



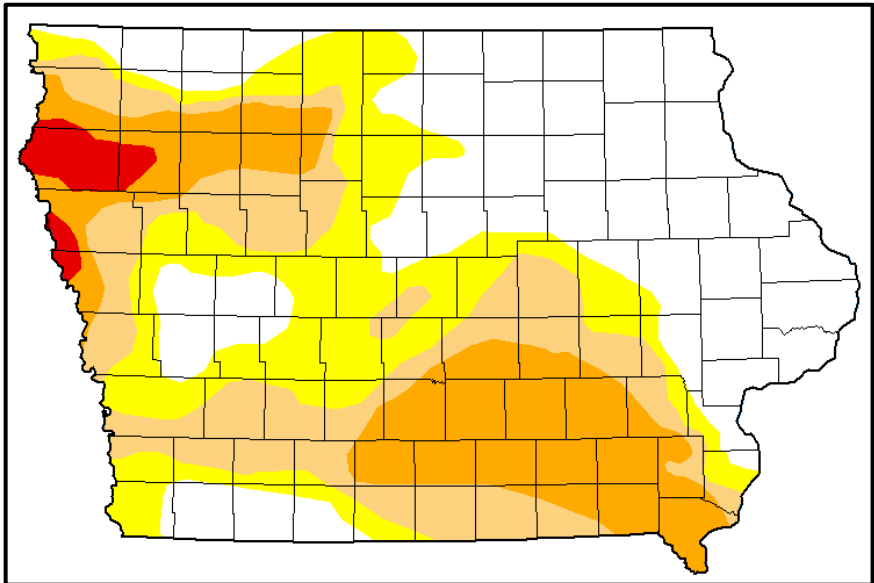
WATER SUMMARY UPDATE

Published Date September 8, 2022 | Issue 135

A snapshot of water resource trends for August, 2022

Drought Monitor - Conditions as of September 6, 2022

National Drought Mitigation Center and partners

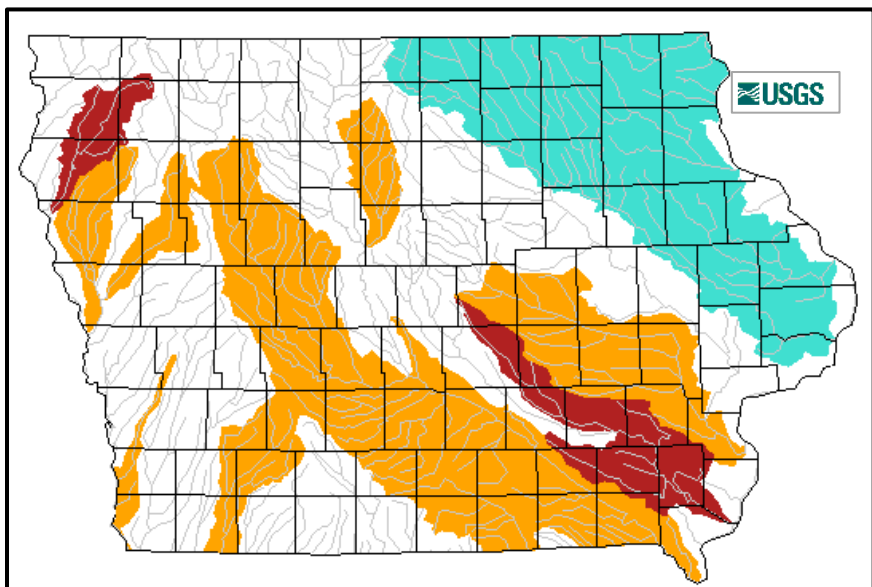


Intensity:

■ D0 Abnormally Dry	■ D3 Extreme Drought
■ D1 Moderate Drought	■ D4 Exceptional Drought
■ D2 Severe Drought	

