IOWA DEPARTMENT OF NATURAL RESOURCES

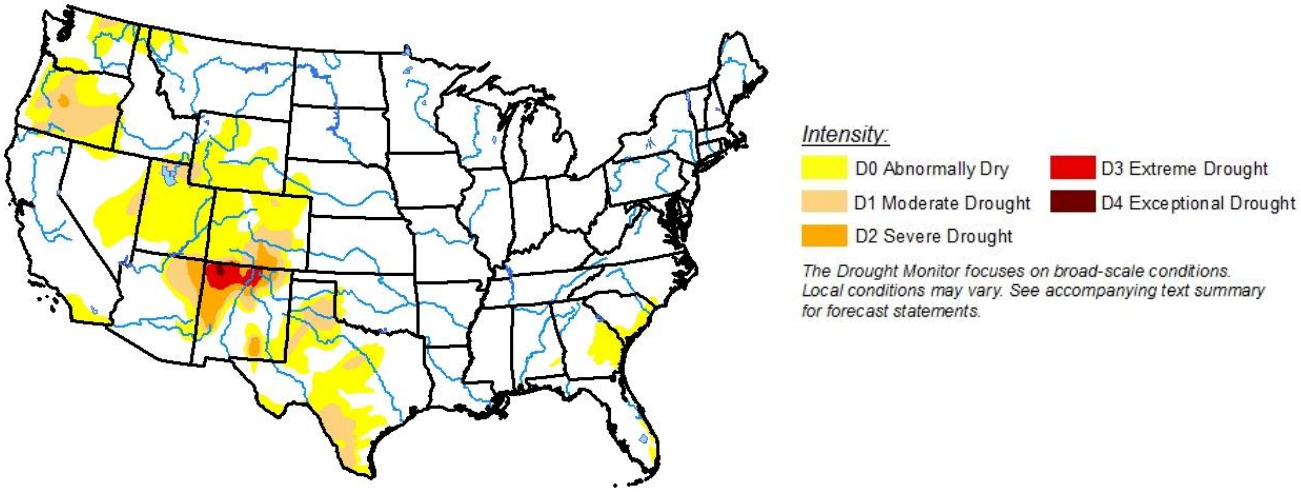
WATER SUMMARY UPDATE

Published Date March 14, 2019 | Issue 93

A snapshot of water resource trends from March 2019

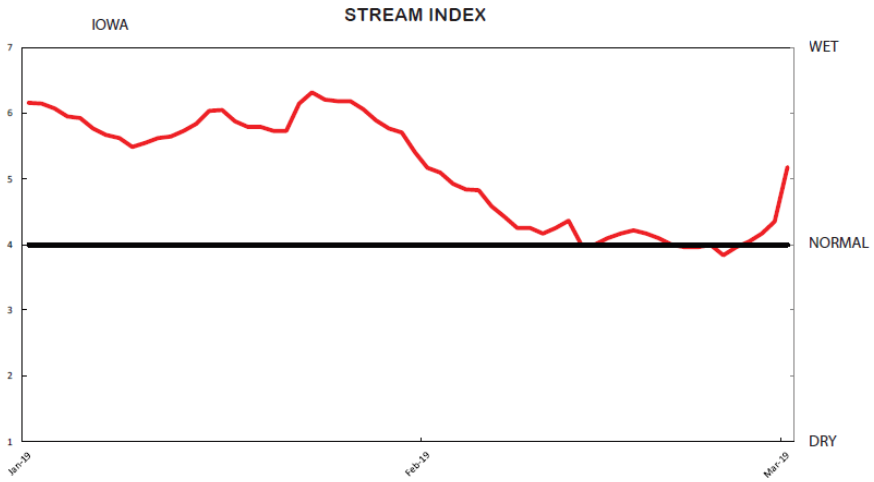
Drought Monitor - Conditions as of March 12. 2019 at 7 a.m.

