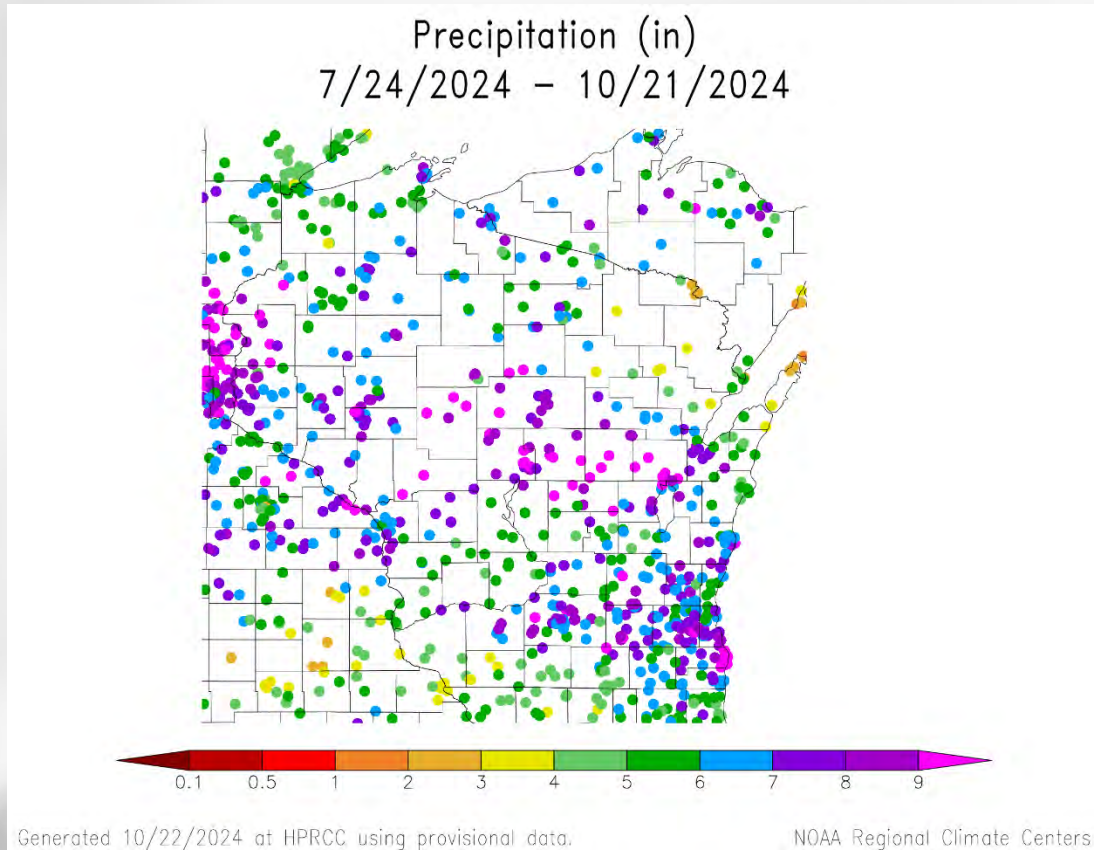
- In the western half of the state, precip totals have been **0.5" or less**, except for the **far NW (0.5-2")**.
- **0.5" or greater** in the eastern half of WI, with **>1"** common in the SE and in the Door peninsula.
- Highest amounts in the **far SE** → **2-4"**.

30 Day Precip Total/% Avg.



- Rainfall totals across regions outside of the SE have been **50% or less** of climatological average at many stations.
- **<1" of rainfall** common in the west, the Central Sands, and near Green Bay.
- Higher totals in the south-central came during **late September** → **minimal rainfall** since then.

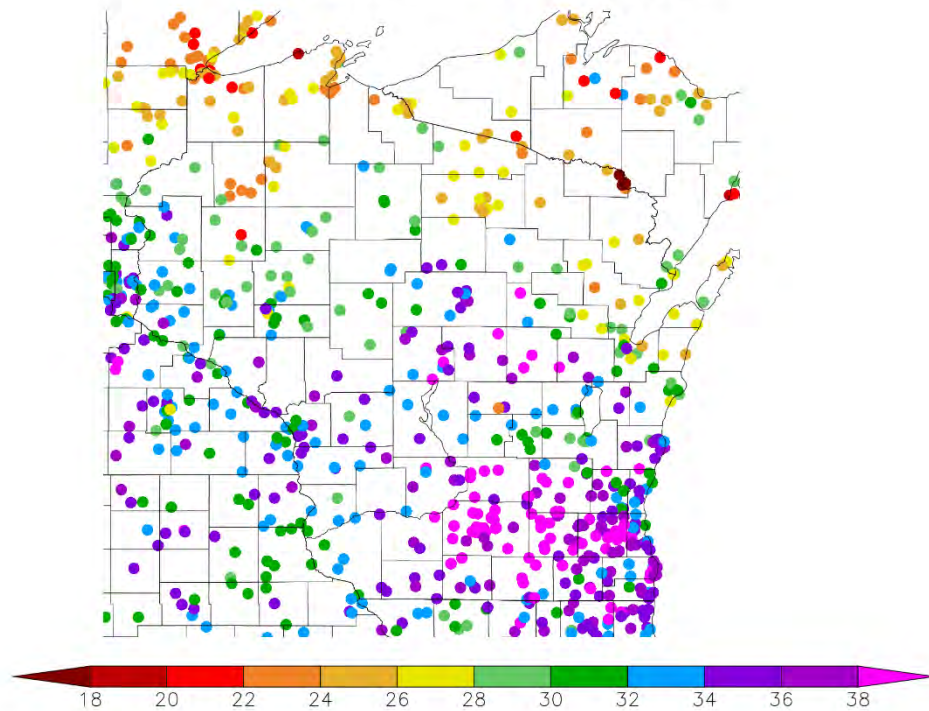
90 Day Precip Total/% Avg.



- **6-9"** of precip common across stations from the TC to Lake Winnebago, and between Madison & Milwaukee.
 - However, most of these stations are still **below the climatological average**.
- **25-70% of normal** across most stations in the SW and in the north.

2024 Precipitation (so far)

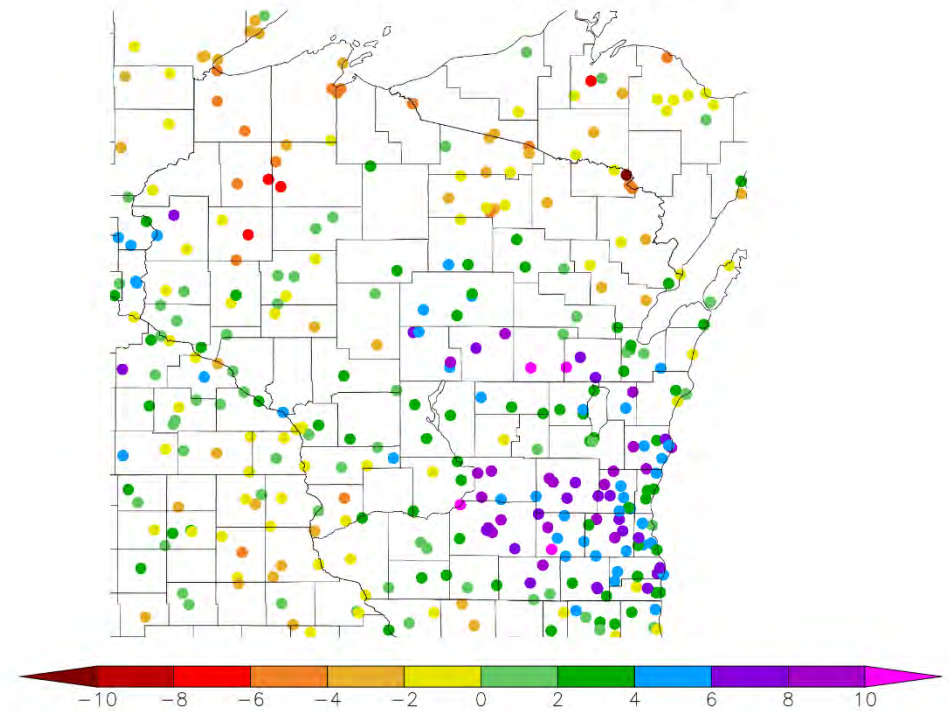
Precipitation (in)
1/1/2024 - 10/21/2024



Generated 10/22/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Precipitation (in)
1/1/2024 - 10/21/2024



Generated 10/22/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

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

Soil Moisture Models

- **20th percentile or lower** for soil moisture conditions covering most of the state.
- **2nd percentile or lower** common in the NE and in parts of the Central Sands and SW.
- **Wettest conditions** in the SC/SE and near Wausau, but these areas are still relatively dry.

Model Notes:

Red areas = top 5 driest in 100 years.

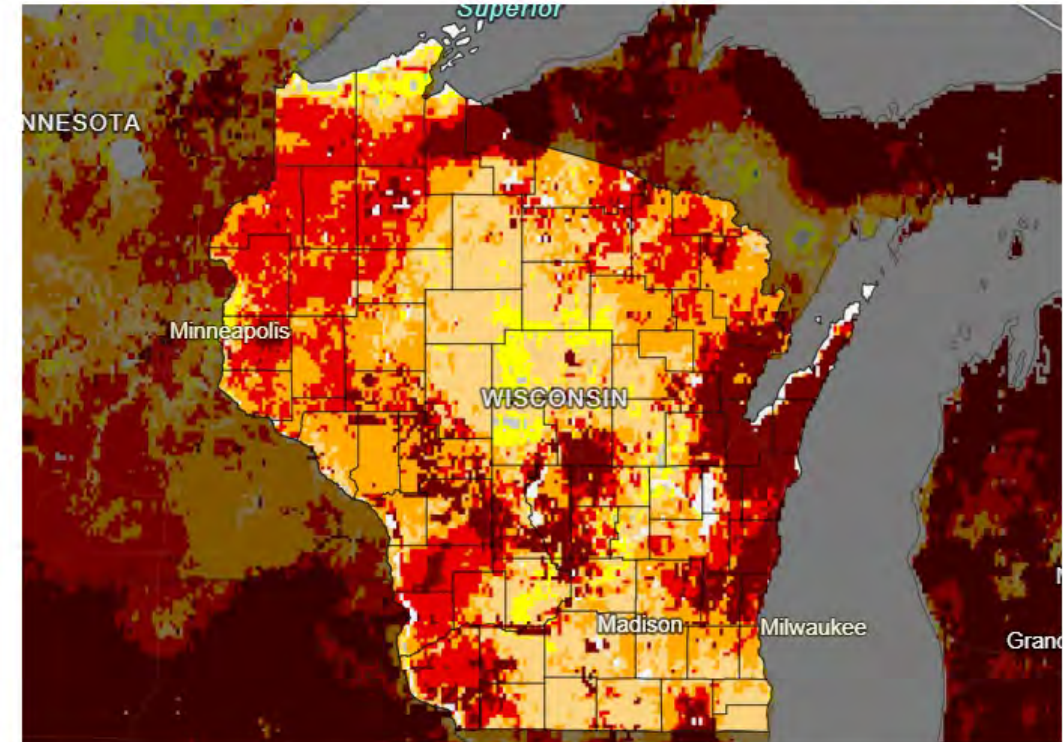
Dark red areas = top 2 driest in 100 years.

Blue areas = top 2 wettest in 100 years.

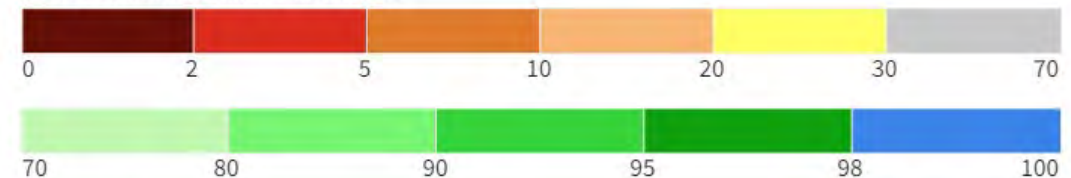
It's worth noting that each soil moisture model has their own characteristics and input variables, so there tends to be variation between models. Thus, it's worthwhile to look at multiple models opposed to just one.

