



WATER SUMMARY UPDATE

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A review of water resource trends from 2019

In a word – 2019 was wet. From January to December 2019 the state of Iowa received 41.5 inches of rain, more than 6 inches above normal, making 2019 the 12th wettest year on record. The two years from January 2018 to December 2019 was the wettest two year period on record. This wetness shows itself in streamflow and groundwater trends, as well as in the US Drought Monitor. Average temperatures in Iowa for 2019 were 1.2°F cooler than normal, making the past year the 29th coldest on record.

PRECIPITATION FOR 2019

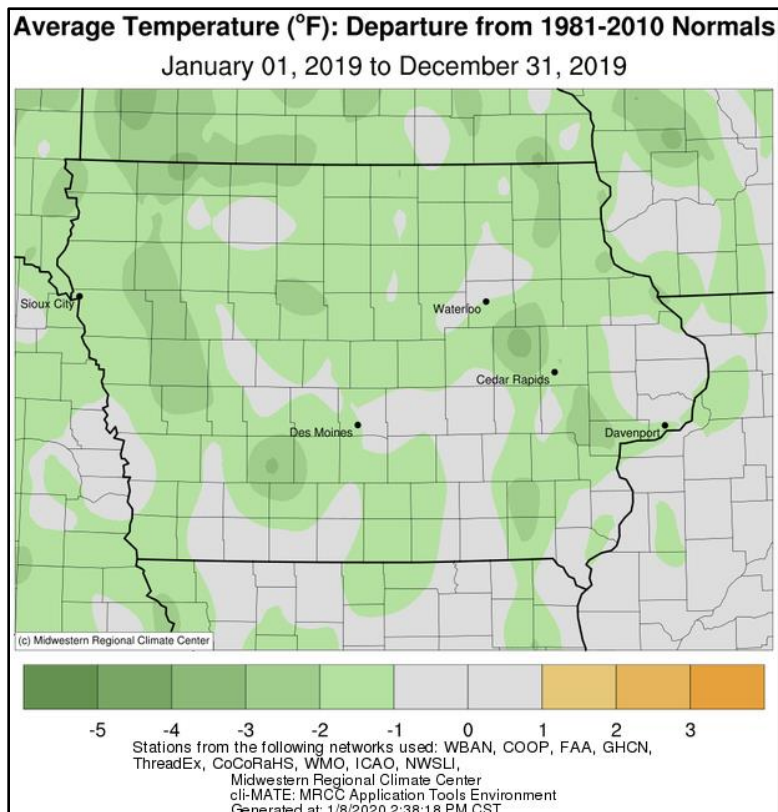
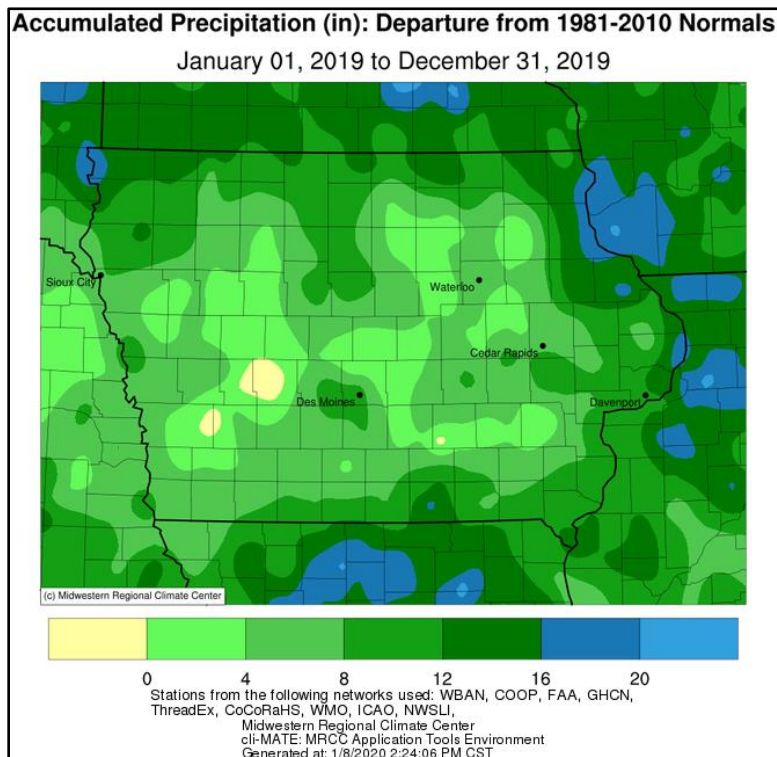
Based on 147 years of statewide observations, Iowa experienced its 12th wettest year on record in 2019 with a preliminary statewide average precipitation accumulation of 41.49 inches, 6.22 inches above normal. 2018 was even wetter than 2019, with 48.05 inches falling across the state, making 2018 the 2nd wettest year on record. In fact, the 24-month period from January 2018 through December 2019 is the wettest two-year period on record, with 19 inches more than normal rainfall occurring during that two year period.

