



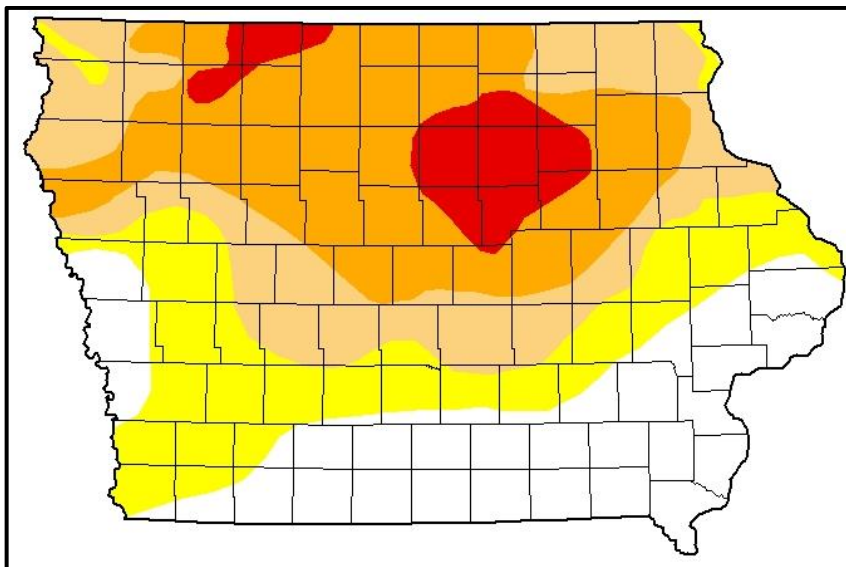
WATER SUMMARY UPDATE

Published Date August 5, 2021 | Issue 122

A snapshot of water resource trends for July, 2021

Drought Monitor - Conditions as of August 3, 2021

National Drought Mitigation Center and partners

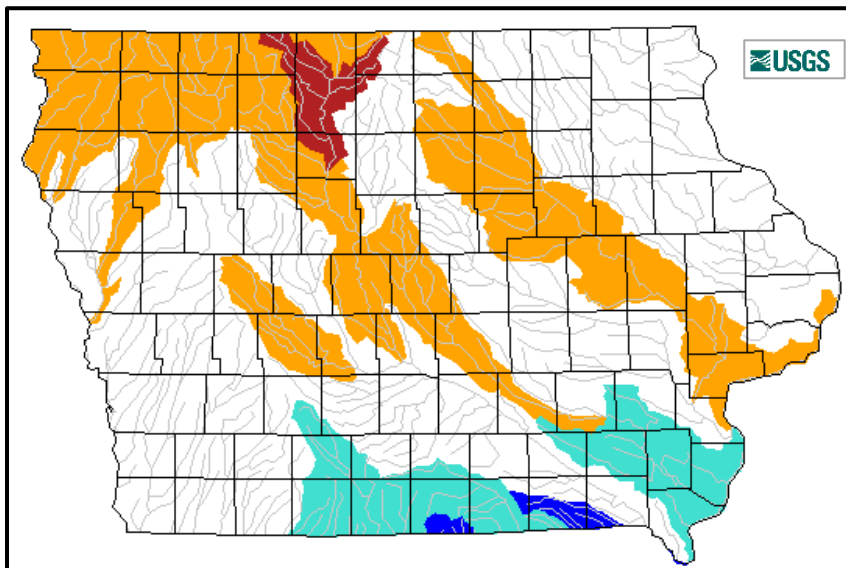


Intensity:

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.

