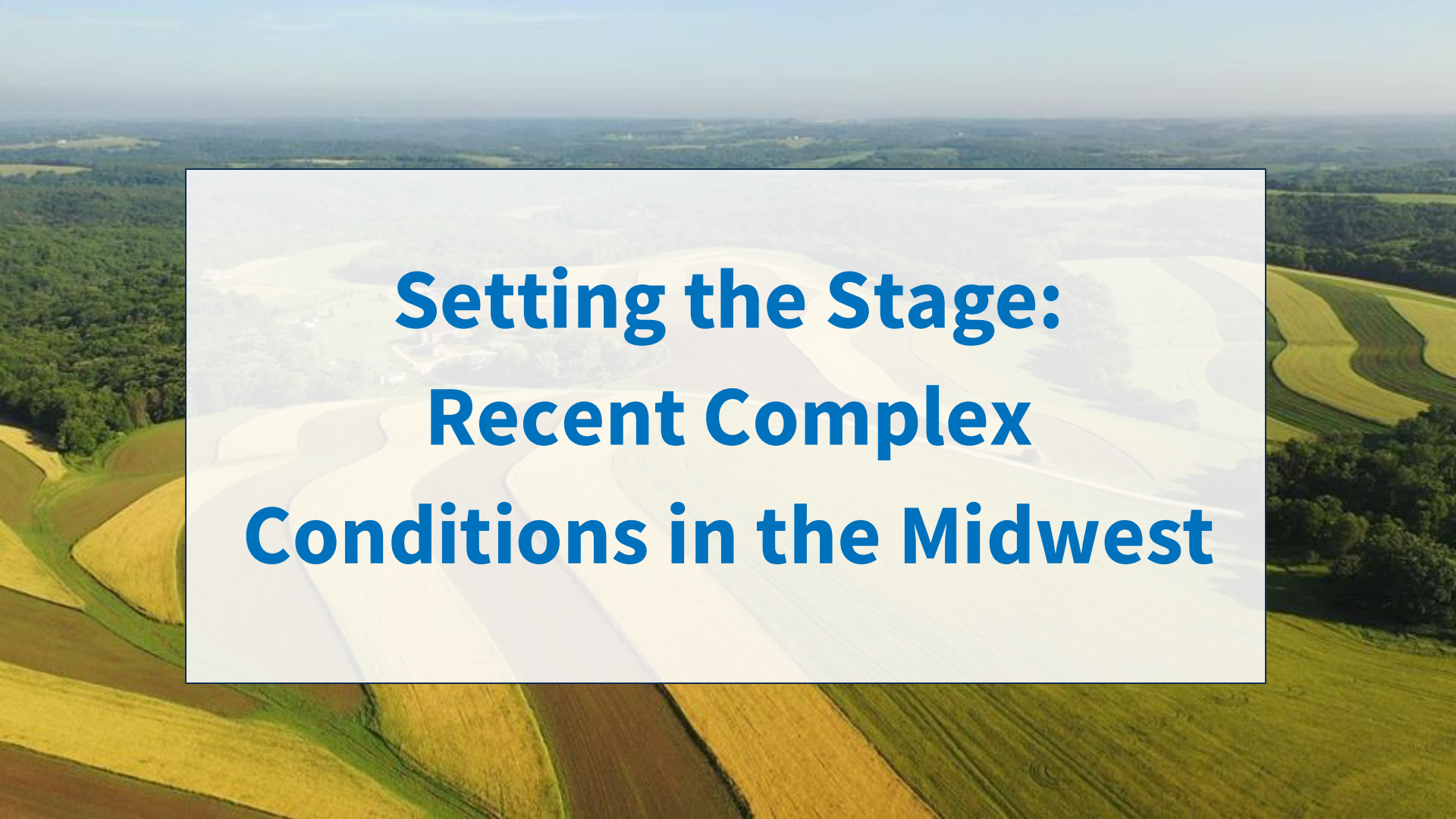
