



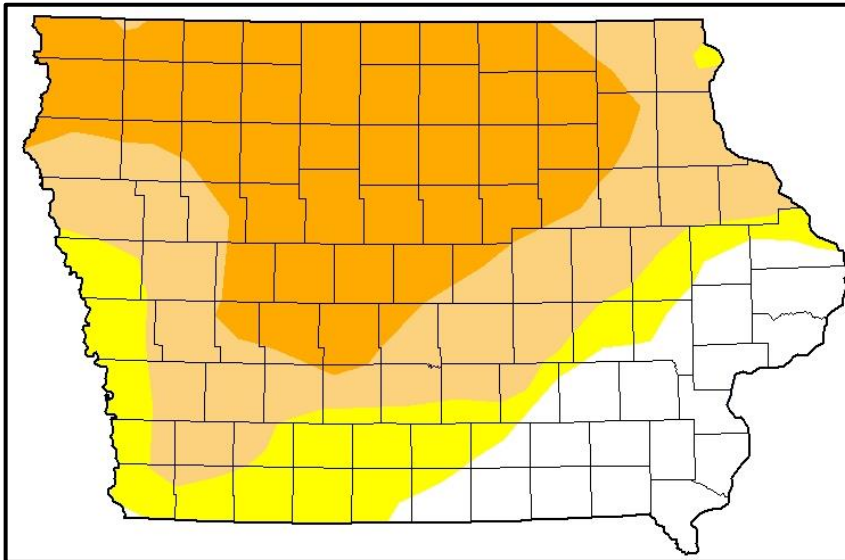
WATER SUMMARY UPDATE

Published Date July 8, 2021 | Issue 121

A snapshot of water resource trends for June, 2021

Drought Monitor - Conditions as of July 6, 2021

National Drought Mitigation Center and partners

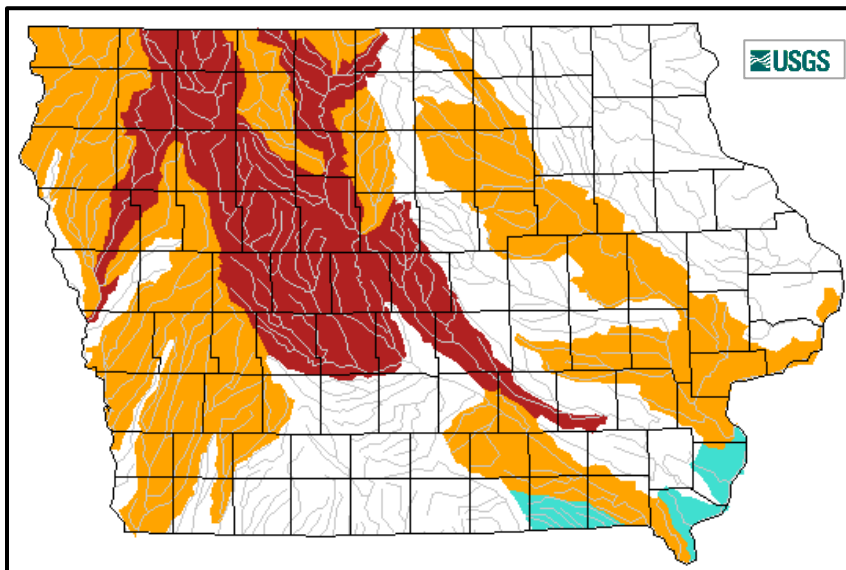


Intensity

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.

