IOWA DEPARTMENT OF NATURAL RESOURCES

WATER SUMMARY UPDATE

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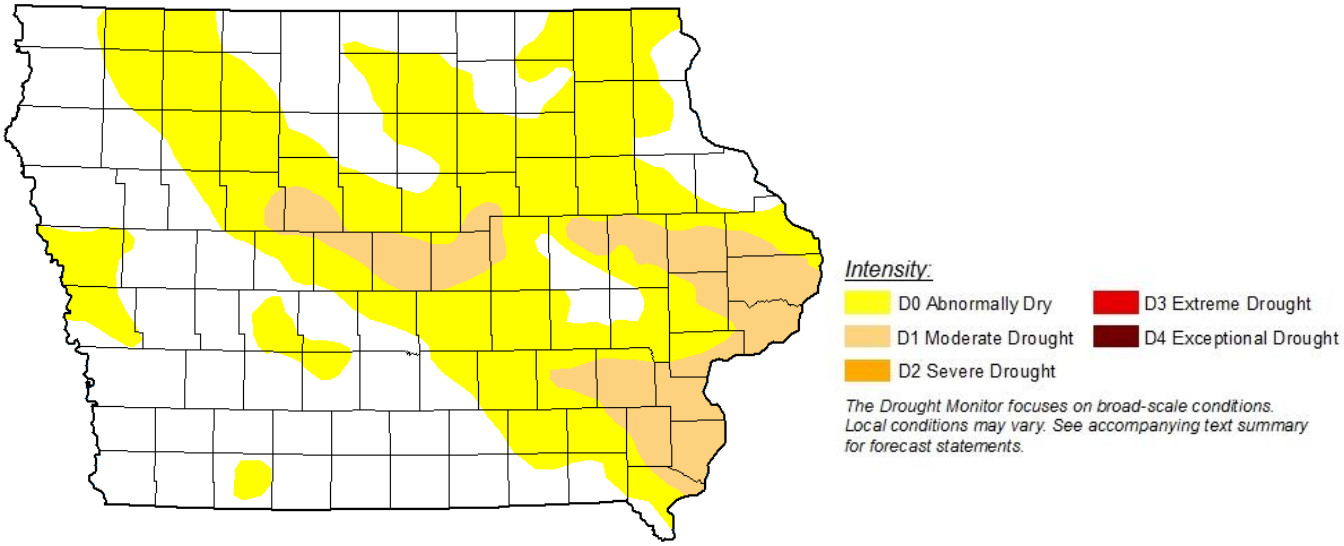
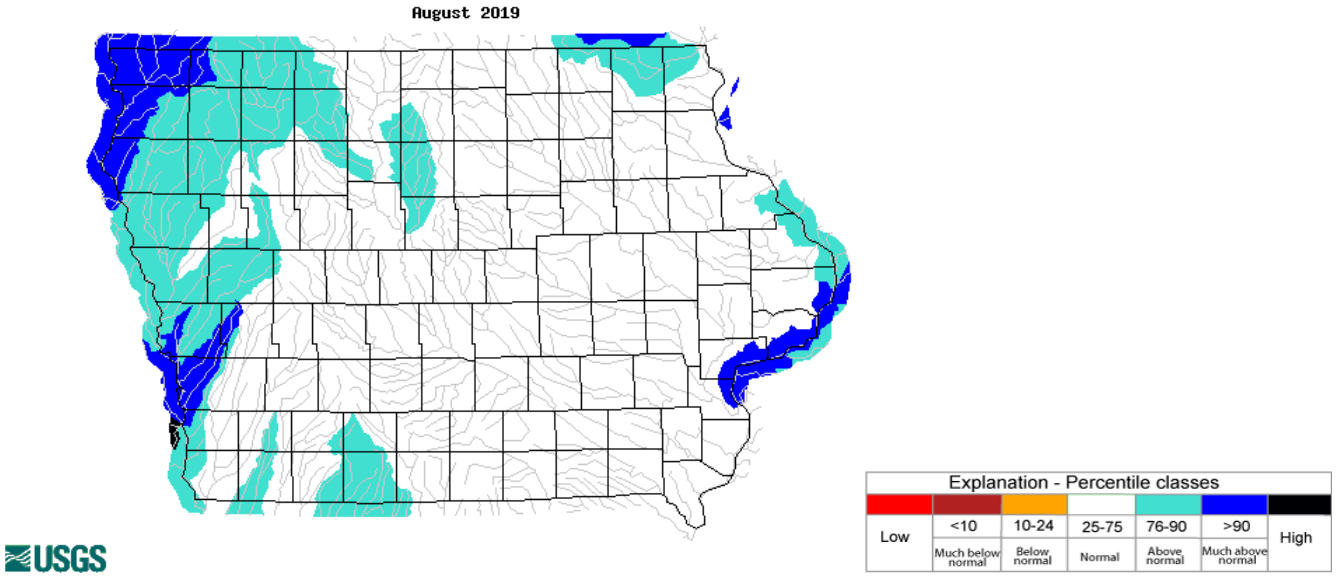
A snapshot of water resource trends for the month of August 2019