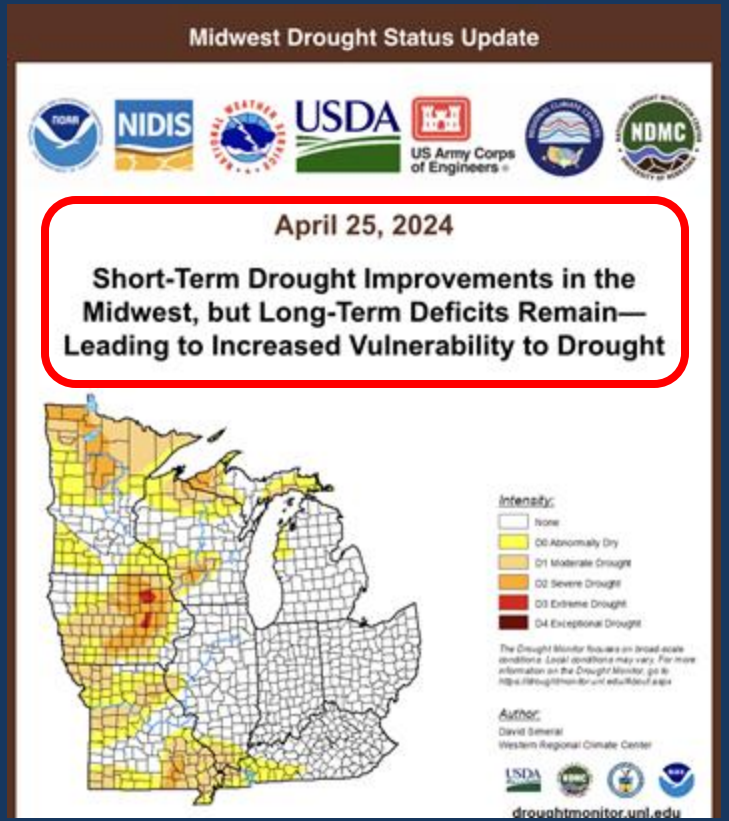