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

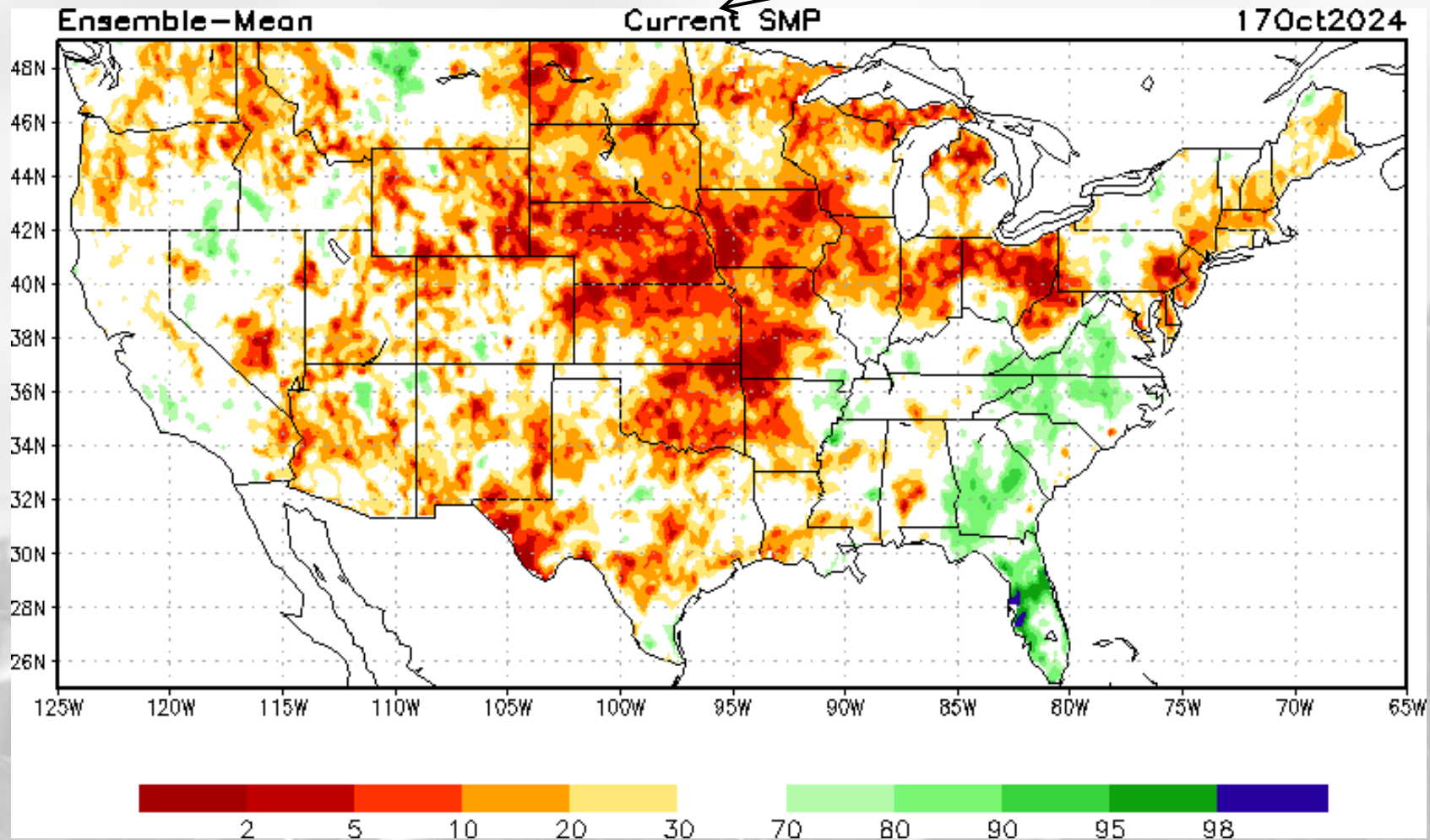


Source(s): NASA
Data Valid: 10/22/24

Drought.gov

Soil Moisture Models

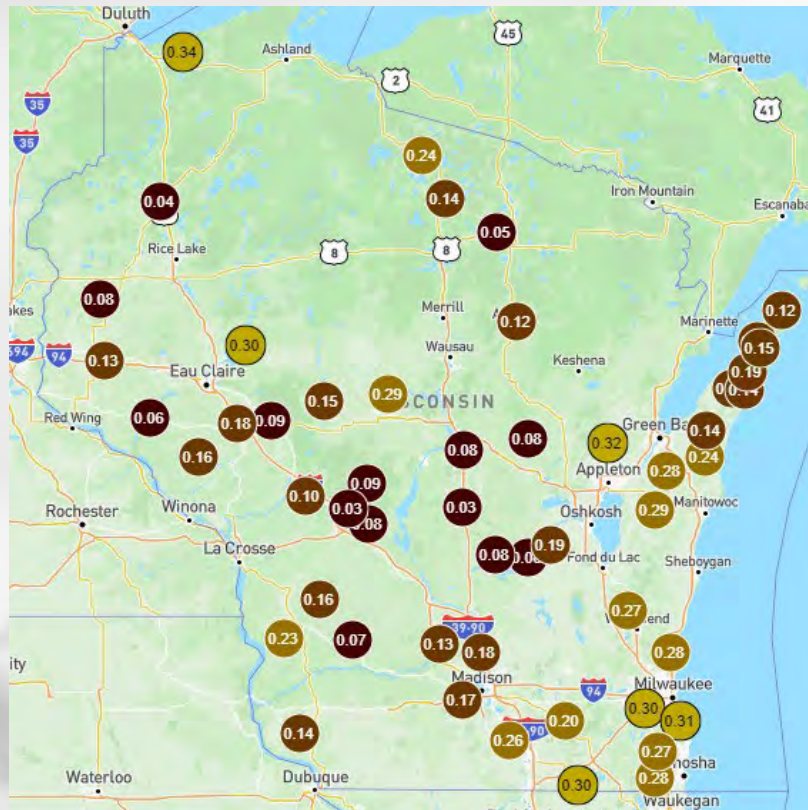
NOTE: this map displays the soil moisture percentile for Oct. 17. It was the most recent update on Oct. 22.



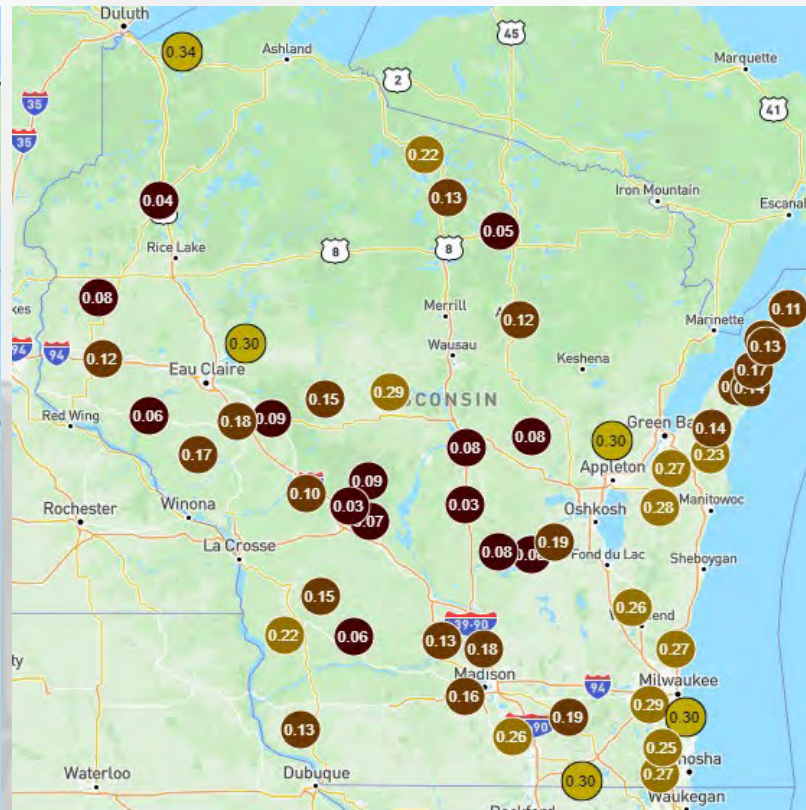
https://www.cpc.ncep.noaa.gov/products/Drought/Monitoring/smp_new.shtml

Wisconet Soil Moisture (4" Depth)