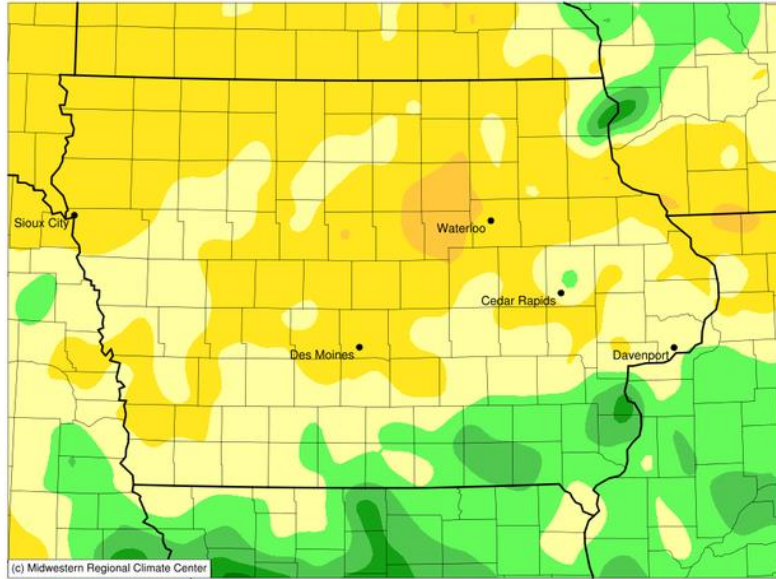
Stream Flow – June, 2021



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): Departure from 1991-2020 Normals

June 01, 2021 to June 30, 2021



(c) Midwestern Regional Climate Center



Stations from the following networks used: WBAN, COOP, FAA, GHCN,

ThreadEx, CoCoRaHS, WMO, ICAO, NWSLI,

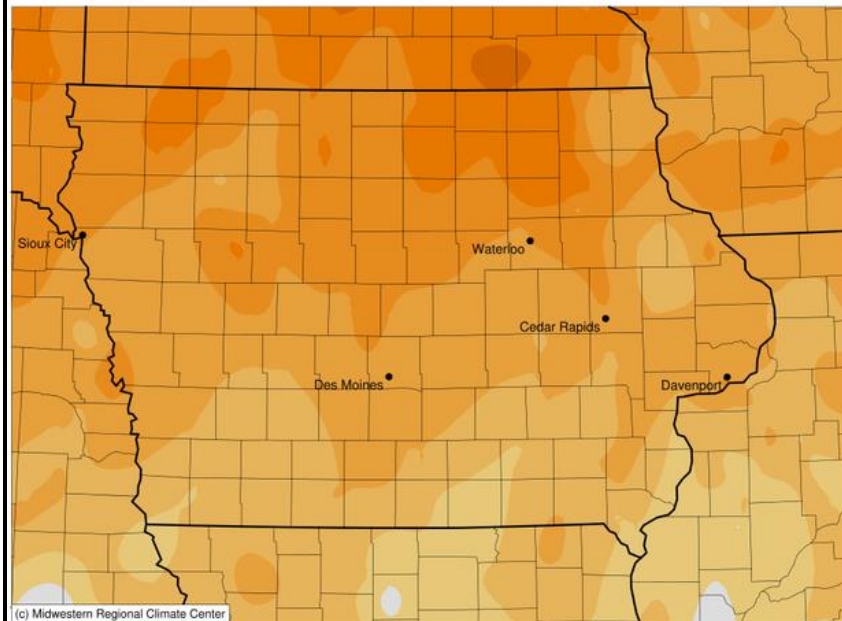
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Average Temperature (°F): Departure from 1991-2020 Normals

June 01, 2021 to June 30, 2021



(c) Midwestern Regional Climate Center



Stations from the following networks used: WBAN, COOP, FAA, GHCN,

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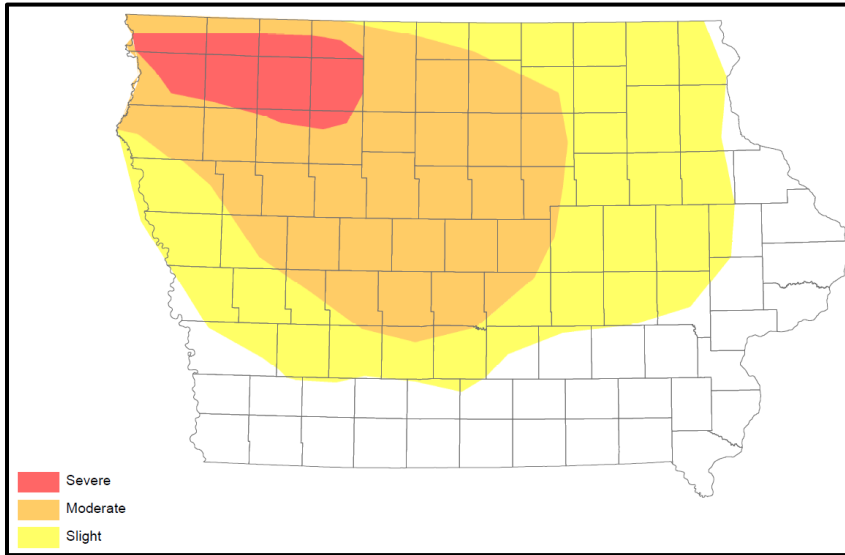
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Shallow Groundwater - Conditions for June 2021

