

# Wisconsin Ag Climate Outlook

*Week of September 2, 2024*

**Josh Bendorf**

Ag Climatologist, Midwest Climate Hub

[joshua.bendorf@usda.gov](mailto:joshua.bendorf@usda.gov)

**Bridgette Mason**

Assistant State Climatologist of Wisconsin

[bmmason2@wisc.edu](mailto:bmmason2@wisc.edu)

**Kristin Foehringer**

NRCS State Working Lands Climate Smart Specialist

[kristin.foehringer@usda.gov](mailto:kristin.foehringer@usda.gov)

**Steve Vavrus**

State Climatologist of Wisconsin

[sjvavrus@wisc.edu](mailto:sjvavrus@wisc.edu)

**Natasha Paris**

Crops Educator – Adams, Green Lake, Marquette, Waushara Cos.

[natasha.paris@wisc.edu](mailto:natasha.paris@wisc.edu)

**Dennis Todey**

Director, Midwest Climate Hub

[dennis.todey@usda.gov](mailto:dennis.todey@usda.gov)

# Key Points

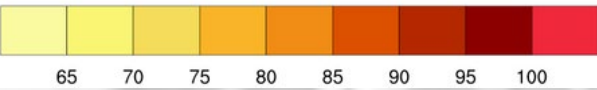
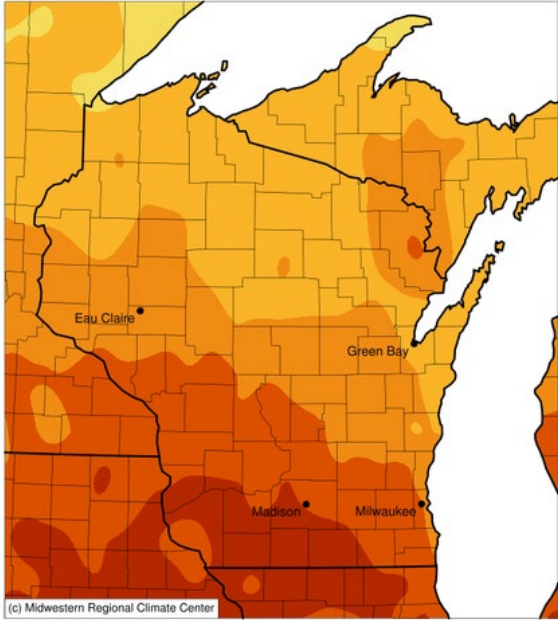
Navigate to select slides by clicking on the [links](#) below.

- 1) New daily max temp [records](#) were broken last week at many stations last week, with some [bouts of precip](#) across the state.
- 2) August was a relatively [dry month](#) in southern WI, with areas of D0 now showing up in that region on the [USDAM](#).
- 3) Precip chances exist [statewide](#) next week, with mid-September probabilities leaning towards [warmer and drier](#) than normal.

- 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](#).

# End of Summer (Record) Heat

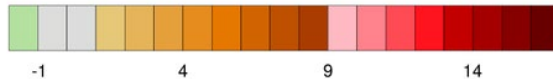
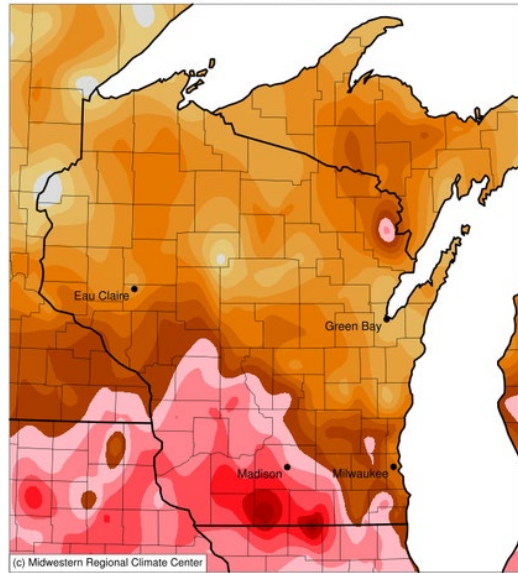
Average Maximum Temperature (°F)  
August 26, 2024 to August 29, 2024



*Highest temps from the  
4-day period  
( & a new record set )*

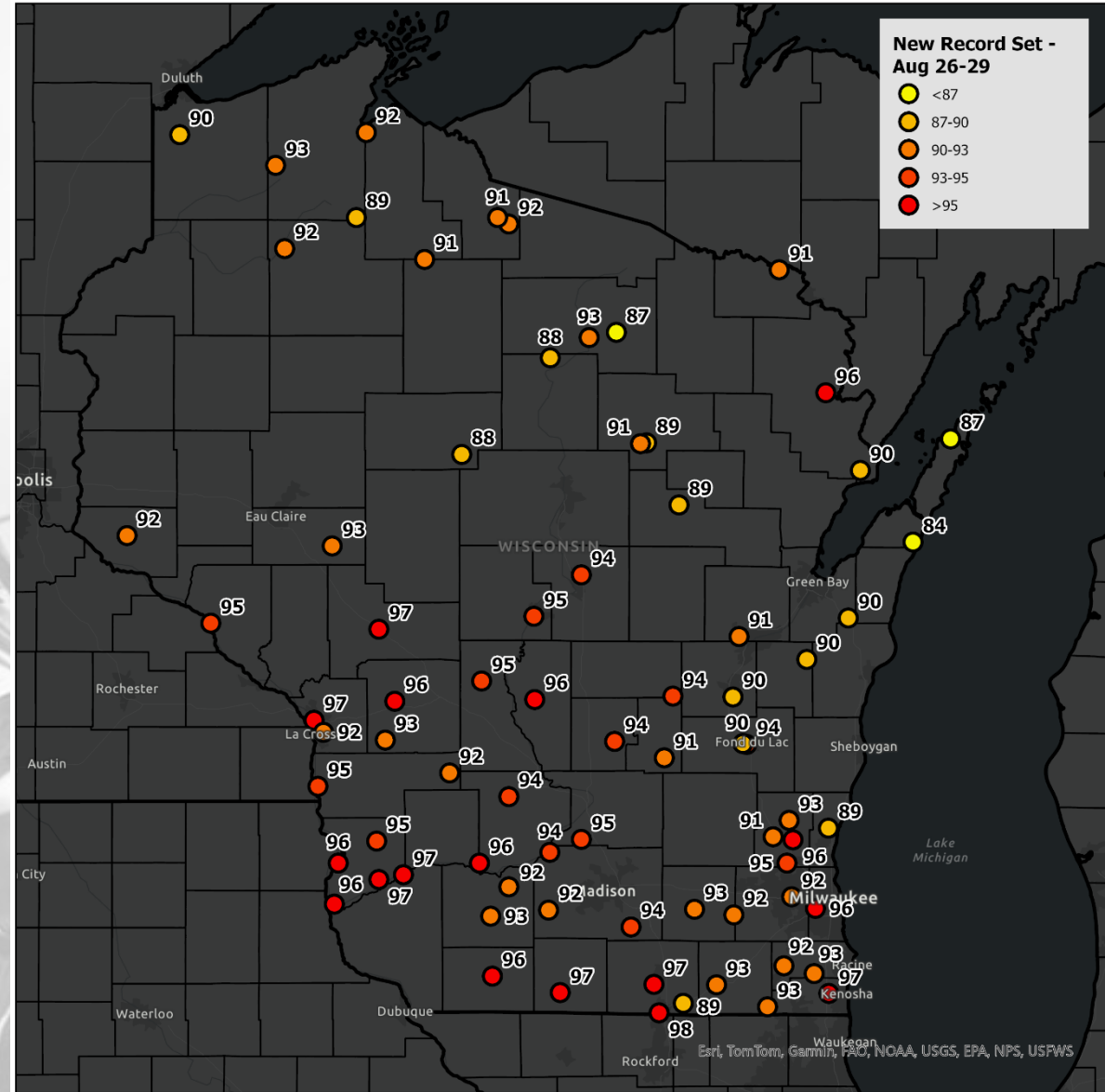


Average Maximum Temperature (°F): Departure from 1991-2020 Normals  
August 26, 2024 to August 29, 2024

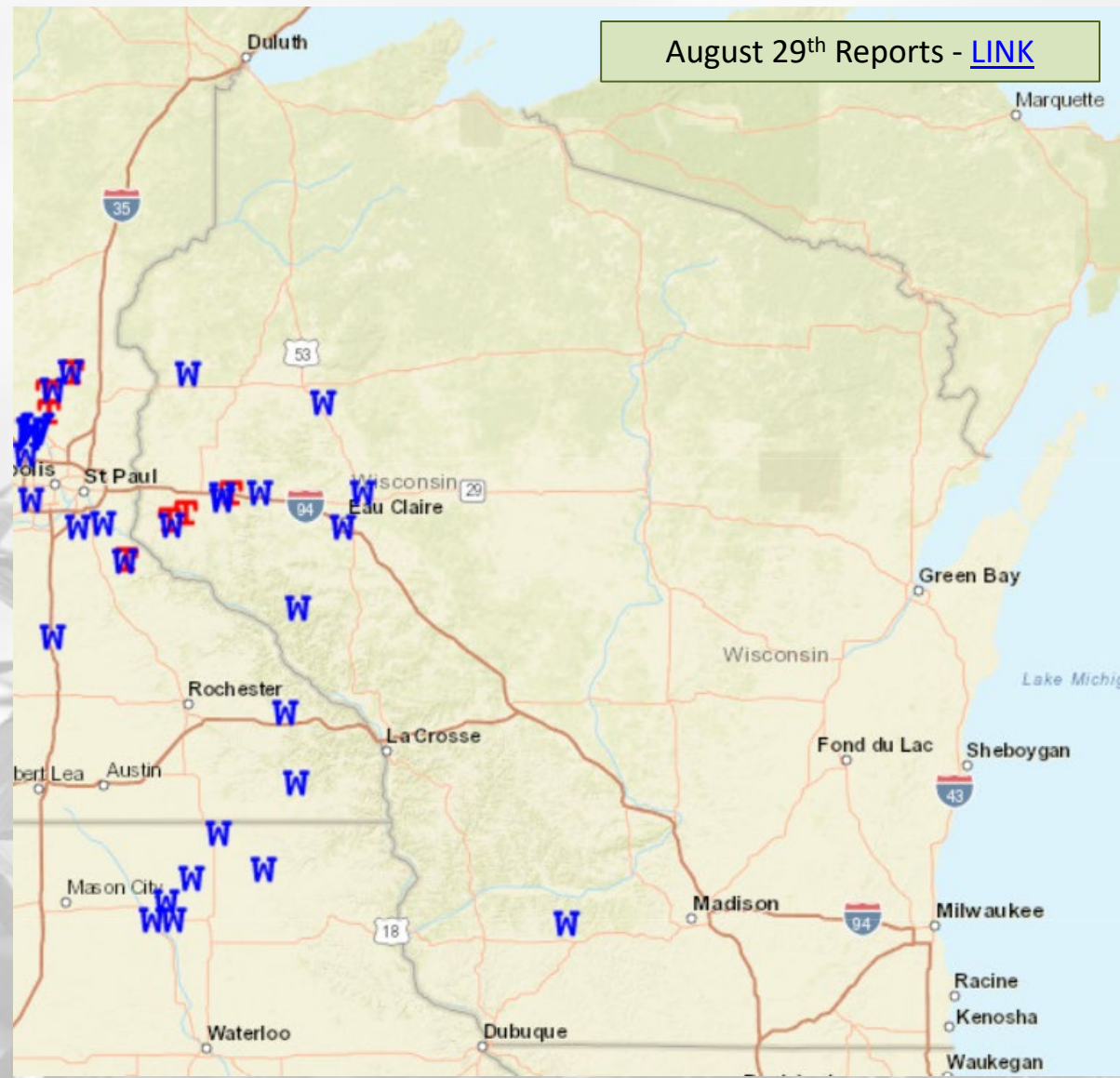
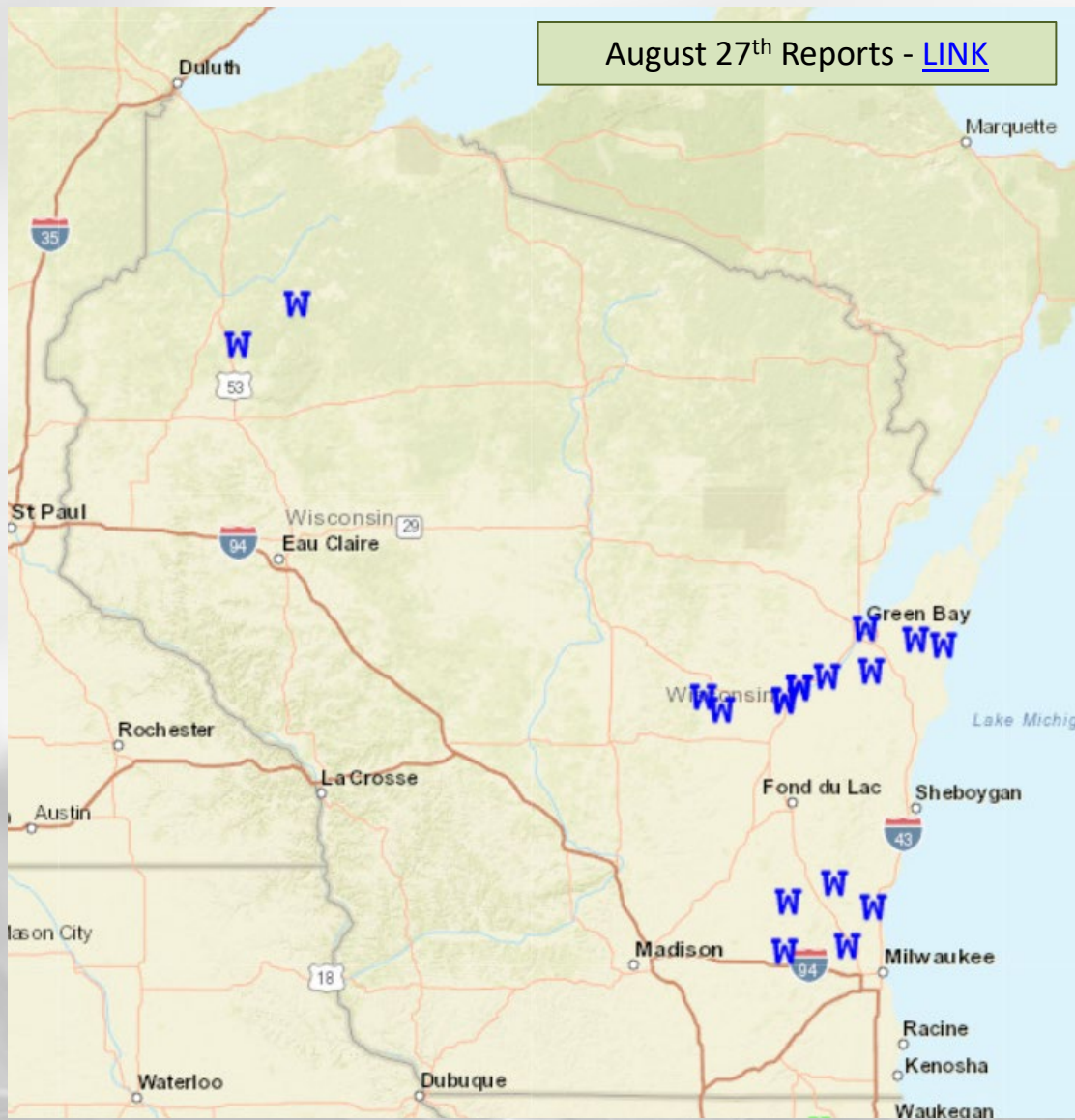


