



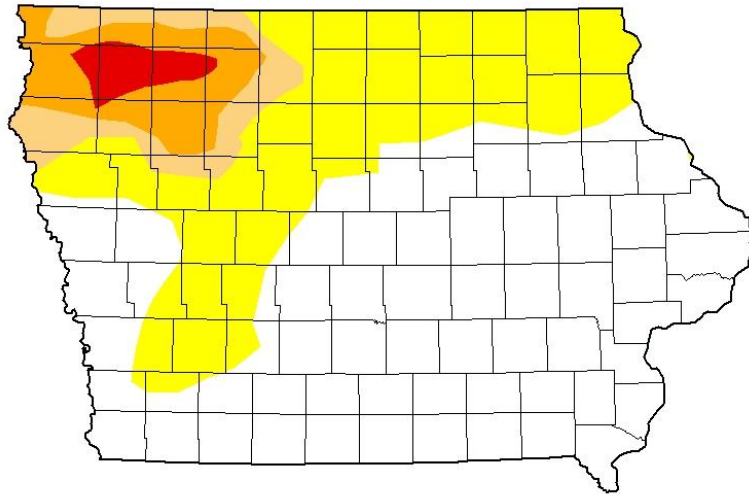
# WATER SUMMARY UPDATE

Published Date April 8, 2021 | Issue 117

## A snapshot of water resource trends for the month of March 2021

### Drought Monitor - Conditions as of April 6, 2021

National Drought Mitigation Center and partners

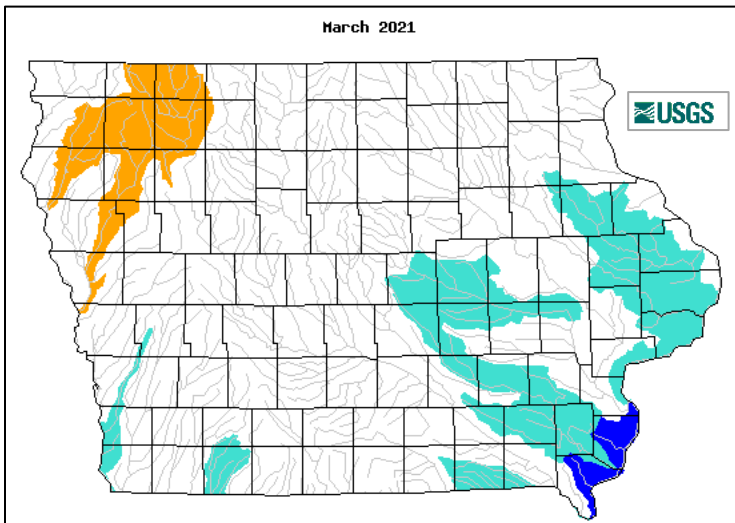


**Intensity:**

<span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> D0 Abnormally Dry	<span style="background-color: red; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> D3 Extreme Drought
<span style="background-color: orange; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> D1 Moderate Drought	<span style="background-color: darkred; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> D4 Exceptional Drought
<span style="background-color: #f4a460; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> D2 Severe Drought	

