WATER SUMMARY UPDATE

No. 31

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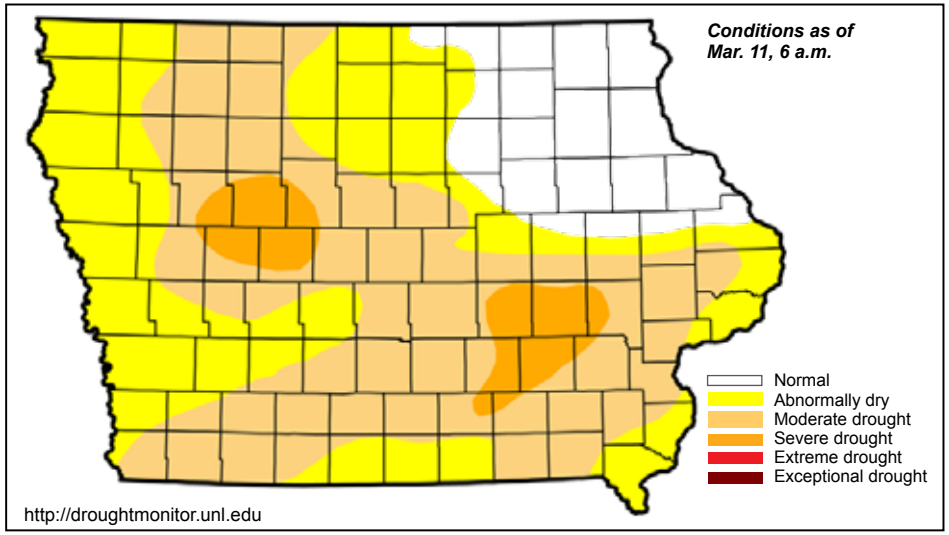
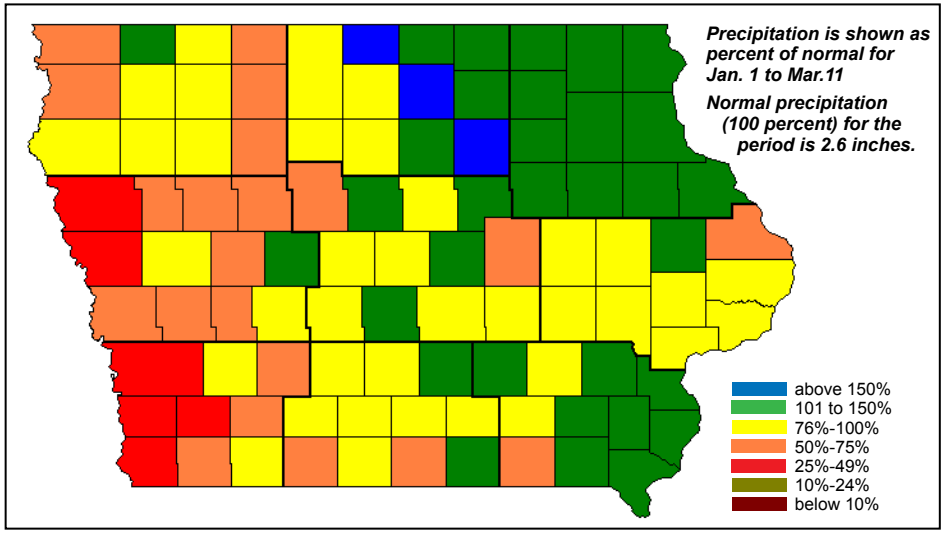
Drought Monitor