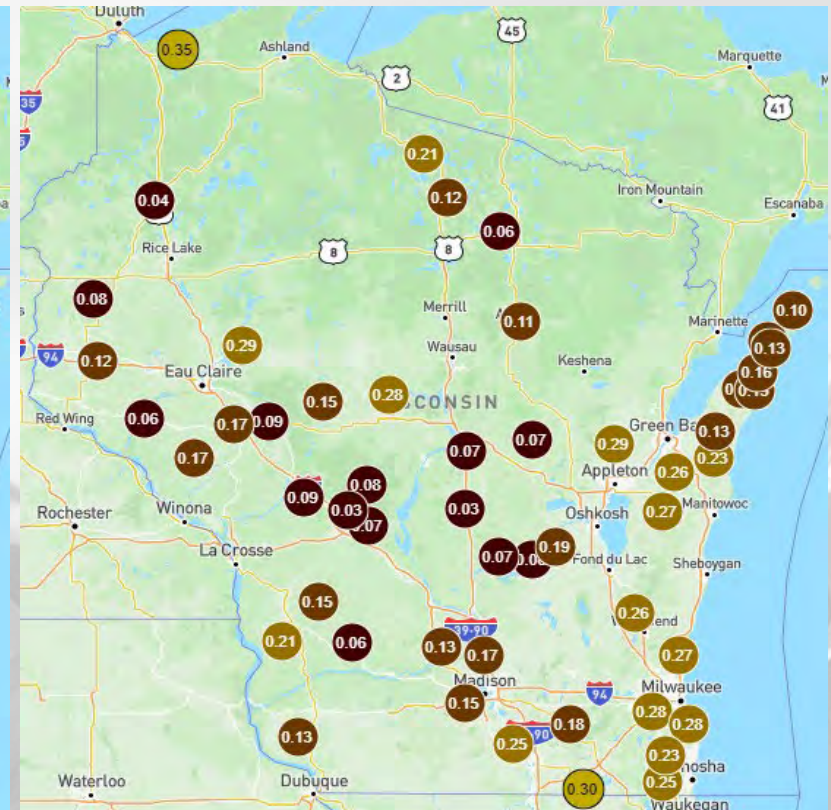
Thursday Oct. 17th @ Midday



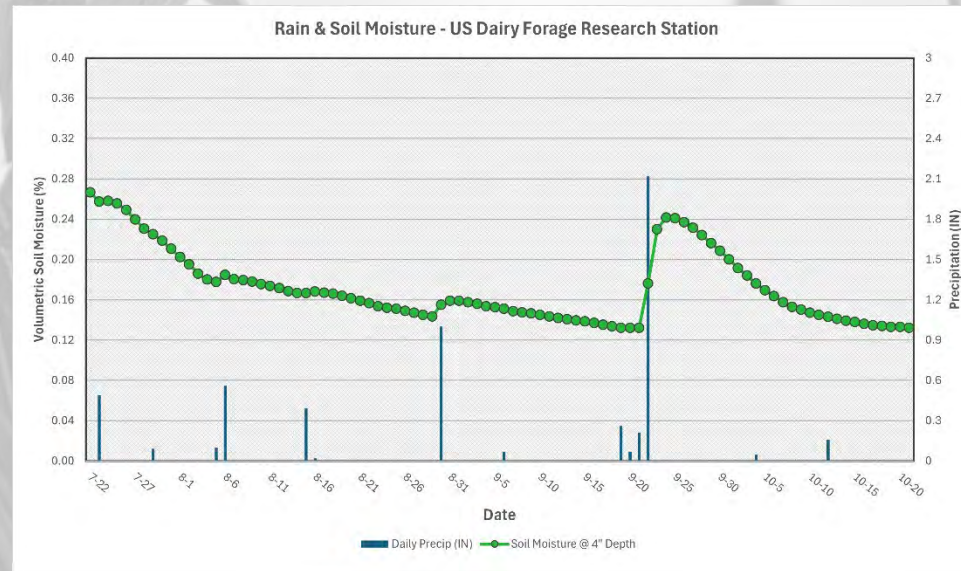
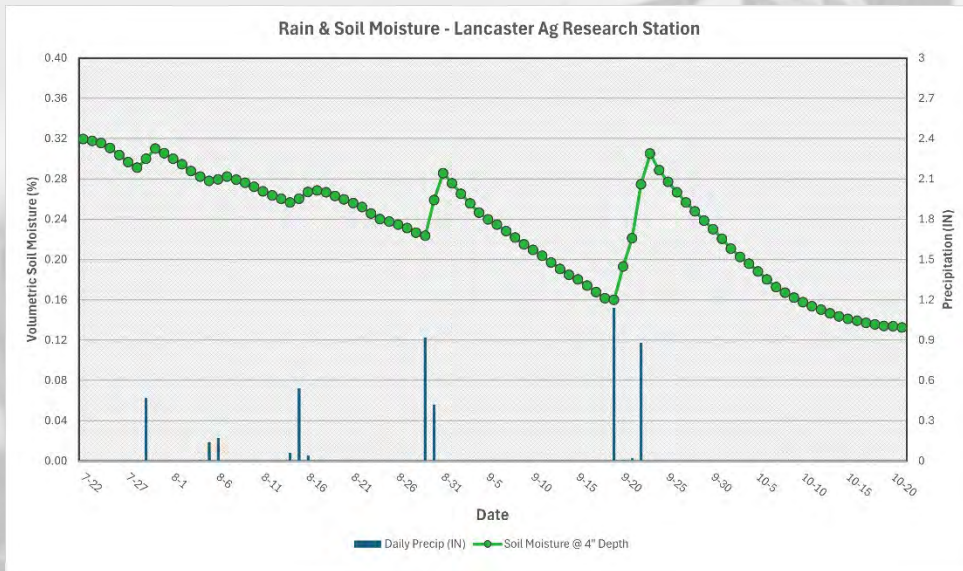
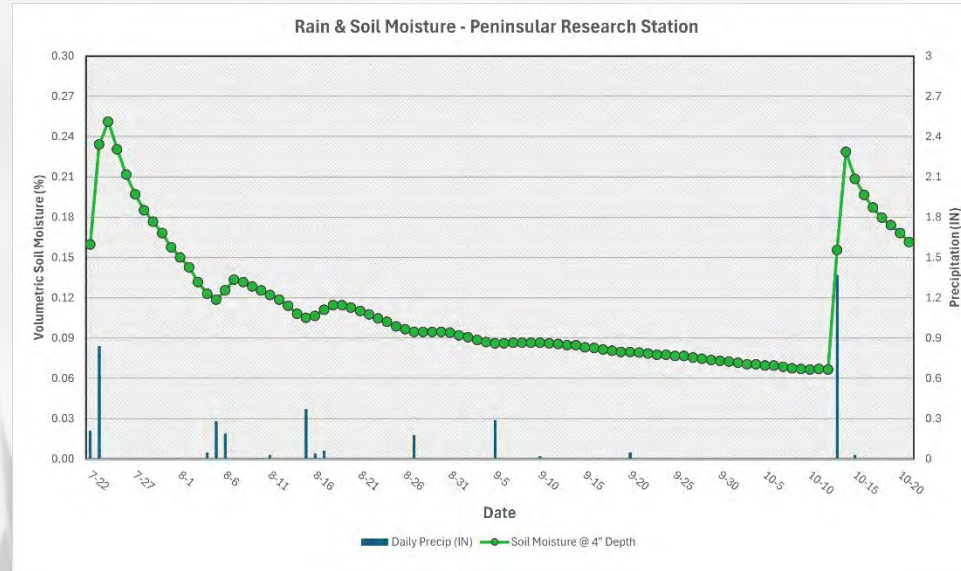
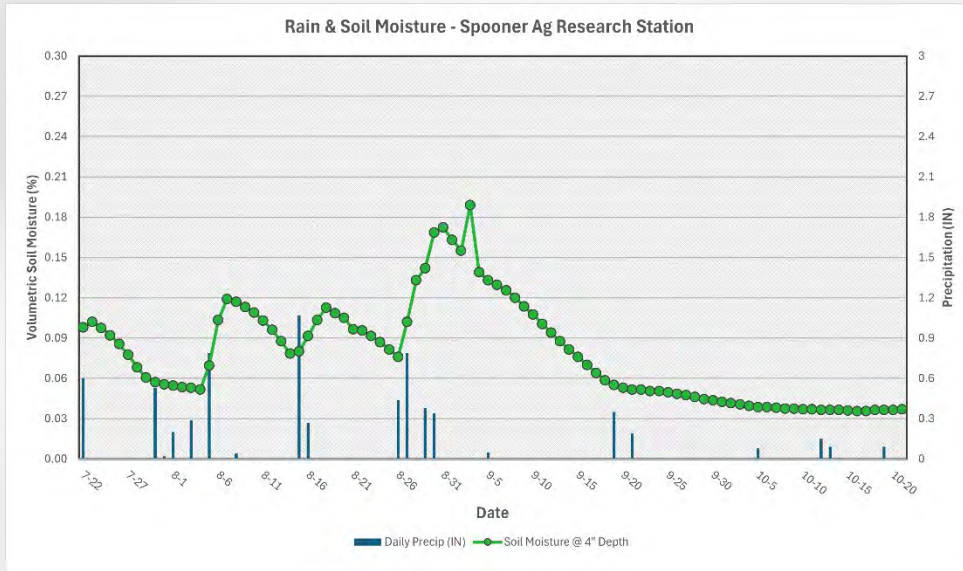
Saturday Oct. 19th @ Midday



Monday Oct. 21st @ Midday



Wisconet Soil Moisture – 4" Depth



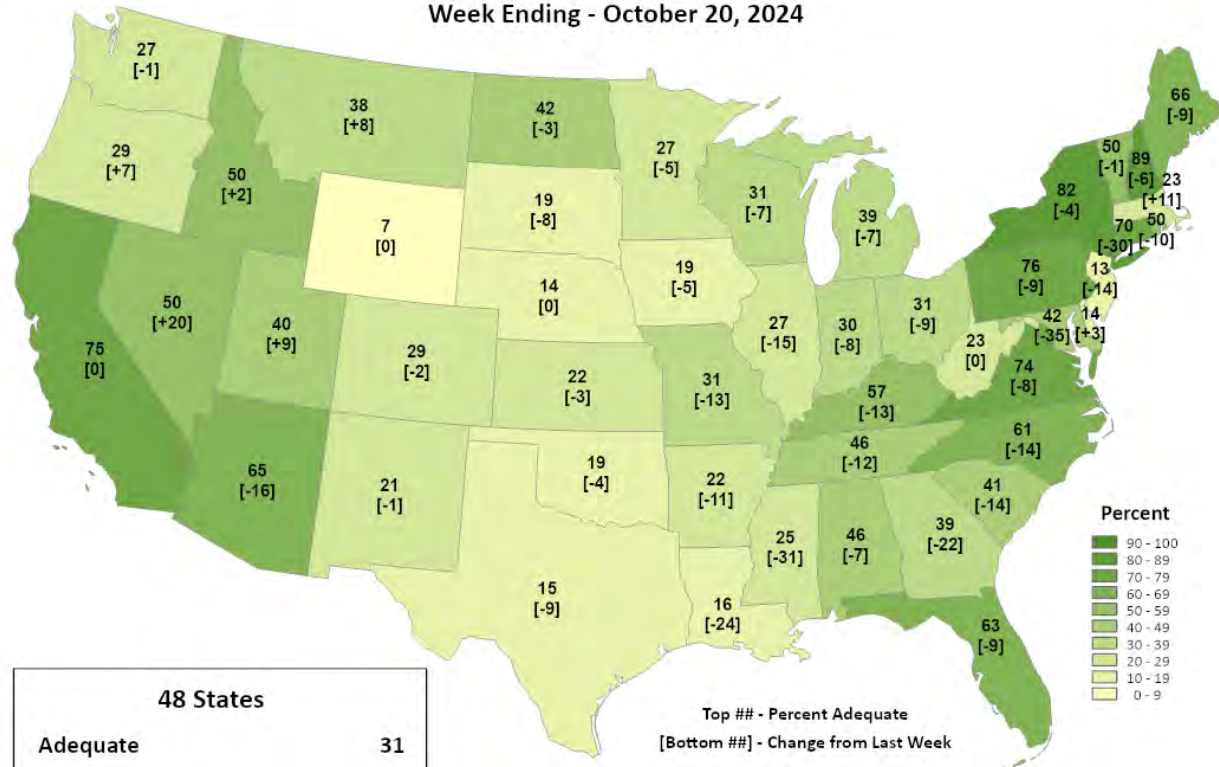
3-month trend in soil moisture (4") & precip at UW research stations

NASS Topsoil & Subsoil Moisture



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

Topsoil Moisture Percent Adequate Week Ending - October 20, 2024



48 States	
Adequate	31
Change from Last Week	-6

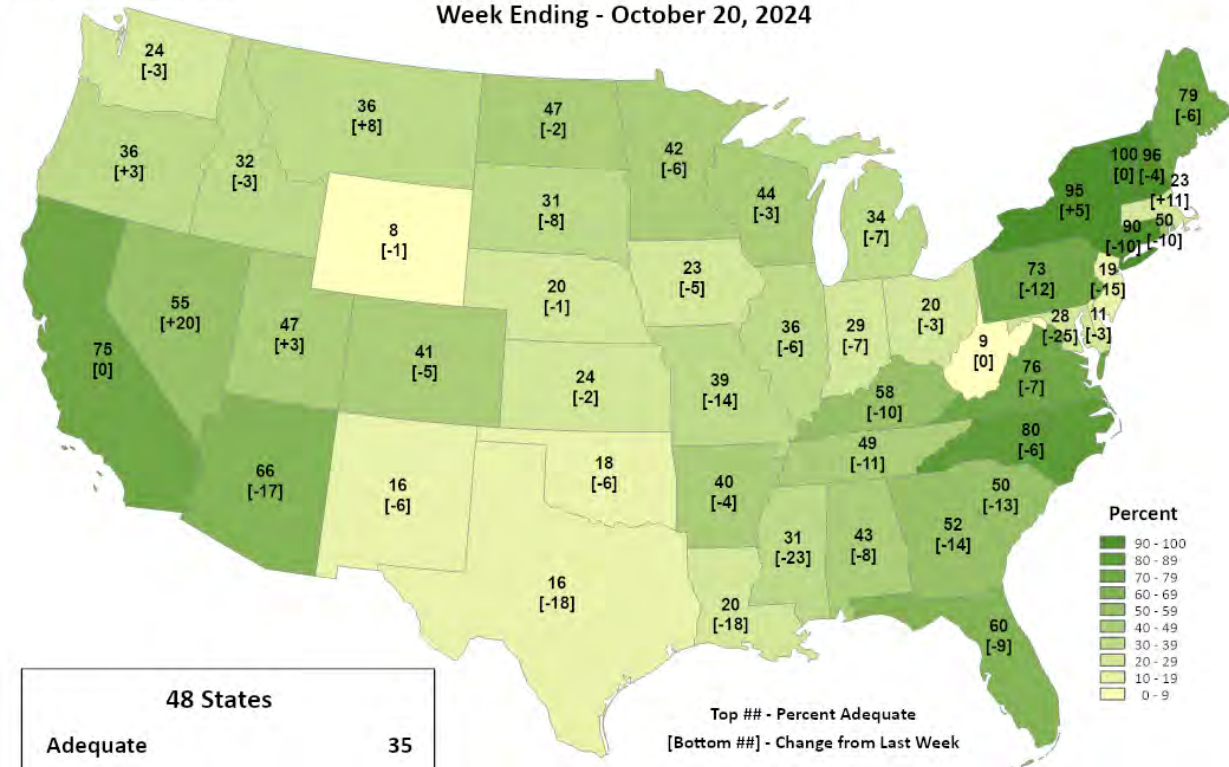
Top ## - Percent Adequate
[Bottom ##] - Change from Last Week

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



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

Subsoil Moisture Percent Adequate Week Ending - October 20, 2024



48 States	
Adequate	35
Change from Last Week	-7

Top ## - Percent Adequate
[Bottom ##] - Change from Last Week

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

US Drought Monitor

U.S. Drought Monitor Midwest

October 15, 2024

(Released Thursday, Oct. 17, 2024)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	17.18	82.82	52.79	17.96	2.27	0.66
Last Week <small>10-08-2024</small>	18.38	81.62	41.55	12.60	2.12	0.66
3 Months Ago <small>07-16-2024</small>	87.34	12.66	3.73	0.67	0.00	0.00
Start of Calendar Year <small>01-02-2024</small>	22.92	77.08	50.25	20.76	4.20	0.00
Start of Water Year <small>10-01-2024</small>	21.78	78.22	28.15	6.40	1.46	0.66
One Year Ago <small>10-17-2023</small>	17.46	82.54	50.00	18.25	4.66	0.00

Intensity:

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

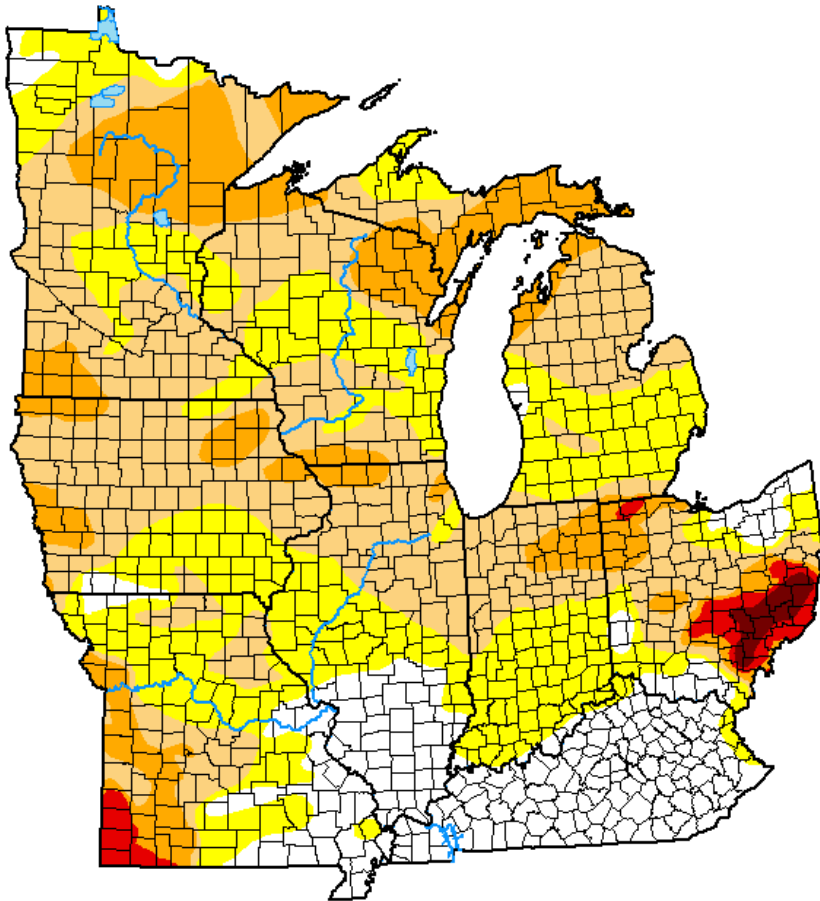
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

