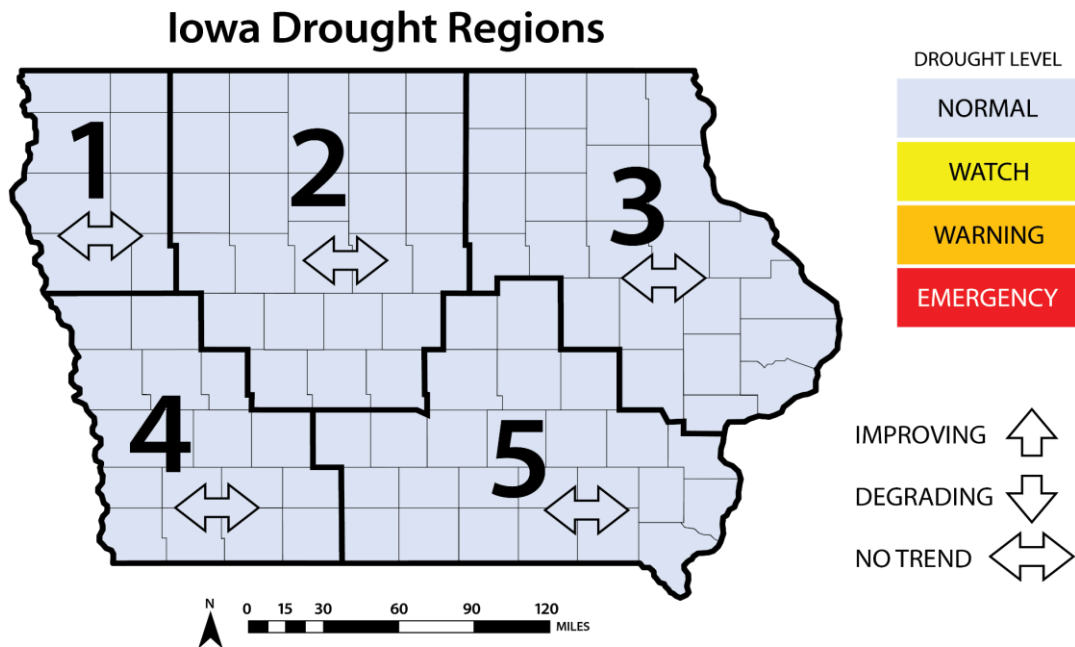


# WATER SUMMARY UPDATE

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## A snapshot of water resource trends for August 2024

### IOWA DROUGHT CONDITIONS



### CONDITION SUMMARY - MONTH OF AUGUST TURNS DRIER

After several normal or wetter than normal months over the spring and summer of this year, August ended as drier than expected. Preliminary rainfall for the month was 3.20 inches, or 0.93 inches below normal. Temperatures for the month were near normal.

For the summer months of June, July, and August temperatures averaged 72.0 degrees, or 0.6 degrees above normal. For these summer months preliminary precipitation totals were 13.75 inches, or 0.19 inches above normal.

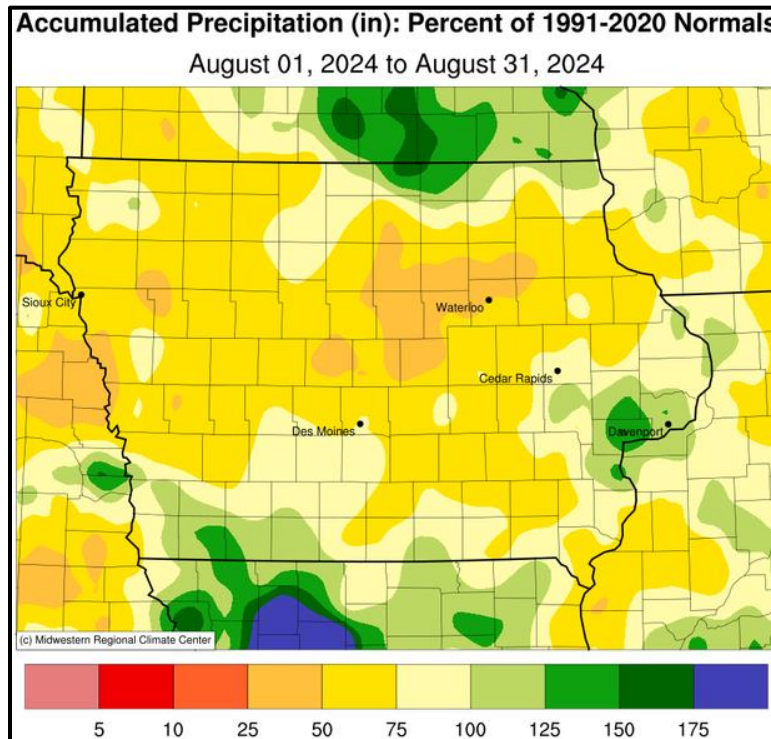
The US Drought Monitor, one measure reflected in the Iowa Drought Plan (IDP), showed increasing dryness in Iowa, with 43 percent of the state now designated as being abnormally dry. According to the IDP, all five monitoring regions are drought free, with conditions stabilized. After nearly a year of normal to above normal precipitation, all areas of the state are now in “Normal” condition. Over the past 12 months the state received 38.17 inches of rain, 4.63 inches more than normal. This one-year period brought a foot more rain than the period of September 2022 through August of 2023, when only 26.03 inches of rain fell across Iowa.