<https://mrcc.purdue.edu/CLIMATE>

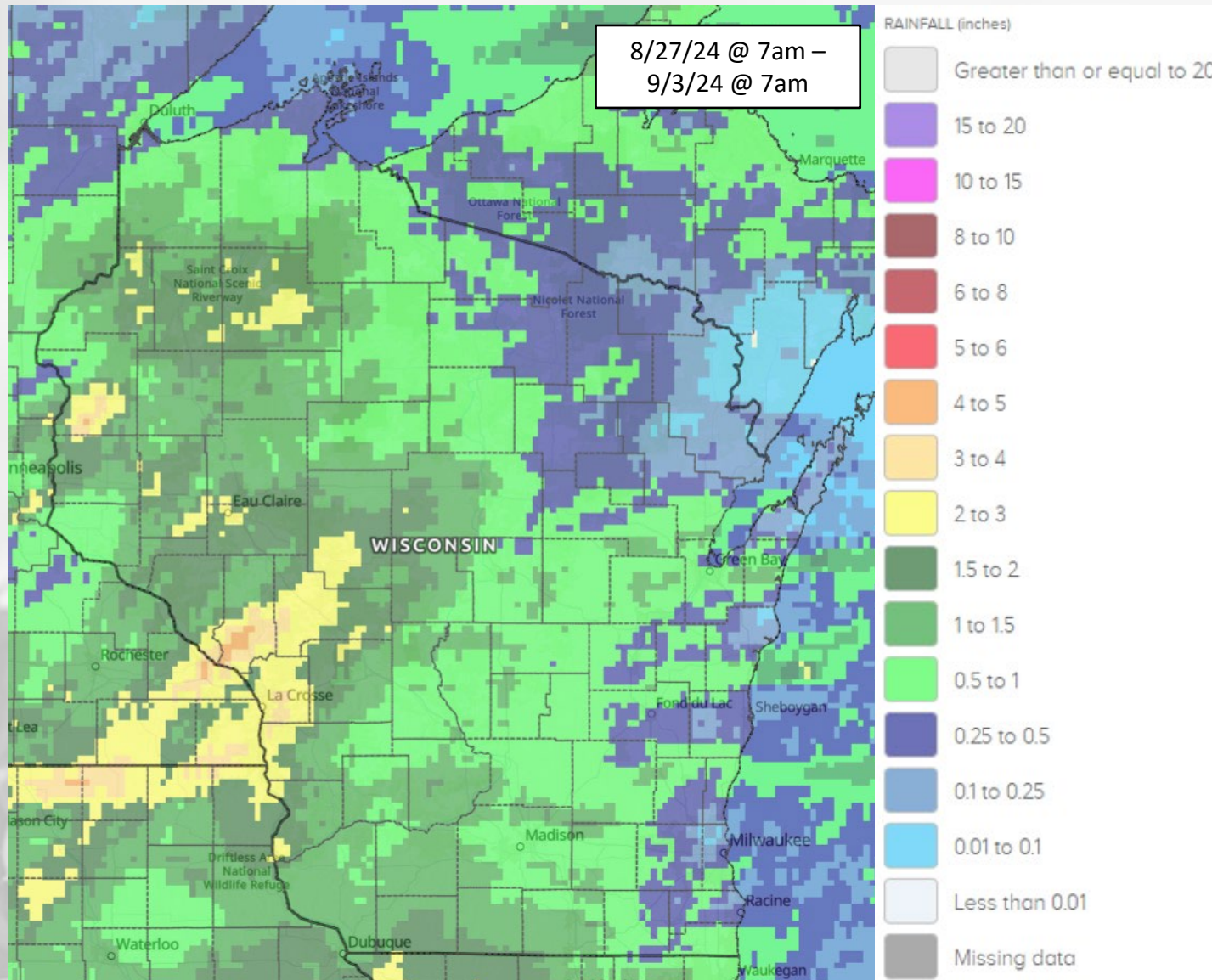
<https://scacis.rcc-acis.org/>



# Severe Storms

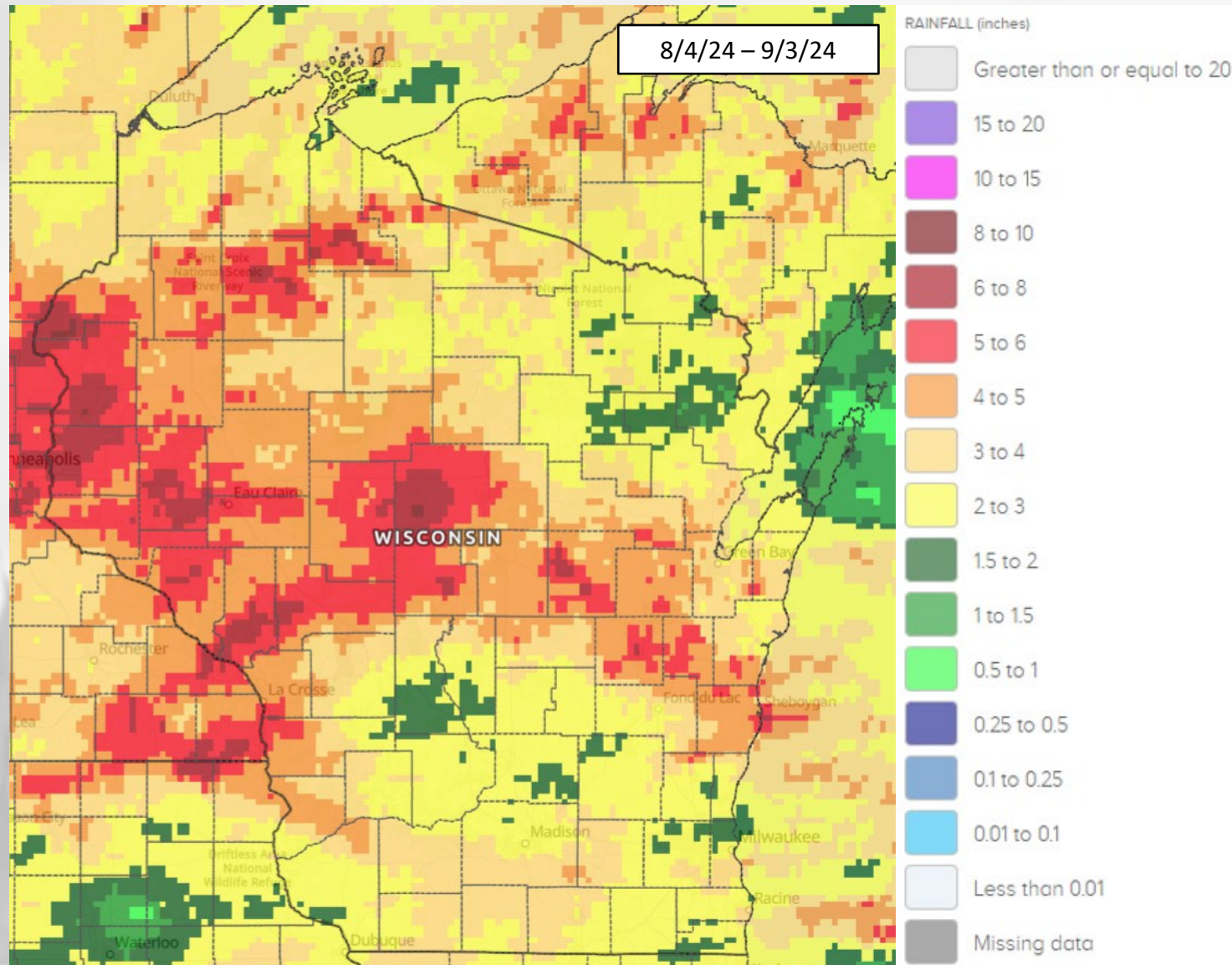


# 7 Day Precip



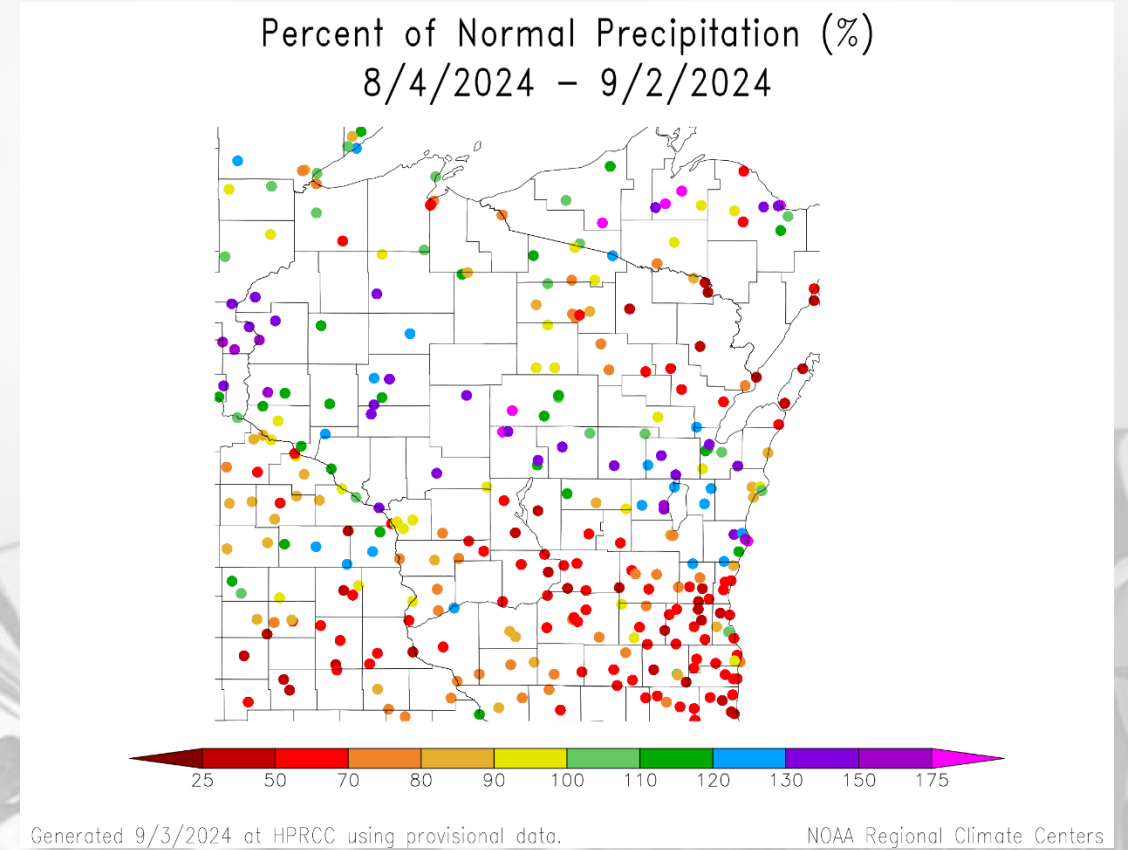
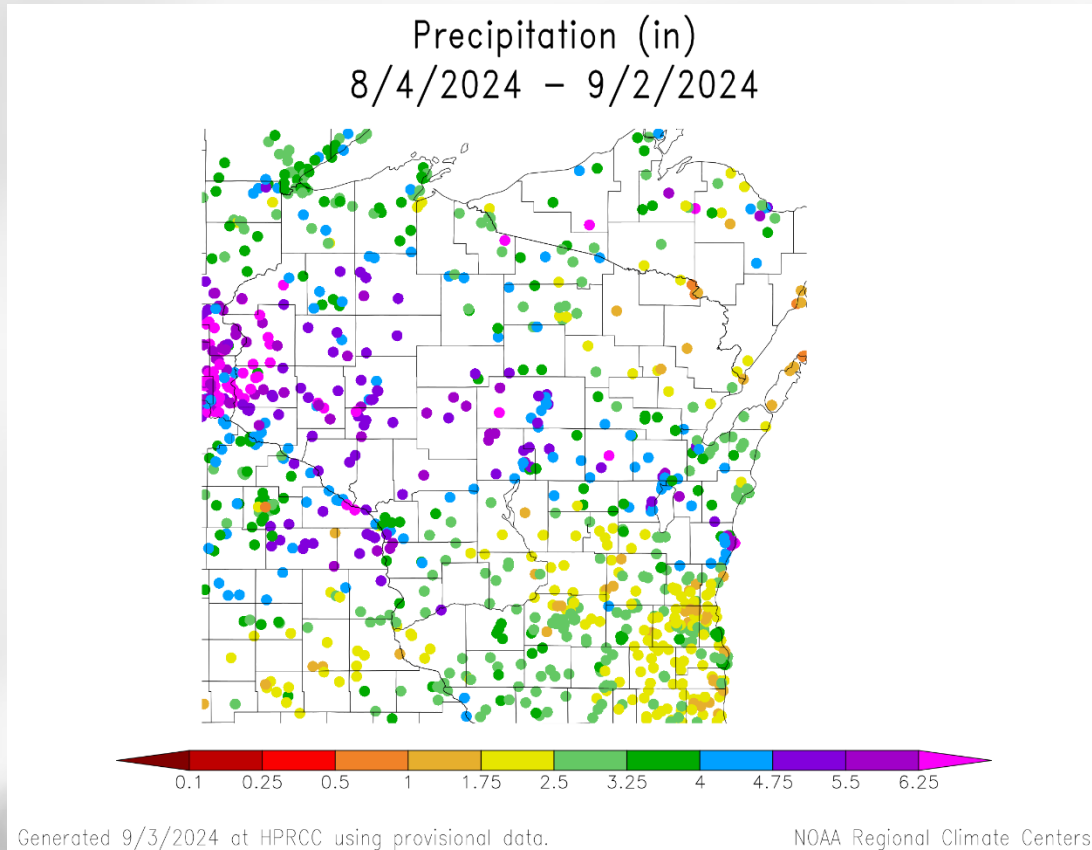
- Precip fell statewide last week, with **heavier totals in the west**.
- Highest totals in the La Crosse vicinity → **2-4" common**, with pockets of **>4"**.
- Lower totals in the east → **0.5" or less**.