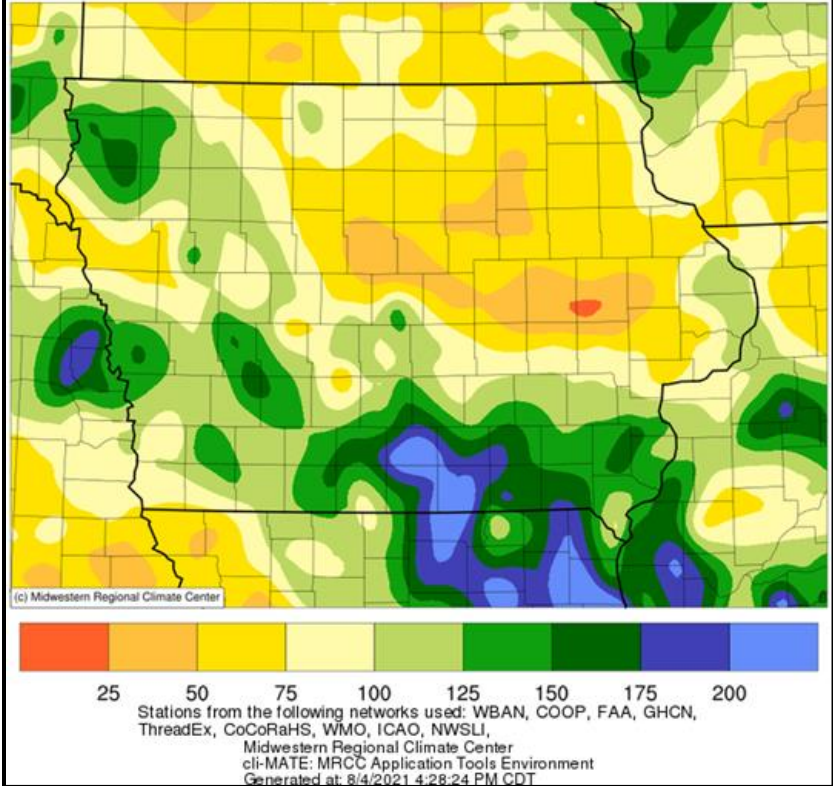
Stream Flow – July, 2021



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

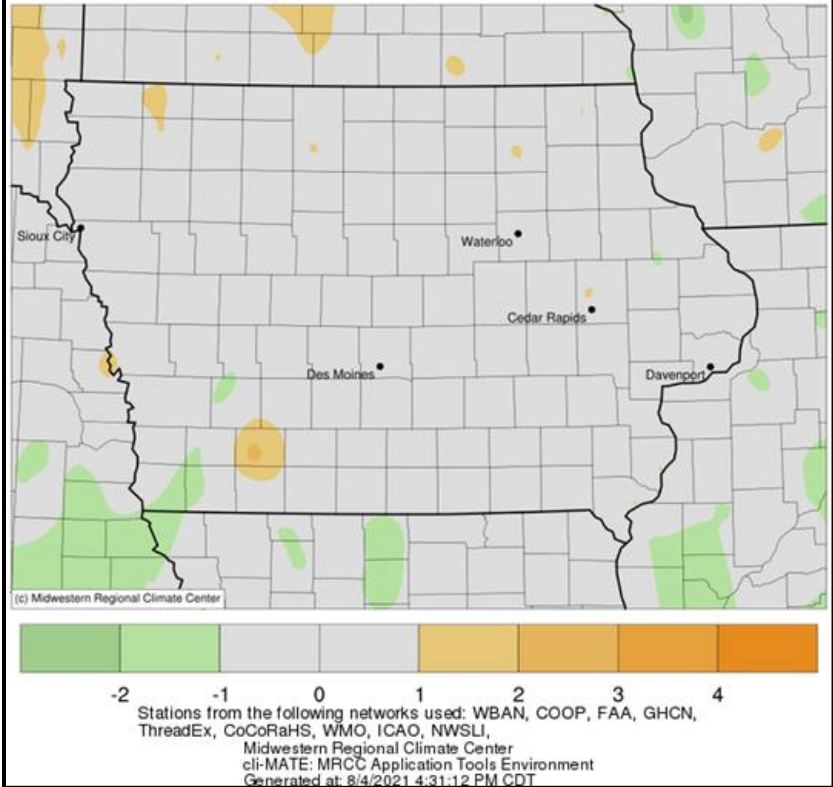
Accumulated Precipitation (in): Percent of 1991-2020 Normals