### August Precipitation and Temperature

Precipitation for the month of August totaled 3.20 inches, or 0.93 inches below normal. Most of Iowa’s National Weather Service co-op stations reported precipitation deficits through August with widespread one to two-inch departures; portions of central to north central Iowa had deficits over two inches. Stations along the northern and

southern state lines along with eastern Iowa reported above average totals. Monthly precipitation totals ranged from 1.11 inches in Cedar Falls to 6.82 inches in Muscatine.

Preliminary statewide temperatures averaged 71.0 degrees - equal to the 30-year climatological average. Osceola and Shenandoah reported the month's high temperature of 100 degrees on the 26th, 17 degrees above normal. Mapleton reported the month's low temperature of 43 degrees on the 10th, 18 degrees below normal.



### Standardized Precipitation Index (SPI)

The SPI is an index based on accumulated precipitation for various time scales. SPI is the most commonly used indicator worldwide for detecting and characterizing meteorological droughts. The SPI indicator measures precipitation differences based on a comparison of observed total precipitation amounts over the period of interest with the long-term historical precipitation record for that period. Droughts are characterized by negative SPI values, while positive SPI values indicate wet periods. The range of SPI values is between -3 and +3, denoting “extremely dry” to “extremely wet”.

Both the 90-day and 180-day SPI values for all Drought Regions in July (comparing, June, July, and August precipitation) are nearly all above zero. Although the SPI values have declined over the last month, they continue to reflect favorable precipitation going back six months, and all drought regions remain in normal condition for this indicator.

Drought Region	3-month SPI	6-month SPI	IDP Classification ↑ = improving ↓ = degrading ↔ = no trend
1	+ 0.3	+ 1.8	Normal ↓
2	+ 0.5	+ 1.7	Normal ↓
3	+ 0.9	+ 1.8	Normal ↔
4	- 0.2	+ 0.8	Normal ↓
5	+ 0.5	+ 1.2	Normal ↔

## Standardized Streamflow Index (SSI) and Streamflow

SSI is a metric that compares current streamflow against the historical record to determine how far away the current streamflow value is from the river's historical mean observed on the same date. SSI values in all five drought regions are in the normal range, but are decreasing due to a drier than normal August.

According to the US Geological Survey, during August, streamflow levels decreased from much above and above normal flow to normal conditions across the majority of the state, as the runoff from July rains moved downstream. The Cedar, Ocheyedan, Little Sioux, Floyd, and Rock Rivers remain in above normal conditions. In addition, flow in portions of the Des Moines and Skunk Rivers remained above normal, while the remainder of the state's streams and rivers have normal flow. It is worth noting a decrease in streamflow is expected in the fall months in Iowa, so flows that are normal in September will be lower than flows that are normal in June.

The lake level at Saylorville Reservoir has returned to a seasonally normal level, down over 43 feet from its high level of July 12 of this year.