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

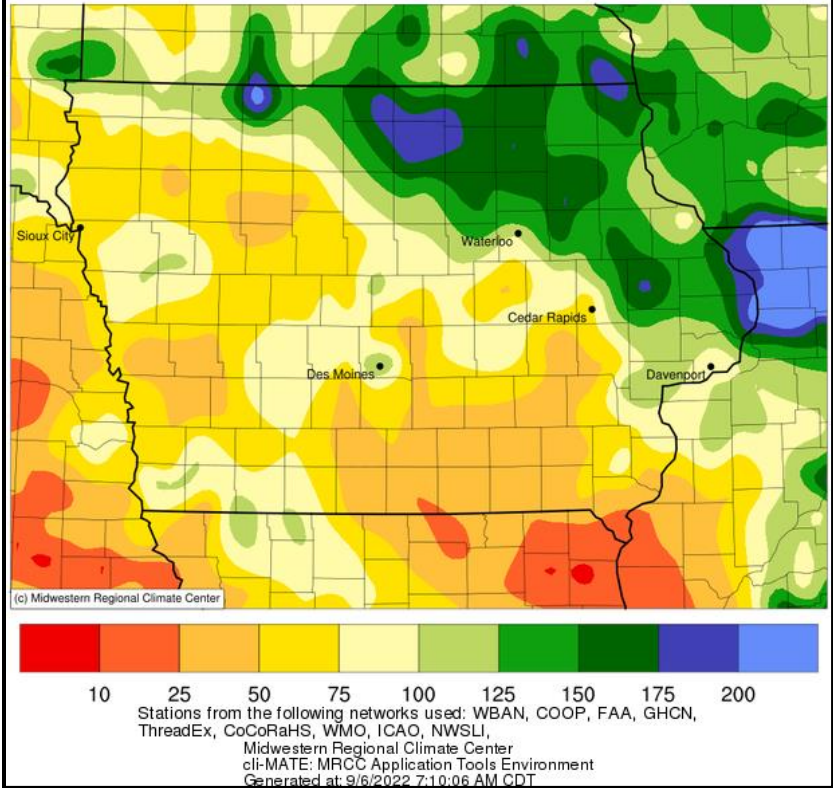
Stream Flow – August, 2022



Explanation - Percentile classes					
■	■	■	■	■	■
Low	<10	10-24	25-75	76-90	>90
	Much below normal	Below normal	Normal	Above normal	Much above normal
					High

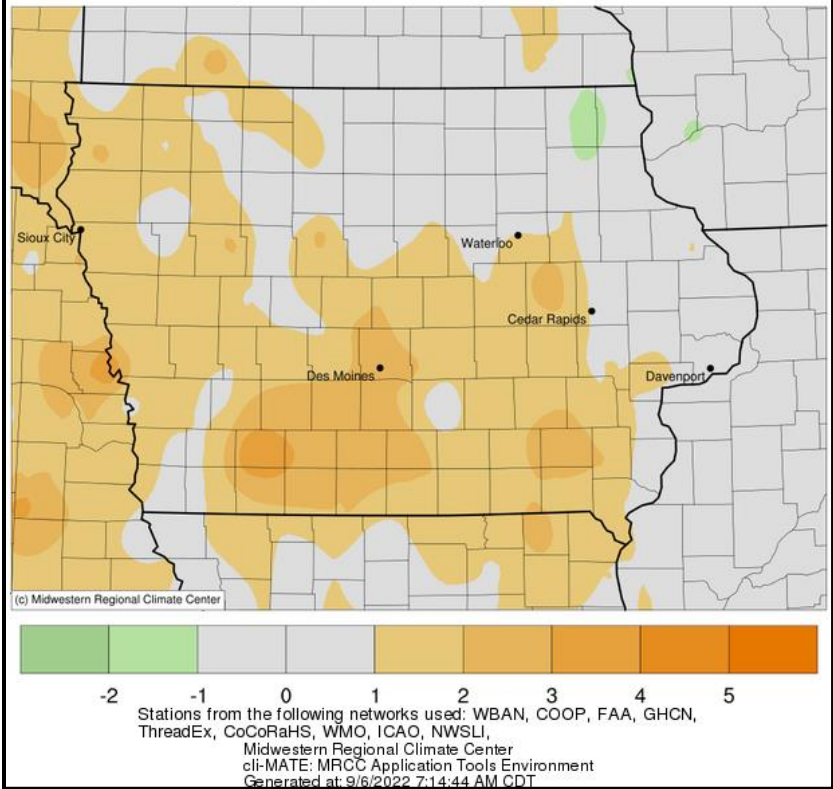
Accumulated Precipitation (in): Percent of 1991-2020 Normals