National Drought Mitigation Center and partners



Stream Flow – Iowa Streamflow Index – Winter 2019

US Geological Survey

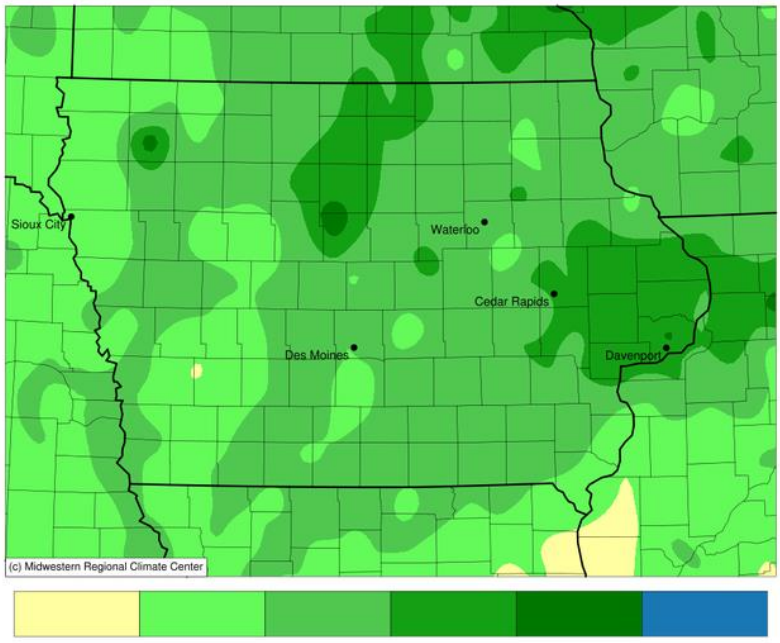


Precipitation – Departure from normal precipitation for February, 2019.

State Climatologist

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

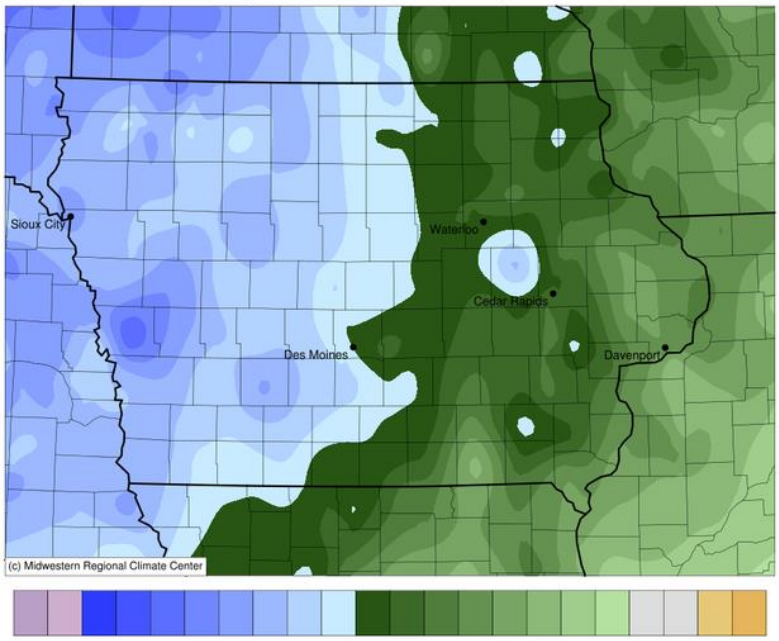
February 01, 2019 to February 28, 2019



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: 3/13/2019 9:36:29 AM CDT

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

February 01, 2019 to February 28, 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: 3/13/2019 9:37:01 AM CDT

Shallow Groundwater - Conditions for March 2019

Iowa DNR and IIHR-Hydroscience and Engineering

RECENT DEVELOPMENTS AND CHANGES

SUMMARY

February 2019 was the 16th coldest and the 7th wettest on record. February brought over 40 inches of snow to parts of northern Iowa, and saw a low temperature of -20 degrees in Pocahontas on the 19th. Streamflow was moving toward the normal range until the very recent rain and snowmelt – and it has now begun to rise. Localized flooding is occurring in many locations. Soil moisture is high, and frost remains in the ground across the state. Drought is non-existent over nearly all of the eastern United States, and has diminished greatly in the western part of the county.