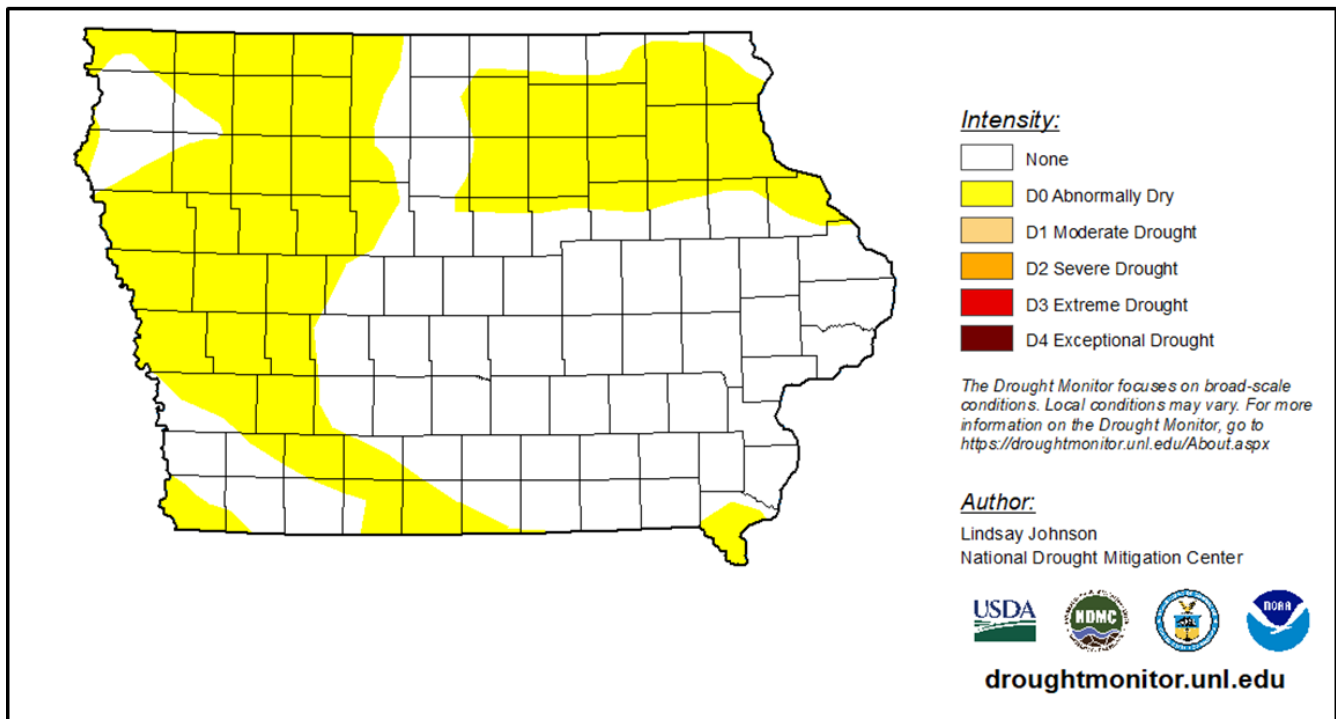
## US DROUGHT MONITOR AND DROUGHT CONDITIONS

The current US Drought Monitor (USDM) shows the return of short-term dryness to parts of Iowa. After starting the month of August with almost no dryness or drought, the shortfall of rain has resulted in an increase of D0 - Abnormally Dry designation to more than 43 percent of the state. It is worth noting that D0 is used to indicate abnormally dry areas that could be entering or recovering from drought, but does not indicate drought conditions.