Iowa DNR and IIHR-Hydroscience and Engineering



RECENT DEVELOPMENTS AND CHANGES

SUMMARY

The month of June brought some much-needed rainfall relief to parts of Iowa, but overall conditions continue to deteriorate. June is normally the wettest month of the year for most of Iowa, but this past June ended with 3.31 inches of rain, almost two inches less than average. The month of June was also warmer than normal, which contributes to greater evaporation and then to drier conditions. The most recent US Drought Monitor map shows 83 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 the central and northwestern 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

The US Drought Monitor released on July 8, reflecting conditions as of July 6, shows some deterioration over the most recent week, and more significant deterioration over the month of June. At the beginning of June just over 62 percent of Iowa was rated at some level of dryness or drought, with 7.6 percent in D2 – Severe Drought. Now, one month later, almost 83 percent of Iowa is at some level of dryness or drought, with 37.9 percent of the state shown in D2. The D2 conditions have expanded from all or parts of 12 counties in northwest Iowa across nearly all of northern Iowa, and as far south of Dallas County. D2 conditions now cover all or parts of 45 counties. The last time that the overall statewide drought conditions were worse than this week was in early September of 2020, about ten months ago.

JUNE PRECIPITATION AND TEMPERATURE

Iowa's preliminary statewide average precipitation totaled 3.31 inches, or 1.95 inches below the 1991-2020 climatological normal. The last time Iowa had a drier June was in 2012. A majority of Iowa's National Weather Service co-op stations reported below-average totals during the month; pockets of three to four-inch deficits were reported from Des Moines to Waterloo and into the state's northwest corner. Only stations in southern

and eastern Iowa observed positive departures. Monthly precipitation totals ranged from 0.84" in Dickinson County to 12.96" at a rain gauge near Harpers Ferry in Allamakee County.

The first half of June saw very warm temperatures across the Midwest with daytime high temperatures in the upper 80s and 90s along with sporadic triple-digit days. The first 16 days in June were the 7th warmest start dating back 149 years. The preliminary statewide average temperature was 73.8 degrees, 3.9 degrees warmer than normal, with a warmer June last occurring in 1988. A location in Harrison County observed the month's high temperature of 104 degrees on the 17th, 20 degrees above normal. Belle Plaine, Elkader, and the Estherville Municipal Airport all reported the month's low temperature of 40 degrees on the 22nd, nearly 20 degrees below normal.

JUNE STREAM FLOW

Since the last water summary update, streamflow conditions across approximately a half of the state remain in the below normal condition. The Skunk, Des Moines, Raccoon, and Little Sioux basins have moved into the much below normal condition since the last water summary update.

The flow in the South Skunk River near Ames has dropped below protected flow, which could restrict irrigation from that river unless precipitation in the near future increases the low flow.