# 30 Day Precip



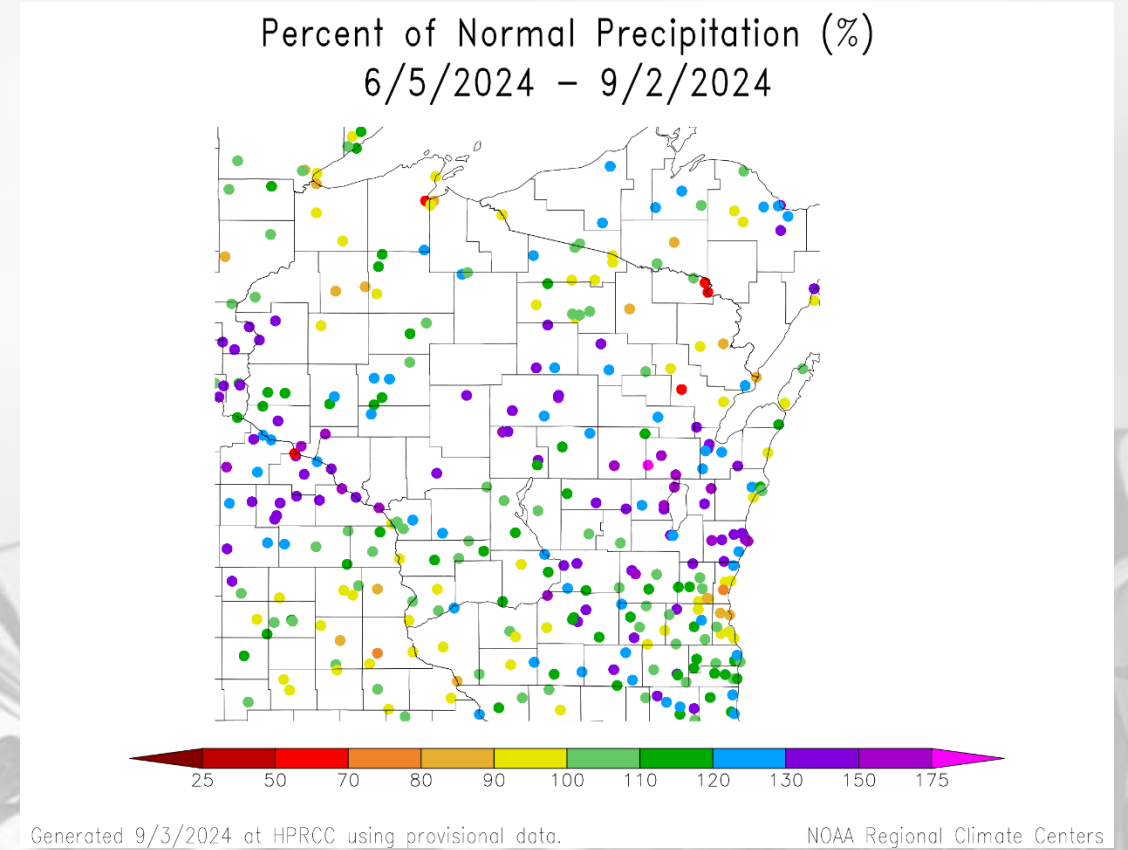
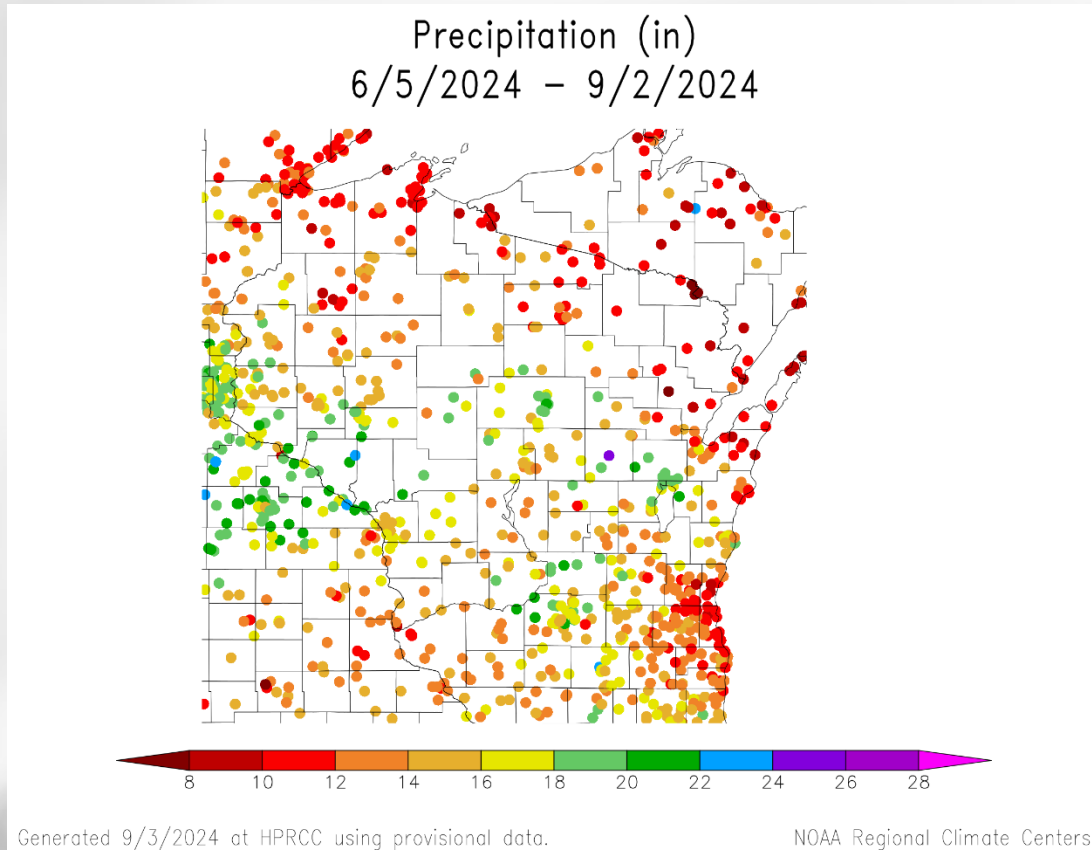
- **5" or more** was common between La Crosse & the Twin Cities and in the central counties.
- Lowest totals in the NE and parts of the south-central – **1-3" common.**
- River levels remain below flood stage statewide.

# 30 Day Precip Total/% Avg.



- Monthly precip totals of **5+''** common along a line from the Twin Cities, La Crosse, & over to the Fox Cities.
  - **>6''** common at stations along the WI-MN border in the NW region → **130+%** of climatological average.
- **<70%** of climatological average is common at SC/SE stations → **2.5''** or less of monthly precip.

# 90 Day Precip Total/% Avg.

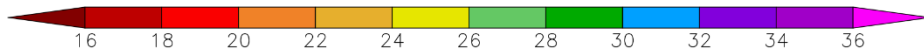
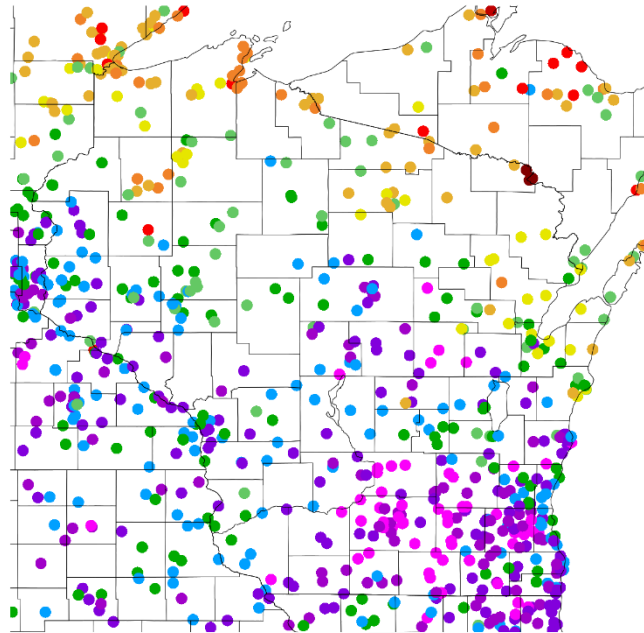


- **18-22"** at stations north of Madison, between La Crosse & the TC, & along a line from Appleton to Wausau.
  - These regions are sitting at **130% or more** above the climatological average.
- Lowest totals around Milwaukee & in the north → **<12"** common; **~90%** of the climatological average.



# 2024 Precipitation (so far)

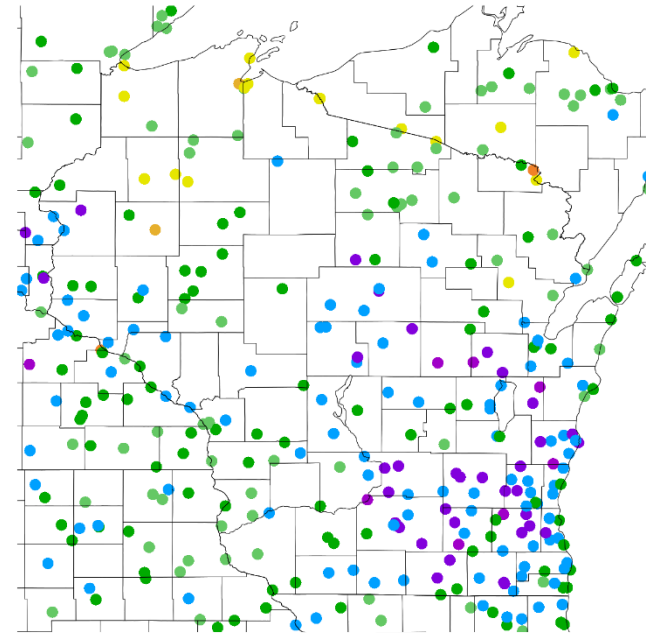
Precipitation (in)  
1/1/2024 - 9/2/2024



Generated 9/3/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Precipitation (in)  
1/1/2024 - 9/2/2024



Generated 9/3/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

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

# Soil Moisture Models

- **70<sup>th</sup> percentile or greater** for soil moisture conditions across the central belt of WI and the NW, where precip totals have been above normal the past few weeks.
- **Closer to normal** soil moisture for the majority of the state (grey shading).
- **Dry percentiles** in pockets along Lake Michigan.

*Model Notes:*

*Red* areas = top 5 driest in 100 years.

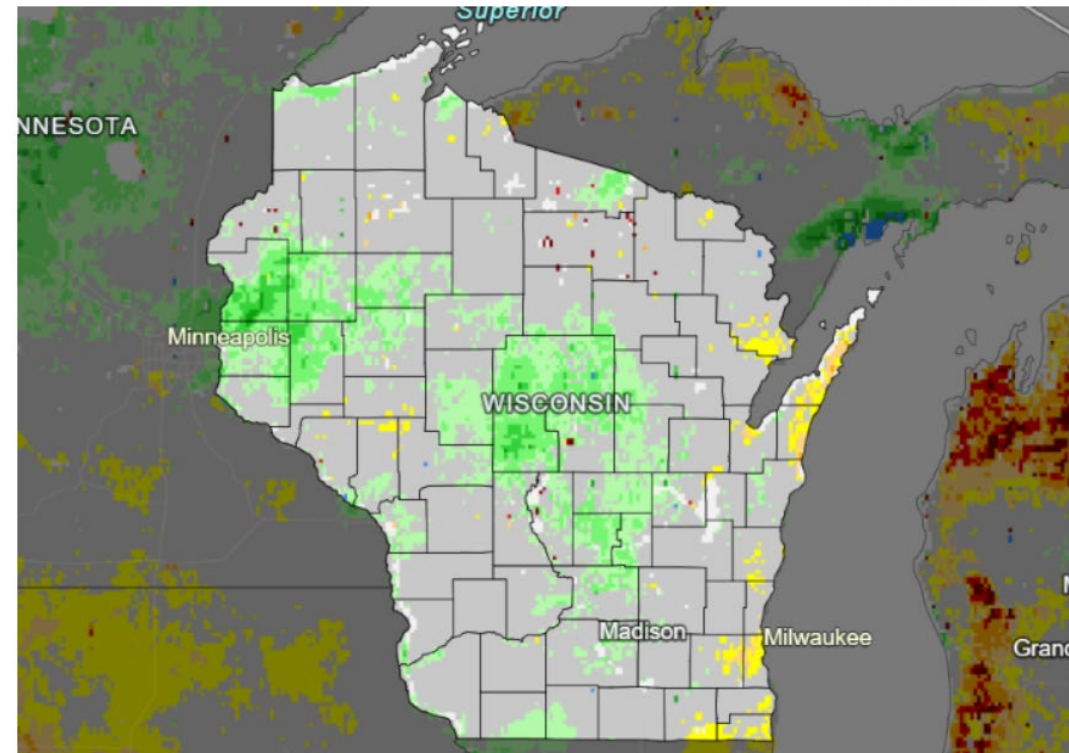
*Dark red* areas = top 2 driest in 100 years.

*Blue* areas = top 2 wettest in 100 years.

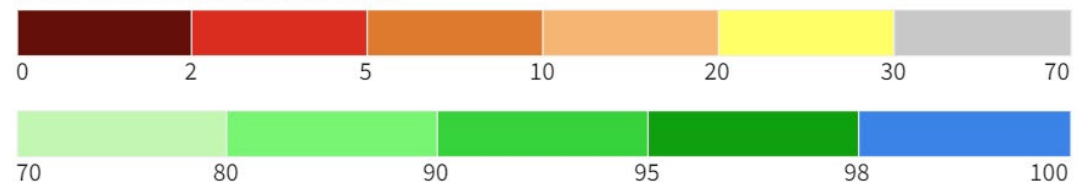
*It's worth noting that each soil moisture model has their own characteristics and input variables, so there tends to be variation between models. Thus, it's worthwhile to look at multiple models opposed to just one.*

[https://weather.msfc.nasa.gov/sport/case\\_studies/lis\\_CONUS.html](https://weather.msfc.nasa.gov/sport/case_studies/lis_CONUS.html)  
<https://www.drought.gov/states/wisconsin>