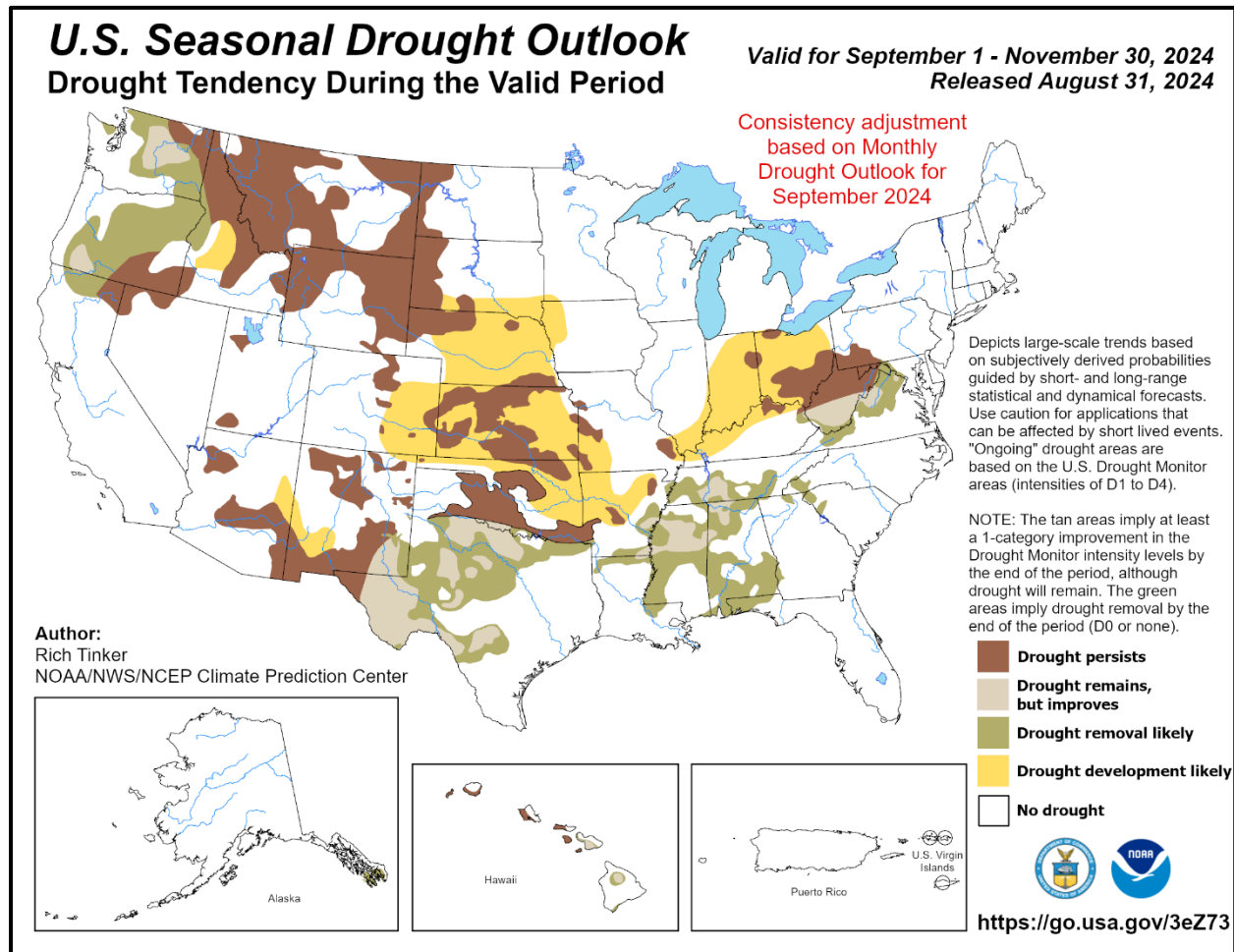
One year ago, over 90 percent of Iowa was in some form of drought, including about 25 percent of the state in D3 - Extreme Drought. The current 43 percent of D0 coverage shows short-term dryness, but also reflects the improvement in conditions that began in October 2023 and continues into the fall of 2024. Over the last month drought conditions have expanded to the west, south, and east of Iowa, with a significant area of drought now present in southeastern Ohio, including a pocket of D4 - Exceptional Drought now covering 7 percent of that state. Drought conditions are also present in the western portions of the Missouri River basin.

### U.S. Drought Monitor Iowa

September 3, 2024  
(Released Thursday, Sep. 5, 2024)  
Valid 8 a.m. EDT



The Seasonal Drought Outlook released on August 31 by the Climate Prediction Center (CPC), valid through November 30, shows the potential for drought development in northwest Iowa, as well as in areas to the west of Iowa. The southwestern United States is expected to remain largely free from drought. Much of Texas is expected to see improvement in drought conditions through the fall months. Indiana and Ohio are expected to see drought development and the persistence of drought conditions.



