



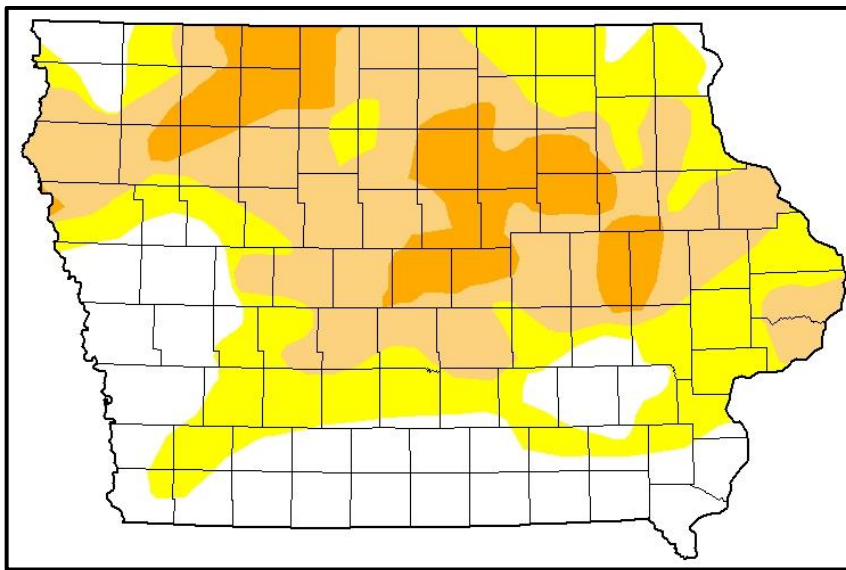
WATER SUMMARY UPDATE

Published Date September 2, 2021 | Issue 123

A snapshot of water resource trends for August, 2021

Drought Monitor - Conditions as of August 31, 2021

National Drought Mitigation Center and partners

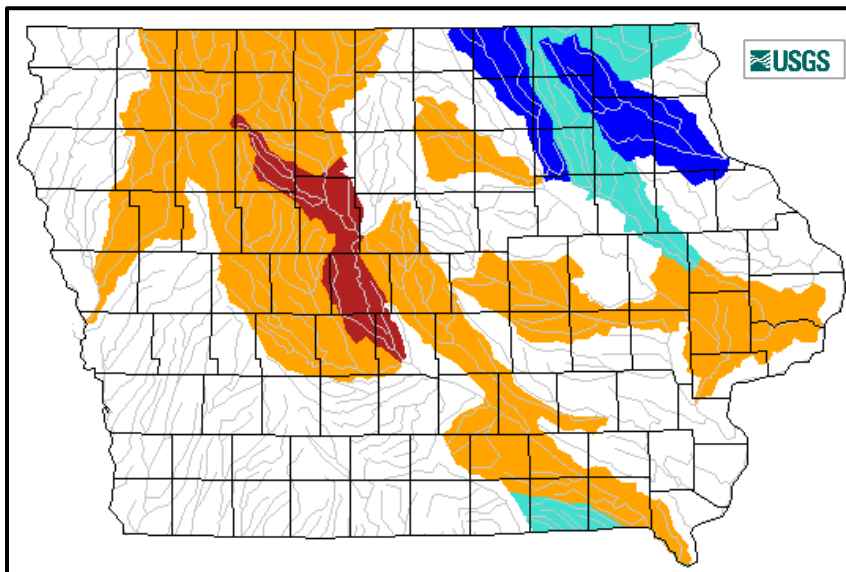


Intensity:

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

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

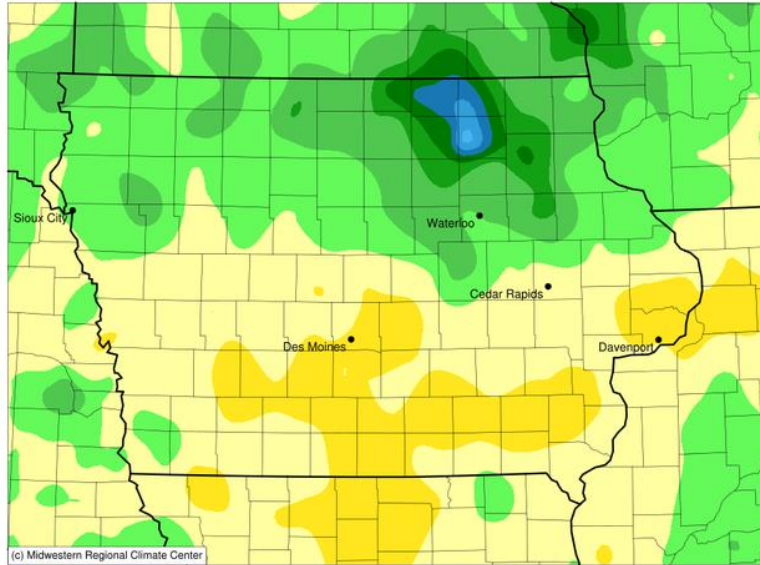
Stream Flow – August, 2021



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

Accumulated Precipitation (in): Departure from 1991-2020 Normals

August 01, 2021 to August 31, 2021



-2 0 2 4 6 8 10 12

Stations from the following networks used: WBAN, COOP, FAA, GHCN, ThreadEx, CoCoRaHS, WMO, ICAO, NWSLI,

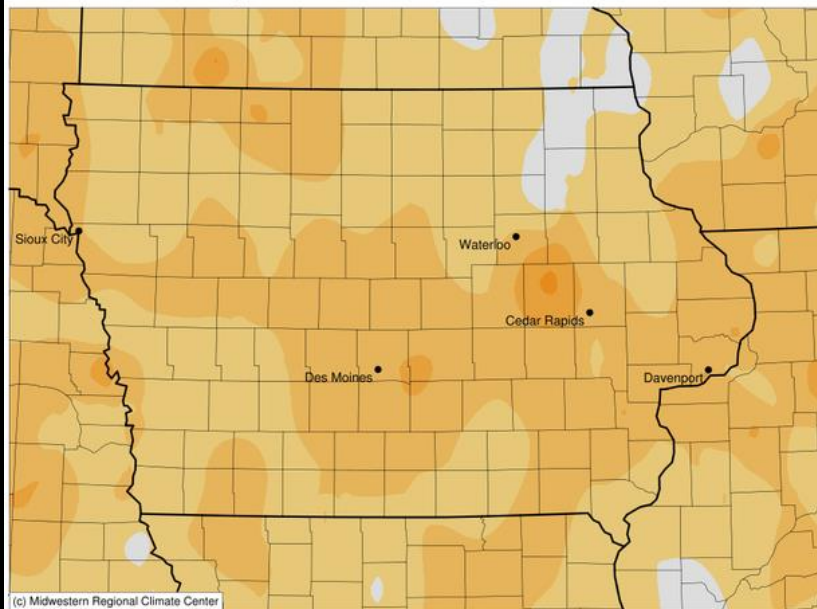
Midwestern Regional Climate Center

cli-MATE: MRCC Application Tools Environment

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

August 01, 2021 to August 31, 2021



0 1 2 3 4 5 6

Stations from the following networks used: WBAN, COOP, FAA, GHCN, ThreadEx, CoCoRaHS, WMO, ICAO, NWSLI,

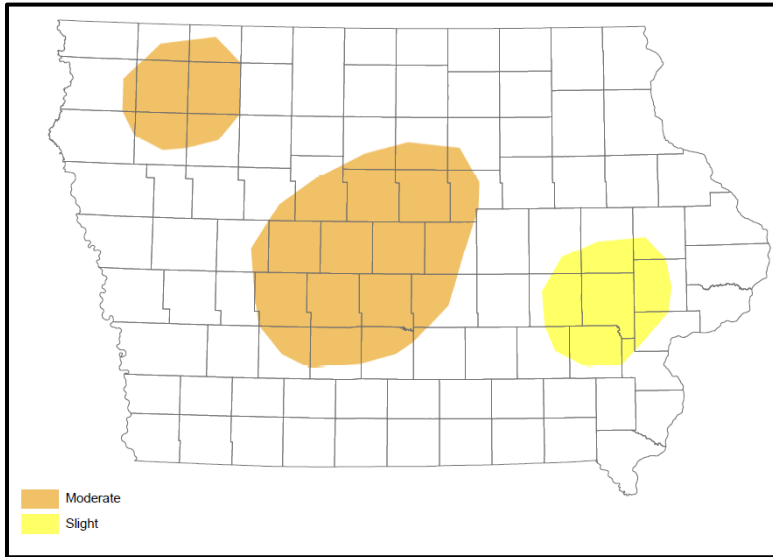
Midwestern Regional Climate Center

cli-MATE: MRCC Application Tools Environment

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Shallow Groundwater - Conditions for August 2021