Drought Monitor - Conditions as of September 3, 2019

National Drought Mitigation Center and partners

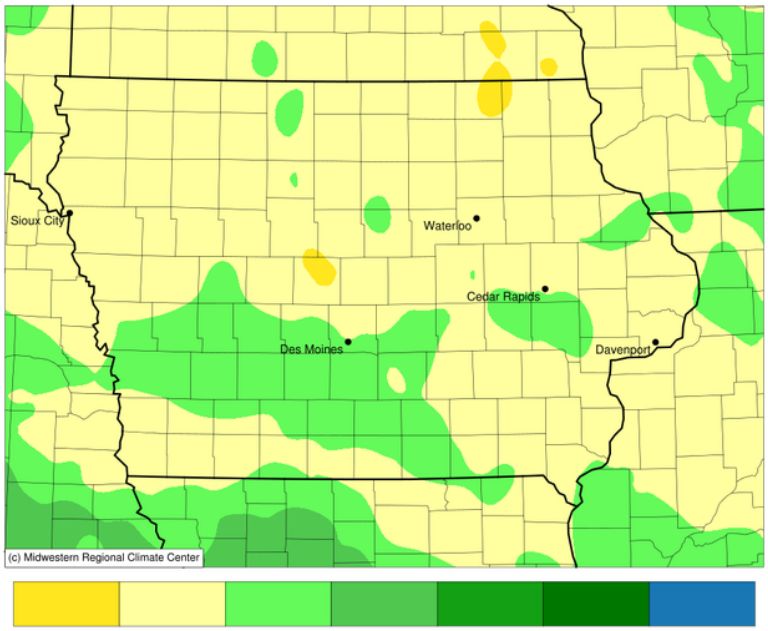


Stream Flow – August 2019



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

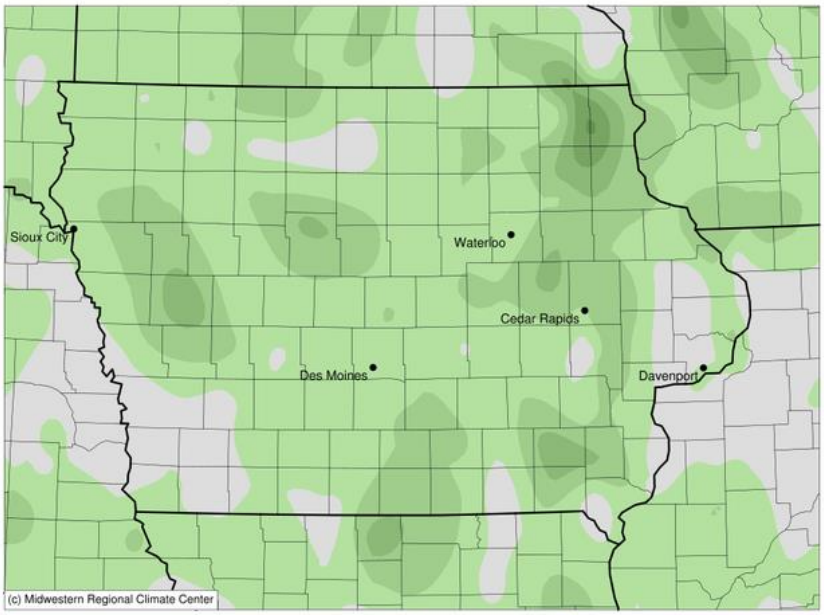
August 01, 2019 to August 31, 2019

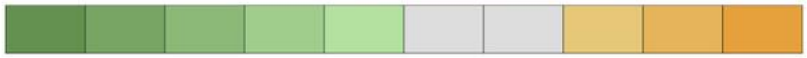


Stations from the following networks used: WBAN, COOP, FAA, GHCN, ThreadEx, CoCoRaHS, WMO, ICAO, NWSLI,
Midwestern Regional Climate Center
cli-MATE: MRCC Application Tools Environment
Generated at: 9/5/2019 9:47:03 AM CDT