0-100 cm Soil Moisture Percentile



0-100 cm Soil Moisture Percentile

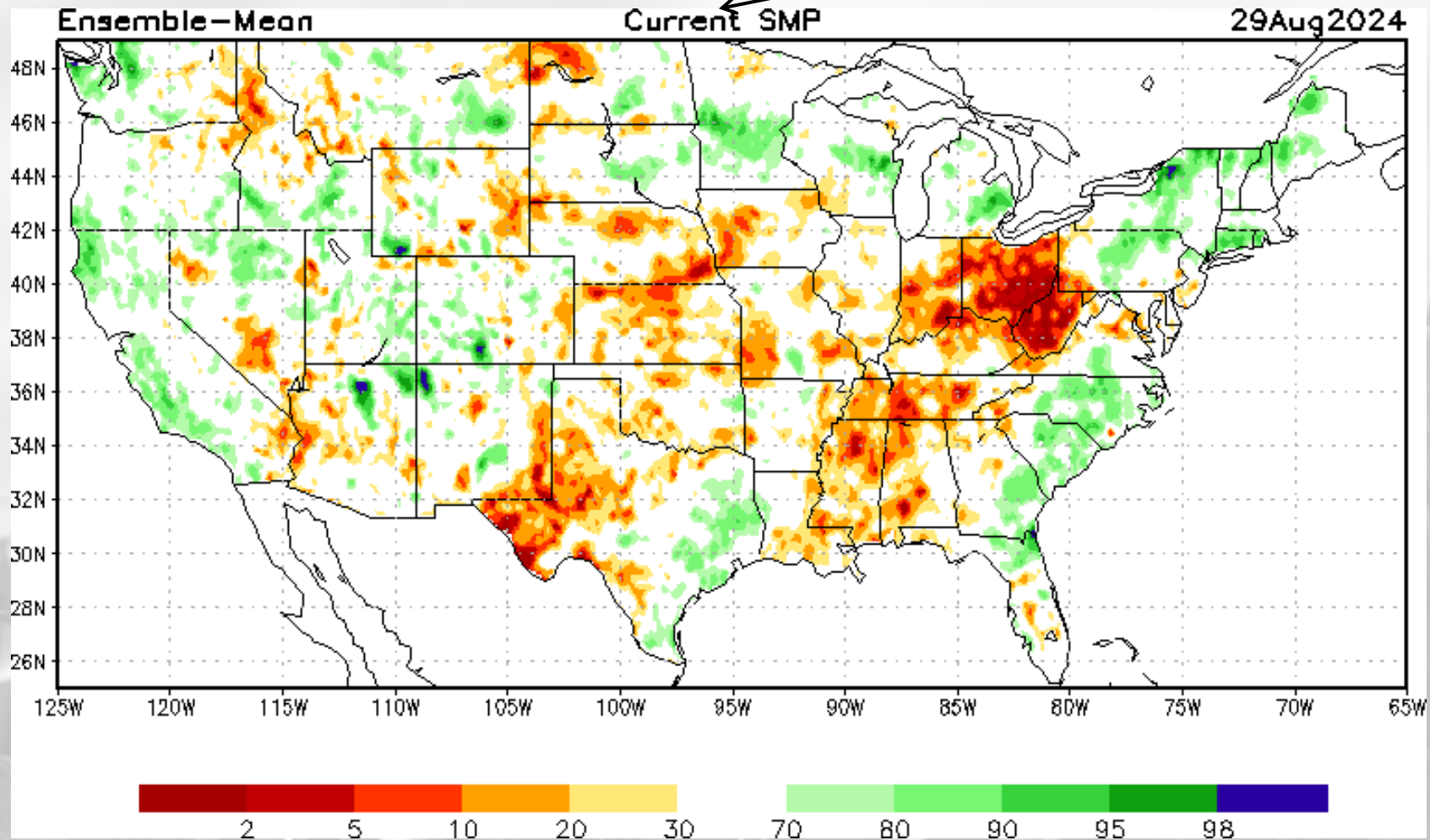


Source(s): NASA  
Data Valid: 09/03/24

**Drought.gov**

# Soil Moisture Models

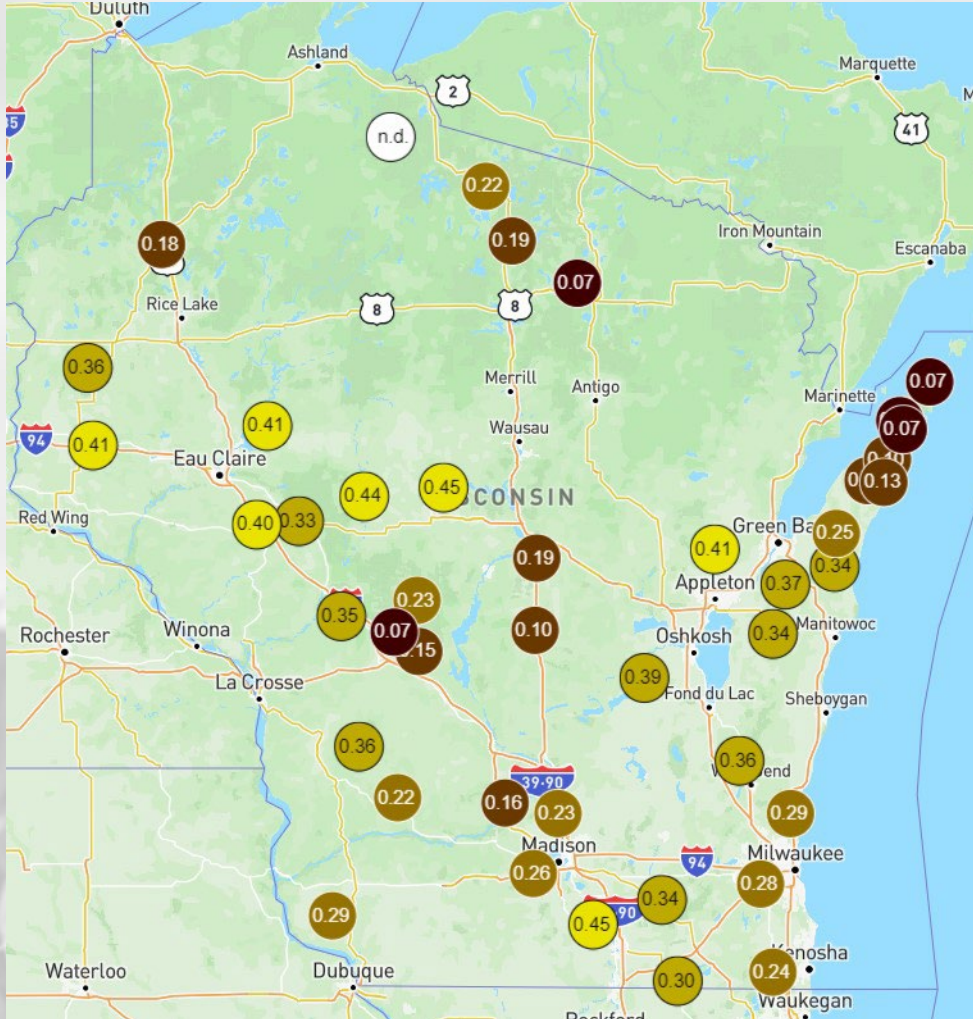
**NOTE:** this map displays the soil moisture percentile for August 29. It was the most recent update on Sept. 3.



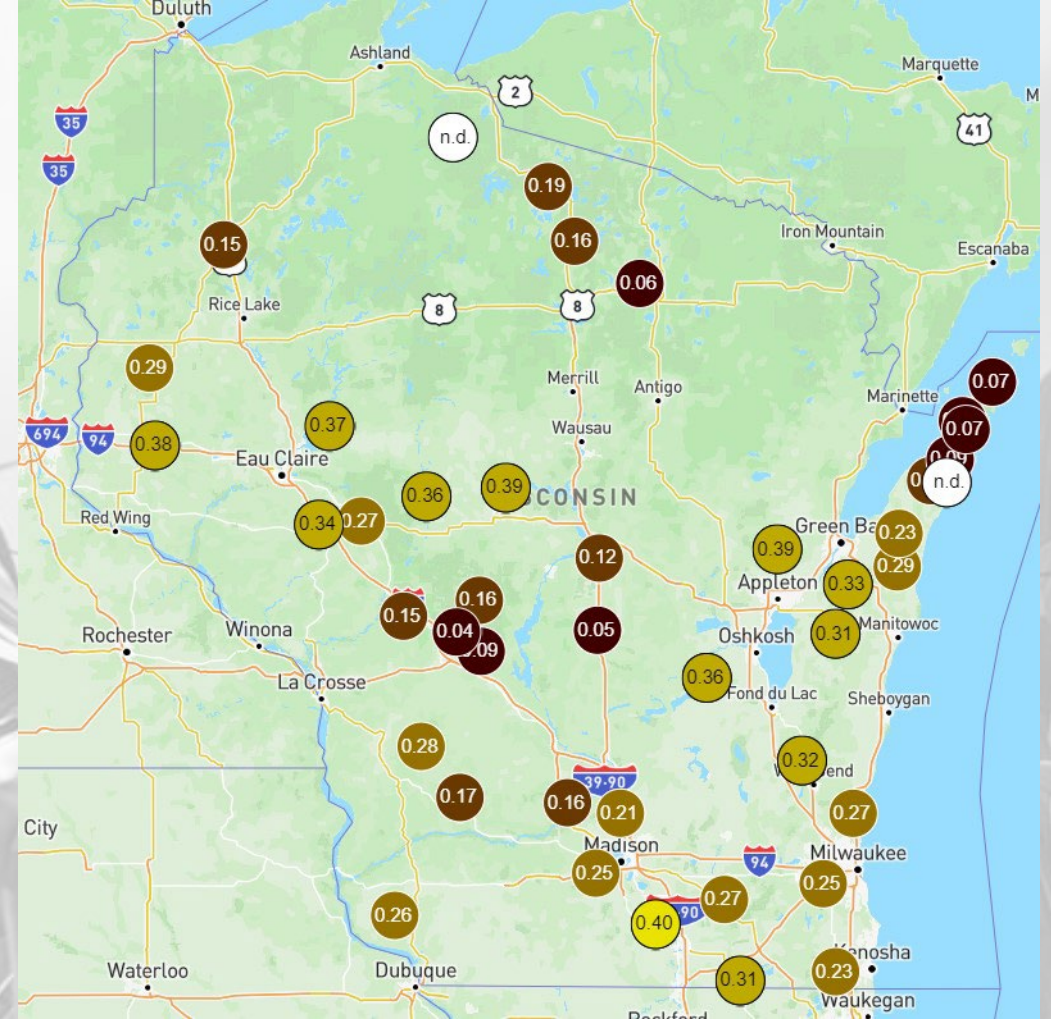
[https://www.cpc.ncep.noaa.gov/products/Drought/Monitoring/smp\\_new.shtml](https://www.cpc.ncep.noaa.gov/products/Drought/Monitoring/smp_new.shtml)

# Wisconet Soil Moisture (4" Depth)

Friday, August 30<sup>th</sup> @ MIDDAY



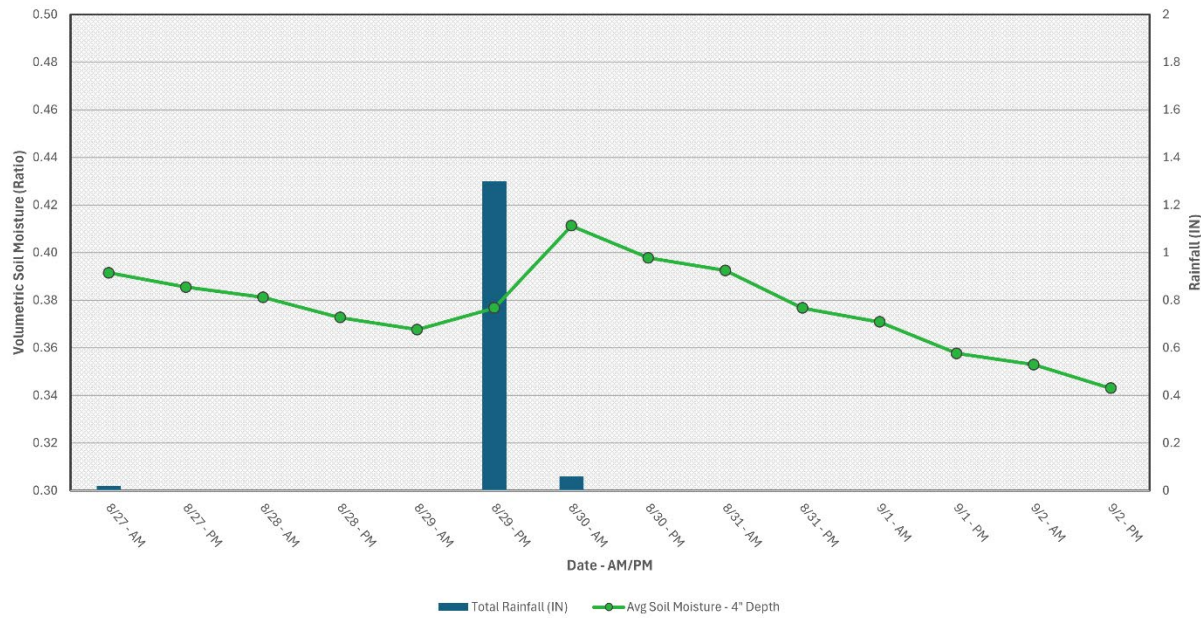
Tuesday, September 3<sup>rd</sup> @ Mid-morning



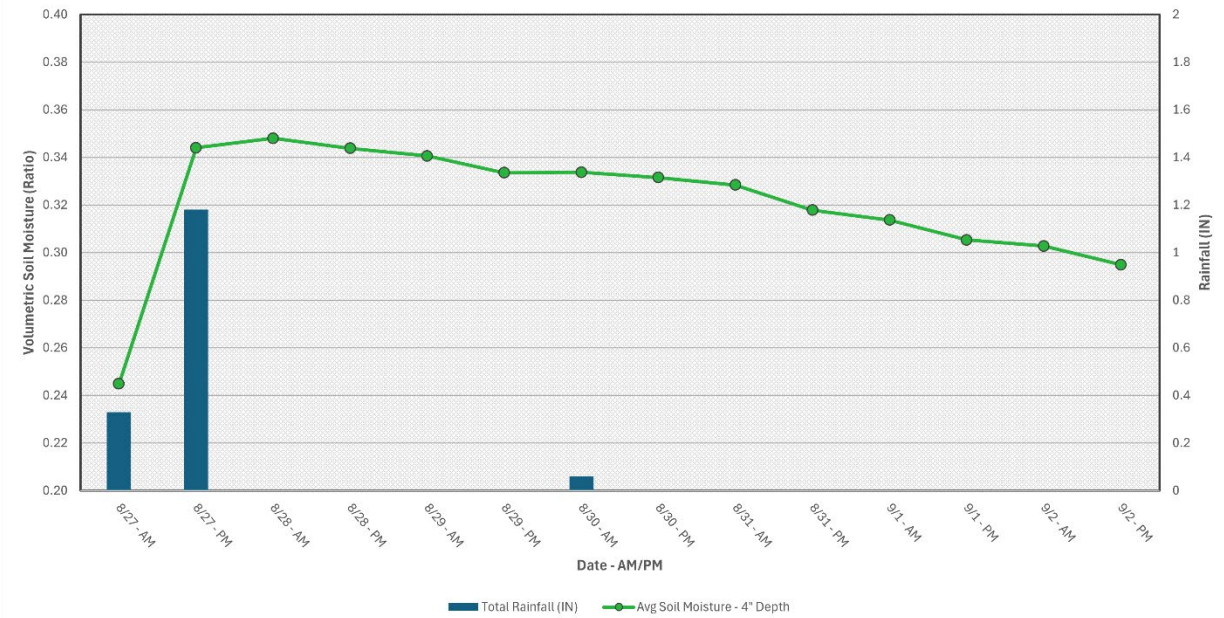
# Wisconet Soil Moisture – 4" Depth

Soil moisture time series at select Wisconet stations

Rain & Soil Moisture - Osseo (Trempealeau Co.) - OSEO



Rain & Soil Moisture - Kewaunee (Kewaunee Co.) - KWNE



# NASS Topsoil & Subsoil Moisture

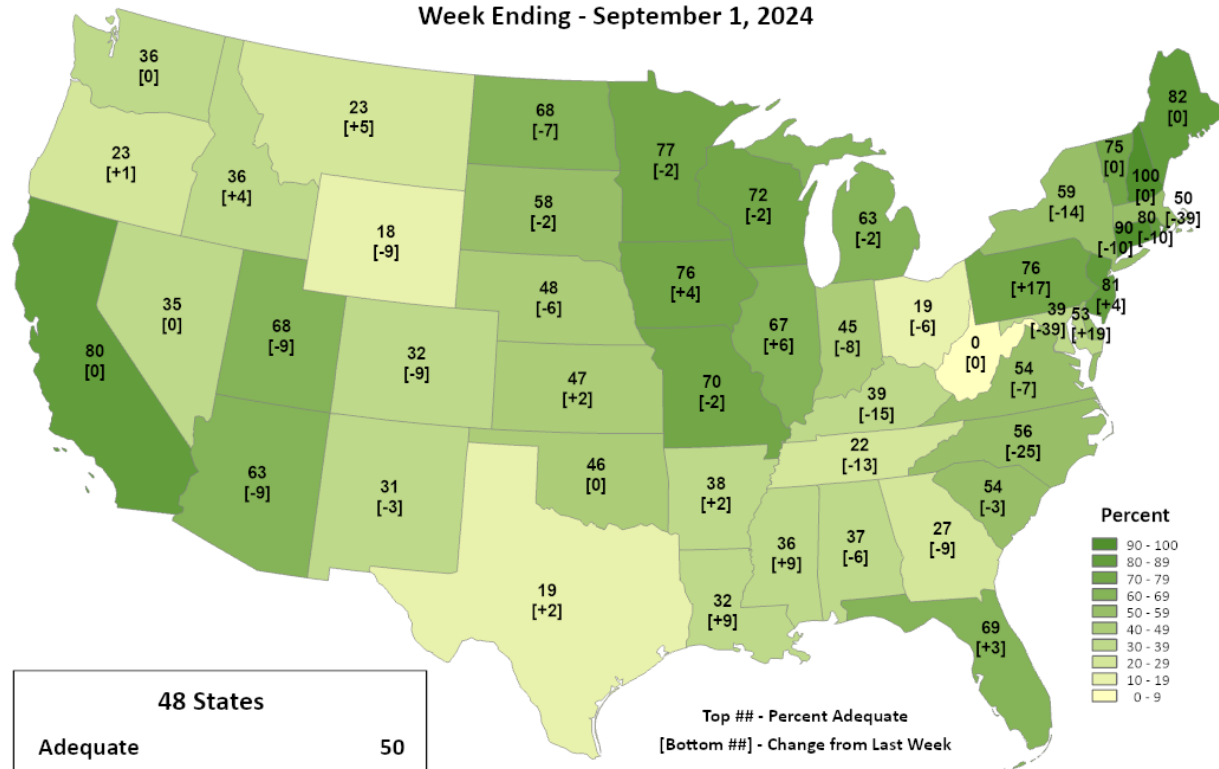


This product was prepared by the  
USDA Office of the Chief Economist (OCE)  
World Agricultural Outlook Board (WAOB)