Iowa DNR and IIHR-Hydroscience and Engineering



RECENT DEVELOPMENTS AND CHANGES

SUMMARY

August was the first summer month of 2021 that brought above normal precipitation to the state, providing significant relief to the ongoing drought conditions. Average precipitation for August totaled 4.64 inches, or 0.51 inches above normal, with especially high precipitation occurring in northeast Iowa at the end of the month. Streamflow and soil moisture levels have improved over most of the state as well. Drought conditions, as reflected in the US Drought Monitor are also improved. The area of Extreme Drought in Iowa has been eliminated, and the area of Severe Drought has been reduced to under 13 percent. The total area of the state covered by drought conditions remains above 70 percent, but the severity of the drought conditions has been significantly reduced.

DROUGHT MONITOR

The month of August saw a significant improvement in the US Drought Monitor. At the beginning of August, seven percent of Iowa was in Extreme Drought (D3) and an additional 27 percent of the state was in Severe Drought (D2). At the end of August, the area of Extreme Drought was eliminated, and the area of Severe Drought was reduced to under 13 percent. While the total area of the state covered by drought conditions remains above 70 percent, the severity of the drought conditions has been significantly reduced, especially over the last week.

The worst of the drought conditions in August peaked during the third week of the month, with Extreme Drought covering 10.5 percent of Iowa, and Severe Drought covering another 25 percent of the state. At its greatest extent, during that same week, nearly 79 percent of the state was rated as being in some stage of abnormal dryness or drought. Improvements over the last week have seen the elimination of Extreme Drought and the reduction of Severe Drought coverage to less than 13 percent of the state. The total area rated in some stage of abnormal dryness or drought is now below 72 percent, an improvement by more than seven percent in the last week.

AUGUST PRECIPITATION AND TEMPERATURE

Iowa's preliminary statewide average precipitation for August totaled 4.64 inches, or 0.51 inches above normal. Widespread and beneficial rain fell statewide, accompanied by several days of severe weather. Much of the state's northern half reported above-average rainfall with many stations in north-central to northeastern Iowa measuring more than four inches above average. Multiple National Weather Service co-op stations in northern Iowa experienced their wettest August on record. Southern Iowa stations reported near normal to below-normal precipitation with the driest stations observing more than two-inch deficits. Monthly precipitation totals ranged from 0.23 inches at Fairfield to 20.65 inches at Ionia. 11.25 inches of Ionia's total monthly rain fell over a 24-hour period ending on August 29th. Despite the above normal rainfall for the month, statewide 2021 rainfall totals are more than four inches below normal for the year.

The preliminary statewide average temperature was 73.3 degrees, 2.3 degrees warmer than normal with a warmer August occurring last year. Multiple south-central stations observed the month's high temperature of 98 degrees on the 24th, on average 15 degrees above normal. Forest City and Webster City reported the month's low temperature of 45 degrees on the 14th, on average 14 degrees below normal.

AUGUST STREAM FLOW

During the month of August, streamflow conditions show great variation across the state. The Skunk, Des Moines, Raccoon, and Little Sioux basins have remained in the below normal condition since the last water summary update, including areas that show much below normal flow. At the same time, the Upper Iowa, Turkey, Chariton, Wapsipinicon, Little Cedar, and Cedar Rivers moved into the above and much above normal since the last water summary update.

USGS staff were in northeast Iowa on Sunday August 29 taking field measurements. The second and third highest measurements on record were made on the Turkey River near Eldorado, IA, and the second highest discharge measurement ever was made at the Wapsipinicon River near Tripoli, IA. These record flows were brought about by significant rainfall, with widespread areas of more than seven inches of rain in southern Minnesota and Northern Iowa in the upper ends of the Turkey, Wapsipinicon and the Cedar River drainage areas.