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

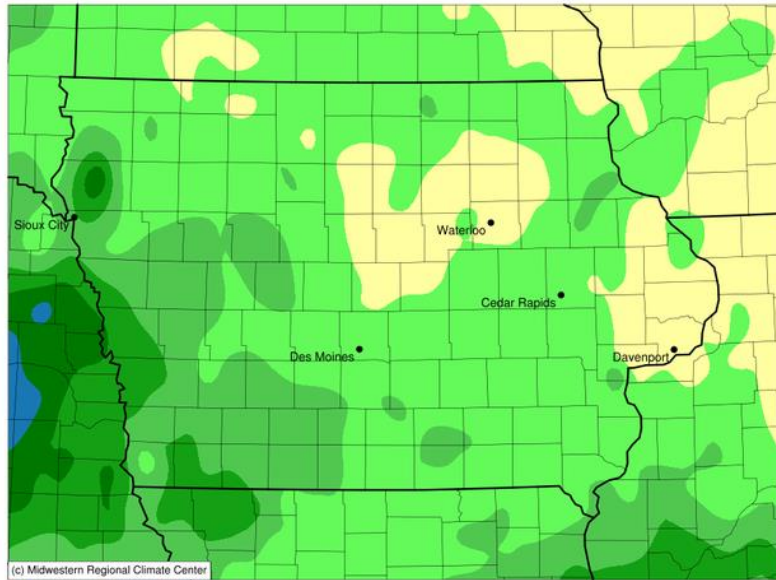
### Stream Flow – March 2021



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 1981-2010 Normals

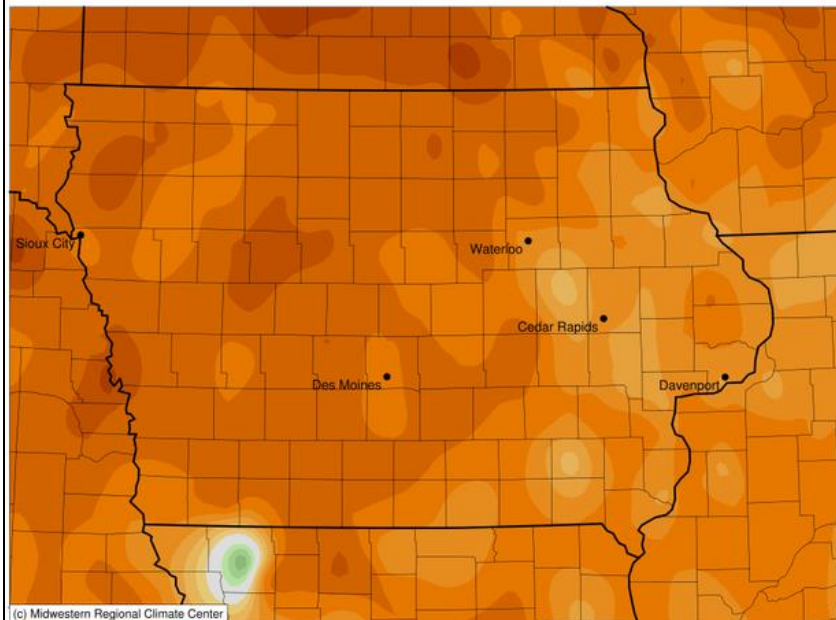
March 01, 2021 to March 31, 2021



-1 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  
Generated at: 4/8/2021 10:14:26 AM CDT

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

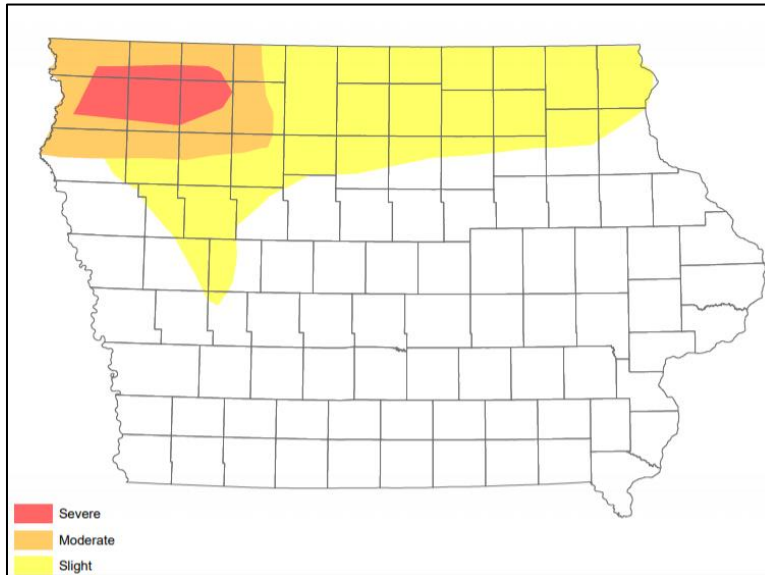
March 01, 2021 to March 31, 2021



-3 2 7  
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: 4/8/2021 10:13:02 AM CDT