August 01, 2022 to August 31, 2022



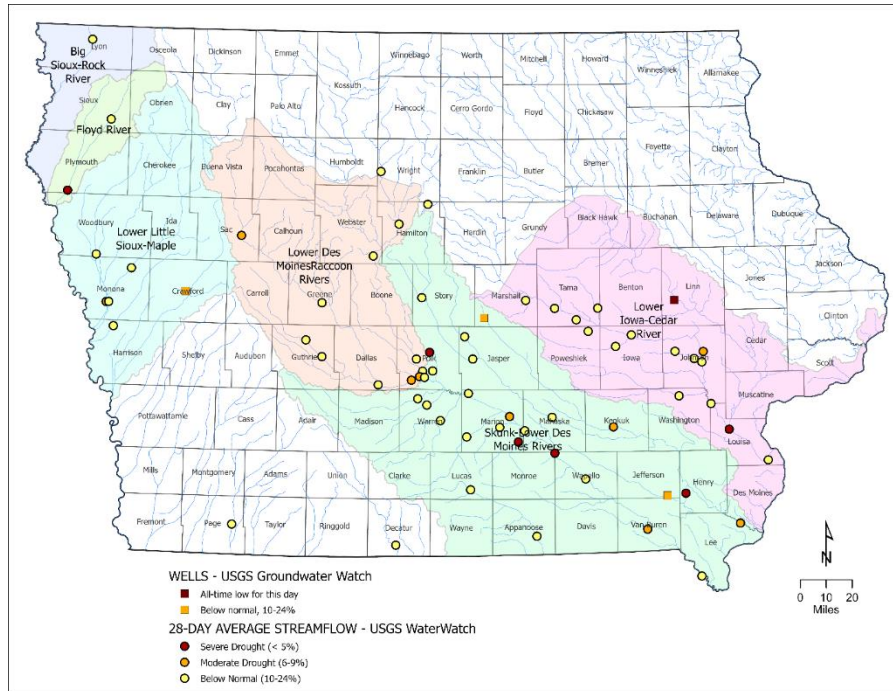
Average Temperature (°F): Departure from 1991-2020 Normals

August 01, 2022 to August 31, 2022



Shallow Groundwater - Conditions for August, 2022

Iowa DNR and Iowa Geological Survey – IIHR Hydroscience and Engineering



RECENT DEVELOPMENTS AND CHANGES

SUMMARY

August marked the fifth month in a row of below normal precipitation for the state of Iowa. The 3.53 inches of rainfall was 0.6 inches below normal for the month, while average temperatures were more than one degree above normal. East central and southeast Iowa were the driest regions of the state in August, with the extreme southeast corner of the state getting less than 25 percent of normal rainfall. Over the past month the US Drought Monitor indicates some improvement across the central part of Iowa, but deterioration in the east central and southeast areas. Iowa is likely to continue to see small areas of improvement and deterioration until the state sees widespread consistent above normal rainfall. Streamflow, soil moisture, and shallow groundwater levels are all lower than normal in northwest and southeast Iowa.

SUMMER MONTHS' SUMMARY

For climatologists the summer season includes the months of June, July, and August. For the 2022 summer season, temperatures averaged 72.6 degrees, which is 1.2 degrees above normal. Precipitation totaled 10.26 inches or 3.30 inches below normal. A warmer summer occurred last year while the summer of 2020 was drier.

