



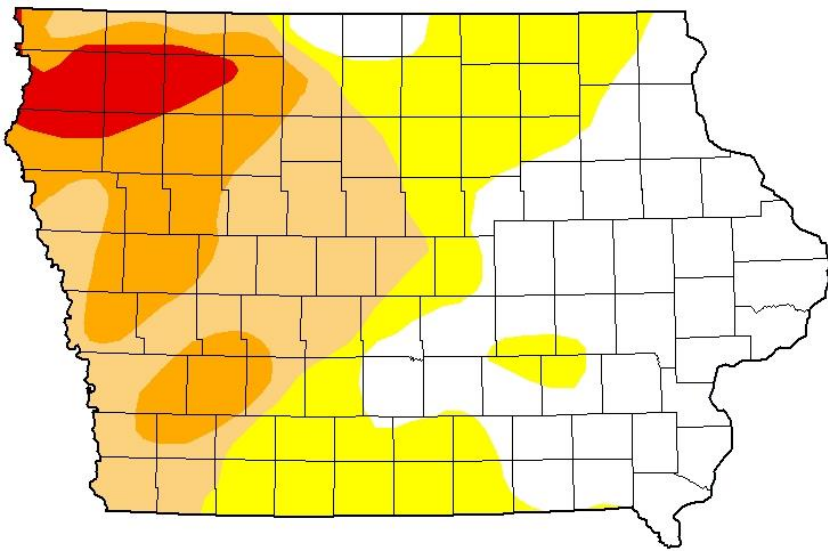
# WATER SUMMARY UPDATE

Published Date November 12, 2020 | Issue 112

## A snapshot of water resource trends for the month of October 2020

### Drought Monitor - Conditions as of November 10, 2020

National Drought Mitigation Center and partners



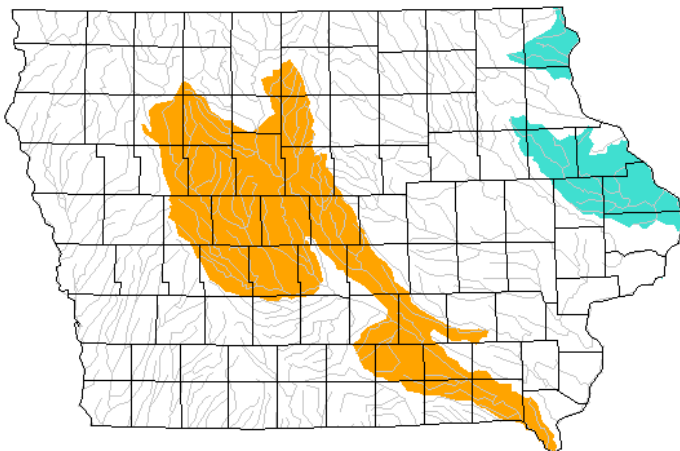
*Intensity:*

<span style="color: yellow;">■</span> D0 Abnormally Dry	<span style="color: red;">■</span> D3 Extreme Drought
<span style="color: lightorange;">■</span> D1 Moderate Drought	<span style="color: darkred;">■</span> D4 Exceptional Drought
<span style="color: orange;">■</span> D2 Severe Drought	