## Topsoil Moisture

### Percent Adequate

Week Ending - September 1, 2024



48 States	
Adequate	50
Change from Last Week	-3

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

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

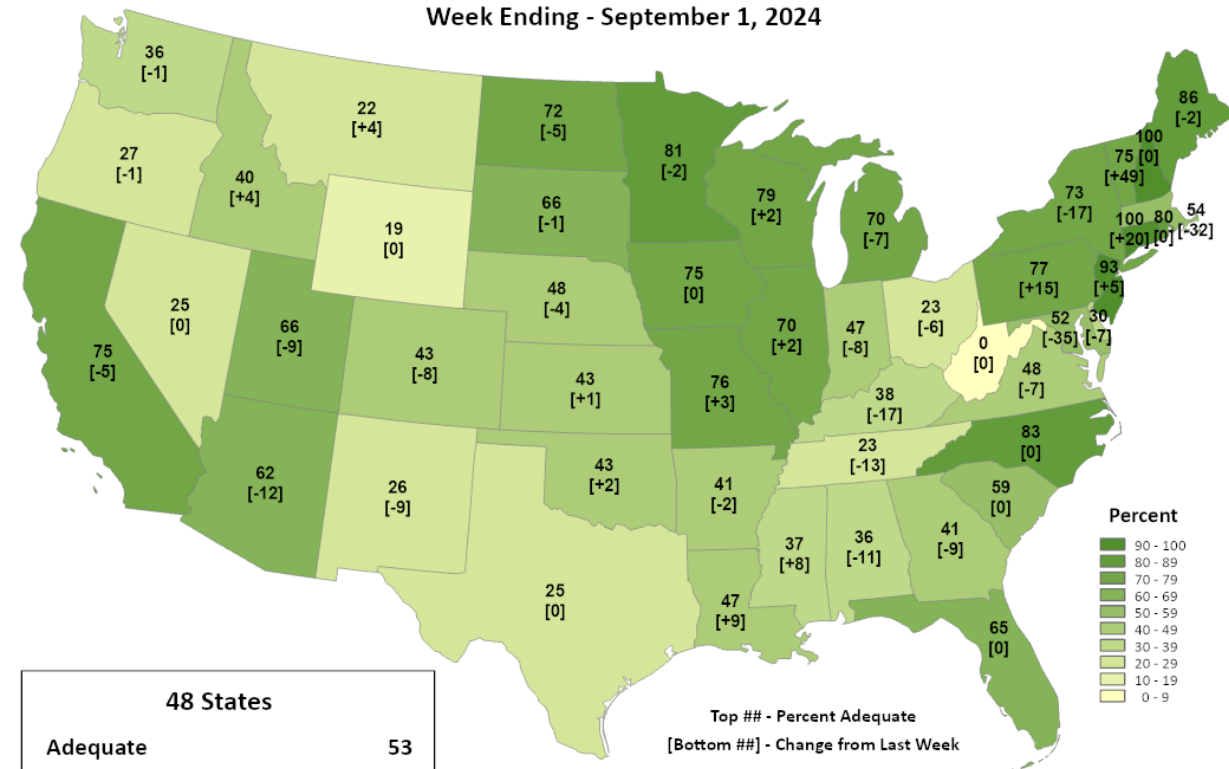


This product was prepared by the  
USDA Office of the Chief Economist (OCE)  
World Agricultural Outlook Board (WAOB)

## Subsoil Moisture

### Percent Adequate

Week Ending - September 1, 2024



48 States	
Adequate	53
Change from Last Week	-3

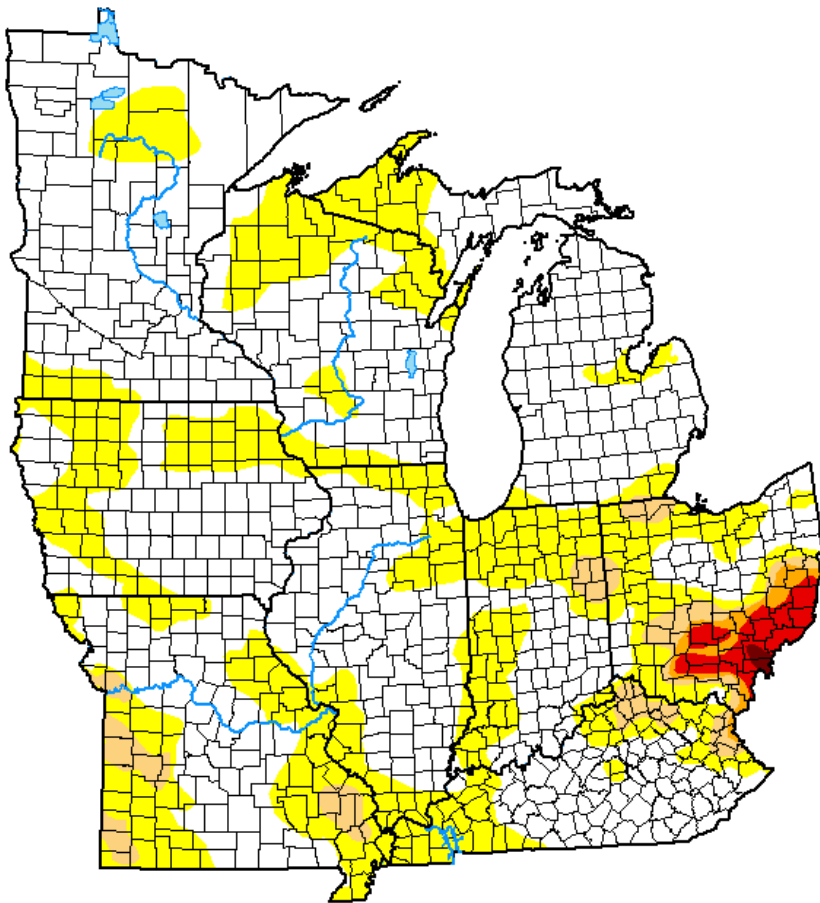
Top ## - Percent Adequate  
[Bottom ##] - Change from Last Week

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

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

# US Drought Monitor

## U.S. Drought Monitor Midwest



**August 27, 2024**

(Released Thursday, Aug. 29, 2024)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	62.98	37.02	5.49	2.08	1.35	0.11
<b>Last Week</b> 08-20-2024	78.53	21.47	3.43	1.97	1.03	0.00
<b>3 Months Ago</b> 05-28-2024	92.73	7.27	0.83	0.00	0.00	0.00
<b>Start of Calendar Year</b> 01-02-2024	22.92	77.08	50.25	20.76	4.20	0.00
<b>Start of Water Year</b> 09-26-2023	16.82	83.18	54.98	23.81	6.21	0.13
<b>One Year Ago</b> 08-29-2023	39.91	60.09	41.11	20.85	6.29	0.07

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:

Richard Heim  
NCEI/NOAA



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

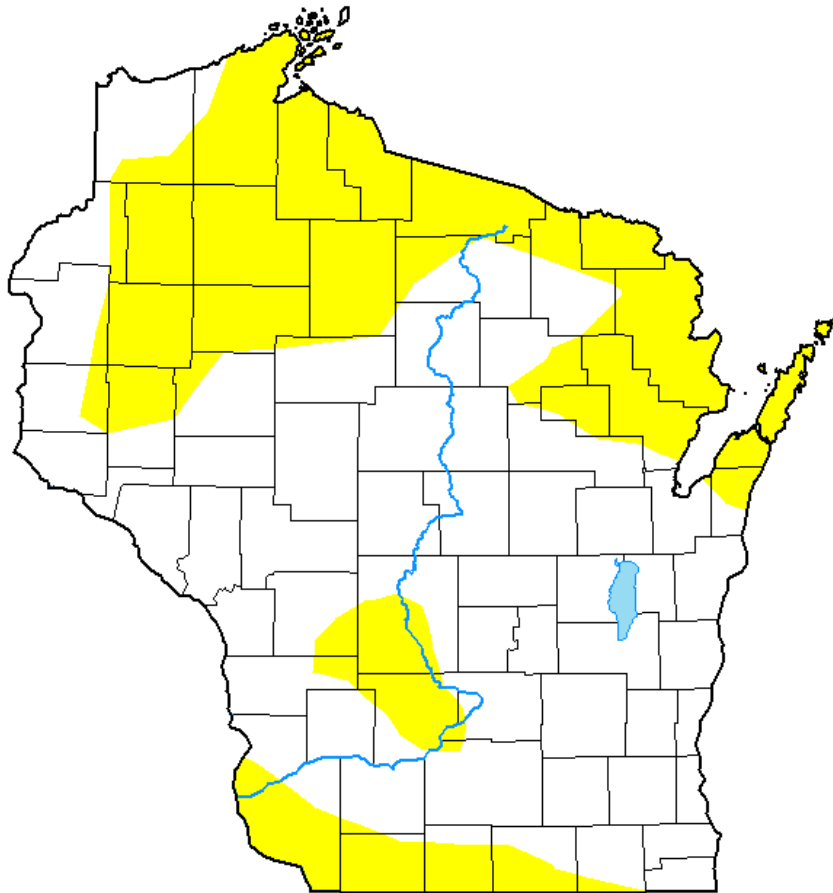
- Compared to last week:
  - Large increase in D0 coverage from last week, with D4 now showing up in southern OH.
- **5.5%** of the Midwest is categorized in D1 (moderate) drought.
- **1.4%** is in D3-D4 drought, all in OH.
- **37.0%** of the Midwest is in D0 (abnormally dry) conditions, up from **21.5%** last week.

*Note: D0 is not considered drought.*

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

# US Drought Monitor

## U.S. Drought Monitor Wisconsin



**August 27, 2024**

(Released Thursday, Aug. 29, 2024)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	63.49	36.51	0.00	0.00	0.00	0.00
<b>Last Week</b> 08-20-2024	71.24	28.76	0.00	0.00	0.00	0.00
<b>3 Months Ago</b> 05-28-2024	90.31	9.69	0.77	0.00	0.00	0.00
<b>Start of Calendar Year</b> 01-02-2024	33.04	66.96	37.34	16.80	0.26	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> 08-29-2023	3.31	96.69	81.62	51.80	16.76	0.66

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:

Richard Heim  
NCEI/NOAA



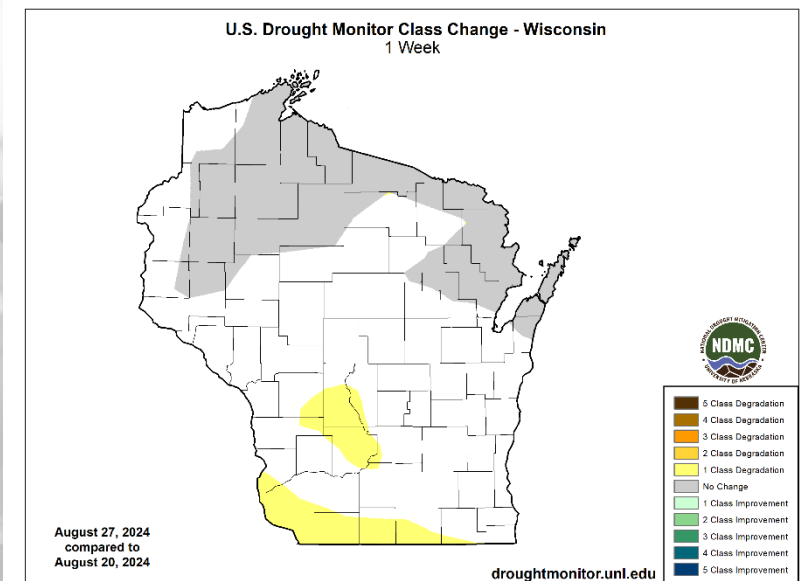
[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)

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

Amount of state in:

- D1-D4 – 0.0% --
- D2-D4 – 0.0% --
- 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.

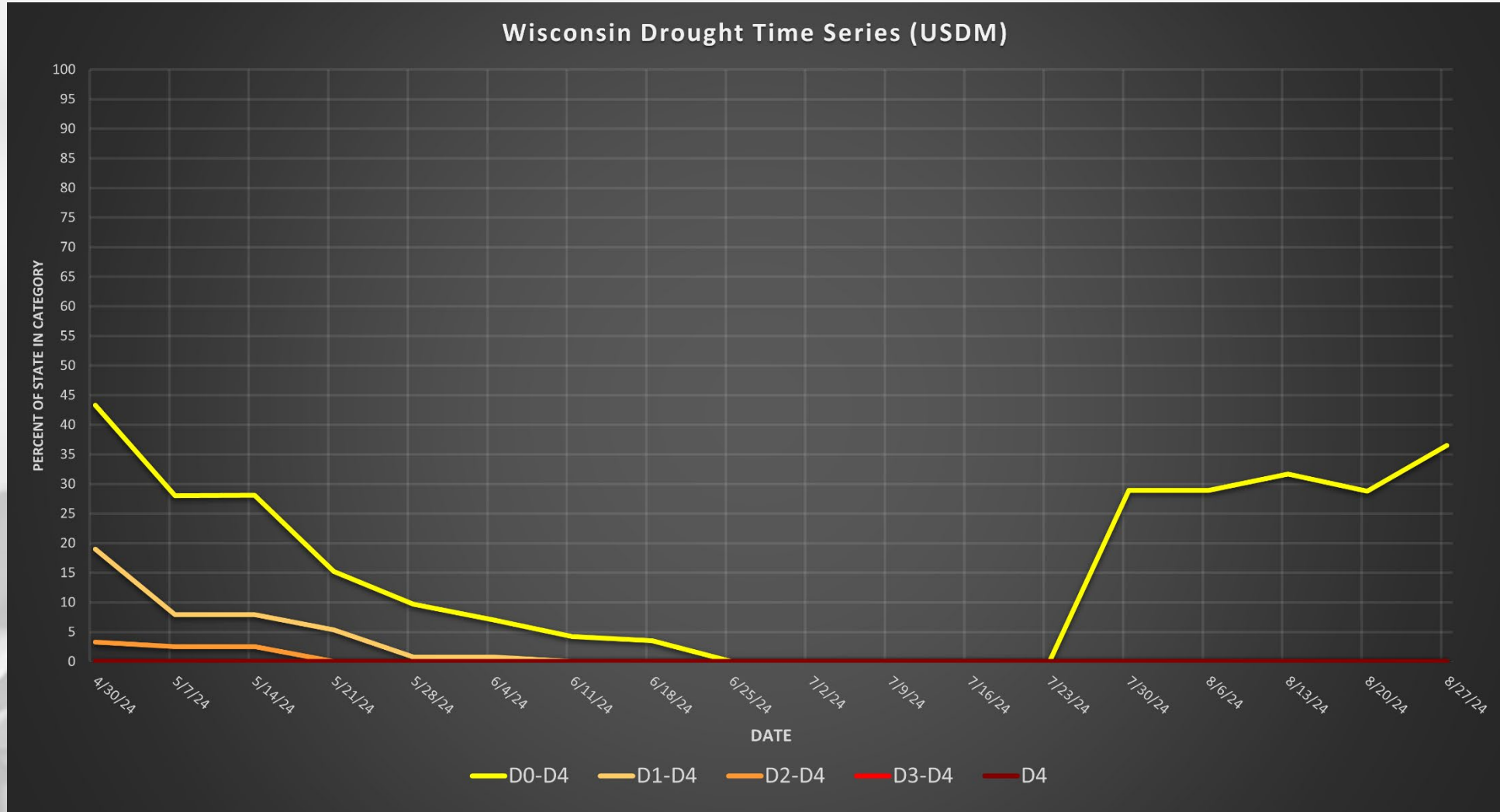


August 27, 2024  
compared to  
August 20, 2024

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



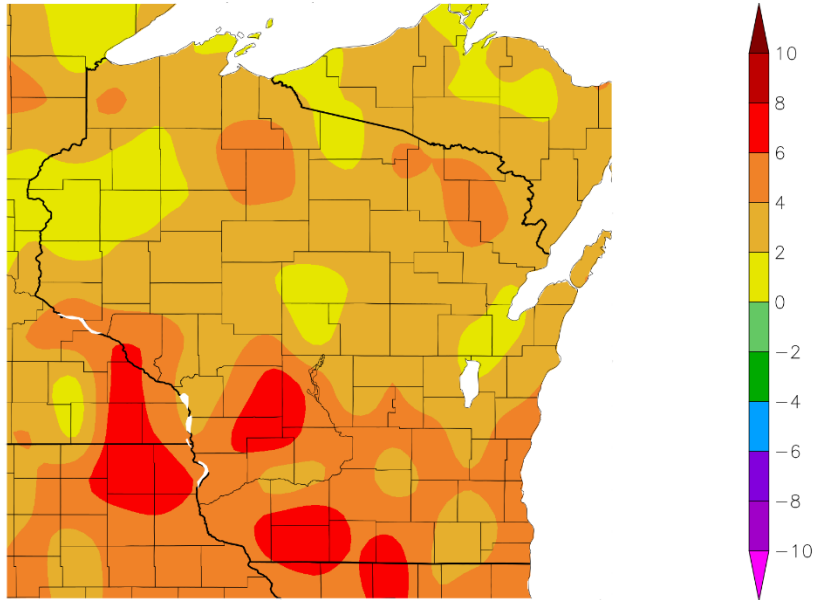
# USDM Time Series



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

# 7 Day Temperatures

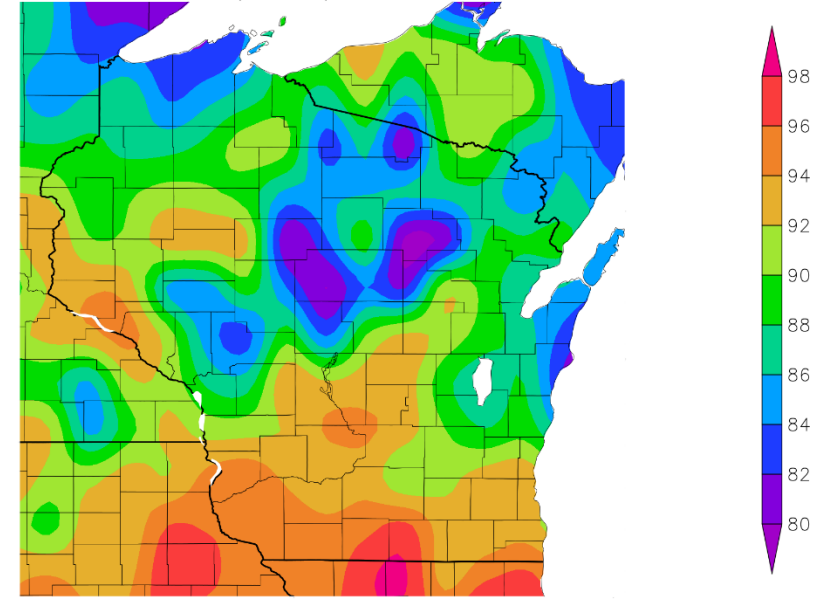
Departure from Normal Temperature (F)  
8/27/2024 – 9/2/2024