Brian Fuchs
National Drought Mitigation Center



droughtmonitor.unl.edu



- Compared to last week:

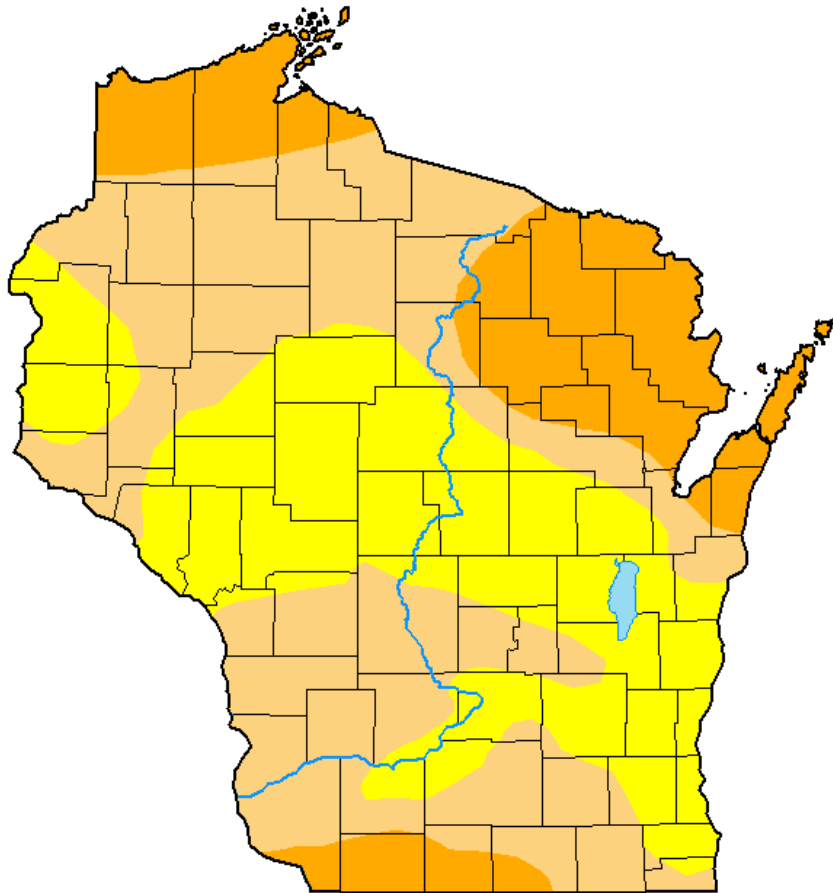
- **Increases in D1** drought coverage region-wide (**up 11%**) from last week. **D1 expansion** in southern & western WI.
- **Addition of D2** in parts of WI along the Illinois border. Regionally, D2 is **up 5%** from last week.
- **Extreme to exceptional drought (D3-D4)** remains in place over SE Ohio and in SE Missouri.

Note: D0 is not considered drought.

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

US Drought Monitor

U.S. Drought Monitor Wisconsin



October 15, 2024

(Released Thursday, Oct. 17, 2024)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	63.85	20.81	0.00	0.00
Last Week 10-08-2024	0.43	99.57	44.54	18.00	0.00	0.00
3 Months Ago 07-16-2024	100.00	0.00	0.00	0.00	0.00	0.00
Start of Calendar Year 01-02-2024	33.04	66.96	37.34	16.80	0.26	0.00
Start of Water Year 10-01-2024	18.68	81.32	29.83	8.45	0.00	0.00
One Year Ago 10-17-2023	6.49	93.51	68.19	23.65	3.04	0.00

Intensity:



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National Drought Mitigation Center



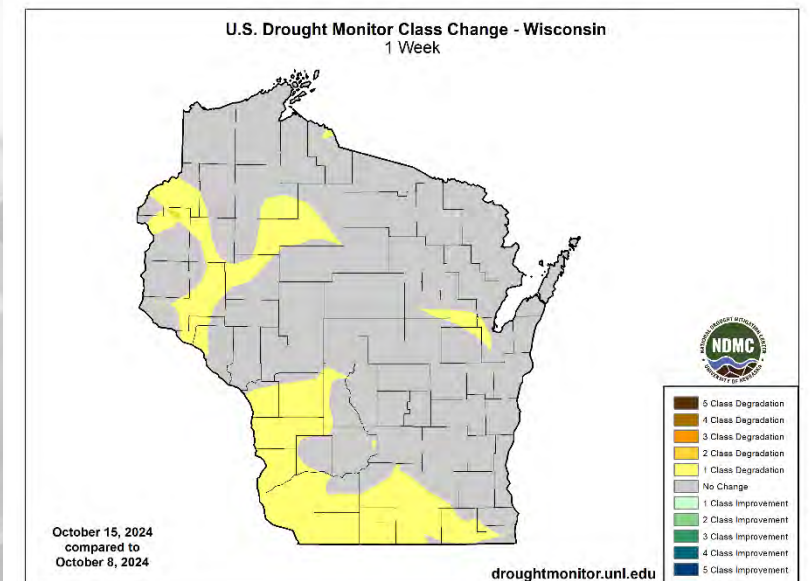
droughtmonitor.unl.edu

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

Amount of state in:

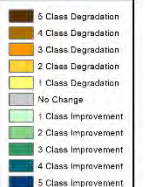
- **D1-D4** – 63.9% ↑
- **D2-D4** – 20.8% ↑
- **D3-D4** – 0.0% --
- **D4** – 0.0% --

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

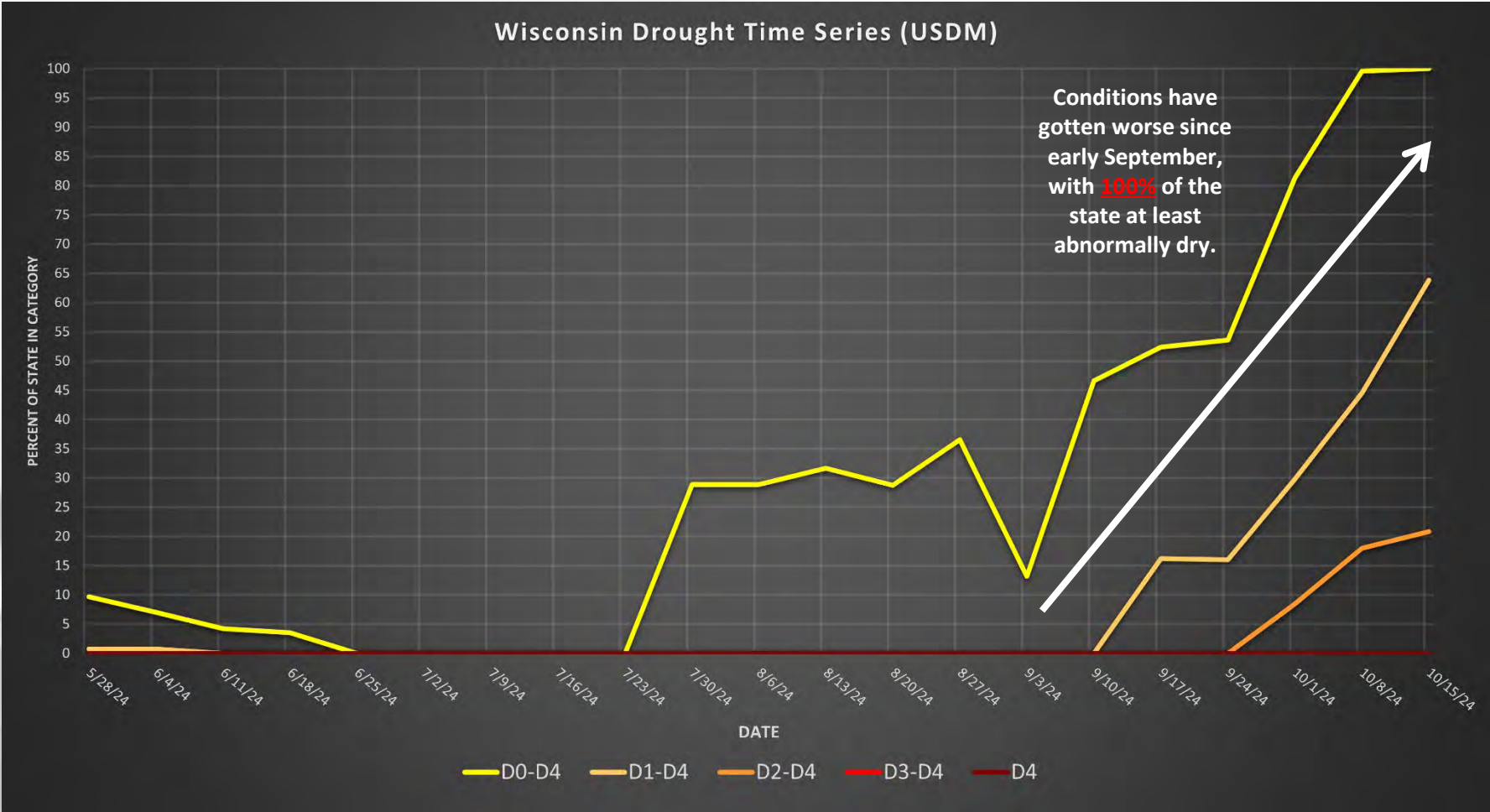


October 15, 2024
compared to
October 8, 2024

droughtmonitor.unl.edu

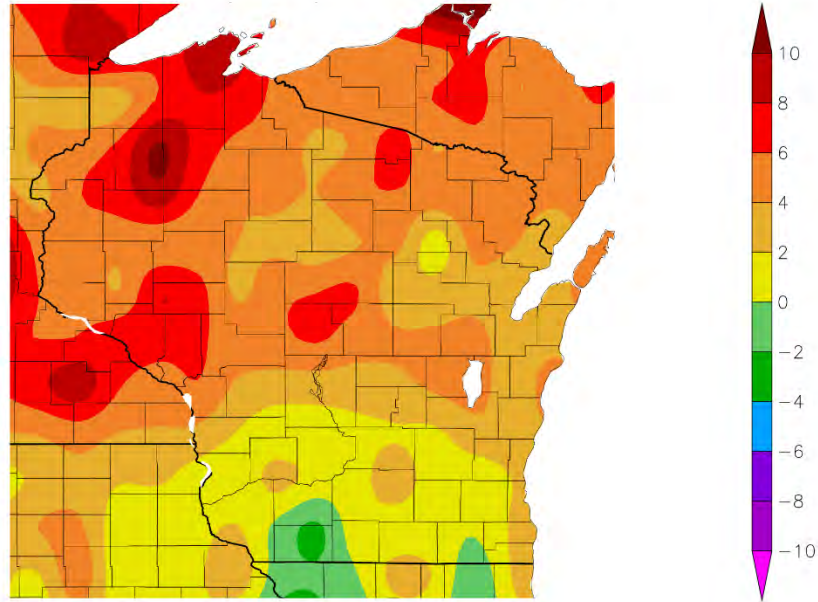


USDM Time Series



7 Day Temperatures

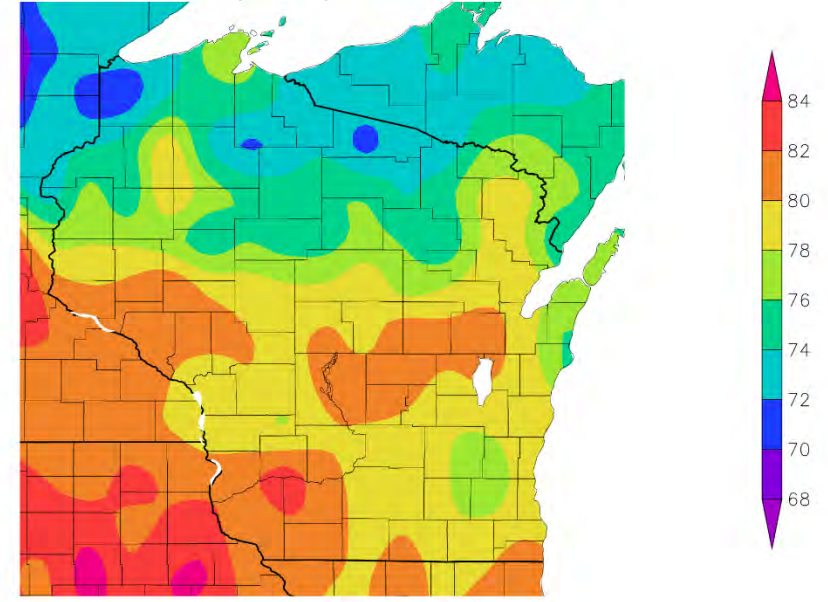
Departure from Normal Temperature (F)
10/15/2024 – 10/21/2024



Generated 10/22/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Highest 1-Day Maximum Temperature (F)
10/15/2024 – 10/21/2024