AUGUST SHALLOW GROUNDWATER

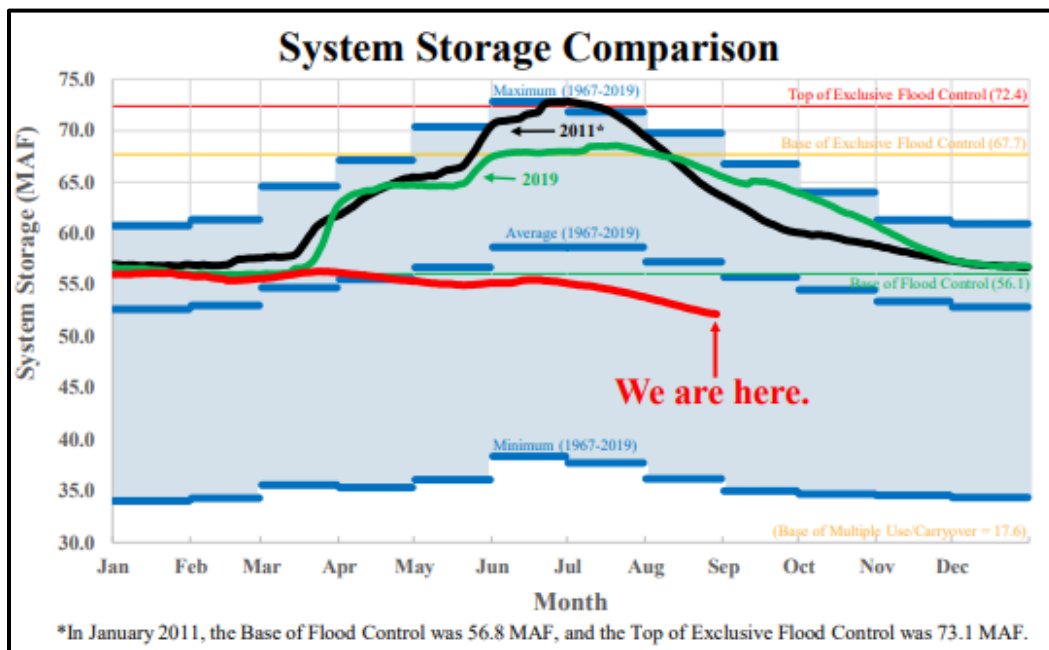
Shallow groundwater conditions have improved statewide, especially across North Central and Northeast Iowa. Moderate to heavy rainfall during the last two weeks of August improved shallow groundwater conditions in most locations. Moderate concern for shallow groundwater conditions still exists in parts of Northwest and Central Iowa. Slight levels of concern exist in parts of East Central Iowa.

AUGUST SOIL MOISTURE

Recent rainfall in the state has resulted in significant improvement in soil moisture conditions. The most recent Iowa Crop Progress & Condition report from the National Agricultural Statistics Service (released August 30, 2021) indicates that areas with adequate topsoil moisture have increased from 36 percent to 52 percent statewide, and for the subsoil moisture the increase was from 31 percent to 38 percent of Iowa. At this time last year, only 19 percent of the state had adequate topsoil moisture and only 23 percent of the state had adequate subsoil moisture. The central region of Iowa has the lowest soil moisture levels in the state, with only 16 percent of subsoil having adequate moisture at the end of August.

MISSOURI RIVER BASIN CONDITIONS

In its weekly update for September 1, 2021, the US Army Corps of Engineers indicates the overall storage in the reservoir system is 52.1 million acre-feet (MAF), a reduction of 0.3 MAF in the previous week (see figure below). Winter releases from Gavins Point will be at the minimum rate of 12,000 cubic feet per second (cfs), based on the Corps' September 1 System storage check. Upper Basin runoff during August was 54% of average, resulting in a forecast of calendar year runoff of 14.7 MAF, about 57% of normal annual runoff. The Corps notes, however, that areas of the basin have experienced significant precipitation over the last 7 days, and that Gavins Point releases have been temporarily reduced due to allow for increased tributary flows entering the Missouri River below the reservoir system.



ADDITIONAL INFORMATION

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

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