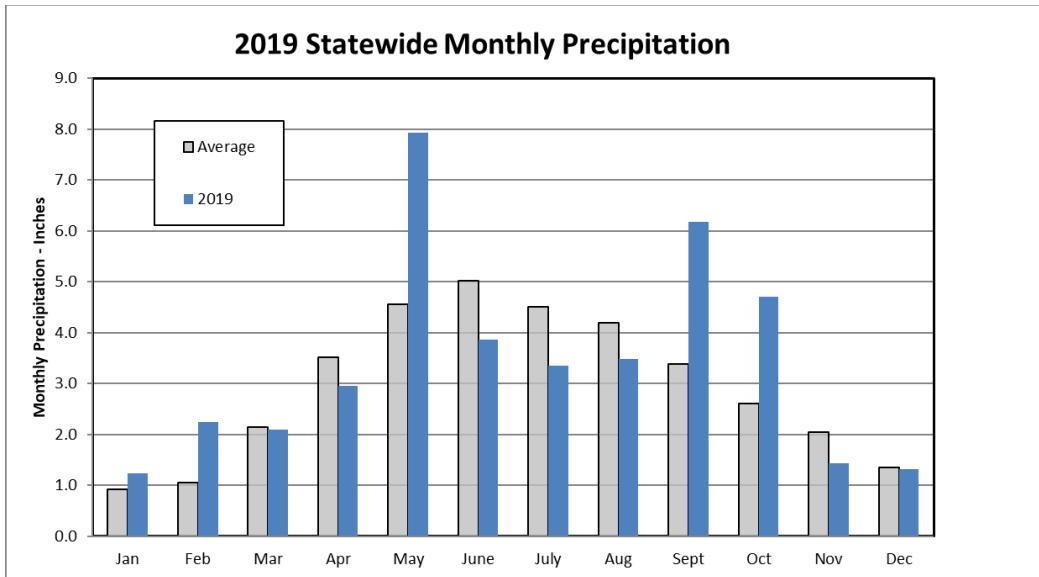
The winter months saw 5.72 inches of precipitation and 38.9 inches of snow, ranking it as the 3rd wettest and 8th snowiest. Spring 2019 ended up ranking as the 6th wettest on record with 13.43 inches of precipitation; this reading was 3.21 inches above normal. All three summer months reported below normal rainfall, though subsoil conditions, aided by above-normal rainfall over the previous several months, helped mitigate meteorological dryness and agricultural stresses. Summer ended with 10.82 inches of rain, 2.89 inches below average and ranking it as the 41st driest since statewide record keeping started in 1872. The fall season ranked as the 6th wettest on record with 12.44 inches of precipitation, 4.41 inches more than the 30-year average. December closed out the year with wetter than normal conditions across northwestern Iowa though drier conditions prevailed over the rest of Iowa.

TEMPERATURE FOR 2019

Iowa experienced variable temperature behavior during 2019, though eight months of the year had below average temperatures. The coldest temperatures of the year were reported near sunrise on January 30th with temperatures ranging from the -20s in southern Iowa to -30s in northern Iowa. Wind chill readings plummeted into the -50s in northern Iowa; Estherville Municipal Airport (Emmet County) reported a wind chill temperature of -59 degrees. Winter ended slightly below normal at 20.7 degrees, 1.4 degrees below normal. Spring into early summer trended on the cooler side with Spring 2019 ending up 2.6 degrees below normal. Summer conditions were cooler than average as well with only July having unseasonable warmth. Summer ended slightly below average at 71.3 degrees, 0.3 degrees below normal.