Setting the Stage: Recent Complex Conditions in the Midwest

Spring Rains-Yay!! But…

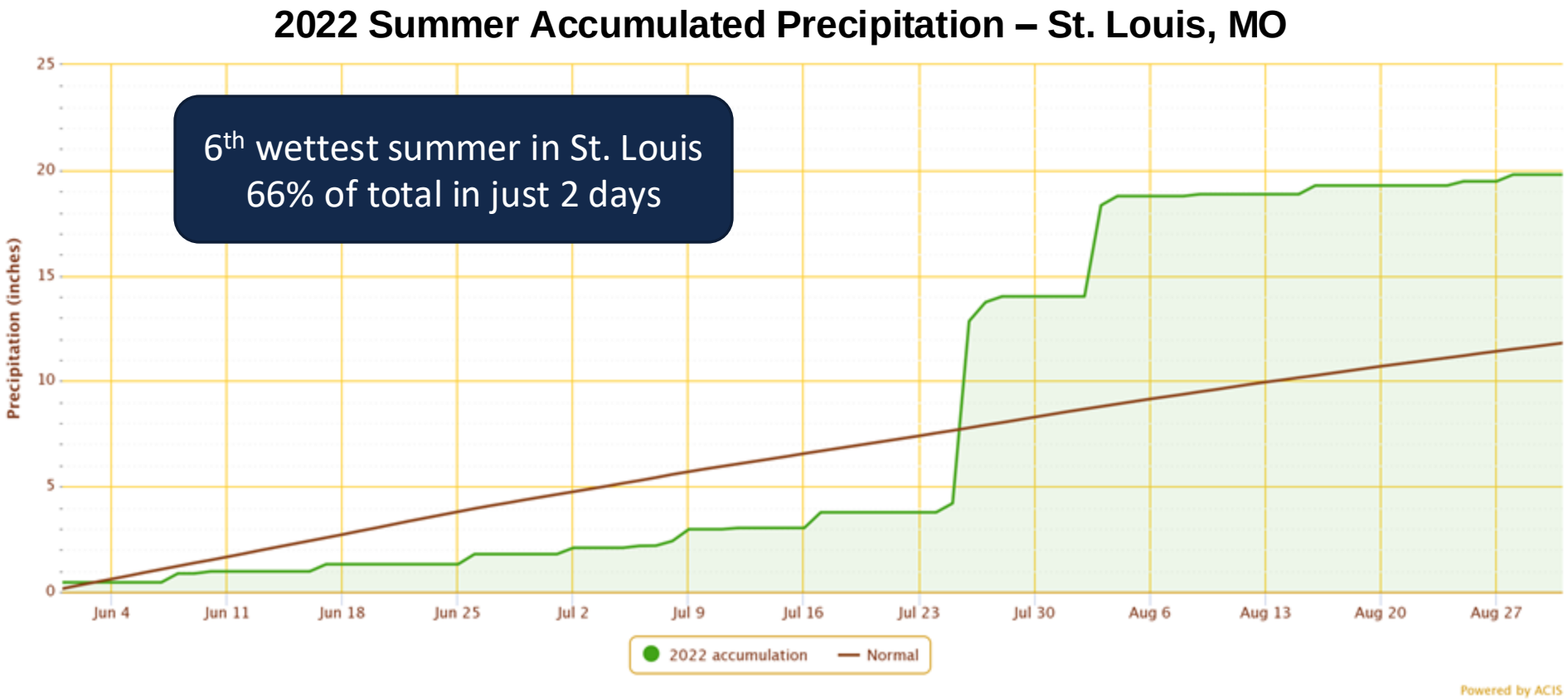
April 25th Key Messages

- 23% of the Midwest region is in drought
- Significant portions of the region, including Iowa and portions of Minnesota, Wisconsin, Missouri, and Indiana, have long-term precipitation deficits over last 4 years.
- Hydrology is showing the impacts (soil moisture, streamflow, AND groundwater)
- Short-term improvements: BUT long-term deficits are increasing our vulnerability in the Midwest.
- Underlying dryness means locations are VERY reliant upon regular spring and summer rainfall.
- Areas with below-normal rain in coming months: at risk for worsening drought conditions.

