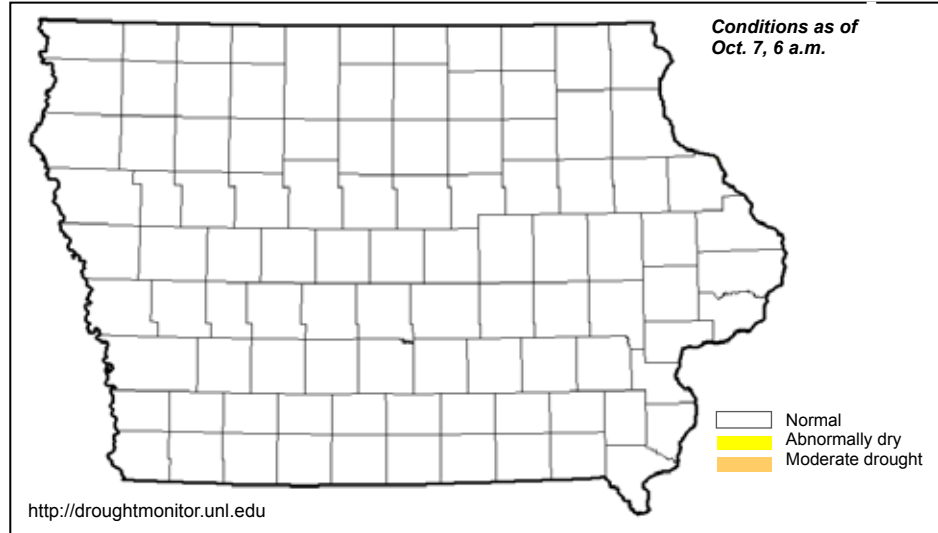


WATER SUMMARY UPDATE

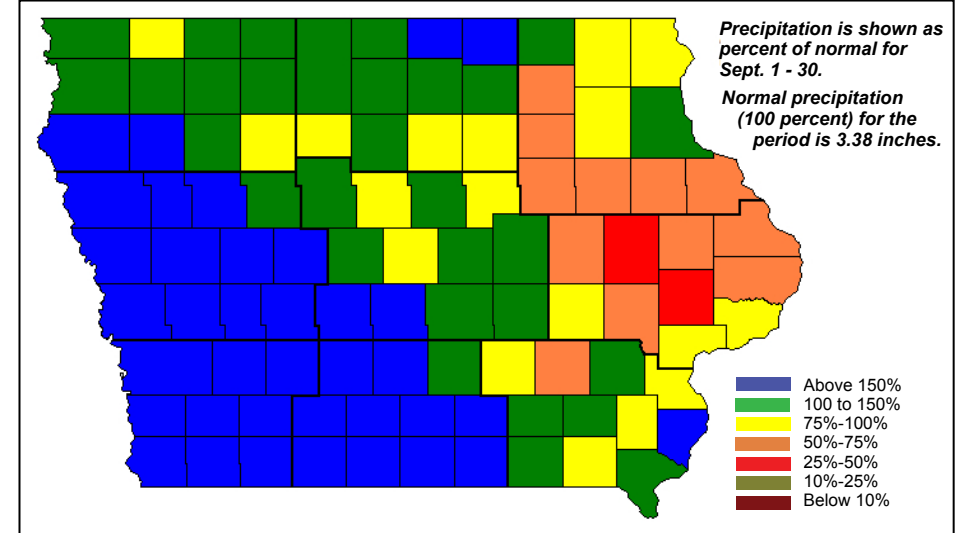
Drought Monitor

National Drought Mitigation Center and partners



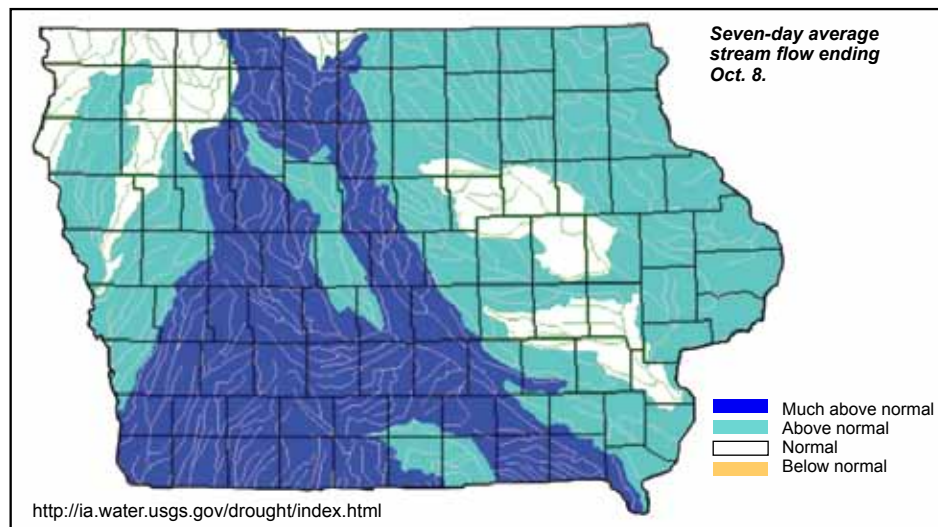
Precipitation

State Climatologist



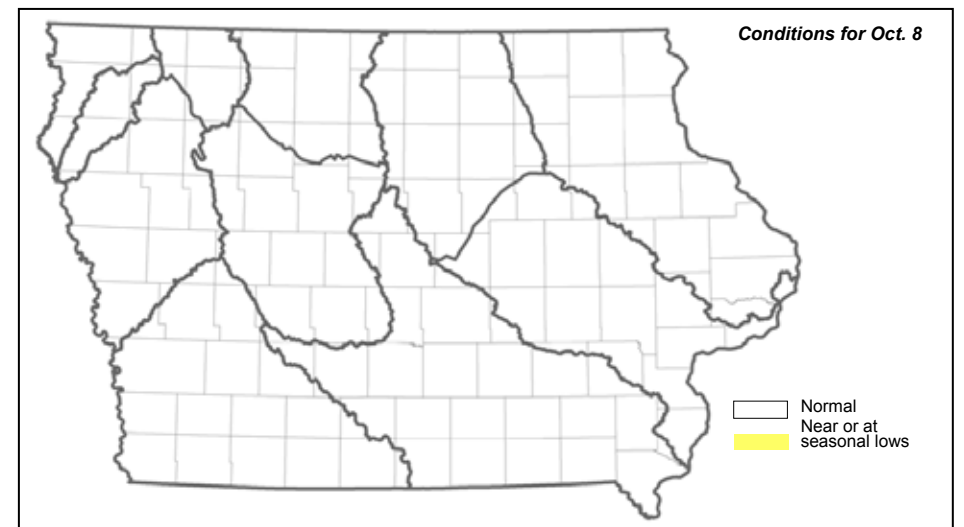
Stream Flow

US Geological Survey



Shallow Groundwater

Iowa DNR and IHR-Hydroscience and Engineering



Recent Developments and Changes

Overall Conditions

Overall conditions are dramatically improved over this time last year, when nearly the entire state was in some level of drought. Our normal to wet