National Drought Mitigation Center and partners



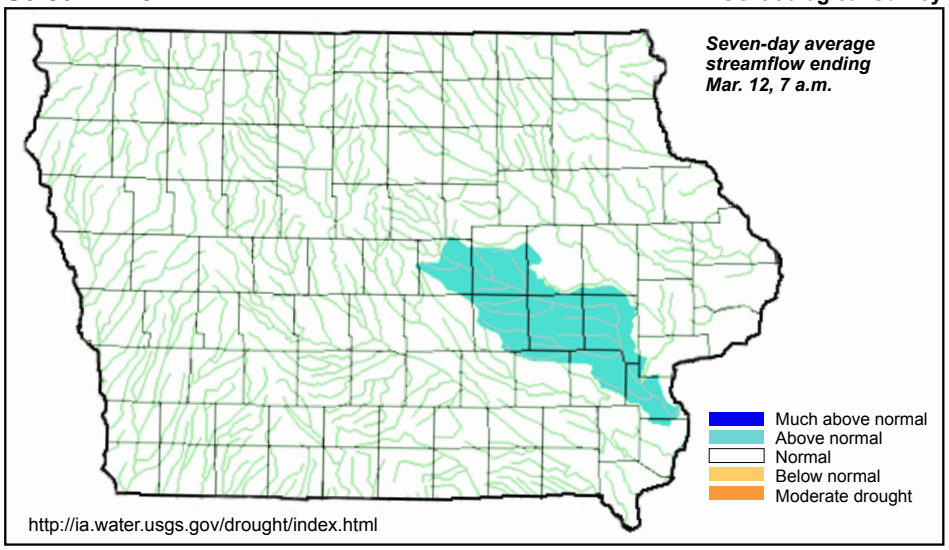
Precipitation

State Climatologist



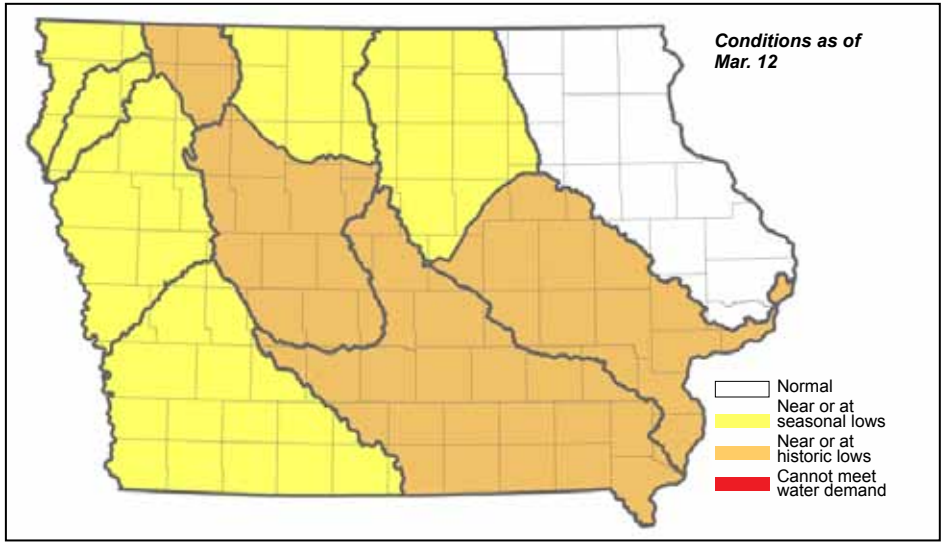
Stream Flow

US Geological Survey



Shallow Groundwater

Iowa DNR



Recent Developments and Changes

Overall Conditions

It seems odd to discuss both drought and flooding at the same time, but that is the message for portions of Iowa, especially across the central part of the state. Drought is a long-term event, and flooding can be short-term, so both can exist at the same time.

Overall conditions are improving in Iowa, but hydrologic conditions usually don't change significantly over the winter months. Precipitation is below normal so far in 2014, but our critical months for rainfall are April, May and June, so we continue to look for slow, steady rainfall in the months ahead. Groundwater conditions are holding steady, but some areas in northwest Iowa have very low water levels. Stream flow has improved and is now normal over most of the state.

Drought Monitor

During the winter months the Drought Monitor typically changes very little, and that is true for 2014. There has been slight improvement over the past three months, with areas in severe drought reduced from almost 20 percent of the state to less than 7 percent. In the next few months the impact of spring rains and melting snow should continue to improve drought conditions. In fact, the seasonal drought outlook from the National Oceanic and Atmospheric Administration (NOAA) predicts improvement and possibly the lifting of more drought designations across Iowa by the end of May.

Precipitation

Precipitation across Iowa looks remarkably similar to the pattern seen last year at this time. In comparison to normal, eastern Iowa has been wettest, while areas along the Nebraska border have been the driest through early March. Precipitation for 2014 has been about 2.2 inches, or just under the year-to-date normal of 2.6 inches. The wettest area has been extreme southeast Iowa — receiving over 5 inches of moisture — and the driest area is portions of the I-29 corridor which have received only about an inch. Although temperatures have moderated over the past few days, Iowa has seen the coldest start of the year since 1979, with temperatures averaging 8.8 degrees below normal.

Soils remain frozen to considerable depths across the state, although the uppermost few inches have thawed recently in a few areas. Substantial snow cover remains over northeastern Iowa, roughly east of U.S. Hwy. 69 and along and north of U.S. Hwy. 20, where the snow pack contains about two to three inches of water.

Shallow Groundwater

Shallow groundwater levels this winter continue to show the same steady pattern. The presence of frozen ground across the state has prevented measurable groundwater recharge from occurring since late November 2013. Several rural water systems in northwest Iowa are experiencing near record low water levels. The low water levels are the result of a combination of factors which could include an increase in water usage, deep frost and lack of fall recharge. Adequate spring rainfall will be critical across most of Iowa to recharge the alluvial and shallow bedrock aquifers, and prevent drought conditions from reoccurring or deteriorating prior to peak summer water usage.

Stream Flow

The stream flow map shows the average flow over the past seven days compared to historical stream flow levels. Stream flow conditions across the majority of the state are at normal levels. The highest stream flow conditions are in the Iowa River watersheds, which are above normal.

Spring Flood Outlook

The National Weather Service (NWS) in Des Moines recently issued its first Spring Flood Outlook for 2014, which includes the following points:

- The risk of flooding through early June is currently near or below normal at most locations, based on current conditions and near normal rainfall.
- Significant spring flooding in central Iowa typically requires a heavy rainfall component in addition to snowmelt. It is rare to see significant spring flooding due to snowmelt alone.
- Ground frost depth is currently much greater than it has been over the past several years. This deep ground frost may result in an increased risk of flooding due to runoff from snowmelt or rainfall until the ground thaws.

The NWS in Sioux Falls, South Dakota shows normal to below normal chances for minor and moderate flooding for all of the rivers and streams in their region, and below normal chances for major flooding. In eastern Iowa the predications are different, with the NWS in the Quad Cities indicating:

- An above normal spring flood risk for the Mississippi River from near Dubuque downstream to Burlington, and a close to normal spring flood risk from near Keokuk downstream to Gregory Landing, Missouri.
- Generally a near normal spring flood potential for eastern Iowa and northeastern Missouri tributary rivers.

Prepared by the Iowa DNR in collaboration with the Iowa Department of Agriculture and Land Stewardship, the U.S. Geological Survey, and The Iowa Homeland Security and Emergency Management Department.

Contacts

General Information. . . . . Tim.Hall@dnr.iowa.gov 515-281-8169
Drought Monitor. . . . . Harry.Hillaker@Iowaagriculture.gov 515-281-8981
Precipitation. . . . . .Harry.Hillaker@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 319-335-1575