Late year warmth returned to Iowa with the 9th warmest September on record. October conditions reversed course and ended up at 3.7 degrees below normal and ranking it as the 13th coldest on record. November and December repeated behavior similar to the end of 2018. At 32.5 degrees, November's average temperatures was 4.1 degrees below normal, while December's average temperature of 29.1 was 6.2 degrees above normal. In terms of historical ranking, 2019 will be the 29th coldest on record at 46.8 degrees, 1.2 degrees below normal.

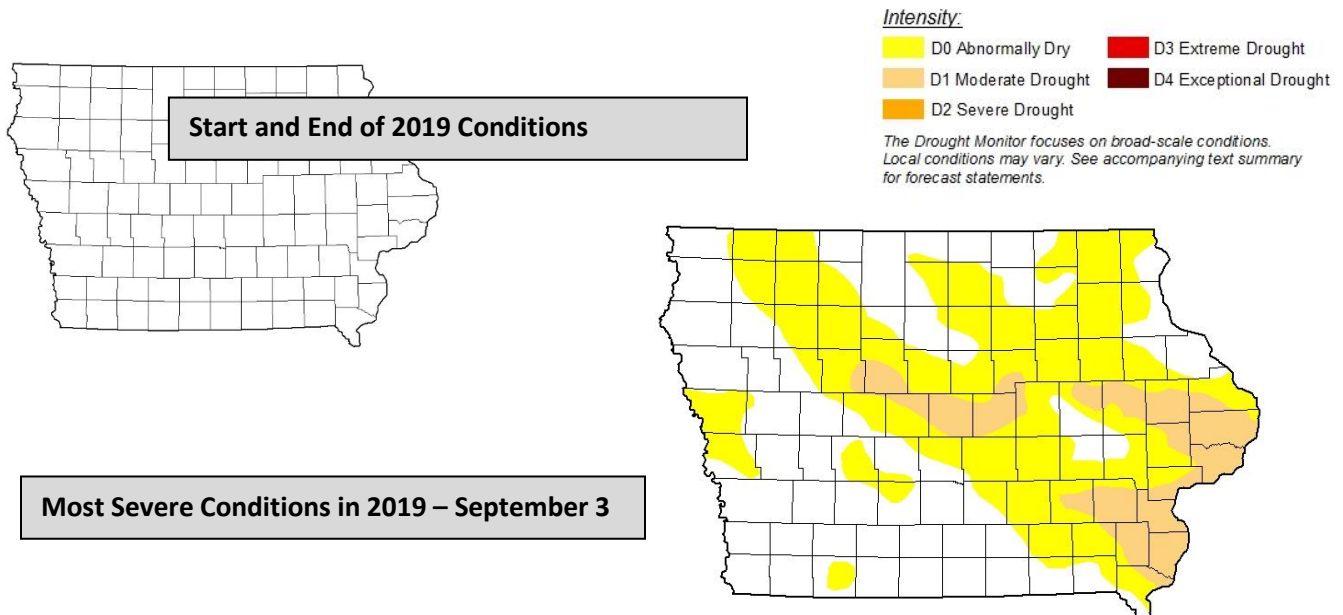




DROUGHT MONITOR FOR 2019

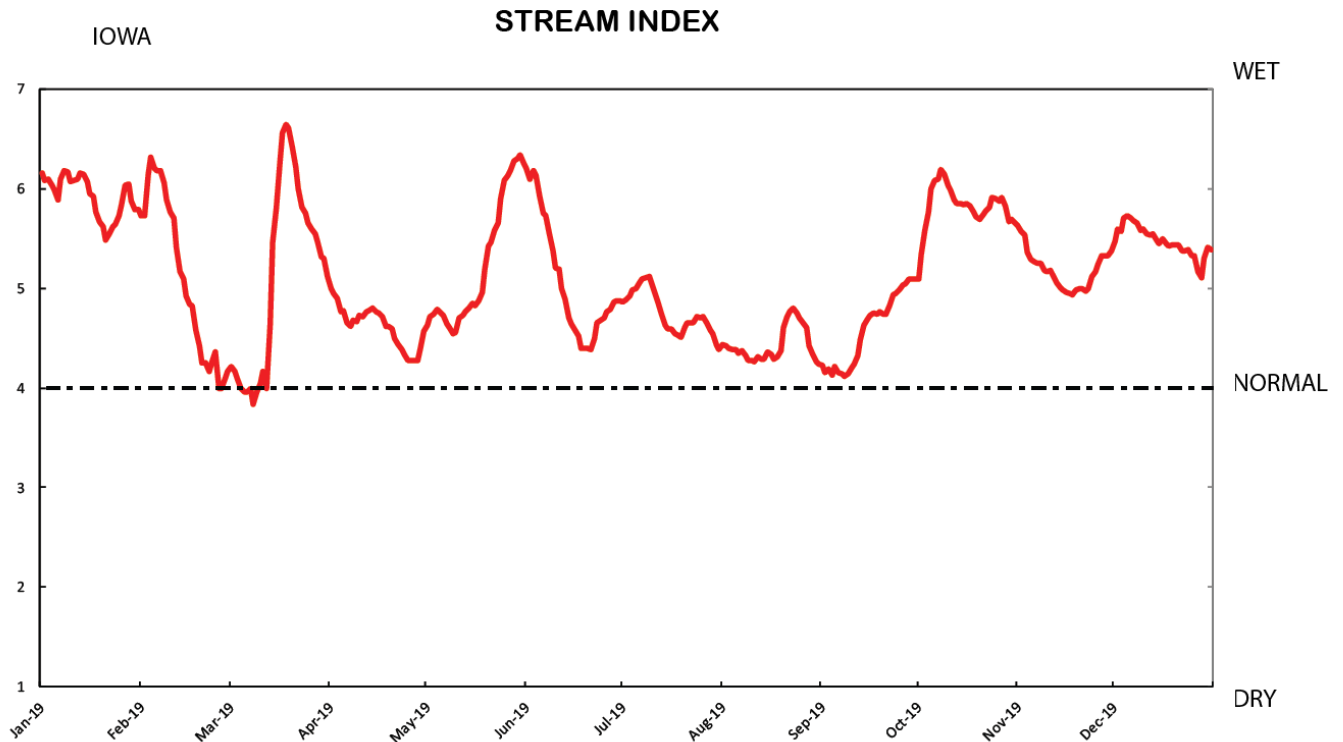
Iowa was free from any drought or dryness for nearly all of 2019. The year began with no abnormally dry (D0) or drought conditions across Iowa, as surface conditions were saturated from the third wettest fall and winter on record. In early summer conditions start to dry out across parts of Iowa. On July 23rd, Abnormally Dry (D0) conditions were introduced into Iowa for the first time since October 30th, 2018. On July 30th, the dry regions expanded northwest, with D0 conditions covering nearly a quarter of the state. Abnormally Dry (D0) conditions continued to expand across Iowa in August. Moderate Drought (D1) conditions were also introduced into eastern and central Iowa on August 13th, as precipitation deficits continued to accumulate. As of September 3rd, D1 conditions covered almost 12 percent of Iowa.