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

August 01, 2019 to August 31, 2019





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Midwestern Regional Climate Center
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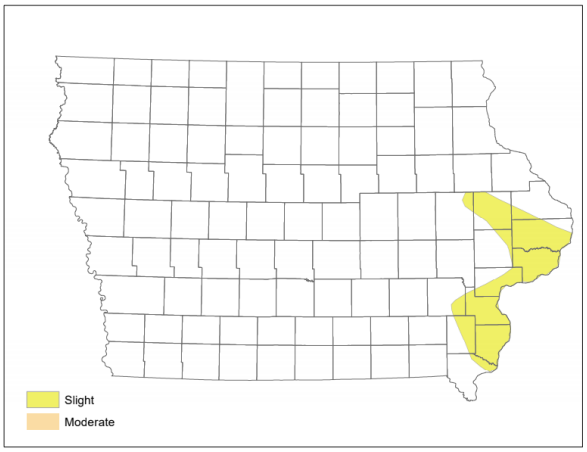
Shallow Groundwater - Conditions for August 2019

Iowa DNR and IIHR-Hydroscience and Engineering



Normal
Slight
Moderate

RECENT DEVELOPMENTS AND CHANGES

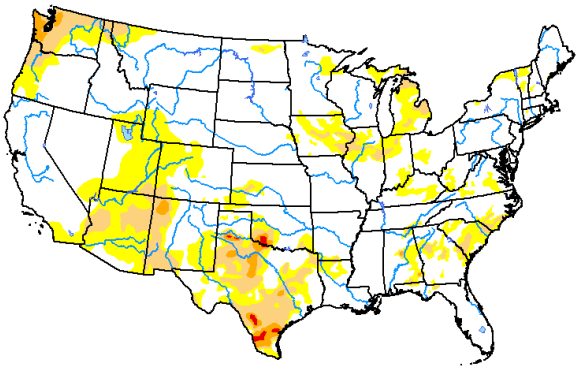
SUMMARY

As the state continues to dry out, indicators of dry conditions continue to slowly expand. Precipitation averaged below normal for all three of the meteorological summer months (June, July and August). Statewide summer rainfall was 10.74 inches, or nearly 3 inches below normal. Statewide average temperature was 71.4 degrees, or 0.20 degrees cooler than normal. The highest temperature observed in Iowa during the month of August was 92 degrees. Over half of the state is now rated as at least abnormally dry by the National Drought Monitor, while streamflow conditions in the away from the border river areas have moved into the normal flow range. For the first time in a year, there are areas of Iowa where groundwater conditions are beginning to show stress.

DROUGHT MONITOR

Dry conditions continue to expand across the state. All drought and dryness disappeared from Iowa in late October 2018 and did not reappear until the middle of July of this year. Since the July 23, 2019 Drought Monitor first showed signs of reappearing dryness, conditions have continued to degrade. The current drought monitor shows over half of Iowa rated as being at least D0 (Abnormally Dry), and nearly 12 percent of the state rated as D1 (Moderate Drought). The affected areas have doubled over the last month. The driest of conditions are in central and eastern Iowa.

Nationally, significant drought conditions persist in the Pacific Northwest. In addition, the only areas of D3 (Exceptional Drought) in the United States are found in small areas of Texas and Oklahoma.



National Drought Monitor Map
Data valid: September 3, 2019

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

CURRENT STREAM FLOW

Streamflow conditions in the state continue to decrease from above normal and much above normal conditions in July to normal conditions across the state in August. There are a few areas that remain in the much above normal condition in the west, and few areas that have decreased to above normal and normal conditions in the northeast since July.