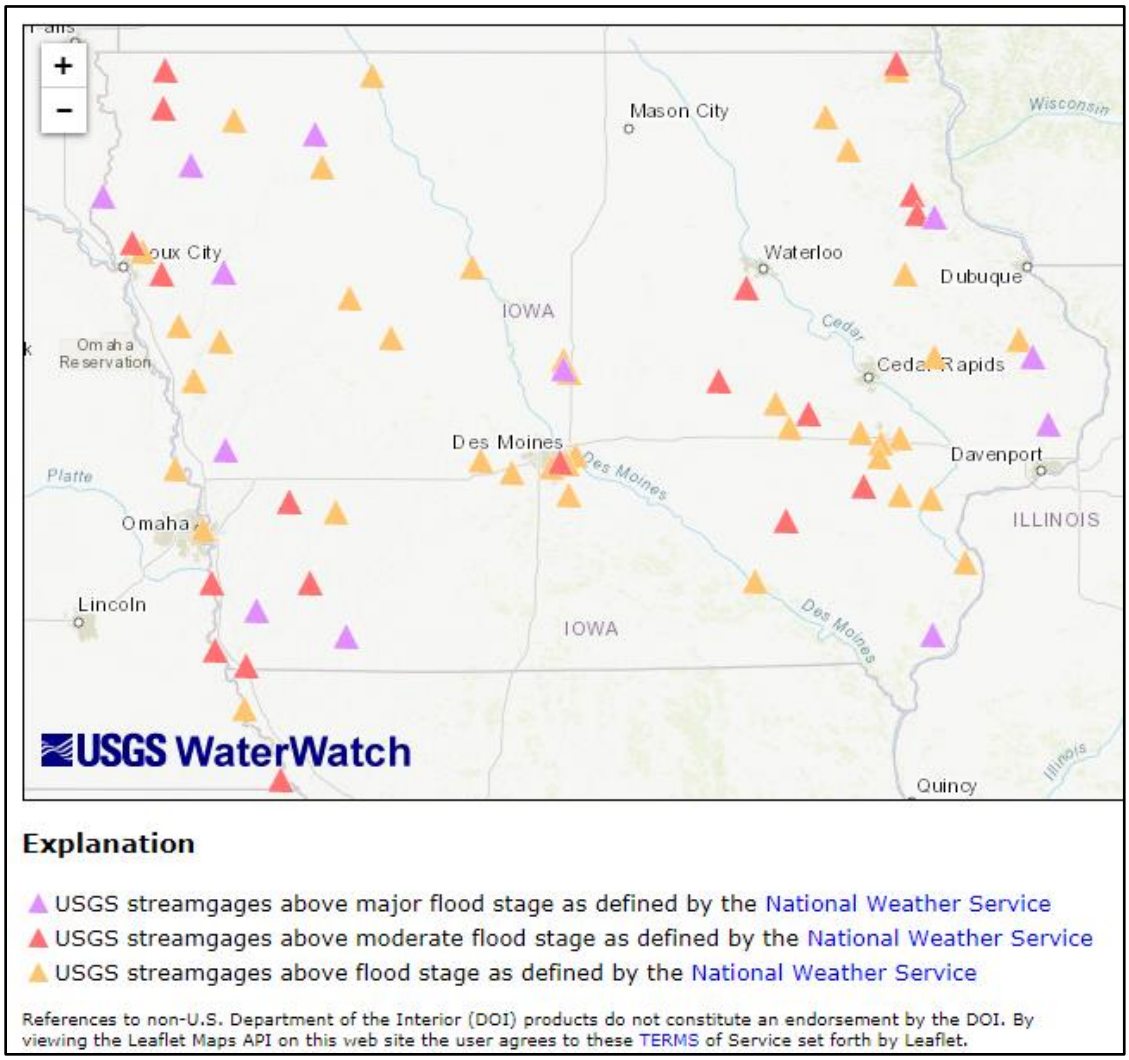
DROUGHT MONITOR

Drought and abnormally dry conditions were completely removed from the state on November 6th, 2018, and conditions remain drought free. At this time in 2018 over a quarter of the state was in some form of drought, mainly in southeastern Iowa. The National Drought Monitor shows that nearly the entire eastern two thirds of the country is free from drought, and large areas of extreme drought in the southwest have been significantly reduced over the past several months. The only remaining areas of extreme or exceptional drought are in northern New Mexico, a huge change from the summer of 2018.

CURRENT STREAM FLOW

Streamflow conditions in much of the state remain in the above and much above normal condition. Streamflow conditions across south-central Iowa have remained in the above and much above normal condition. The recent warm temperatures and precipitation events have caused some streams in Iowa to move above flood stage. The streamflow gage map shows all the sites that are in flood stage currently, and the streamflow index has a rapid increase of sites moving into the above normal condition.

It should be noted that during the winter season, USGS streamflow data may be impacted by ice formation and backwater. This information should be used as preliminary information only.