conditions are generally positive as we move into the winter months. Soil moisture is good and stream flows are normal or above normal across the state.

Precipitation

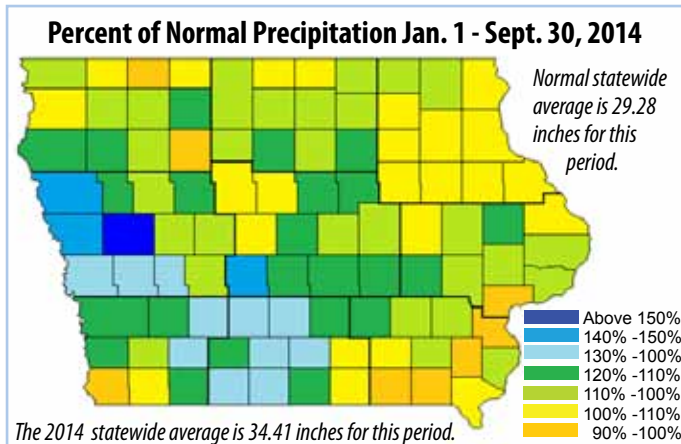
September weather averaged slightly cooler and wetter than normal for the state as a whole. Average rainfall was an inch more than normal for September. Rain was unseasonably heavy across the southern third of the state during the first half of the month. The past three months have had a similar pattern with wettest conditions in the south or southwest and driest in the north or northeast.