## OTHER WATER RESOURCE INFORMATION

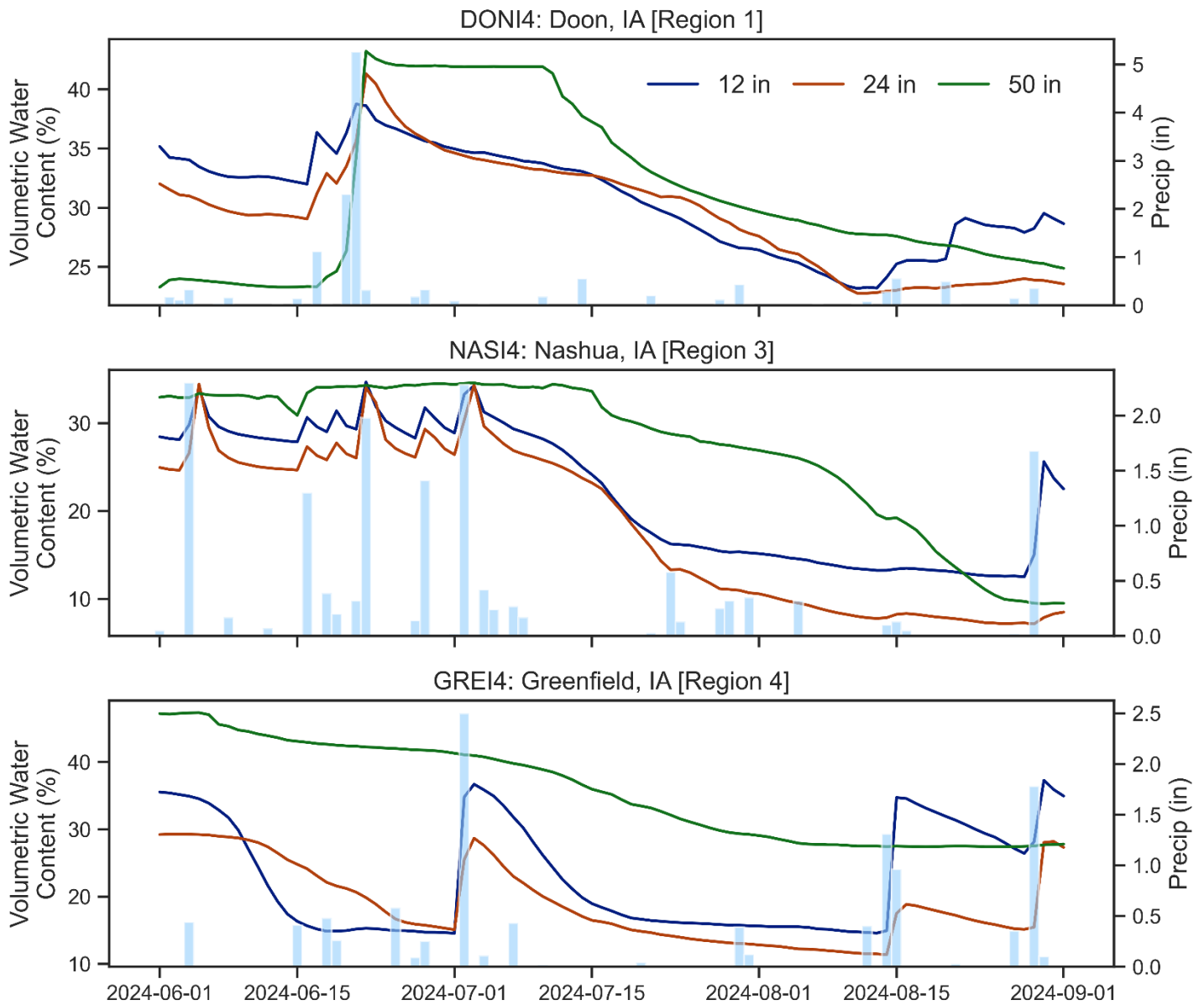
### Border River Conditions

Current conditions on both the Missouri and Mississippi Rivers have generally normal flows. On the Missouri River the US Army Corps of Engineers reports that total reservoir storage peaked for the year in August, and is decreasing. Storage should be at normal levels by the end of the calendar year. Drought conditions in the western portion of the Basin are expected to persist or worsen through the end of November.

### August Soil Moisture

The most recent United States Department of Agriculture's National Agricultural Statistics Service (NASS) report issued on September 3 indicates that for both topsoil and subsoil, 22 percent of the state has short or very short moisture levels, while 78 of the state has levels rated as adequate or surplus. The graphs below show soil moisture levels and response to rainfall events for three locations in Iowa. The Iowa Geological Survey reports that soil moisture conditions during the month of August were similar to those in July, with areas of western Iowa more dryness than areas of eastern Iowa. This is a result of normal temperature conditions and below normal precipitation in August.

## ISU Soil Moisture Observations: 2024-06-01 to 2024-09-01



### ADDITIONAL INFORMATION

This edition of the Water Summary Update continues to reflect use of the 2023 Iowa Drought Plan (IDP), which was developed as a collaborative effort between the Department of Natural Resources, the Department of Agriculture and Land Stewardship, and the Department of Homeland Security and Emergency Management. The IDP can be seen in its entirety on the DNR’s website: [The Iowa Drought Plan](https://www.dnr.iowa.gov/2023/06/20/2023-Iowa-Drought-Plan).

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