AUGUST PRECIPITATION AND TEMPERATURE

Preliminary monthly precipitation totaled 3.48 inches or 0.75 inches below normal in August, ranking as the 67th driest on record. A drier August last occurred in 2013. Much of Iowa experienced below average precipitation during August with sections of central, northwest and northeast Iowa reporting deficits between one and three inches. Above average totals were reported in southern Iowa. Preliminary precipitation totals for the month varied from 0.99 inches at Sibley in Osceola County to 7.49 inches at Atlantic in Cass County.

Preliminary Iowa temperatures averaged 69.9 degrees or 1.6 degrees below normal. This ranks as the 32nd coldest August with a cooler one last occurring two years ago. Temperature departures show below average conditions across the state with up to three degrees below normal in isolated sections of Iowa. The month's high temperature of 92 degrees was reported at Muscatine in Muscatine County on the 5th; this reading was also reported at Little Sioux in Harrison County and Oakland in Pottawattamie County on the 20th. The reported high temperature was on average eight degrees above average. Fayette in Fayette County reported the month's low temperature of 47 degrees on the 31st, 10 degrees below average.

Summer Summary: Precipitation averaged below normal for all three meteorological summer months of June, July and August. The summer statewide average was 10.74 inches or 2.97 inches below normal. The statewide average temperature was 71.4 degrees or 0.20 degrees cooler than normal. This ranks as the 54th coolest and 40th driest summer among the 147 years of statewide observational records. A cooler and drier summer last occurred in 2017. A majority of Iowa reported precipitation deficits with parts of the northeastern quadrant observing deficits between four to six inches.

SHALLOW GROUNDWATER

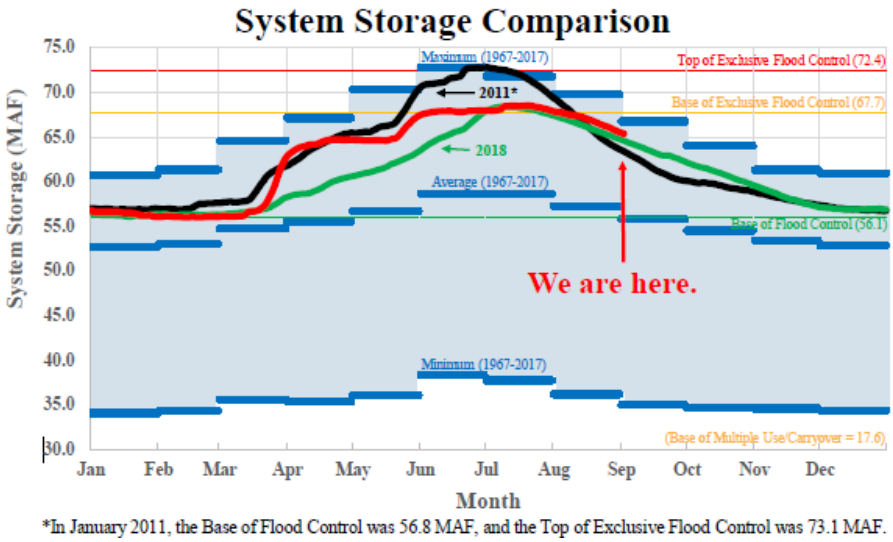
Shallow groundwater conditions continue to deteriorate across most of Iowa, with portions of East Central Iowa experiencing slight drought conditions. Shallow groundwater conditions across the rest of Iowa were normal to slightly below normal.

MISSOURI RIVER BASIN

Missouri River flows continue to be much higher than normal as the US Army Corps of Engineers continues to work to drain flood water from its reservoirs. Storage of water in the reservoir system reached its maximum on July 20, and the total volume stored continues to drop. Currently about 43% of the flood control storage remains available to store runoff. The amount of water stored in the reservoir system exceeds the amount stored at this time in both 2018 and 2011.

The most recent estimate for 2019 runoff for the upper Missouri Basin above Sioux City is 54.6 MAF, which is more than double the average runoff. This would make runoff in 2019 the second highest in over 121 years of recordkeeping for the Missouri River. It is also worth noting that these runoff figure do not include the significant spring runoff from the Platte River.

Gavins Point reservoir is currently releasing 70,000 cfs., and the Corps predicts that this elevated release level will continue through September. Discharge rates are will remain high for most of the rest of this year as the Corps empties 2019 floodwater in preparation for 2020.



*In January 2011, the Base of Flood Control was 56.8 MAF, and the Top of Exclusive Flood Control was 73.1 MAF.

ADDITIONAL INFORMATION

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

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