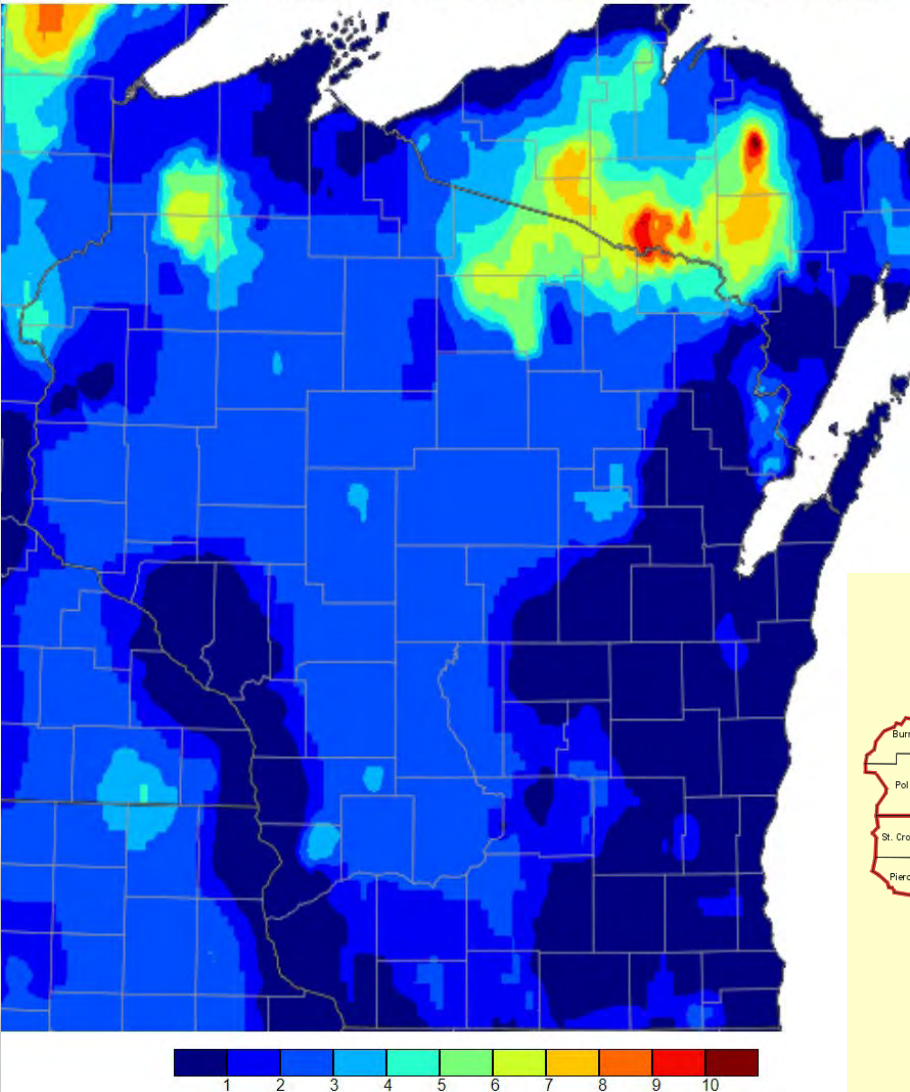
Generated 10/22/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

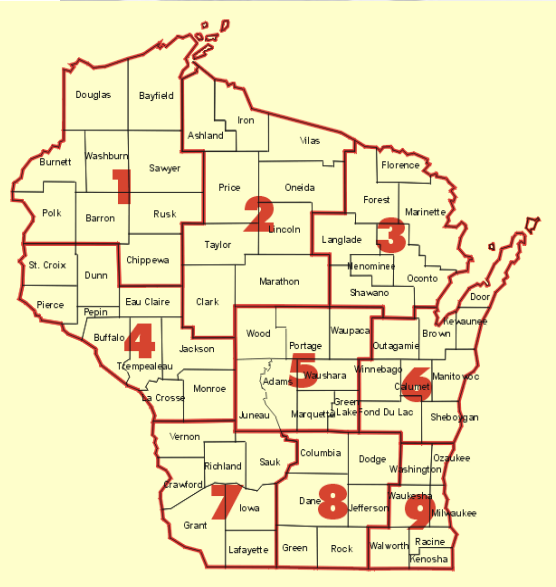
- The north was **2-6°F above** climatological normal for most, with pockets of **>6°F** above normal.
- Conditions were more seasonal in the south → **within -/+2°F** of normal.
- Weekly maximums are still **topping 80°F** in the west and Central Sands.

Cold Fall Nights

Number of Days Min Temperature ≤ 28 - October 1, 2024 through October 21, 2024



Days with an overnight low of 28°F or below between October 1-21.

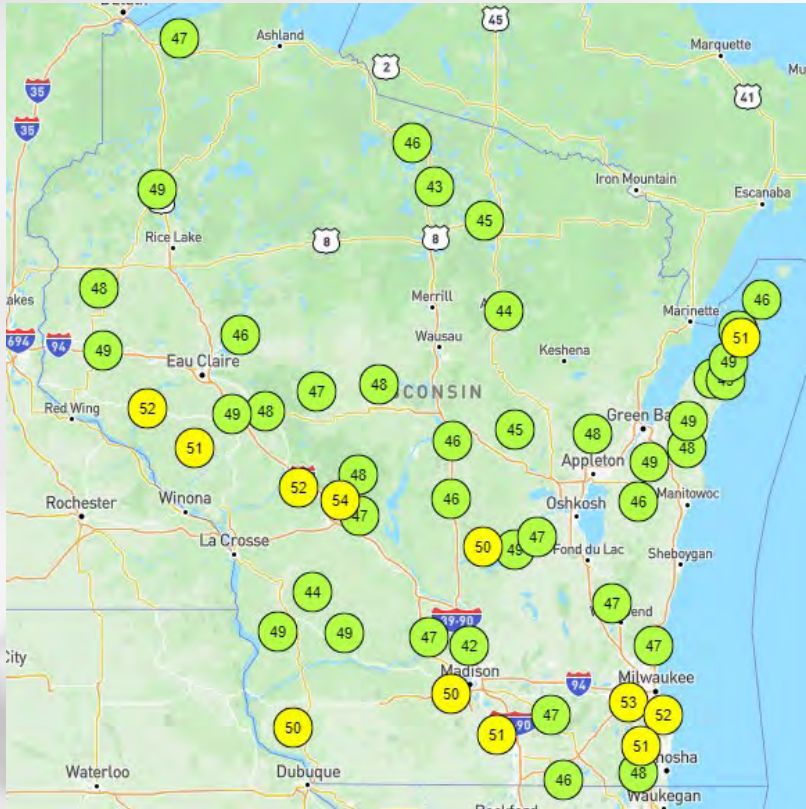


Climate Division	Avg. First Fall Freeze ($\leq 28^\circ\text{F}$) (1950-2023)
WI01	October 5
WI02	October 5
WI03	October 6
WI04	October 14
WI05	October 11
WI06	October 23
WI07	October 16
WI08	October 18
WI09	October 25

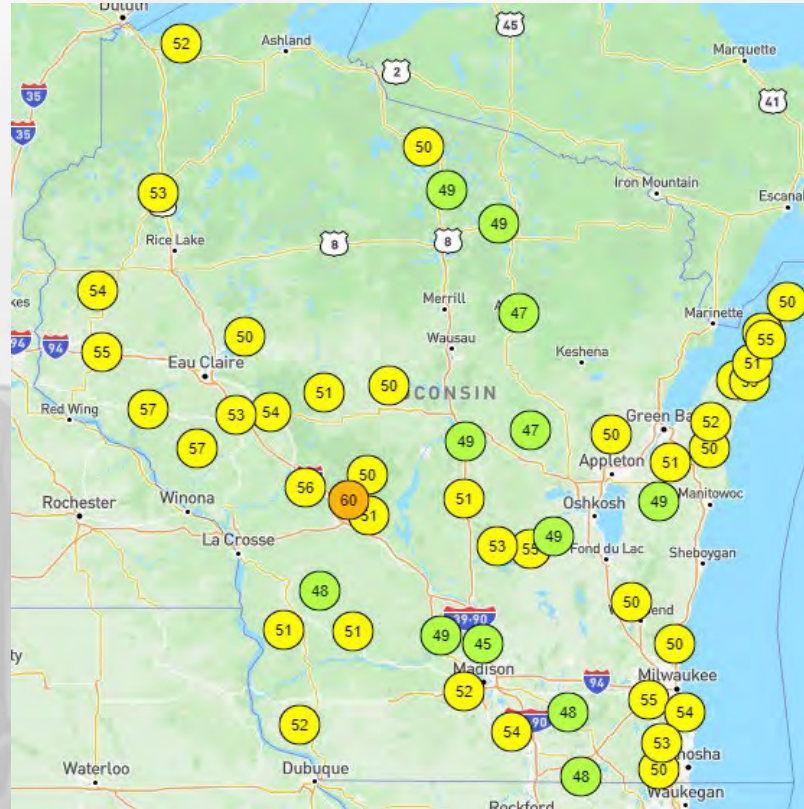
Data in the table represents the average first date in the fall with a minimum temperature at or below 28°F. (Source: MRCC)

Wisconet Soil Temp (4" Depth)

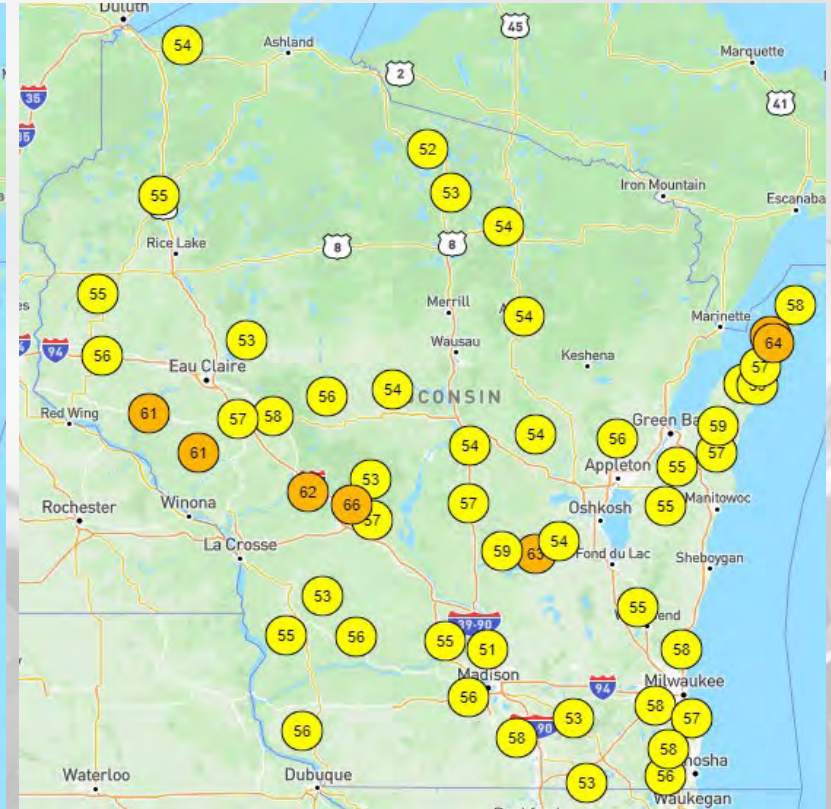
Thursday Oct. 17th @ Midday



Saturday Oct. 19th @ Midday

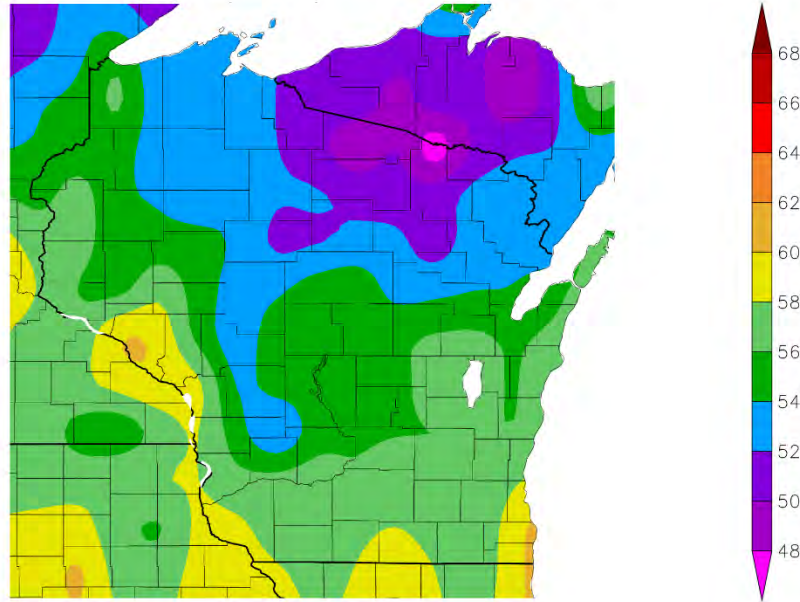


Monday Oct. 21st @ Midday



30 Day Temperatures

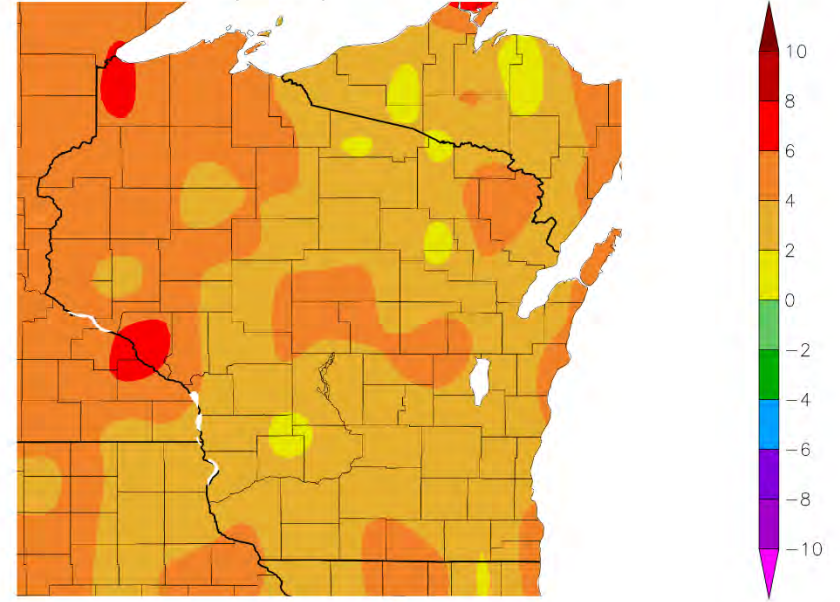
Temperature (F)
9/22/2024 - 10/21/2024



Generated 10/22/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Temperature (F)
9/22/2024 - 10/21/2024