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

### Stream Flow – October 2020

October 2020

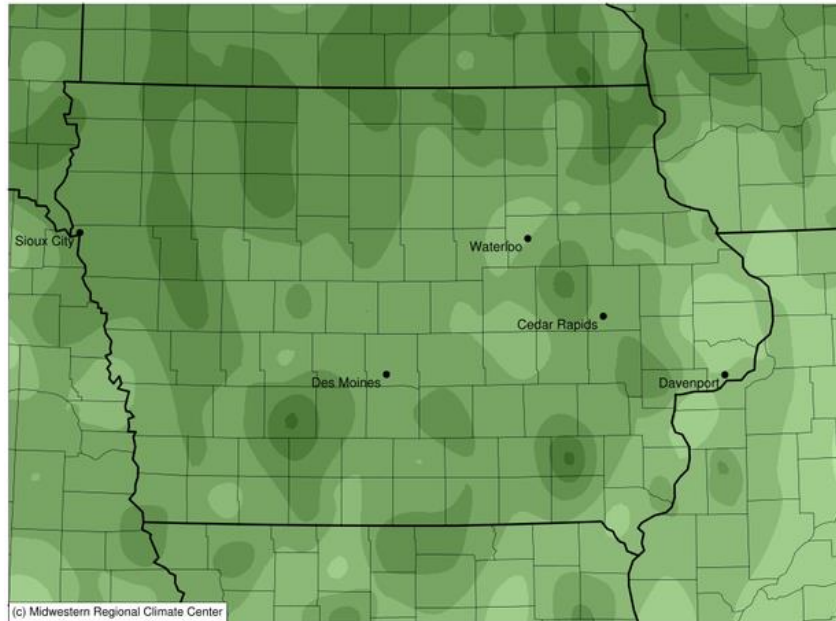


Explanation - Percentile classes						
	<10	10-24	25-75	76-90	>90	High
Low	Much below normal	Below normal	Normal	Above normal	Much above normal	



## Average Temperature (°F): Departure from 1981-2010 Normals

October 01, 2020 to October 31, 2020

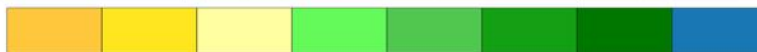
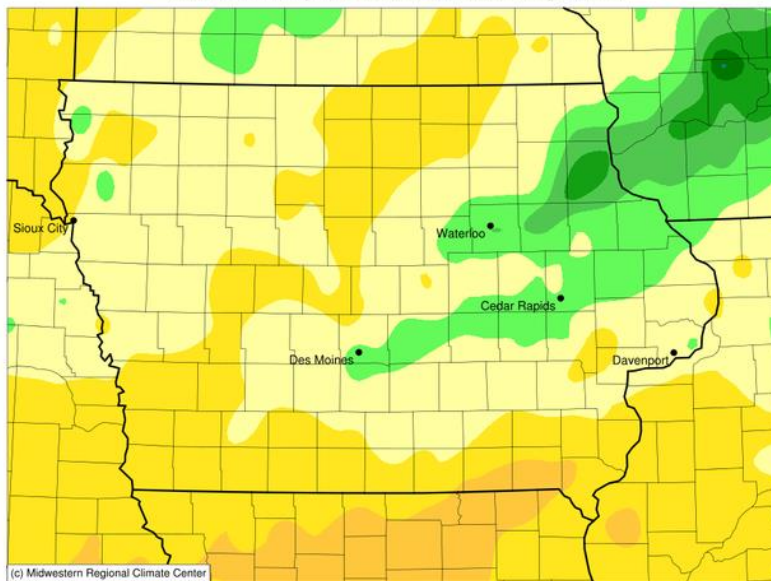


-9 -8 -7 -6 -5 -4 -3 -2 -1 0

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  
Generated at: 11/10/2020 11:44:34 AM CST

## Accumulated Precipitation (in): Departure from 1981-2010 Normals

October 01, 2020 to October 31, 2020

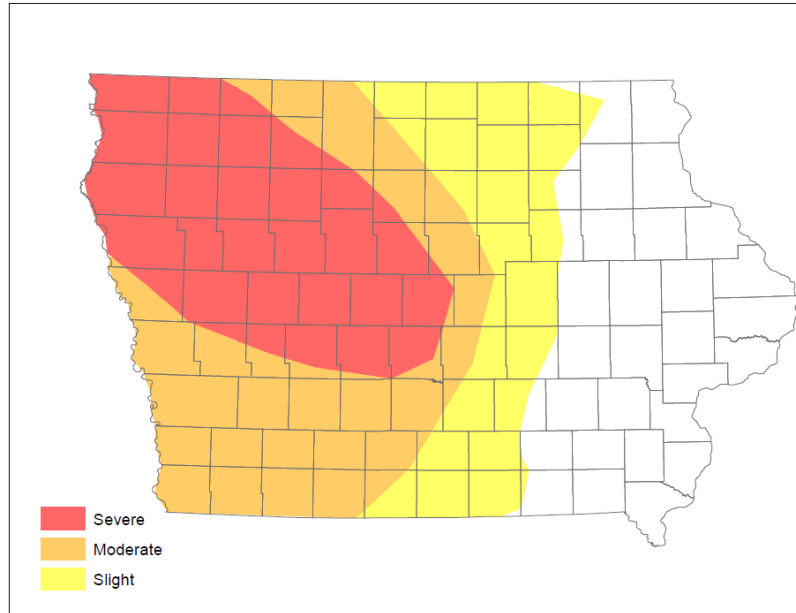


-2 -1 0 1 2 3 4

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  
Generated at: 11/10/2020 11:41:08 AM CST