Generated 9/3/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Highest 1-Day Maximum Temperature (F)  
8/27/2024 – 9/2/2024



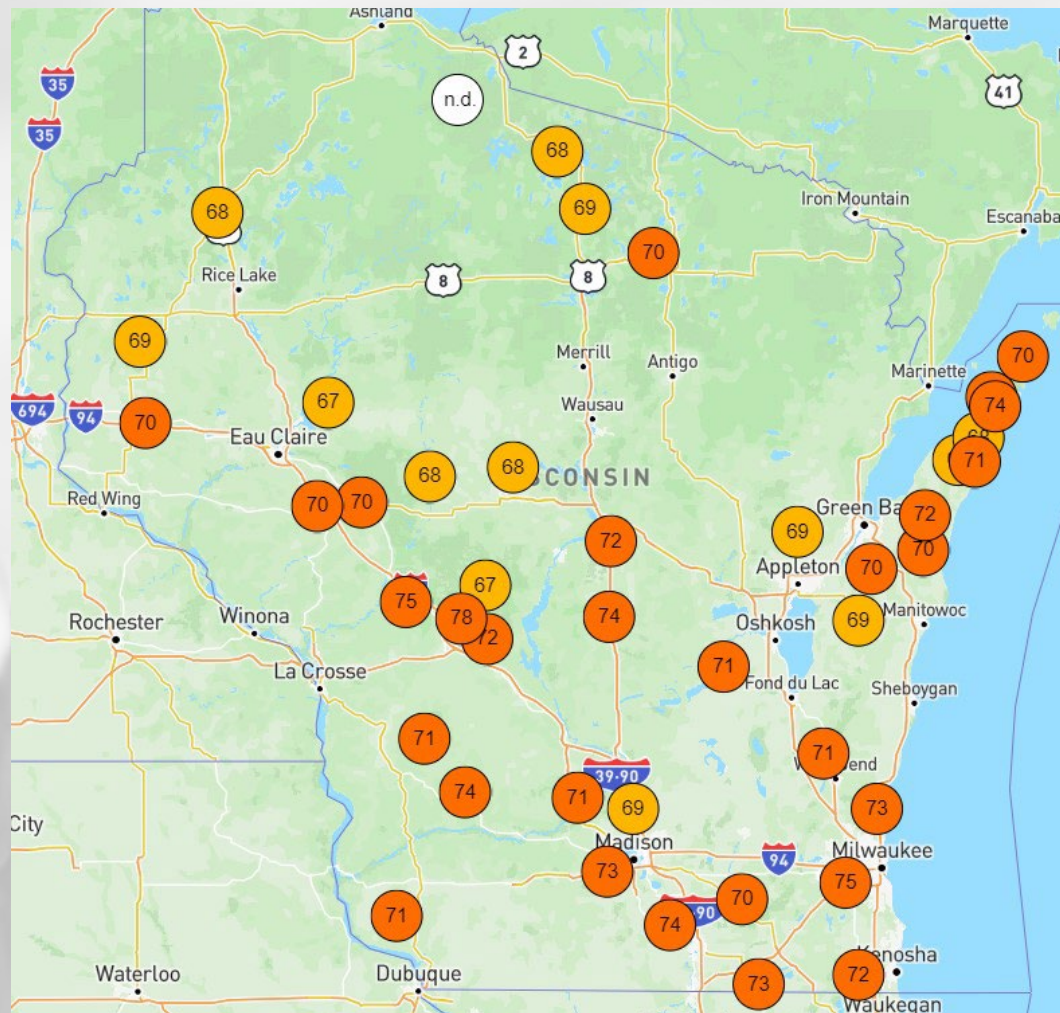
Generated 9/3/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

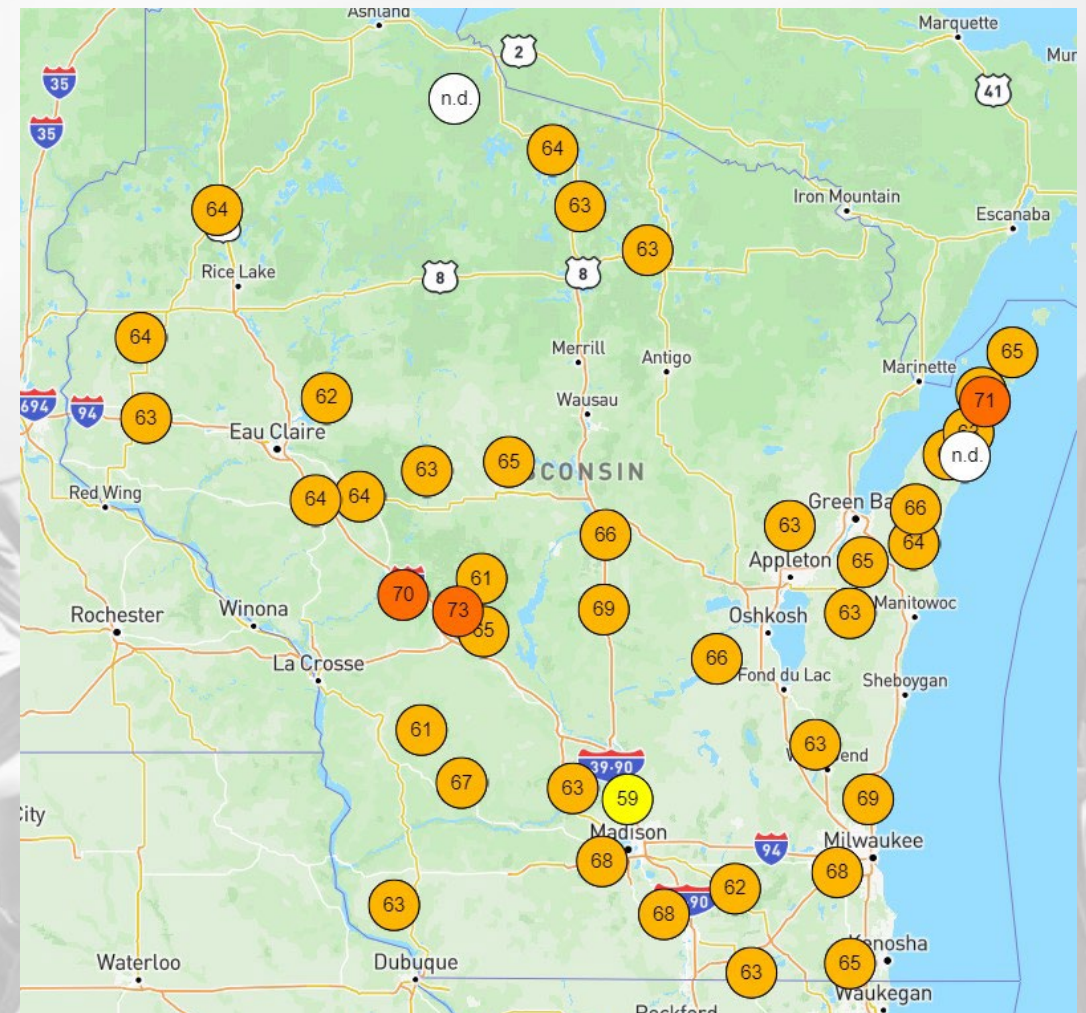
- Highest temps for the weeks reached **well into the 90's** in southern & western WI.
- **Above normal temps** statewide last week
  - **4-8°F** above normal in the south and west, with **2-4°F** above normal commonplace in the rest of the state.

# Wisconet Soil Temp (4" Depth)

Friday, August 30<sup>th</sup> @ Middy

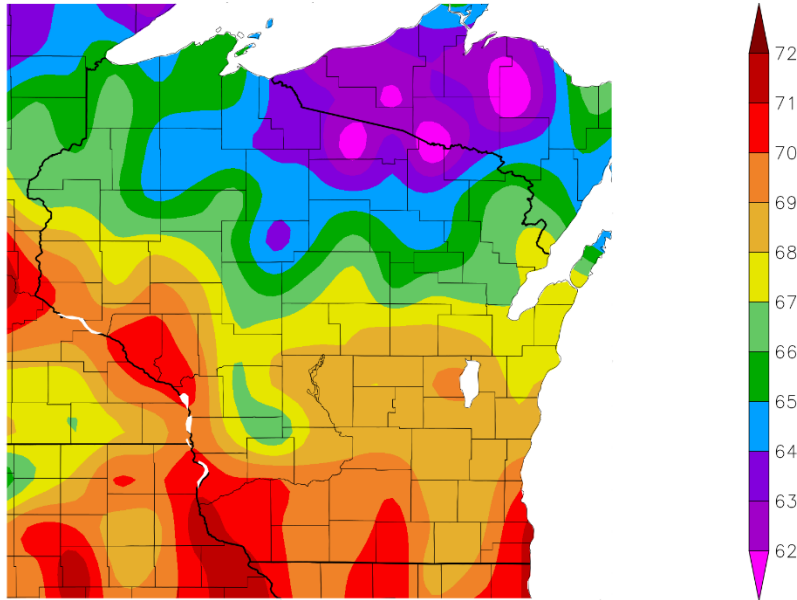


Tuesday, September 3<sup>rd</sup> @ Mid-morning



# 30 Day Temperatures

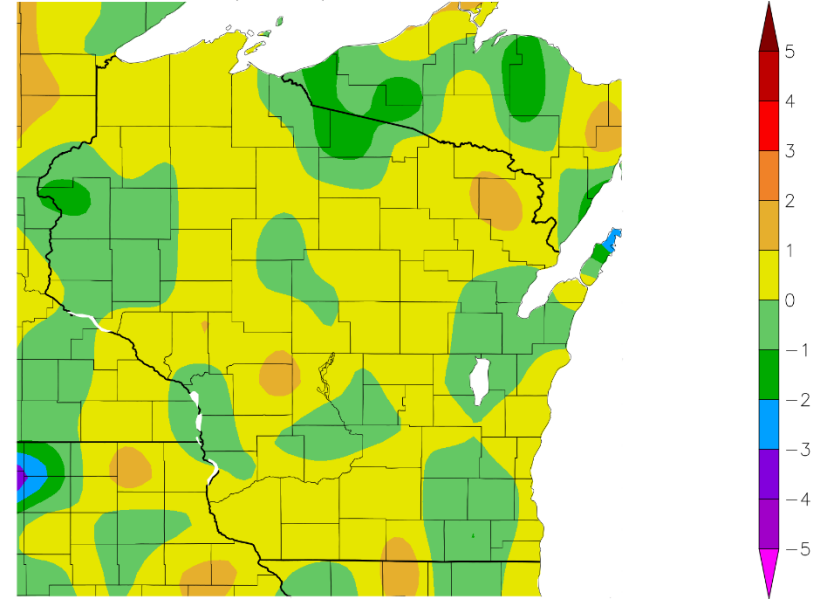
Temperature (F)  
8/4/2024 - 9/2/2024



Generated 9/3/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Temperature (F)  
8/4/2024 - 9/2/2024



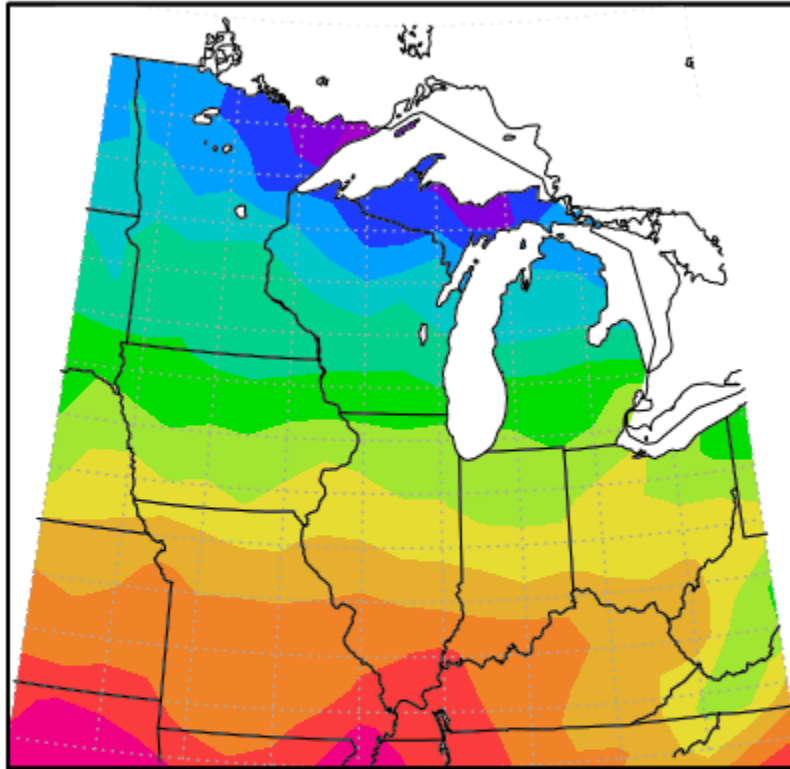
Generated 9/3/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

- Temperatures for the past month ranged from **69-71°F** in the S & W to **62-65°F** in the far N.
  - **Within +/-1°F** for most compared to climatological (1991-2020) average.

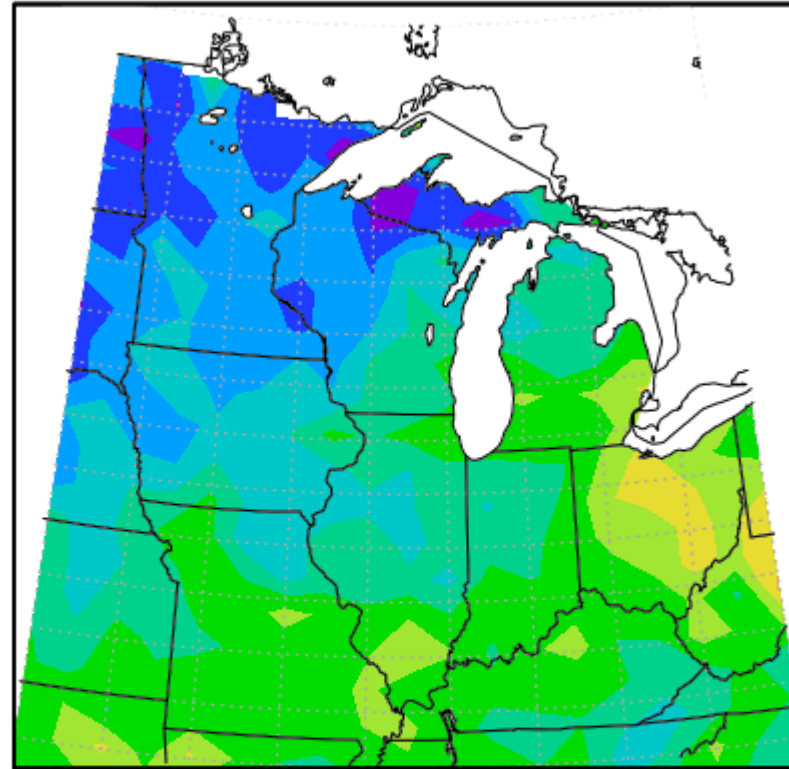
# Growing Degree Days (Base = 50°F; Since April 1)

Total MGDD from 4/1/2024 to 9/2/2024



Midwestern Regional Climate Center  
Purdue University

MGDD Departure, 4/1/2024 to 9/2/2024



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

- **2400-2600** GDD in the S to **1600-2000** GDD in the N.
- SC/E WI is **100-150** GDD further ahead of the average; **within -/+50** of average in the W/NW and far north.