## Shallow Groundwater - Conditions for March 2021

Iowa DNR and IIHR-Hydroscience and Engineering



## Recent Developments and Changes

### SUMMARY

A wetter than normal March has resulted in improvement of conditions across the state. March saw total precipitation of 2.62 inches across the state, or 0.5 inches above normal. Almost 60 percent of the state is now free from any dryness or drought designation, an improvement from conditions that existed a month ago. Concern remains for the northwest part of Iowa, where streams have below normal flows, and where groundwater needs additional replenishment. As Iowa moves into what are normally the wettest months of the year, normal to above normal rainfall will improve conditions. March was a warmer than normal month, a reversal of the colder than normal February.

### DROUGHT MONITOR

Drought and abnormally dry conditions improved across Iowa during March as above-average precipitation helped ease dryness. Conditions at the beginning of March showed 52% of the state in dryness or drought, with D3 Extreme Drought covering around 3% of northwestern Iowa. Multiple large-scale weather systems moved through Iowa as the month progressed, gradually chipping away at all categories. Much of southwestern Iowa saw a one-category improvement though in mid-March. As of the last week of March, D0-D3 conditions covered 41% of Iowa, the lowest extent since June 30, 2020. To the west of Iowa drought conditions are particularly severe. The entire states of North and South Dakota, Wyoming, and Colorado have drought designations, with 70 percent of North Dakota designated as D3 Extreme Drought, and nearly 15 percent of Colorado designated as D4 Exceptional Drought, which is the worst drought condition used by the National Drought Mitigation Center.

### MARCH PRECIPITATION AND TEMPERATURE

Statewide average precipitation totaled 2.65 inches, or 0.50 inches above normal, ranking March as the 34<sup>th</sup> wettest on record. A wetter March occurred just last year. A majority of the state's National Weather Service co-op stations reported near to slightly above average precipitation during the month. The wettest conditions were found across portions of southwestern Iowa with above normal totals of up to three inches. Monthly precipitation (melted snow and sleet plus rain) totals ranged from 0.89 inches at Estherville Municipal Airport to 5.61 inches at a gauge near Pacific Junction in Mills County.

In March, a majority of the stations across Iowa reported below-average snow with a preliminary statewide average snowfall of 2.2 inches, 2.5 inches below normal tying 2019 as the 27<sup>th</sup> least snowiest March in 134 years of snowfall records. Muscatine (Harrison County) measured the highest accumulation of 10.0 inches of snow.

Unseasonably warm temperatures blanketed Iowa during March with positive departures of up to eight degrees reported in western Iowa. The remaining portions of the state observed monthly averages between two to six degrees above normal. Overall, the statewide average temperature was 42.3 degrees or 6.4 degrees above normal, tying March 1977 as the 12<sup>th</sup> warmest in 149 years of state records with a warmer March last occurring in 2012. March's statewide average maximum temperature was 52.5 degrees, while the average minimum temperature was 32.0 degrees. Desoto reported the month's high temperature of 78 degrees on the 29<sup>th</sup>, 21 degrees above average. Elkader reported the month's low temperature of 7 degrees on the 2nd, nine degrees below average.