July 01, 2021 to July 31, 2021



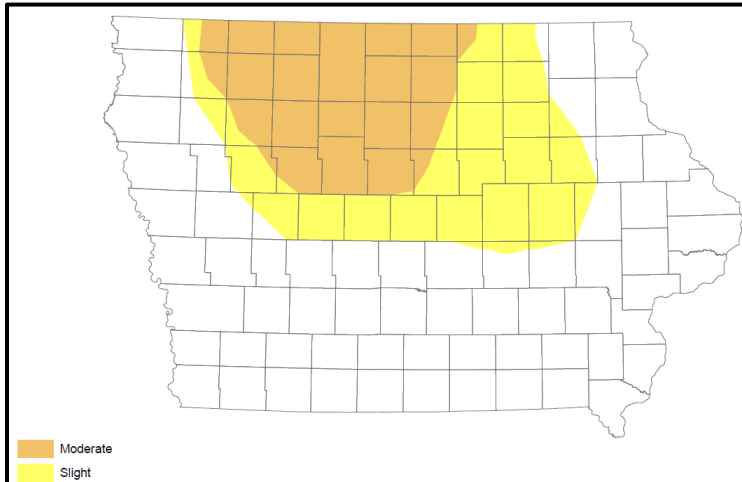
Average Temperature (°F): Departure from 1991-2020 Normals

July 01, 2021 to July 31, 2021



Shallow Groundwater - Conditions for July 2021

Iowa DNR and IIHR-Hydroscience and Engineering



RECENT DEVELOPMENTS AND CHANGES

SUMMARY

The end of July saw both much-needed precipitation as well as the return of D3 conditions to parts of the state. While rainfall was normal to above normal in the southern parts of Iowa, areas of north central and northeast Iowa continue to be very dry. Long term moisture deficits have resulted in the US Drought Mitigation Center designating nearly seven percent of the state as D3 (Extreme) drought – the highest coverage of D3 conditions in nearly a year. Streamflow and soil moisture are very low in portions of northern Iowa, and concerns for shallow groundwater conditions continue over those areas as well. July ended with 3.98 inches of rainfall, slightly below average for the month. The month of July was slightly cooler than normal. The most recent US Drought Monitor map shows 75 percent of the state in some form of dryness or drought, with the D2 – Severe Drought designation covering 37.9 percent of Iowa. Streamflow is dropping across the state, especially in north central and central regions. To our west, conditions in the Missouri River Basin continue to be very dry, with runoff this year expected to be the tenth lowest runoff in the upper Basin since 1898.

DROUGHT MONITOR

As of the first week of July, the US Drought Monitor (USDM) indicated drought condition coverage of 16 percent D0, 29 percent D1, and 38 percent D2. A welcome shift in the storm path during the second week of July brought much-needed precipitation statewide with a majority of the state's reporting stations measuring above-average rainfall with parts of southern Iowa measuring amounts from one to three inches above average. With these above-average totals, southwestern Iowa saw a one-category improvement in drought conditions. The map remained generally unchanged until the first week of August, as sweltering temperatures and accumulating precipitation deficits led to the introduction of two areas of D3 (Extreme Drought) in north-central to northeastern Iowa and in the state's northwest corner. This represents the first D3 area in Iowa since April 6th, 2021 and widest extent of D1-D3 conditions since September 2020.

JULY PRECIPITATION AND TEMPERATURE

Iowa's preliminary statewide average precipitation totaled 3.98 inches, or 0.17 inches below normal; a drier July occurred just last year. While widespread rain fell across Iowa, only the southern and western thirds of the state reported above normal totals. Several gauges in south-central Iowa measured more than three inches of rainfall.

Northeastern Iowa observed the driest conditions with two to three-inch deficits from Cedar Rapids to Waterloo and west to Marshalltown. Deficits on the order of an inch were found generally east of I-35 and north of I-80. Monthly precipitation totals ranged from 0.70 inches near Cedar Rapids to 12.90 inches in Chariton. The preliminary statewide average temperature was 74.0 degrees, 0.1 degree colder than normal; a cooler July last occurred in 2016. Spencer Municipal Airport observed the month's high temperature of 99 degrees on the 28th, 15 degrees above normal. Estherville Municipal Airport reported the month's low temperature of 48 degrees on the 8th, 12 degrees below normal.