## Shallow Groundwater - Conditions for October 2020

Iowa DNR and IIHR-Hydroscience and Engineering



## RECENT DEVELOPMENTS AND CHANGES

### SUMMARY

Hydrologic conditions in Iowa have improved over the last month, but significant dryness and drought continue to be present over northwest and west central Iowa. Rainfall in October was above average in eastern Iowa but continued the below average trend in western and northwestern parts of the state. Overall precipitation in Iowa was almost an inch below normal, with an average of 1.66 inches falling in October in Iowa. Concern remains for many shallow groundwater supplies in west central and northwest Iowa, particularly each month moving to January becomes drier. Average statewide monthly precipitation in Iowa in November is 2.05 inches, and by January that amount drops to less than one inch. This makes the chances of replenishing soil moisture and groundwater more difficult moving into the winter months.

### DROUGHT MONITOR

Over the month of October Iowa saw improvement in conditions as reflected in the National Drought Monitor. Areas of all categories of drought have been reduced in the last month, with conditions improving from east to west. The current Drought Monitor Map shows about one-third of the state free from drought and dryness, with just over four percent of the state remaining in D3 – Extreme Drought. The worst of the drought conditions are in northwest Iowa, with Sioux, O’Brien, and Clay counties and counties bordering those three showing the worst conditions. D2 – Severe Drought conditions remain in a large area of northwest and west central Iowa, covering another 15 percent of the state.

### OCTOBER PRECIPITATION AND TEMPERATURE

Iowa temperatures averaged 46.0 degrees or 4.8 degrees below normal for October, while precipitation totaled 1.66 inches or 0.95 inch below normal. October 2020 ranks as the 6th coldest on record with a colder October

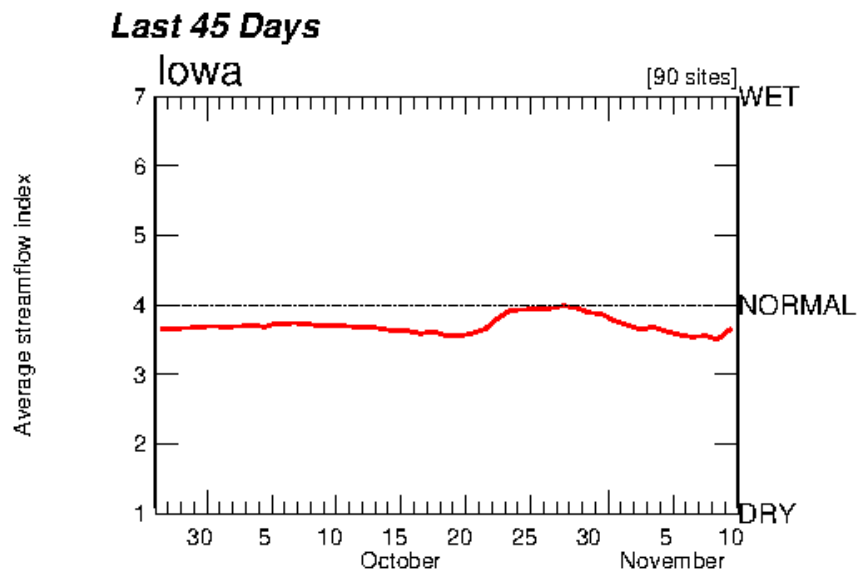
last occurring in 2009. The month ranked as the 48th driest October in 148 years of statewide records with a drier one last occurring in 2011.

For the month, temperatures of three to six degrees below normal were reported across the state with the coldest conditions found across northwestern Iowa. October's statewide average maximum temperature was 56.7 degrees, 5.7 degrees below normal while the average minimum temperature was 35.3 degrees, 3.9 degrees below normal. Ames Municipal Airport, Red Oak, and Shenandoah reported the month's high temperature of 88 degrees on the 9th, on average 20 degrees above normal. Estherville Municipal Airport reported the month's low temperature of 5 degrees on the 27th, 27 degrees below normal.

Precipitation deficits of one to two inches were reported over much of Iowa during October. Wetter than average conditions were found across portions of eastern Iowa with over two inches or more in a few northeastern counties. Monthly precipitation totals ranged from 0.50 inch at a rain gauge in Cantril (Van Buren County) to 5.76 inches at Elkader 6 SSW (Clayton County). The statewide average snowfall was 1.8 inches, which is 1.5 inches above average

### CURRENT STREAM FLOW

Streamflow conditions across much of the state are normal. Flow in the Skunk, Des Moines, and Raccoon River basins are still partially below normal, while the Maquoketa River has moved from the much above normal to the above normal flow since the last water summary update. Field crews have been out collecting low flow measurements. The streamflow index, shown below, gives an indication of average streamflow in all measured locations across the State of Iowa compared to average flows for that date. The index shows that streamflow has been normal or just below normal over the past 45 days.