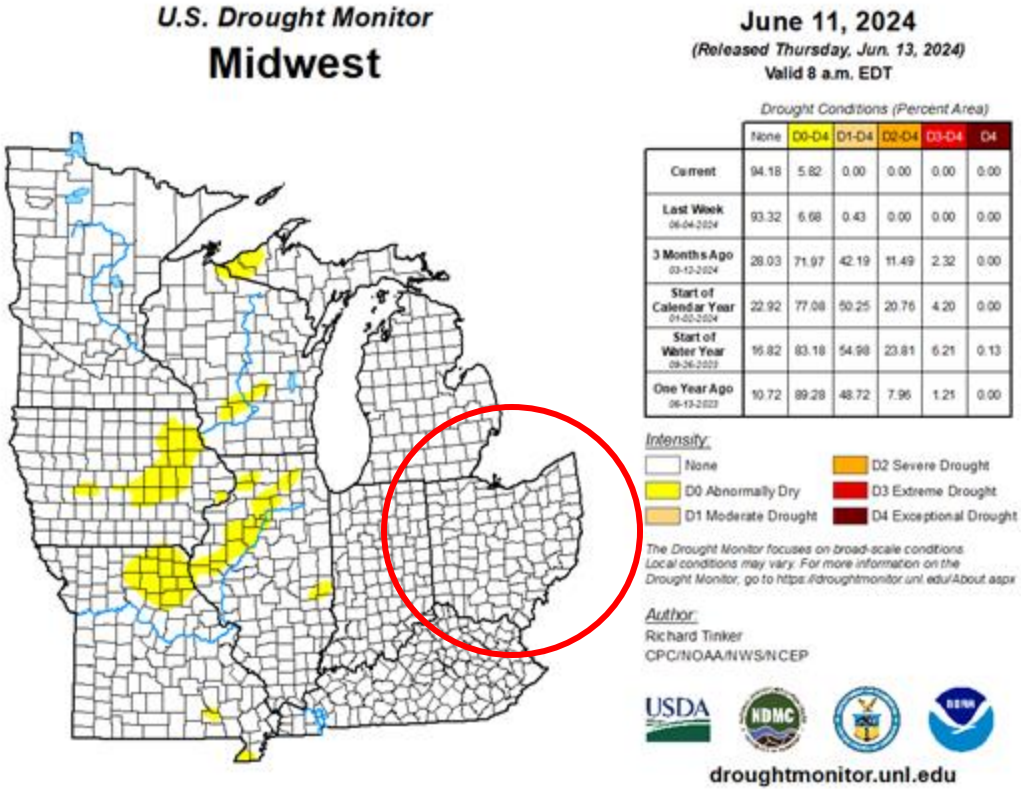


It Rains Finally! But…

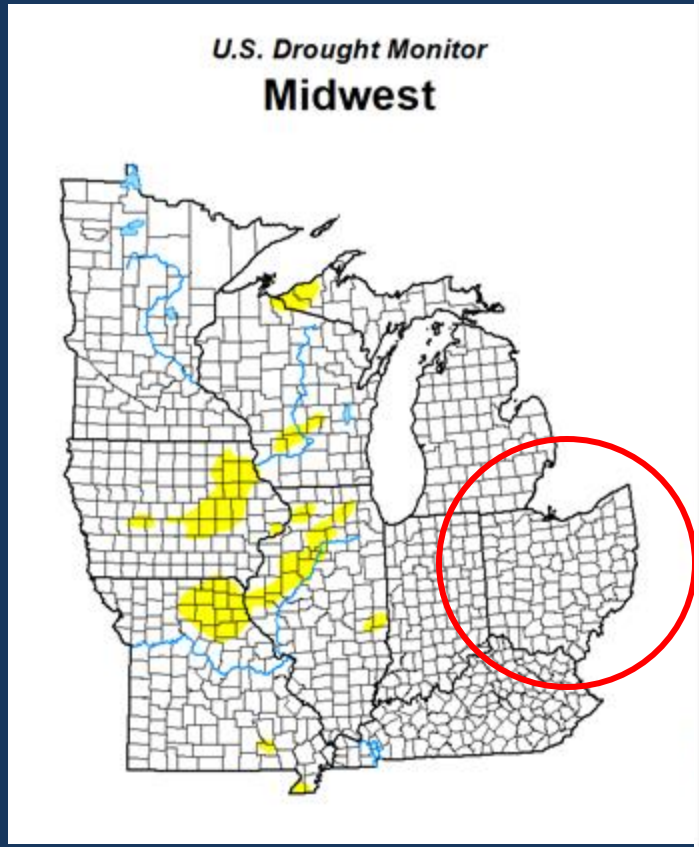
(Stolen from Trent yesterday…)