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](https://mrcc.purdue.edu/climate_watch)

# NASS Crop Progress – Corn

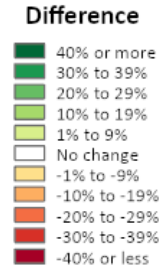
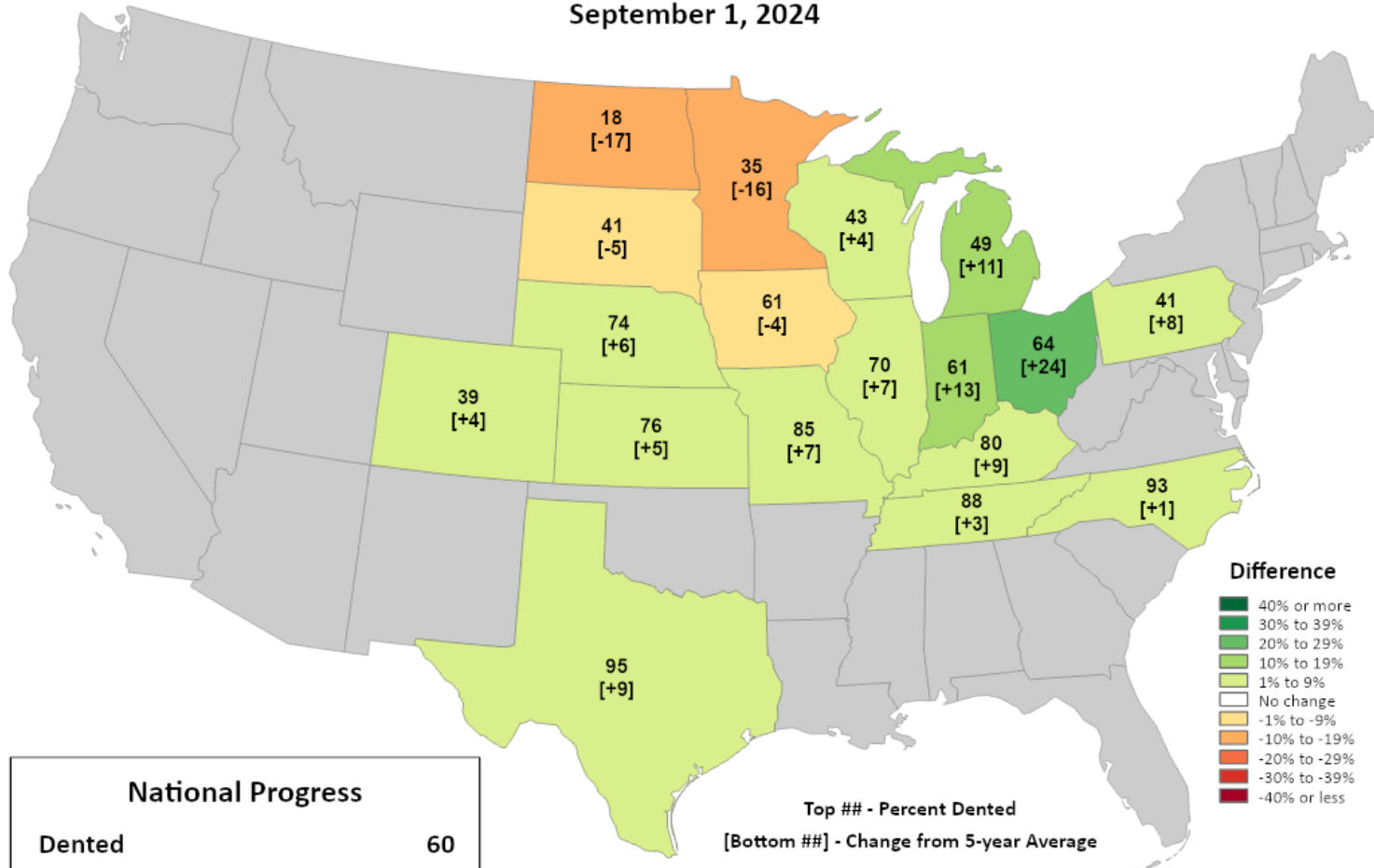


This product was prepared by the  
USDA Office of the Chief Economist (OCE)  
World Agricultural Outlook Board (WAOB)

## Corn Progress

### Percent Dented

September 1, 2024



National Progress	
Dented	60
Change from 5-year Average	+2

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

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

- Doughing & denting are underway WI corn fields. Progress is **ahead of normal pace** in WI & points to the S/E.
- In WI, denting is **43% complete**. 4% ahead of the 5-year average pace & up **18%** from last week.
- Doughing → **82% complete**

# NASS Crop Progress – Soybean

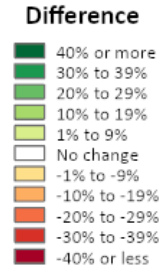
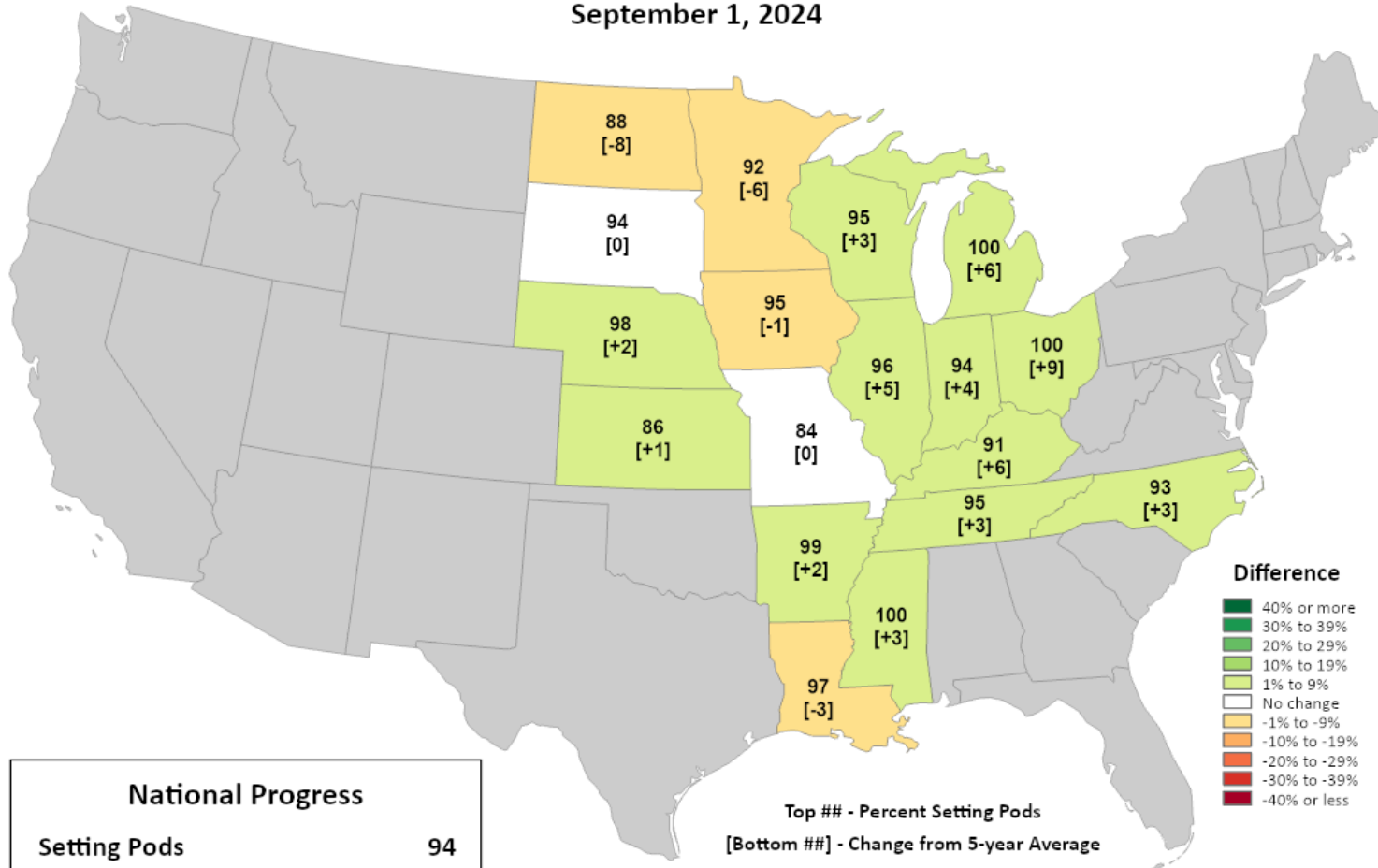


This product was prepared by the  
USDA Office of the Chief Economist (OCE)  
World Agricultural Outlook Board (WAOB)

## Soybeans Progress

### Percent Setting Pods

September 1, 2024



National Progress	
Setting Pods	94
Change from 5-year Average	+1

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

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

- Soybean pod setting is **nearly complete** & running ahead of normal pace in WI and points to the S/E.
  - In WI, pod set is **95% complete**. 3% ahead of the 5-year average pace & up **5%** from last week.
  - Leaf dropping → **4% complete**

# NASS Crop Condition

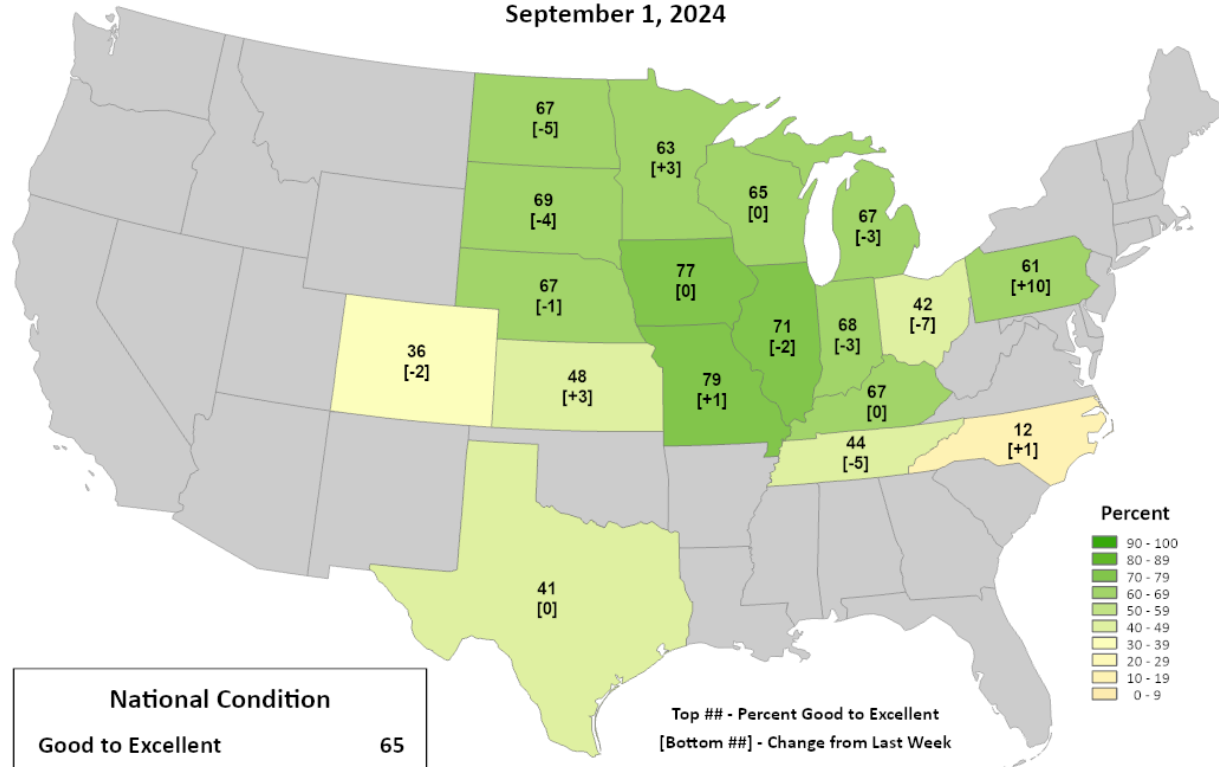


This product was prepared by the  
USDA Office of the Chief Economist (OCE)  
World Agricultural Outlook Board (WAOB)

## Corn Conditions

### Percent Good to Excellent

September 1, 2024



National Condition	
Good to Excellent	65
Change from Last Week	0

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

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

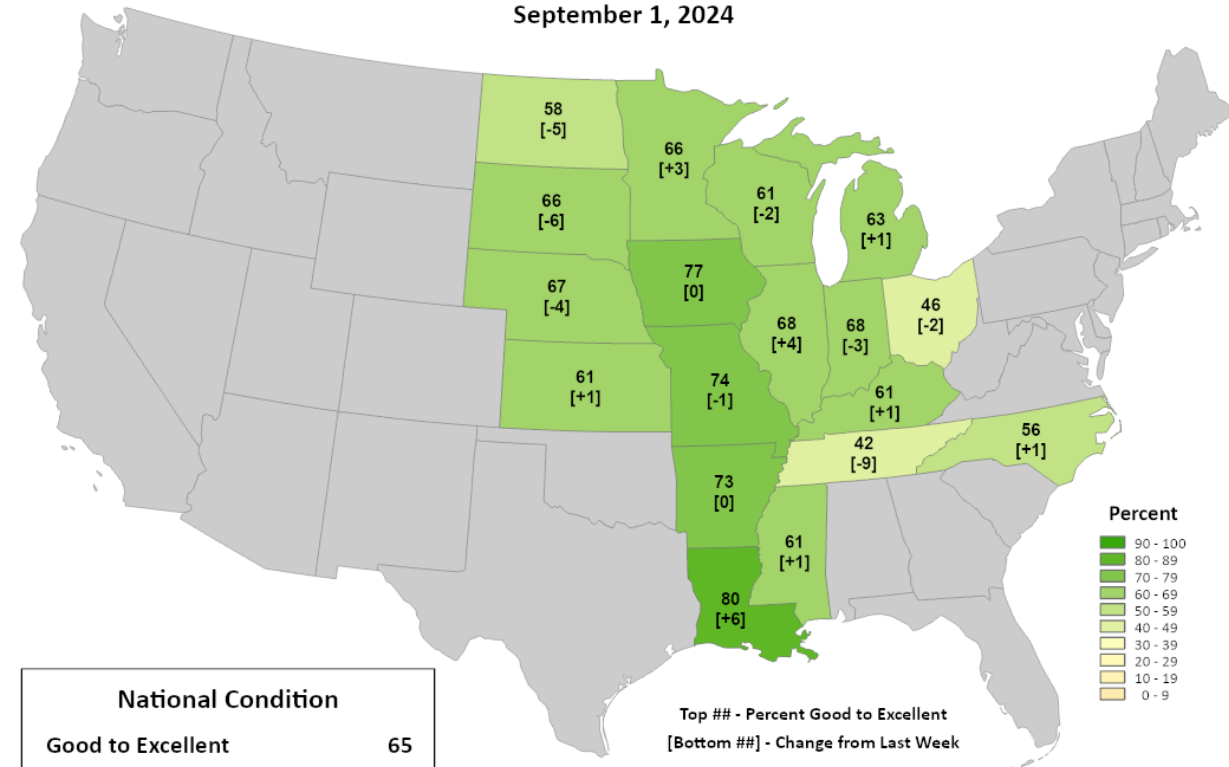


This product was prepared by the  
USDA Office of the Chief Economist (OCE)  
World Agricultural Outlook Board (WAOB)