DROUGHT MONITOR

During the month of August the US Drought Monitor showed some areas of improvement, and some areas of degradation. Areas of southwest and central Iowa that received above normal rainfall for the month saw an improvement in drought classification. However, areas of southeast Iowa that were very dry during the month saw drought conditions deteriorate. Areas of Lee, Van Buren, and Tama Counties saw two drought class degradation in the last month, with a large area of D2 – Severe Drought existing in over 20 counties in southeast Iowa. An area of D3 – Extreme Drought continues to be present in northwest Iowa, covering nearly all of Plymouth County as well as portions of surrounding counties. More than 62 percent of the state is now

designated in some form of dryness or drought, with over 40 percent rated as D2 Severe Drought or worse. These overall conditions are similar to those of one year ago.

Drought conditions are much worse to the west in Nebraska and Kansas. In those states, areas of D4 Exceptional Drought are present, including an area of D4 just to west of the Missouri River in eastern and northeastern Nebraska. All of Nebraska and 95 percent of Kansas are designated in some form of drought of dryness.

AUGUST PRECIPITATION AND TEMPERATURE

August was unseasonably dry for the southwestern three-quarters of Iowa with precipitation deficits of one to three inches. South-central Iowa experienced the driest conditions with deficits of more than three inches. Only northeastern Iowa reported wetter than average conditions with pockets of three to four inches of above normal totals. For August, the statewide preliminary average precipitation totaled 3.53 inches, or 0.60 inches below normal. August of 2020 was the most recent drier August. Monthly precipitation totals ranged from 0.25 inches at Keokuk Lock and Dam to 8.88 inches at a gauge near Center Junction.

August temperatures were anywhere from one to two degrees above average across Iowa with near-normal temperatures reported in northern and northeastern Iowa where cloud cover and rain were more pervasive. The statewide preliminary average temperature was 72.3 degrees, 1.3 degrees warmer than normal, with a warmer August occurring last year. Sioux City Airport reported the month's high temperature of 102 degrees on the August 2nd. This was 18 degrees above normal for that date and location. Anamosa reported the month's low temperature of 47 degrees on the 10th, 14 degrees below normal.

AUGUST STREAM FLOW

During the month of August, streamflow conditions dropped to below-normal flow for two-thirds of the state, while in the northeast corner of the state streamflow remained above-normal. Portions of the Floyd and Skunk rivers move into much below normal conditions. The Chariton, Lower Des Moines, Raccoon, Nodaway, Lower Iowa, and Boone Rivers moved into the below normal condition or remained below normal over the last month. The Upper Cedar, Shell Rock, Wapsipinicon, and Maquoketa Rivers have moved into the above normal condition, and the Turkey, Volga, Yellow, and Upper Iowa Rivers have dropped from above normal and high to the above normal condition.

MISSOURI RIVER BASIN CONDITIONS

On September 1 the Corps of Engineers System lowered their forecast for runoff in the upper Missouri River (the area upstream of Sioux City) to 20.2 million acre-feet (MAF) from the 20.6 MAF forecast issued at the start of August. The forecast runoff is about 79% of average. The total amount of water stored in all of the reservoirs in the Corps of Engineers' system is 49.9 MAF, 0.4 MAF less than last week and 1.9 MAF less than last month.