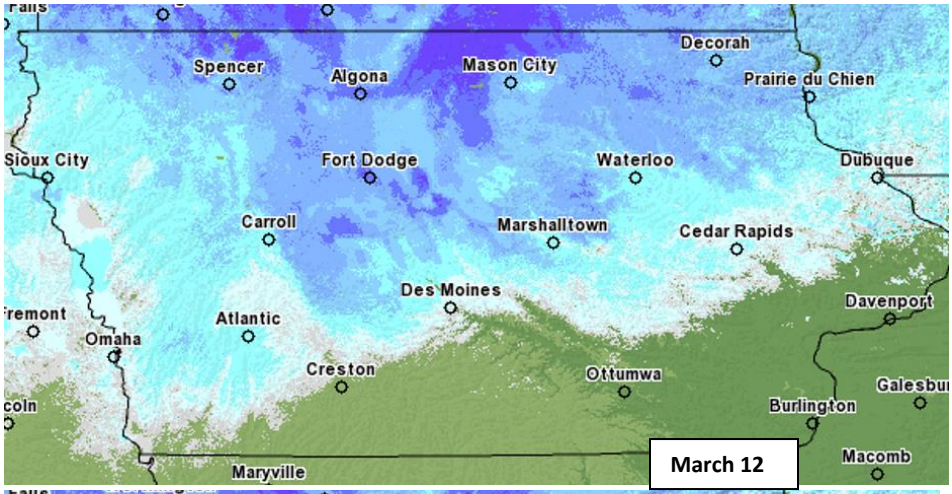
FEBRUARY PRECIPITATION AND TEMPERATURE

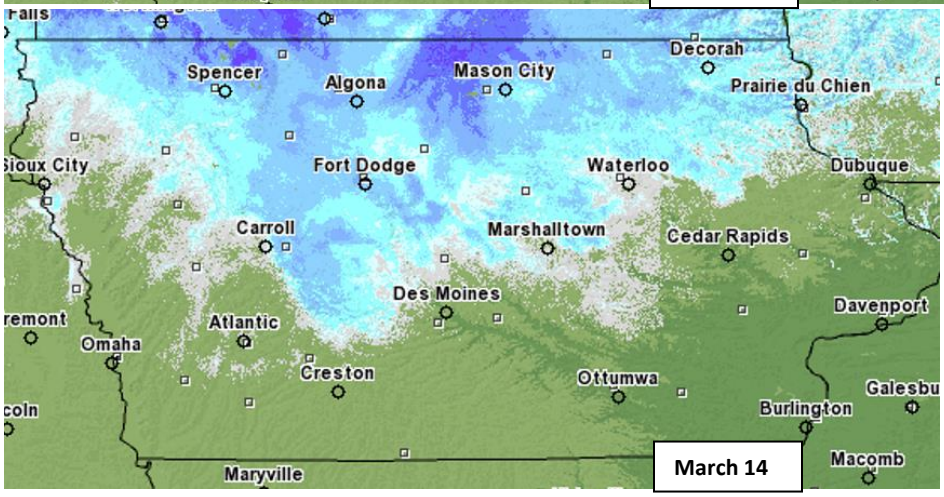
Iowa temperatures averaged 15.6 degrees or 8.4 degrees below normal, ranking February 2019 as the 16th coldest among 147 years of state records. Overnight lows reported at 7:00 am on February 1st were dangerously cold with the coldest readings in northeast Iowa; lows dipped into the -30s. A substantial snowpack across much of the state also helped hold down temperatures. February 8th into the late morning of the 9th had observed temperatures dipping into the negative teens; Estherville Airport reported -11 degrees at 8:00 am with a wind chill of -34 degrees. The warmest temperature for the month 59 degrees in Shenandoah on the 3rd. Pocahontas reported the coldest overnight low of -20 degrees on the morning of February 19th.

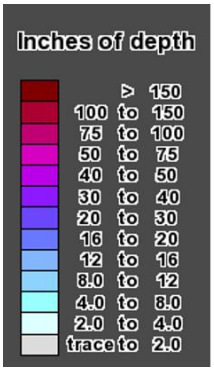
Statewide precipitation totaled 2.25 inches, or 1.20 inches above average. This ranks as the 7th wettest February on record. An active jet stream pattern brought multiple winter systems through the state during the month, with significant snowfall occurring on the 6th and 7th, then on the 9th and 10th, and again on the 16th and the 17th. The average statewide snowfall for February was 22.6 inches, making this February the snowiest on record. For the month, Swea City (Kossuth County) reported 41.1 inches of snowfall while Bloomfield (Davis County) observed only 4.6 inches.

SNOW MELT

Over the last 48 hours (March 12 to March 14) significant snow cover has been lost to melting in Iowa, contributing to current streamflow levels.







SHALLOW GROUNDWATER

Shallow groundwater conditions remain normal throughout Iowa. The abundant groundwater recharge to Iowa's shallow alluvial and bedrock aquifers from the fall sets the state up for good groundwater conditions for the spring.

SPRING OUTLOOK – FROM THE STATE CLIMATOLOGIST

Soil profiles across Iowa's northwestern two-thirds are still frozen to a depth of one to two feet as of the second week of March. The southeastern third of the state has a frost depth of 13 inches, increasing to between 20 and 22 inches generally along and north of the I-80 corridor. Four inch soil temperatures are at or above 32 degrees, generally ranging from the low to mid-30s. The southeastern corner counties are in the upper 30s to low 40s. Longer days and a gradual increase in air temperatures will allow frozen soil to gradually thaw. The current Climate Prediction Center outlook favors a cooler than normal March with a slightly higher probability of wetter than average conditions across the western Iowa. There is also a probability of wetter than average conditions moving into spring. Current modeled soil moisture rankings have Iowa at the 99th percentile, indicating surplus top and sub-soil moisture moving into the growing season. The above average snowpack across the northern two-thirds of Iowa has a snow-water equivalent of two to four inches of water.

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 515-725-8298
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