JULY STREAM FLOW

Since the last water summary update, streamflow conditions across approximately a third of the state remain below normal. The dry streamflow patterns have shifted to the east, with the Skunk, Des Moines, Raccoon, and Little Sioux basins showing below normal conditions since the last water summary update. In southern Iowa, portions of the Thompson, Chariton, and Skunk Rivers have moved into the above normal range.

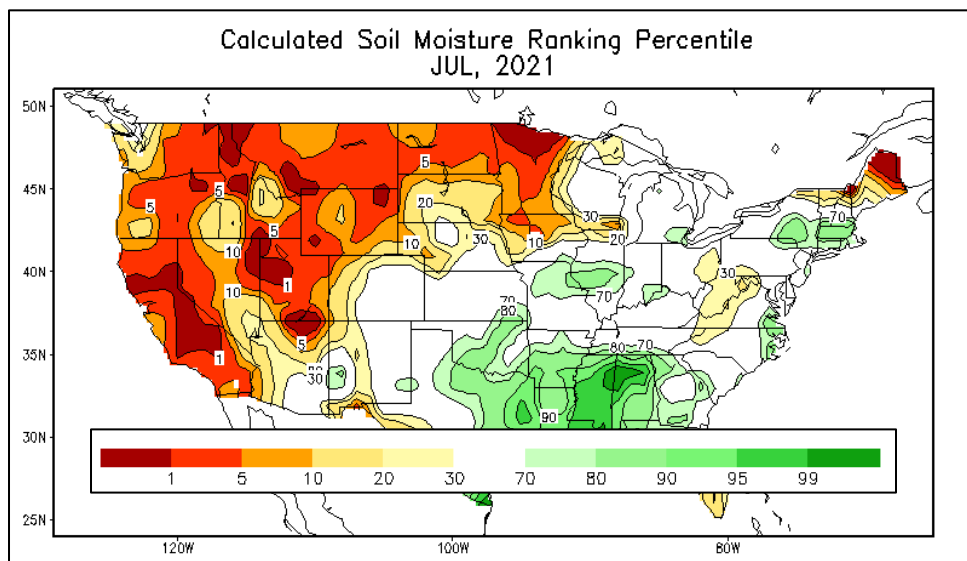
Flow in the South Skunk River near Ames, the Des Moines River, and the East Fork of the Des Moines River has dropped below protected flow levels, which could restrict irrigation for more than 20 irrigators unless precipitation in the near future increases the low flow. Conditions in the Raccoon River continue to trend lower and could lead to low flow conditions in the near future.

JULY SHALLOW GROUNDWATER

Shallow groundwater conditions have improved in parts of Northwest and Southwest Iowa. Rainfall during the last two weeks of July temporarily improved shallow groundwater conditions in some locations. Concern remains for shallow groundwater conditions in parts of North Central and Central Iowa. Additional precipitation is needed across most of Northern Iowa during August to prevent further deterioration in shallow groundwater conditions.

JULY SOIL MOISTURE

Iowa continues to find itself on the eastern edge of lowest soil moisture levels. Significantly lower soil moisture levels exist to the west and north of Iowa, while wetter than normal soil moisture levels are present to the south and east of Iowa. A small portion of southeast Iowa has wetter than normal soils.



The most recent Iowa Crop Progress & Condition report from the National Agricultural Statistics Service indicates that 82 percent of the subsoil in northwest Iowa is rated as being short of very short of moisture. The corresponding soil moisture levels in west central and central Iowa are 77 percent short or very short. Soil moisture levels are generally better across the southern third of the state.

MISSOURI RIVER BASIN CONDITIONS

The August 3, 2021 status update from the Corps of Engineers indicates that total system storage is now 53.7 million acre feet (MAF), more than 1.5 MAF less than at the start of July. Upper Basin runoff during July was just 34 percent of average, with the updated calendar year forecast for Missouri River basin runoff above Sioux City at just 14.6 MAF, which is 57 percent of normal. In comparison, the runoff was more than 60 MAF in each of the flood years of 2011 and 2019 was more than 60 MAF each, or four times the runoff anticipated for this year. The Climate Prediction Center of the National Oceanic and Atmospheric Administration (NOAA) is forecasting continued warmer-than-normal and drier-than-normal conditions for the upper basin in the month of August.

ADDITIONAL INFORMATION

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

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