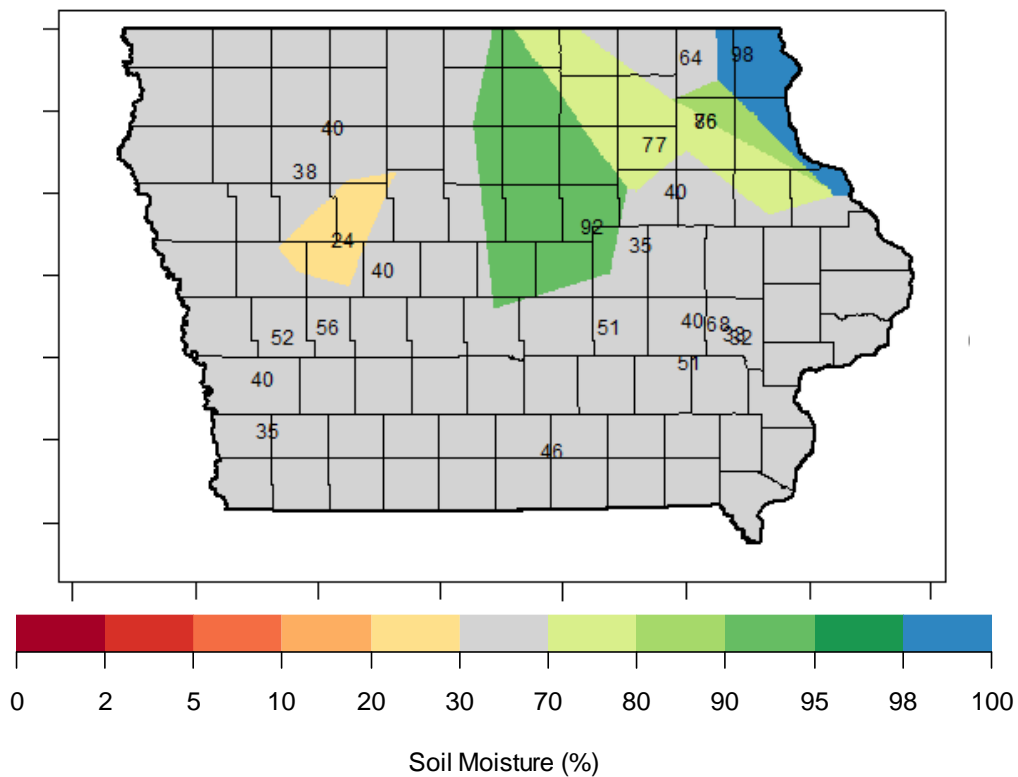
AUGUST SHALLOW GROUNDWATER

August shallow groundwater levels were statistically normal across much of the north and northeast parts of the state. However, declining groundwater levels leading to areas of increased water stress and vulnerability were observed across much of the rest of the state. The 28-day average stream baseflow trends are used as an indicator of long-term water level changes in shallow aquifers, and during August below normal baseflow was observed in a large swath extending from northwest to southeast Iowa. This include parts of northwest Iowa (around the Big Sioux and Rock Rivers, Floyd River and Lower Little Sioux and Maple Rivers), parts of east-central to southeast Iowa (around the Lower Iowa and Cedar Rivers), parts of south-central to southeast Iowa (around

the Skunk and Lower Des Moines Rivers), and parts of west-central Iowa (around the Lower Des Moines and Raccoon Rivers). The expansion into west-central Iowa is new since July. There are also other locations showing stress mainly located along the margins of the areas noted above.

AUGUST SOIL MOISTURE

The Iowa Flood Center map shows soil wetness, in percentage, at the 20-inch depth for the last day of August. The map is obtained from interpolation of soil moisture gages. The map indicates that the lowest soil moistures are located primarily in west-central Iowa. The September 6 US Department of Agriculture’s National Agricultural Statistics Service (NASS) report that indicates that over the last month topsoil and subsoil moisture levels have improved in north central, northeast, and east central Iowa, but have worsened in the west central, central, and southeast parts of the state. According to the NASS report, over 80 percent of topsoil and subsoil moisture is rated as short of very short in the worst part of Iowa, the southeast area. At the same time, northeast Iowa over 85 percent of topsoil and subsoil moisture is rated as adequate or surplus.



ADDITIONAL INFORMATION

For additional information on the information in this Water Summary Update please contact any of the following:

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