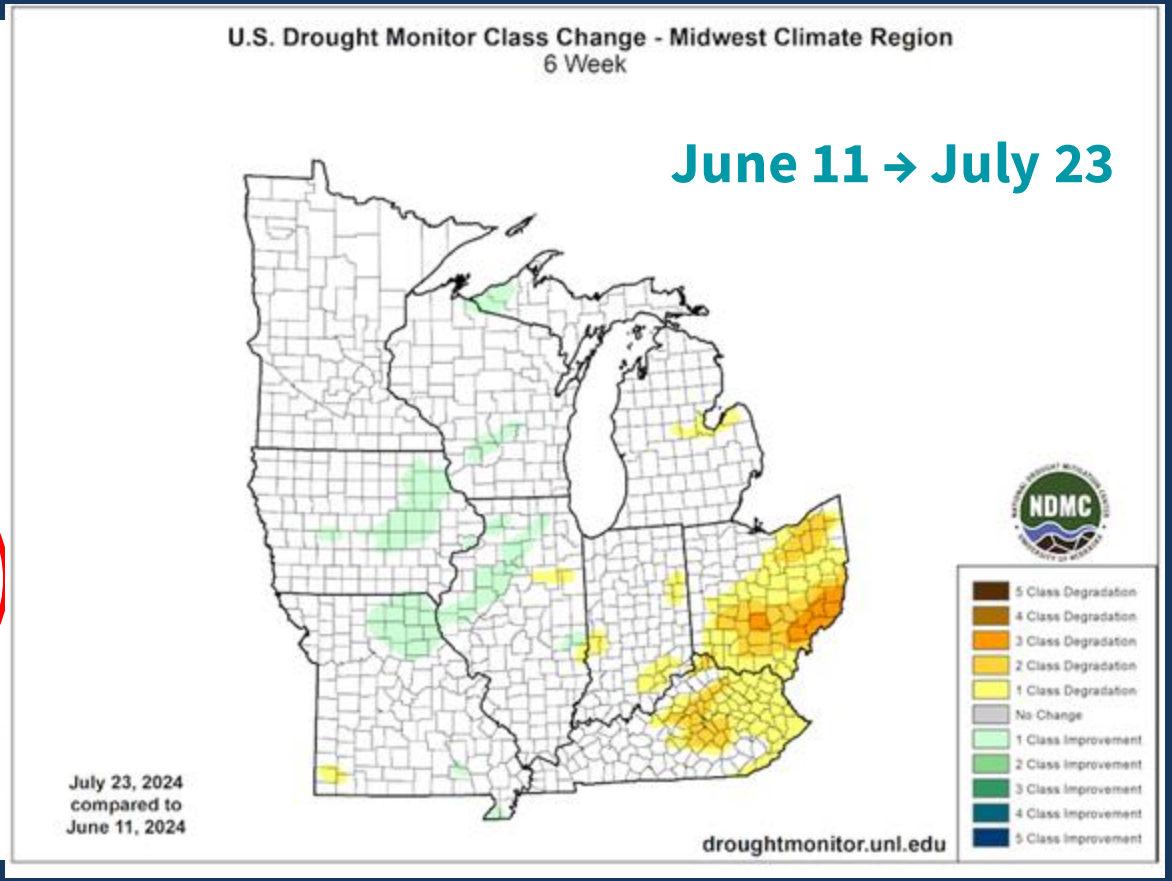


Midwest is Drought Free! Hold on…

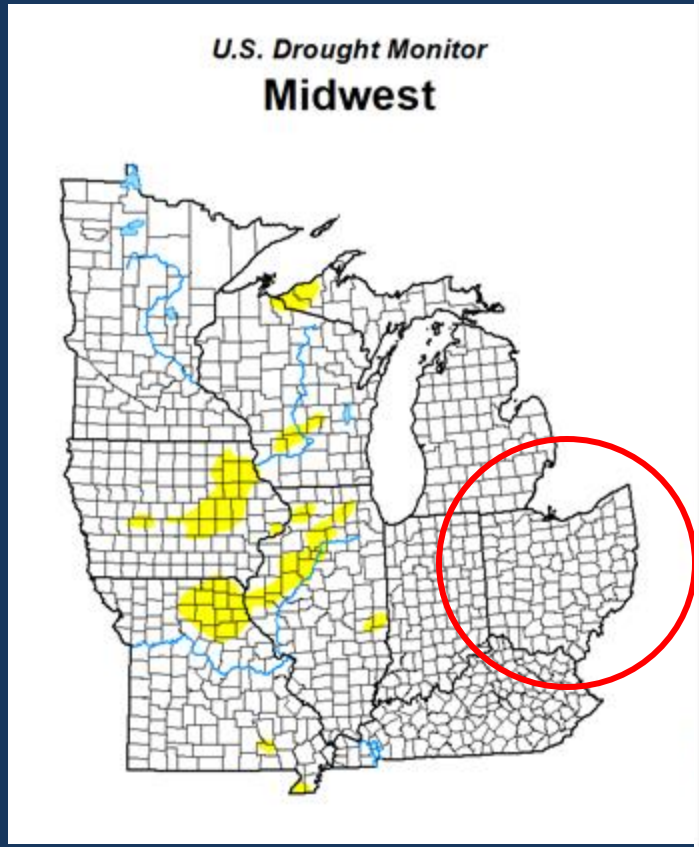


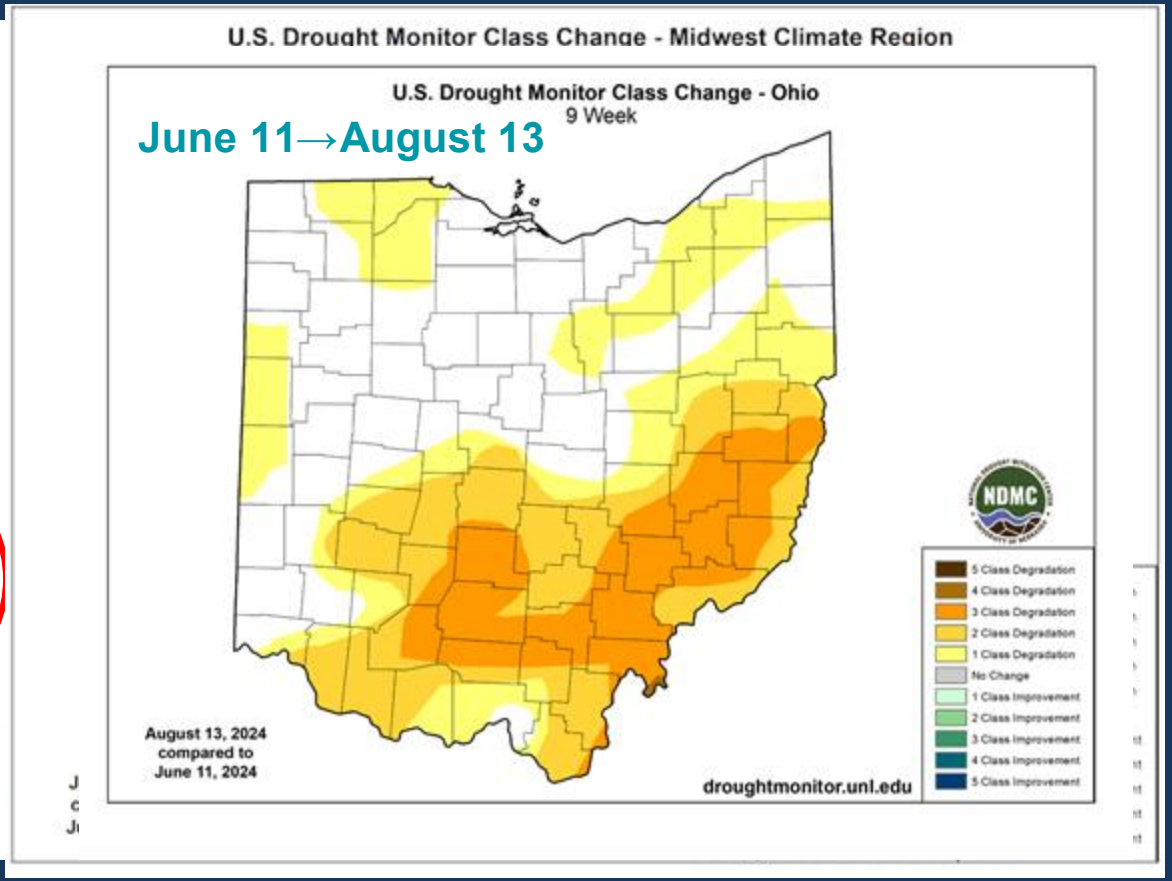
Midwest is Drought Free! Hold on…



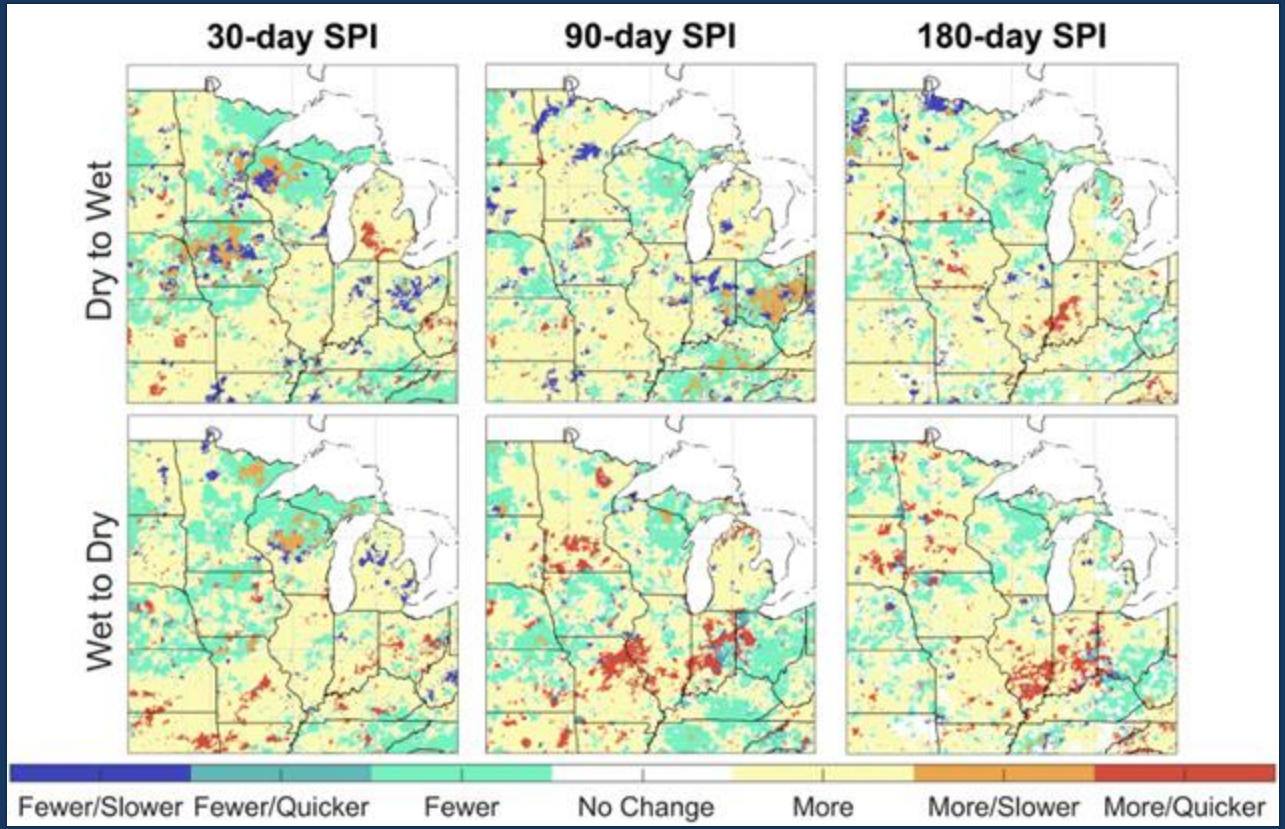


Midwest is Drought Free! Hold on…





Understanding the Complexity of Midwest Drought



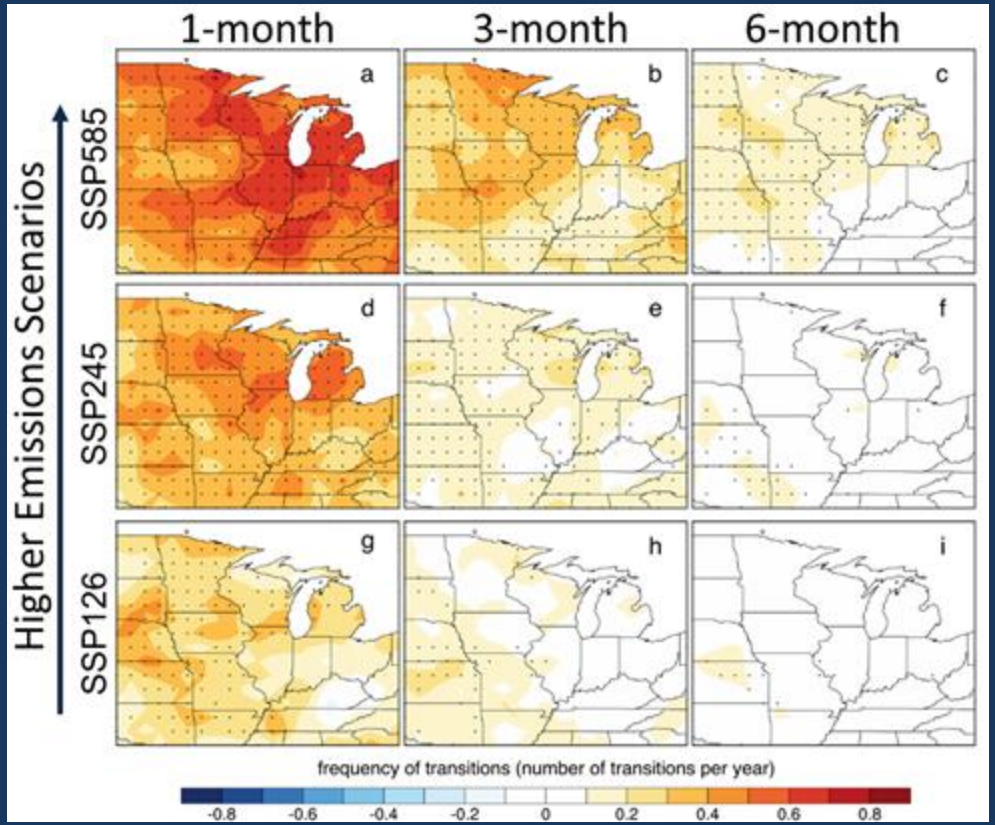
Transitions between extremely wet and extremely dry conditions, and