Shallow Groundwater

Shallow groundwater levels across the state remain normal to above normal. Shallow groundwater levels are generally one to four feet higher than one year ago across most of Iowa.

Drought Monitor

This week's Drought Monitor shows essentially all of Iowa drought free for more than a month.

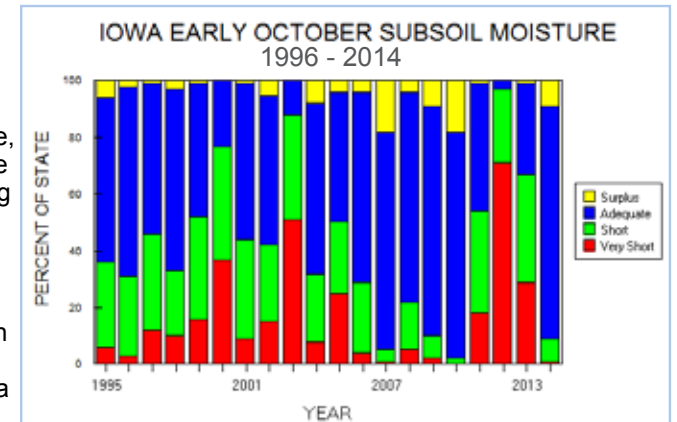


Stream Flow

Stream flow conditions remain above normal for the majority of the state. In the eastern half of the state remain above normal with only the middle Cedar and lower Iowa Rivers decreasing to the normal condition. Stream flow in much of the western half of the state remains above normal, except in the northwest corner of the state where flows are normal.

Year-To-Date Totals

Year-to-date precipitation has been greater than normal across the vast majority of the state, with 2014 ranking as the 12th wettest year among 142 years of records. Meanwhile, year-to-date statewide average temperature has been the lowest since 1979, which means evaporation has been unusually low. Iowa subsoil moisture as of Oct. 5, as surveyed by the USDA National Agricultural Statistics Service, has been greater only twice — in 2007 and 2010 — among the past 20 years..



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

How Much Water Can Be Pumped From a Well?

In Iowa, an individual or business cannot just drill a well and pump as much water as they want from an underground source. The Iowa DNR regulates groundwater pumping rates to protect other groundwater wells, and to insure long-term sustainability.

While we think of water as being relatively abundant in our state, the distribution of groundwater is far from uniform. Groundwater from shallow sand and gravel aquifers can be replenished in a matter of days or weeks, but in deeper bedrock aquifers it may take decades or centuries for groundwater to be replaced. Therefore, it is important that the amount of groundwater pumped from any aquifer be carefully allocated, and this is the responsibility of the Iowa DNR's Water Use program. Since the drought years of the 1950s, permits have been required for anyone who pumps more than 25,000 gallons per day of water from a well, stream, reservoir, gravel pit, quarry or other source.

How does the DNR determine how much water can be sustainably pumped? In the case of groundwater, technical staff evaluate local and regional geology and hydrogeology, and then use existing pumping records and computer models to predict the effects of pumping on groundwater levels and on neighboring water

supplies. In this way, the DNR can determine the probability of a groundwater well interfering with the performance of another nearby well. In some locations limitations on pumping are required so that the supply of water can be appropriately shared by all users. In addition, computer models are used to estimate long-term impacts on groundwater levels so that pumping rates are sustainable over a period of years or decades. Deeper aquifers can be susceptible to long-term depletion if they are over-pumped in localized areas. DNR's responsibility is to work to minimize the potential for this.

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 319-335-1581