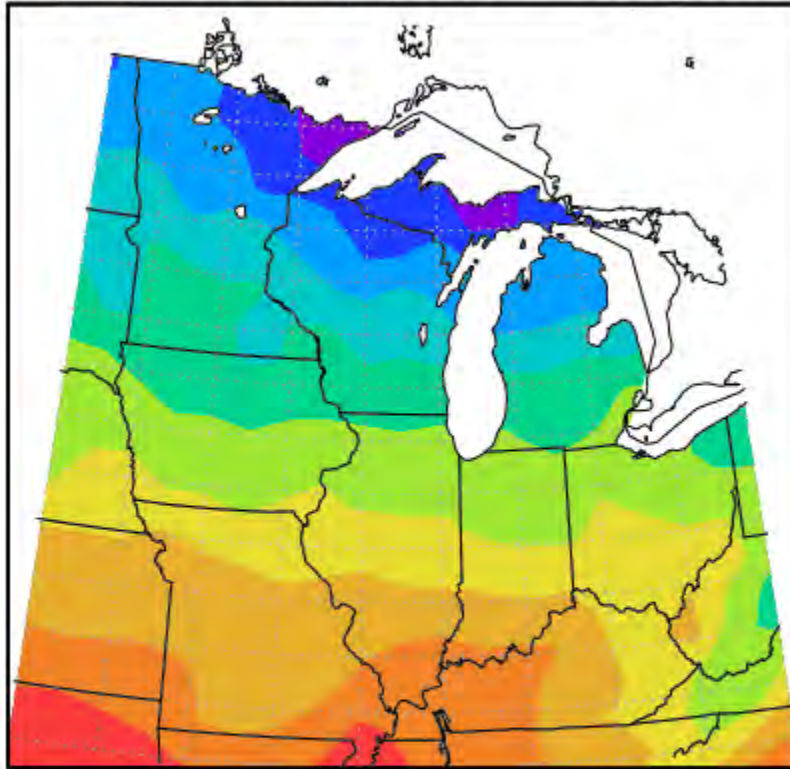
Generated 10/22/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

- Temperatures for the past month ranged from **56-60°F** in the S & W to **50-54°F** in the far NC.
 - **2-4°F above normal** for most of the state compared to climatological (1991-2020) average.
 - Temps more above the climatological average in the NW compared to the south and east.

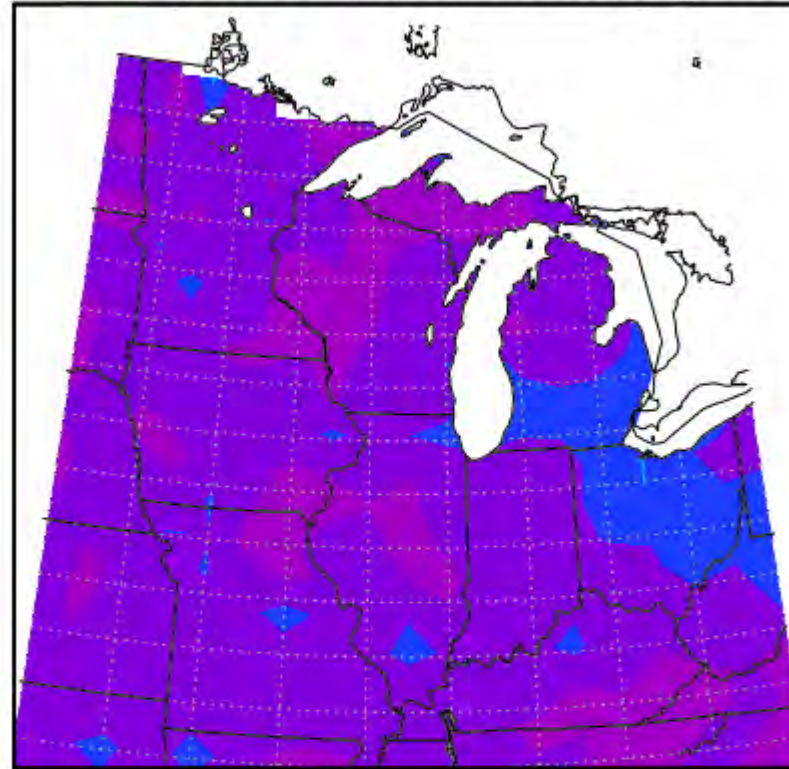
Growing Degree Days (Base = 50°F; Since April 1)

Total MGDD from 4/1/2024 to 10/21/2024



Midwestern Regional Climate Center
Purdue University

MGDD Departure, 4/1/2024 to 10/21/2024



Midwestern Regional Climate Center
Purdue University
Normals Period, 1991–2020

- **3000-3300** GDD in the far S to **2100-2700** GDD in the N.
- With the warm fall that we've had, GDD accumulation is running **≥200 GDD ahead of normal pace.**

To calculate GDD for your corn variety and planting date, use this [tool](#).

To see specific degree models for pests in your location, use the [Vegetable Disease & Insect Forecasting Network](#).

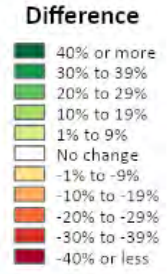
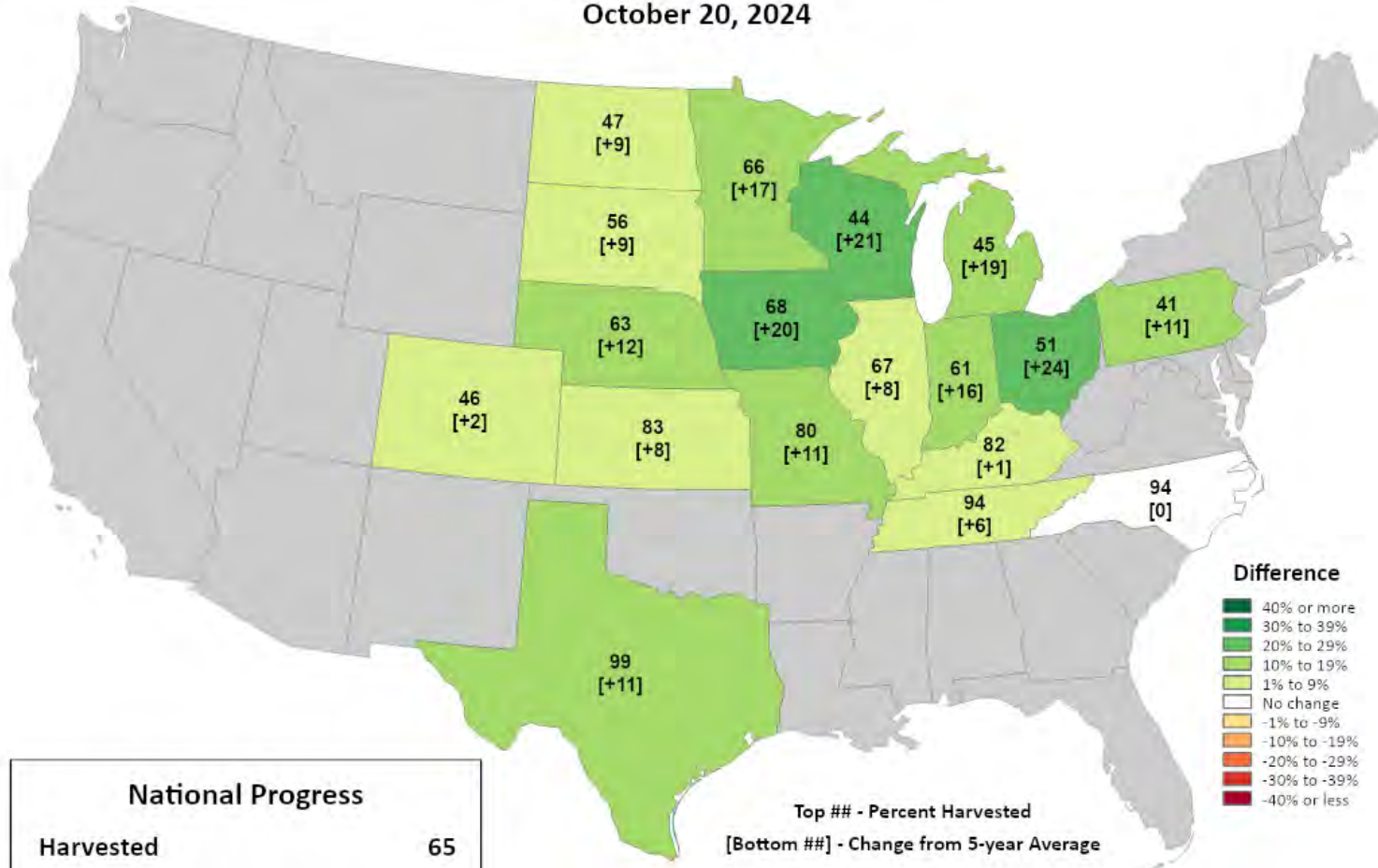
https://mrcc.purdue.edu/climate_watch

NASS Crop Progress – Corn



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

Corn Progress Percent Harvested October 20, 2024



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

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

National Progress	
Harvested	65
Change from 5-year Average	+13

From the October 21 Wisconsin Crop Progress & Condition [Report](#):

- The corn crop is **94% mature**.
- Corn for grain was **44% harvested**, 13 days ahead of last year and **12 days ahead of the 5-year average**.
- Corn for silage harvest was **96% complete**.
- Condition increased 2 percentage points to **63%** good to excellent.

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

NASS Crop Progress – Soybean

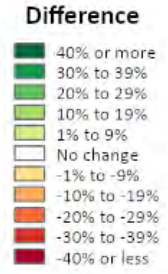
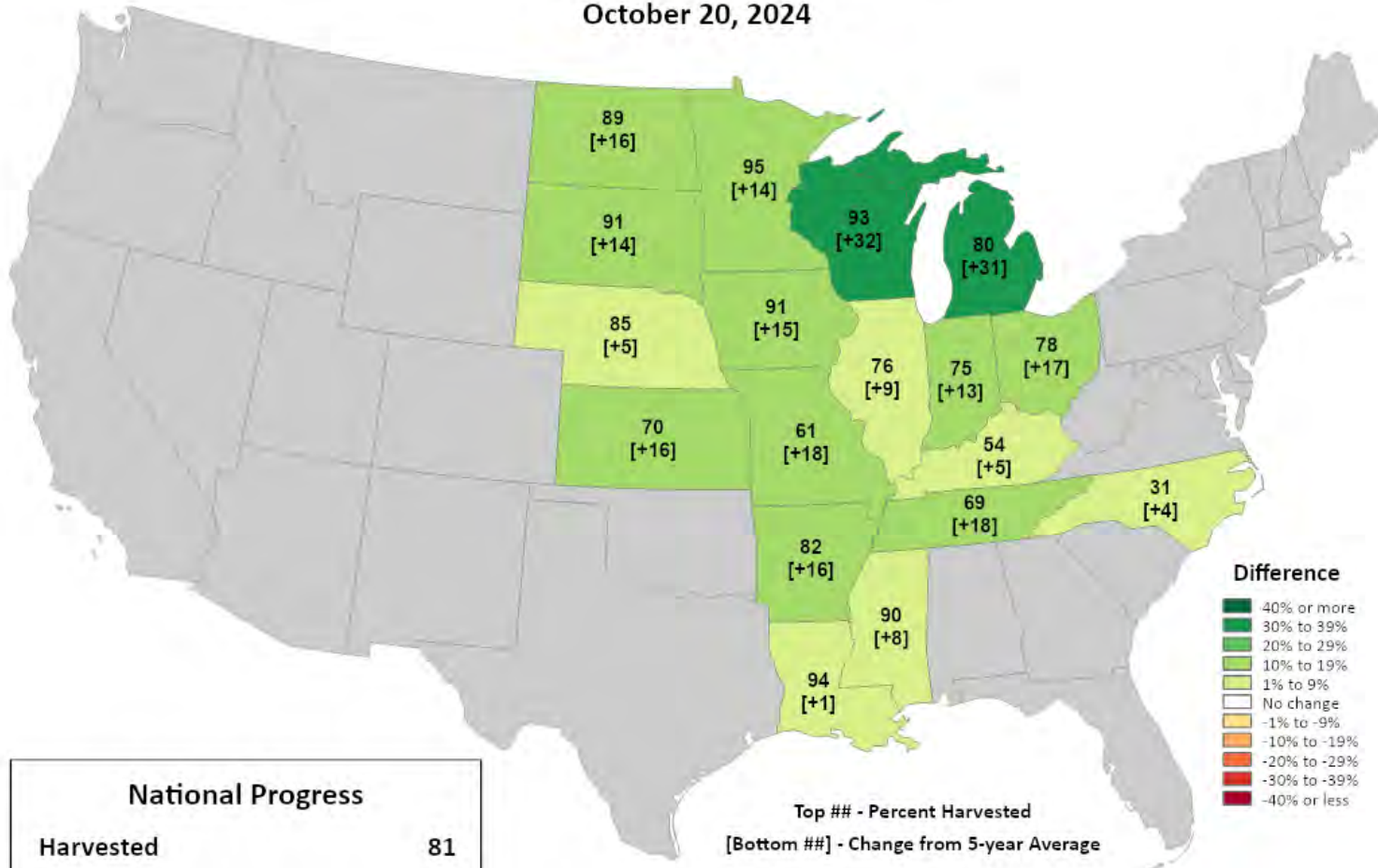