vice versa, were assessed across the Midwest over the past 70 years.

Transitions from wet to dry extremes are happening more quickly and more frequently in the lower Midwest (red).

Yellow: more transitions…but no distinct trend on if events are happening more quickly or slower.

Ford et al. 2021

Understanding the Complexity of Midwest Drought



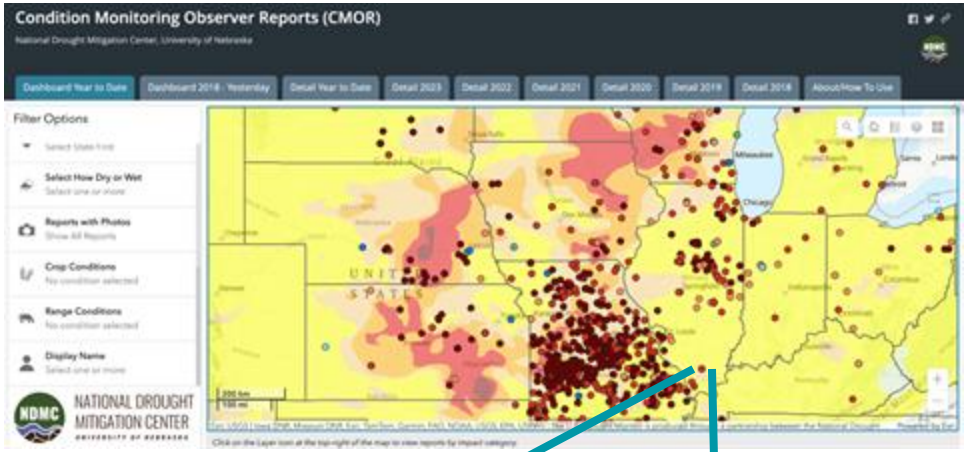
What about the future?

Climate projections (CMIP6) also show an increase in the frequency and intensity of transitions between extremes in the Midwest.

Potential intensification of precipitation extremes seasonality:

- **Wet extremes become more frequent in winter and spring**
- **Dry extremes become more frequent in summer and fall**

Chen et al. 2022



"Severe impact on plants (even after watering,) cracked ground, high levels of dust, blowing dust, corn crops stressed/stunted relative to average year. Stressed trees dropping leaves and developing seed pods, creeks dry, rivers low."

Condition Monitoring Reports

- It is **really important to know what is happening on-the-ground** for drought monitoring, response, and planning.
- Especially **when conditions are complex** - data may not always match what is happening on the ground
- Condition Monitoring Observer Reports (CMOR): https://droughtimpacts.unl.edu