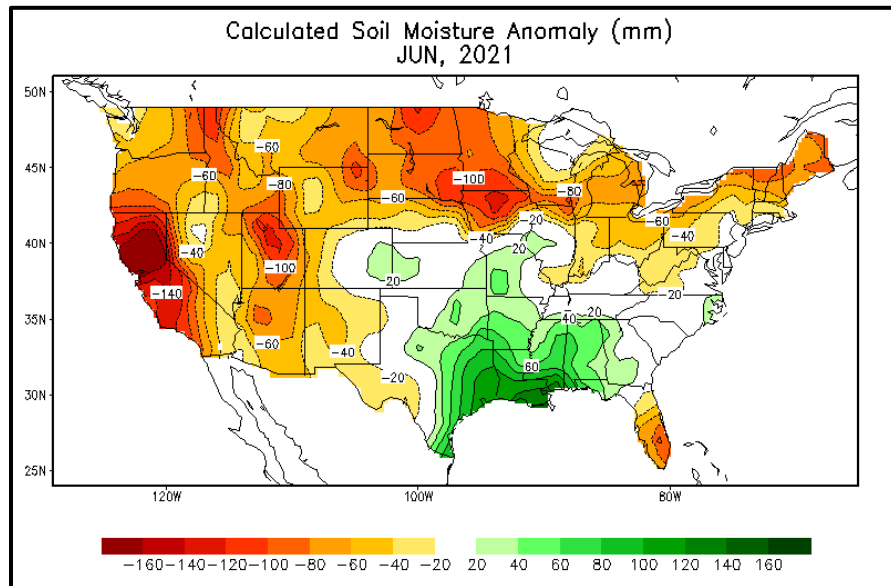
JUNE SHALLOW GROUNDWATER

Shallow groundwater conditions continue to be below normal across all but the far southeast corner of Iowa. The northwest and central portions of the State are well below normal, and voluntary water conservation is being implemented in some communities. Rainfall during the last week of June temporarily improved shallow groundwater conditions in some locations. Severe to moderate groundwater conditions exist in parts of Northwest, North Central, and Central Iowa. Additional precipitation is needed across most of Iowa during July and August to prevent further deterioration in shallow groundwater conditions.

Iowa Geological Survey field visits to NW Iowa at the end of June confirmed that conditions in some locations are approaching conditions last seen in late summer of 2012.

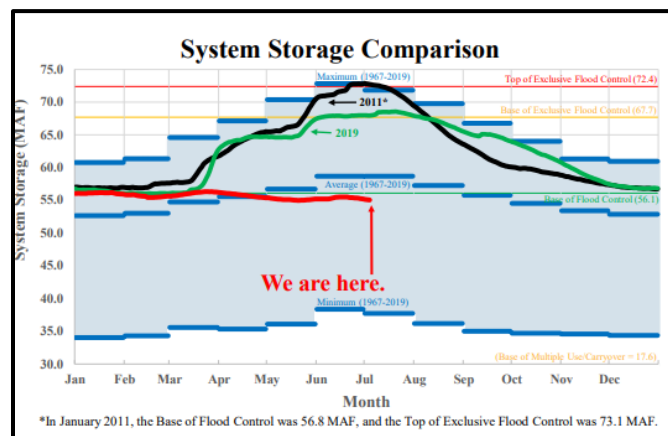
JUNE SOIL MOISTURE

Soil moisture levels across the state have continue to decline. One year ago, 16 percent of subsoil moisture in Iowa was rated as short or very short. As of July 6, 2021 that was 63 percent. Northwest Iowa has 84 percent of subsoil rated as short or very short of moisture, and in west central Iowa that number is 80 percent, and central Iowa stands at in June. The calculated soil moisture ranking map from NOAA's Climate Prediction Center continues to show a large area of north central Iowa with soil moisture levels below the fifth percentile ranking.



MISSOURI RIVER BASIN CONDITIONS

Conditions in the Missouri River basin continue to much drier than normal. The Corps of Engineers has enacted water conservation measures for the second half of the navigation season which began on July 1. Very dry conditions continue to impact the upper Missouri River Basin above Sioux City, IA. As a result of low precipitation and widespread drought conditions, June runoff above Sioux City was just over half of the normal runoff. The updated 2021 upper Basin runoff forecast, as of July 1, is 15.6 million acre-feet (MAF), 60% of average and only 25% of the runoff of 2019. The forecasted runoff for 2021 would be the 10th lowest runoff in the upper Basin since 1898. System storage on July 1 was 55.2 MAF, and is expected to decline further during the remainder of 2021.



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 515-452-6633
- Drought Monitor and Precipitation. Justin.Glisan@iowaagriculture.gov 515-281-8981
- Stream Flow. Daniel Christiansen, dechrist@usgs.gov 319-358-3639
- Stream Flow. Michael.Anderson@dnr.iowa.gov 515-725-0336
- Shallow Groundwater. mike-gannon@uiowa.edu 515-725-0336