This product was prepared by the
USDA Office of the Chief Economist (OCE)
World Agricultural Outlook Board (WAOB)

Soybeans Progress

Percent Harvested

October 20, 2024



National Progress	
Harvested	81
Change from 5-year Average	+14

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

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

From the October 21 Wisconsin Crop Progress & Condition [Report](#):

- Soybean harvest was **93% complete**, **4 weeks ahead** of last year and average.

NASS Crop Progress – Wheat

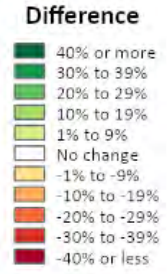
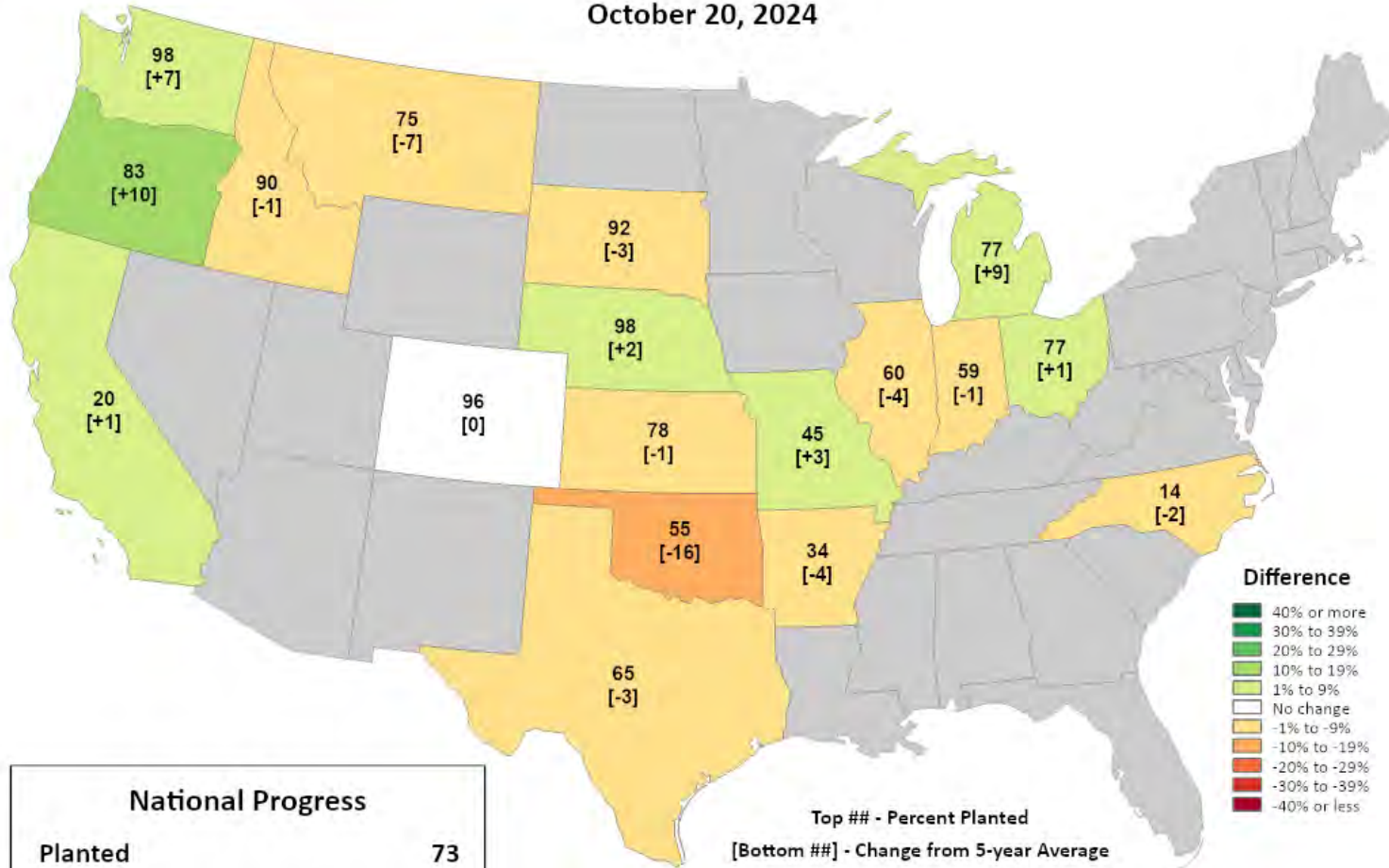


This product was prepared by the
USDA Office of the Chief Economist (OCE)
World Agricultural Outlook Board (WAOB)

Winter Wheat Progress

Percent Planted

October 20, 2024



National Progress	
Planted	73
Change from 5-year Average	-3

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

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

From the October 21 Wisconsin Crop Progress & Condition Report:

- Winter wheat planting was **91% complete**, 1 week ahead of last year and **10 days ahead** of average.
- The winter wheat crop is **62%** emerged.
- Winter wheat condition was rated **75% good to excellent**.

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

NASS Pasture & Range Conditions

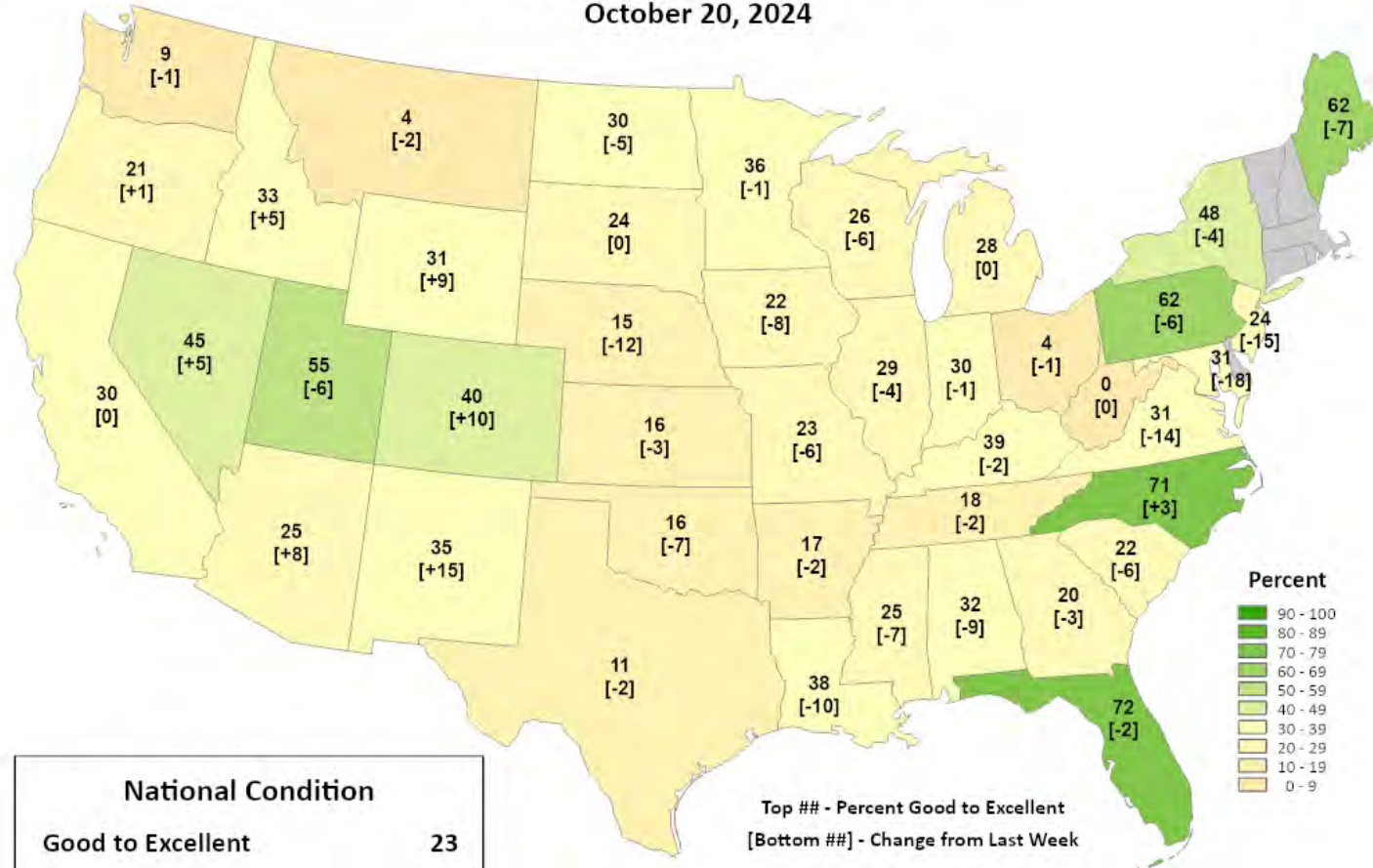


This product was prepared by the
USDA Office of the Chief Economist (OCE)
World Agricultural Outlook Board (WAOB)

Pasture and Range Conditions

Percent Good to Excellent

October 20, 2024



National Condition	
Good to Excellent	23
Change from Last Week	+1

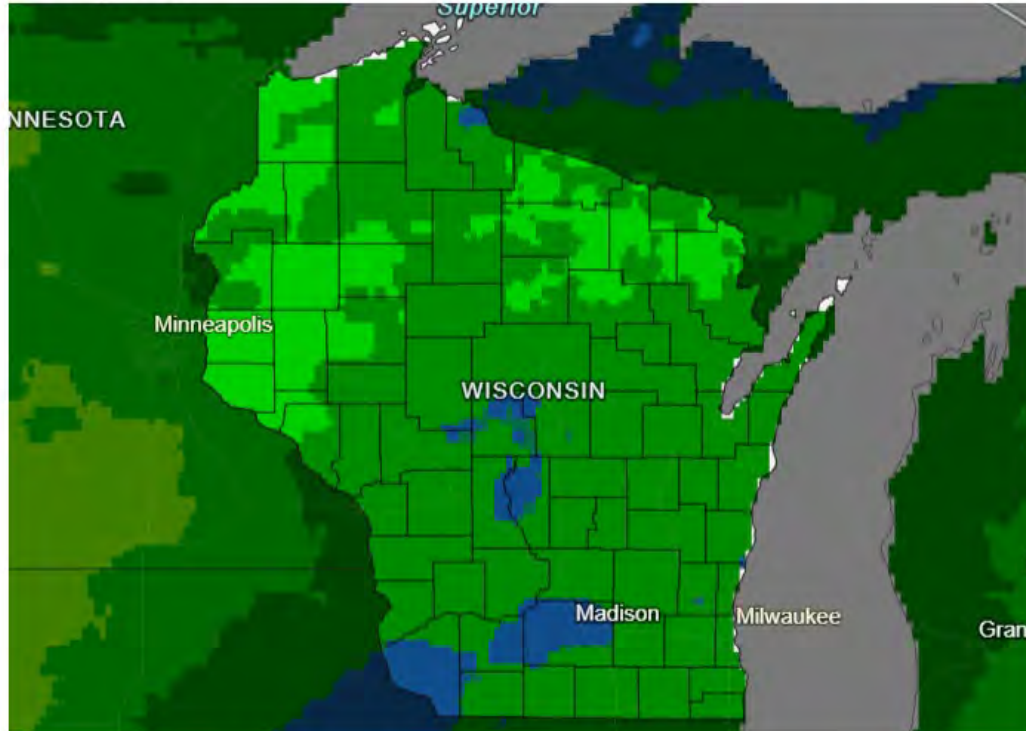
Top ## - Percent Good to Excellent
[Bottom ##] - Change from Last Week