Abnormally Dry (D0) conditions peaked during the first week of September, covering 41% of the state. Moderate Drought (D1) conditions covered the largest aerial extent at 12%, concentrating in central and eastern Iowa. As rainfall totals increased across the state through the month, D0 conditions continued to shrink from west to east; D1 also followed this pattern and were completely removed during the week of September 24th. With abnormally wet conditions during September into October, abnormally dry (D0) conditions were completely removed from Iowa as of the first week of October.



2019 RUNOFF AND STREAM FLOW

As a result of the prolonged period of higher than normal precipitation both in Iowa and throughout the upper Midwest, river and streamflows in Iowa have been above normal for the entire year. Significant and long-term flooding has been experienced on both the Mississippi and Missouri Rivers in 2019, and interior streams have experienced above normal flows for much of the year. The stream index indicates the average flow across the entire state's streams compared to the normal flow for that period of time. For 2019 nearly the entire year experienced above normal flows – with the major runoff event showing in mid-march.



2019 SHALLOW GROUNDWATER

As a result of the prolonged period of higher than normal precipitation in Iowa shallow groundwater conditions have been positive for the entire year. There was some concern for eastern Iowa in September, but the balance of the state for the entire year, shallow groundwater conditions have not been a concern.

ADDITIONAL INFORMATION

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

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