## Soybean Conditions

### Percent Good to Excellent

September 1, 2024



National Condition	
Good to Excellent	65
Change from Last Week	-2

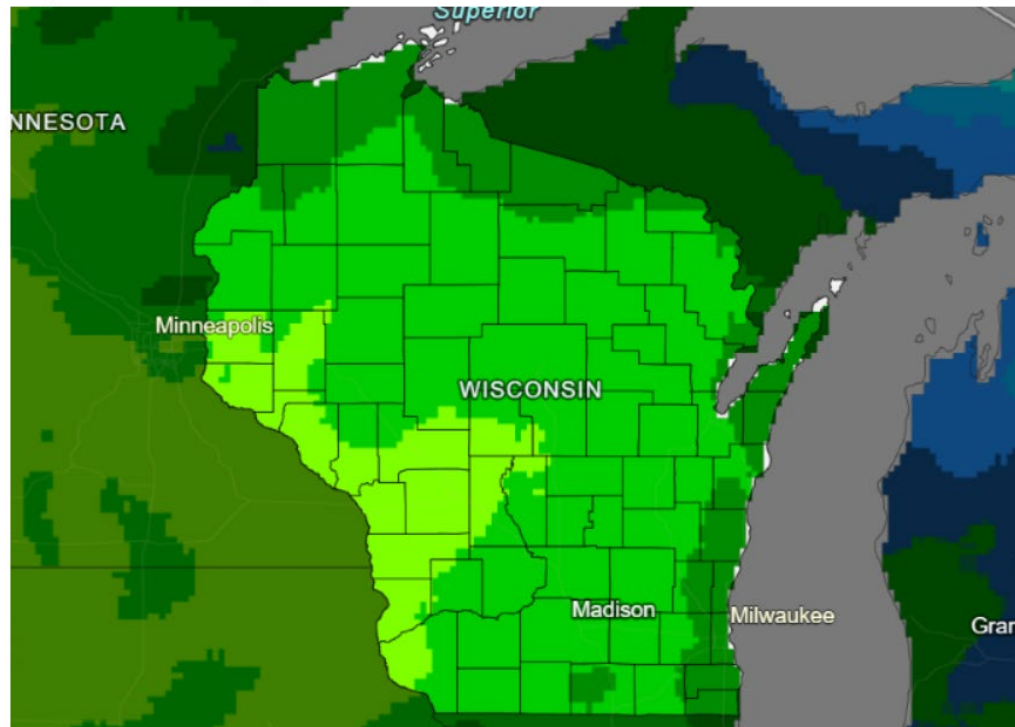
Top ## - Percent Good to Excellent  
[Bottom ##] - Change from Last Week

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



# 7 Day Precip Forecast

7-Day Quantitative Precipitation Forecast for  
September 3-10, 2024



Predicted Inches of Precipitation



Source(s): National Weather Service Weather Prediction Center  
Last Updated: 09/03/24

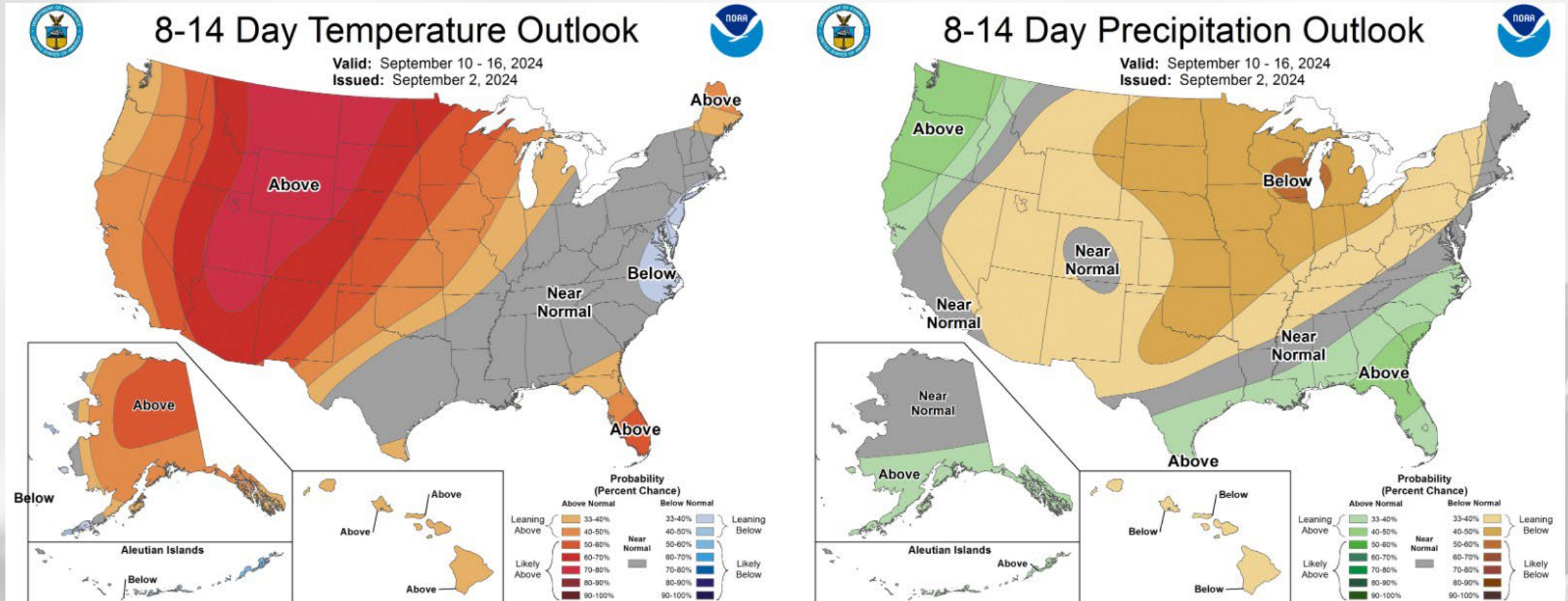
Drought.gov

- **Statewide chances** for precip over the next week.
  - Highest chances for rain from **late Wednesday through Thursday**.
  - Best chances in the **N & along the eastern shore**.
  - Lesser precip chances in the **Driftless Region**.

Forecast for 9/3/24 thru 9/10/24  
(Begins at 7am CDT)

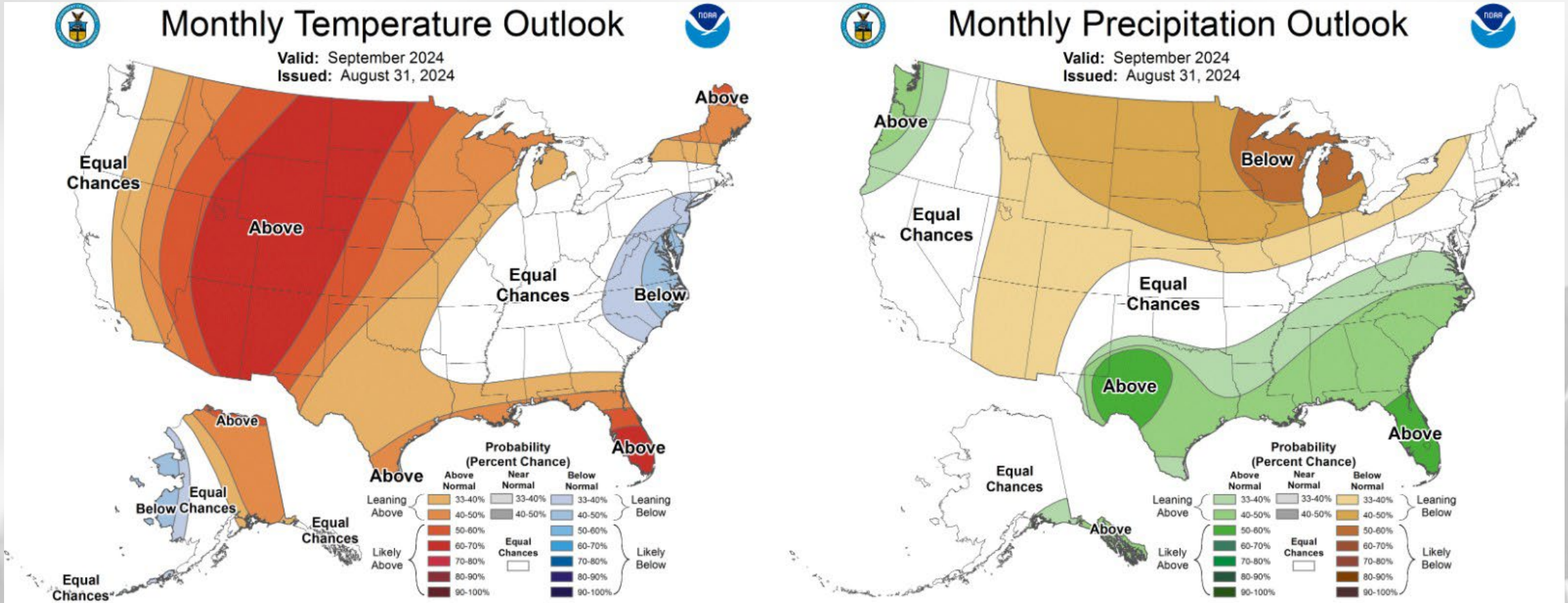
<https://www.wpc.ncep.noaa.gov/qpf/p168i.gif>  
<https://www.drought.gov/states/wisconsin>

# 8-14 Day Temp & Precip Outlook



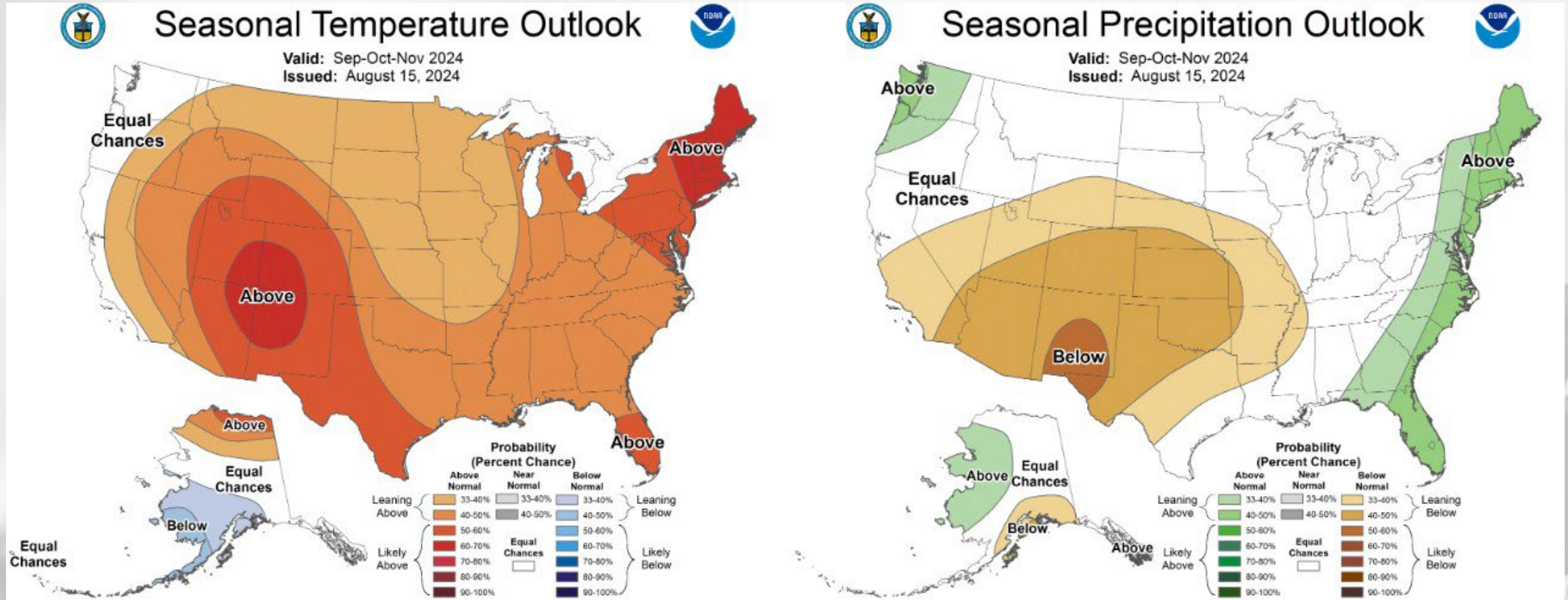
**Mid-September:** Temperatures leaning above normal, with higher probability in the NW. Precipitation leaning/likely below normal, more so in the S & E.

# 30 Day Temp & Precip Outlook



**Month of September:** Temperatures leaning above normal. Precipitation likely to be below normal.

# 90 Day Temp & Precip Outlook



Fall 2024: Temperatures leaning towards above normal. Precipitation uncertainty with equal chances.

# Take-Home Points

## Current Conditions:

- **Late summer heat** impacted most of the state last week, with **above normal temperatures** observed across the state. However, going back to early August, temps have been **mostly near normal**.
- W/NW Wisconsin received the highest precip totals last week, with many stations in that region sitting **above the climatological average** since early August.

## Impact:

- Soil moisture percentiles are in the middle range for most (higher in the central region), with **abnormal dryness** now being added in parts of southern WI to the latest USDM map.
  - **Corn** denting is running **3%** ahead of normal pace, with **65%** of the crop reported in good to excellent condition.
  - **Soybean** pod setting is **nearly complete**, with **61%** of the crop reported in good to excellent condition.
- GDDs are approaching **2600 (2000) units** in the southern (northern) counties.

## Outlook:

- **Statewide precip chances** forecasted this next week, with a higher likelihood in the **N & far E**.
- September has a higher probability to be a **warmer and drier than normal month**, according to CPC outlooks.
- The warmer-than-normal conditions have a higher probability to **continue** into the fall with a La Niña pattern taking shape. Currently, we are in a **neutral phase**.

# Agronomic Considerations

## Crop Development

- Scouting for crop stage and development of issues is very important this year as the wet spring means that there is a lot of variability in fields and across farms.
- As silage and other early 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.

## Manure Applications

- Low runoff risk in the next week. Check the DATCP runoff risk advisory forecast [here](#).
- As silage comes off, consider the relationship between manure and cover crops, learn more [here](#).

## Pest Management

- Fall armyworm flights are underway. Sign up to receive text alerts when pests are in your region [here](#).
- Japanese beetles have emerged, monitor for defoliation thresholds, see [here](#) for management information.
- Conditions have been right in many places for tar spot and white mold, information available [here](#).
- Time to scout for soybean aphid, see more info [here](#).
- Scout for corn rootworm beetle to determine pressure on next year's continuous corn.
- Southern rust of corn was found in Wisconsin last week, see more info [here](#).
- Late blight was found on tomato in Wisconsin last week, see more info [here](#).

## Forage Management

- Look out for herbicide carryover, volunteers in late summer seeding of alfalfa wheat. [Read more](#).
- **Corn Silage Harvest** - look for local opportunities for stalk chopping to gauge moisture content, scout fields to understand which may be ready first. For varying planting dates, plan for a segregated, longer season harvest to optimize forage quality. More info [here](#).
- Fall alfalfa cutting can affect persistence, [read more](#) and use our [new tool](#) to make informed decisions.

# 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](mailto: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>



# Contact Info

Photo Credit: USDA



**Josh Bendorf**

Ag Climatologist, Midwest Climate Hub

[joshua.bendorf@usda.gov](mailto:joshua.bendorf@usda.gov)

**Bridgette Mason**

Assistant State Climatologist of Wisconsin

[bmmason2@wisc.edu](mailto:bmmason2@wisc.edu)

**Dennis Todey**

Director, Midwest Climate Hub

[dennis.todey@usda.gov](mailto:dennis.todey@usda.gov)

**Steve Vavrus**

State Climatologist of Wisconsin

[sjvavrus@wisc.edu](mailto:sjvavrus@wisc.edu)

**Natasha Paris**

Crops Educator – Adams, Green Lake,  
Marquette, Waushara Cos.

[natasha.paris@wisc.edu](mailto:natasha.paris@wisc.edu)

**Kristin Foehringer**

NRCS State Working Lands Climate Smart  
Specialist

[kristin.foehringer@usda.gov](mailto:kristin.foehringer@usda.gov)