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

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

7 Day Precip Forecast

7-Day Quantitative Precipitation Forecast for October
22-29, 2024



Predicted Inches of Precipitation



Source(s): National Weather Service Weather Prediction Center
Last Updated: 10/22/24

Drought.gov

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

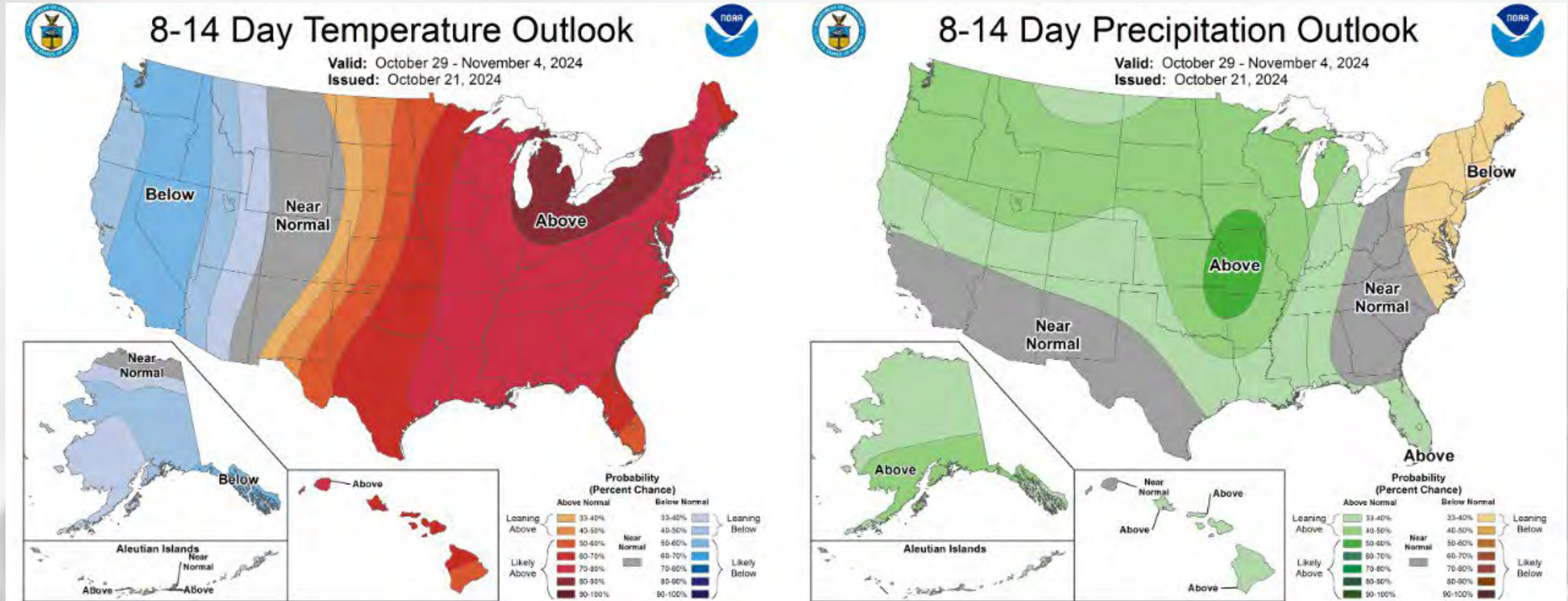
- Location: Best chances in the **SW, SC, and the C. Sands**, albeit for totals <1”.

- Timing: Best chances for rain **Thursday night into Friday morning**.

Forecast for 10/22/24 thru 10/29/24
(Begins at 7pm CDT)

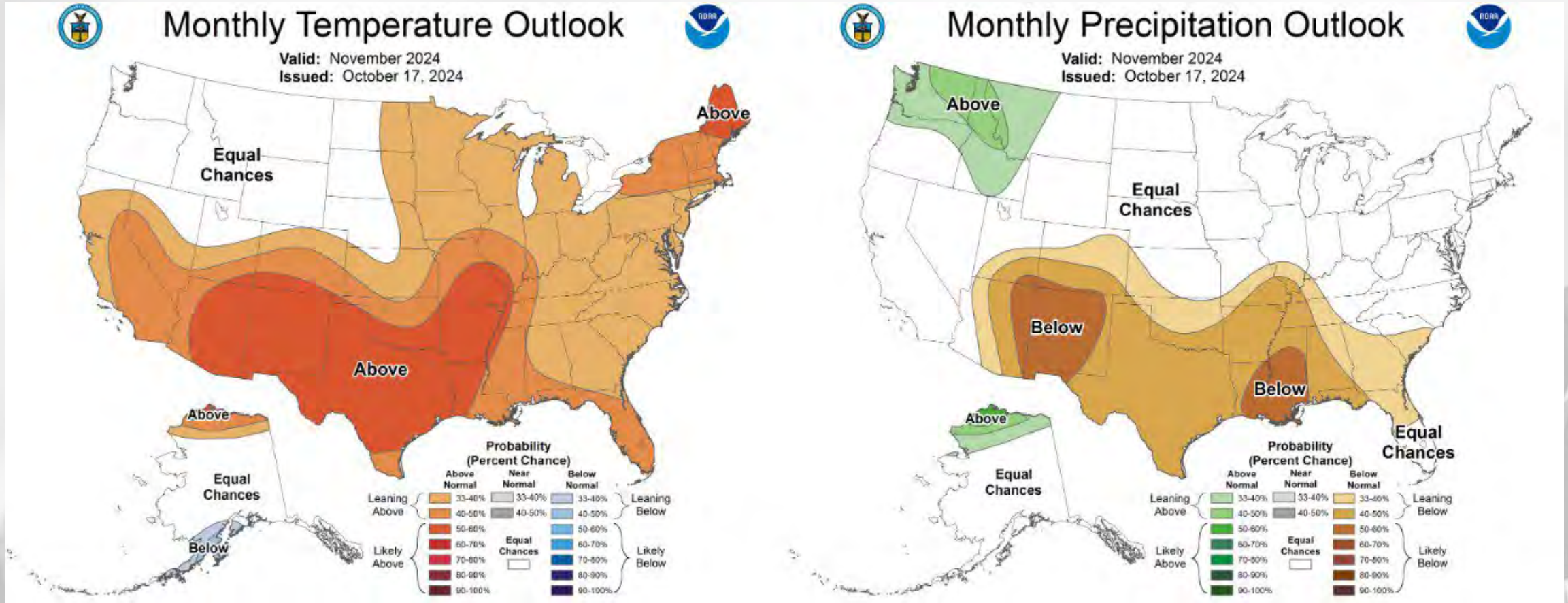
<https://www.wpc.ncep.noaa.gov/qpf/p168i.gif>
<https://www.drought.gov/states/wisconsin>

8-14 Day Temp & Precip Outlook



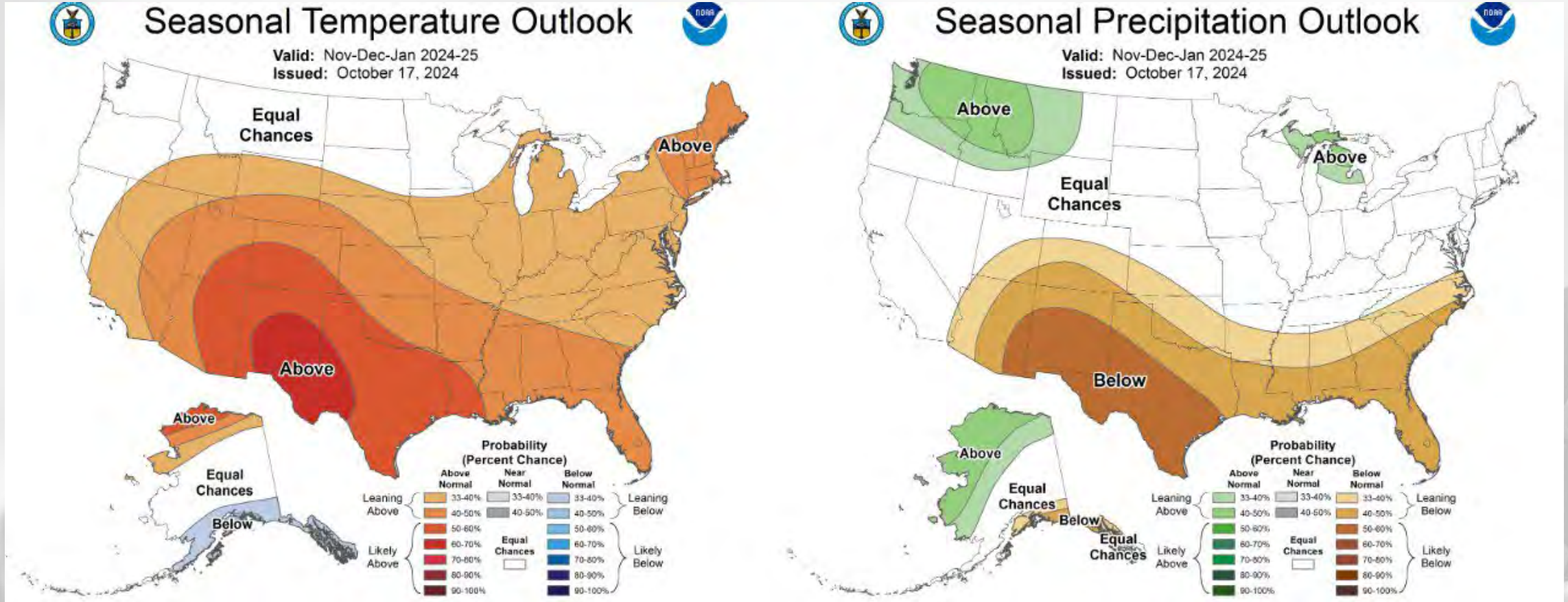
October-November Transition: Temperatures likely to remain above normal, with precipitation leaning towards being above normal.

30 Day Temp & Precip Outlook



Month of November: Temperatures leaning towards above normal, with precipitation uncertain (equal chances).

90 Day Temp & Precip Outlook



Late Fall into Winter: Temperatures showing equal chances in the north and leaning above normal in the south. Precipitation uncertainty with equal chances.

Take-Home Points

Current Conditions:

- **The dryness continued** for another week for the state. Some in the far NW & SE received a half inch or more of precip. Many stations in the west and far south have experienced **little to no precipitation** in October 2024.
- Temperatures last week were once again **warmer than normal**, except for the southern region that was **closer to seasonal**.

Impact:

- Large swaths of WI are now experiencing **very dry soil moisture percentiles**.
 - USDM drought coverage expanded in the west and south, with **D2 drought now in the south**.
- **Corn & soybean harvest** is running **well ahead of normal pace** with the dry conditions.
- Winter wheat planting is nearly complete, with **62%** of the crop emerged in WI fields.
- GDDs are running **well ahead of normal pace**, with corn maturity **complete/nearly complete**.

Outlook:

- **Statewide chances** for precip this upcoming week; with the **SW and Central Sands** having the best chances.
- The transition from October to November has a higher probability to be **warmer and drier than normal** but keep an eye out for some dryness relief with a **lean toward a wetter-than-normal** conditions.
- Late fall into early 2025 is more **uncertain** for temperatures and precip.
 - **La Niña** is favored to be in place by September-November (according to the CPC); **less of a chance** for having a colder-than-normal winter.

Agronomic Considerations

Crop Development

- Monitor moisture in crops closely as the lack of precipitation and mid-season disease pressure has led to some crops drying out earlier than usual.
- Evaluate soil temperatures and moisture for the opportunity for cover crops after crops come off.
- Be aware that nitrogen is still mobile as soil temperatures are still above 50F in most places.
- As crops come off, consider diverse cover crop mixes to help mitigate any compaction that may have occurred this spring and protect soil heading into fall. Tools available here for [cover crop selection](#) and their [use in a forage rotation](#).

Manure Applications

- Runoff risk is low throughout the state in the next week. Be mindful of the possibility of runoff and plan manure applications accordingly. Check the DATCP runoff risk advisory forecast [here](#).
- Consider the relationship between manure and cover crops, learn more [here](#).

Forage Management

- Look out for herbicide carryover, volunteers in late summer seeding of alfalfa into wheat. [Read more](#).
- Fall alfalfa cutting can affect persistence, [read more](#) and use our [new tool](#) to make informed decisions.
- Be mindful of prussic acid concerns in fields with standing sorghums.

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

Citizen Science Opportunity

CoCoRaHS – Community Collaborative Rain, Hail, & Snow Network

The Mission

(From cocorahs.org)

- Provide accurate high-quality precipitation data for end-users;
- Increasing the density of precipitation data available throughout the country;
- Encouraging citizens to have fun participating in meteorological science and heightening their awareness about weather;
- Providing weather education opportunities.



Sign Up Here:

<https://cocorahs.org/Content.aspx?page=application>

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Photo Credit: USDA



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