### MARCH STREAM FLOW

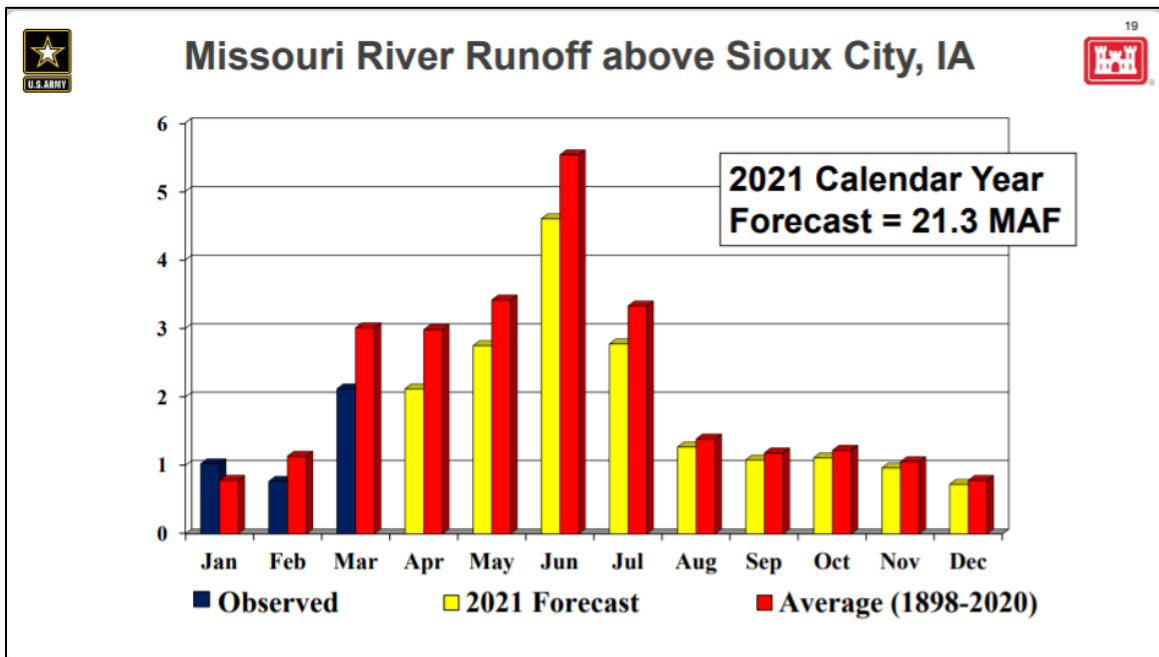
Since the last water summary update, streamflow conditions across most of the state remained in normal conditions. The Little Sioux, Floyd and Ocheyedon Rivers have moved into the below normal condition since the last water summary update. Streamflow conditions were above normal for several basins in the eastern part of the state including the Skunk, Iowa, Wapsipinicon, and Maquoketa Rivers. In the north west part of the state, USGS is currently seeing below normal streamflow compared to statewide historic normal streamflow. Normal flows tend to increase in March and peak late June, early July.

### MARCH SHALLOW GROUNDWATER

Shallow groundwater conditions were well below normal in Northwest Iowa in March, especially in the Floyd, Little Sioux, and Ocheyedon River watersheds. The groundwater conditions that exist in parts of Buena Vista, Cherokee, Clay, Emmet, Lyon, O'Brien, Osceola, Palo Alto, Plymouth, and Sioux counties are moderate to severe. Across the northern one-third of Iowa and parts of West Central Iowa groundwater concerns exist, but are slight. Additional precipitation is needed across most of Iowa during the spring and early summer months to recharge Iowa's shallow aquifers.

### MISSOURI RIVER BASIN CONDITIONS

The US Army Corps of Engineers held their regular Spring Public Meeting Presentation on April 6. Information presented in that meeting indicates that the mountain snowpack remains below average, and that plains snowpack was almost nonexistent during much of the winter. Soils moisture is very low over the upper two thirds of the basin. Flood risk is below normal over much of the upper basin, with flood potential over the next three months generally confined to eastern Kansas, southeastern, and the state of Missouri. The estimated runoff for 2021 is 21.3 million acre feet (MAF), down from the Corps' previous estimate of 21.7 MAF. The current estimated runoff is 83 percent of normal.



**ADDITIONAL INFORMATION**

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

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