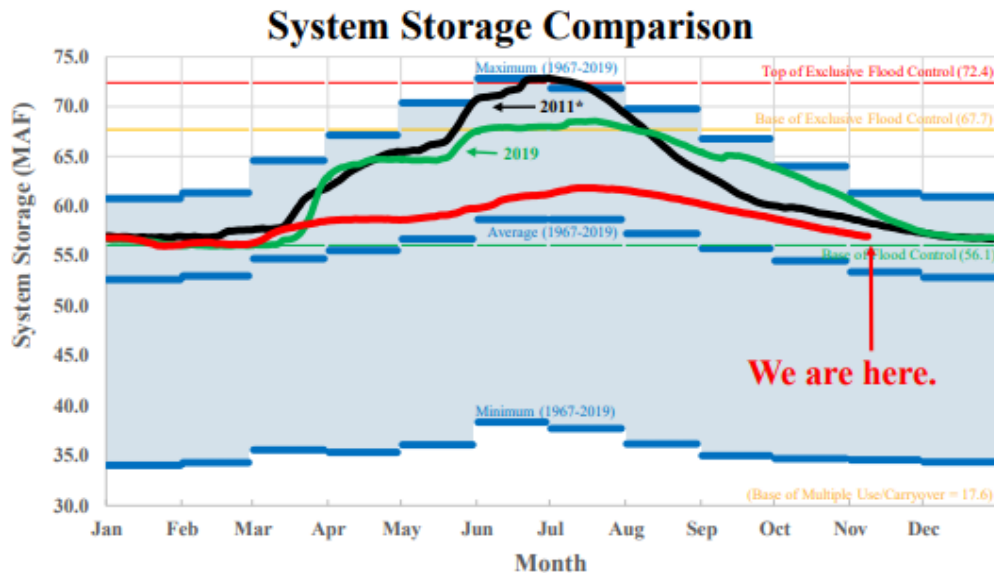
### SHALLOW GROUNDWATER

Shallow groundwater conditions during October continued to deteriorate throughout most of Iowa. Severe groundwater conditions continue to exist in Northwest and parts of Central and West Central Iowa. Moderate and slight groundwater conditions are present in parts of Northeast and South Central Iowa. Low groundwater levels are found throughout the state, especially along the Des Moines, Raccoon and Skunk rivers in Central and West Central Iowa, and along the Ocheyedan River in Northwest Iowa. Rainfall during the third week of

October improved shallow groundwater levels in the eastern half of Iowa. Much more precipitation is needed statewide this fall to recharge shallow groundwater before the winter season begins.

**MISSOURI RIVER BASIN CONDITIONS**

In its November 10, 2020 conditions status, the US Army Corps of Engineers indicated that total system storage is 56.9 MAF, illustrated in the figure below. The red line in that figure provides an annual look at storage in the reservoir system in 2020 compared to the extremely wet years of 2011 and 2019. Reductions to Gavins Point Reservoir winter release levels are scheduled to begin on November 23. The Gavins Point release is currently 34,000 cfs and is expected to be reduced to 20,000 cfs by the end of November, and then to the winter release rate of 17,000 cfs in December. Overall runoff above Sioux City for 2020 is forecast to be 30.2 MAF, which is 117% of the normal 25.8 MAF.



**ADDITIONAL INFORMATION**

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

- General Information . . . . . [Tim.Hall@dnr.iowa.gov](mailto:Tim.Hall@dnr.iowa.gov) 515-452-6633
- Drought Monitor and Precipitation. . . . . [Justin.Glisan@iowaagriculture.gov](mailto:Justin.Glisan@iowaagriculture.gov) 515-281-8981
- Stream Flow. . . . . Daniel Christiansen, [dechrist@usgs.gov](mailto:dechrist@usgs.gov) 319-358-3639
- Stream Flow. . . . . [Michael.Anderson@dnr.iowa.gov](mailto:Michael.Anderson@dnr.iowa.gov) 515-725-0336
- Shallow Groundwater. . . . . [mike-gannon@uiowa.edu](mailto:mike-gannon@uiowa.edu) 515-725-0336