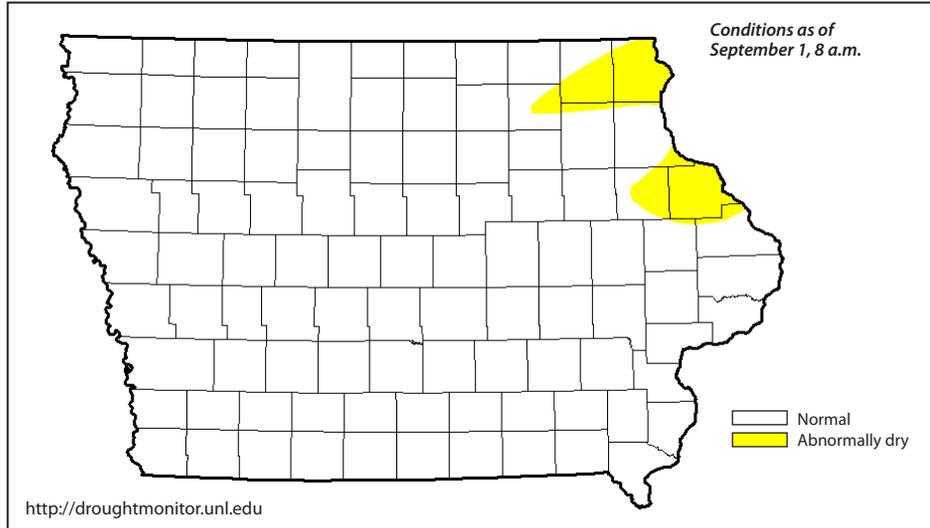


# WATER SUMMARY UPDATE

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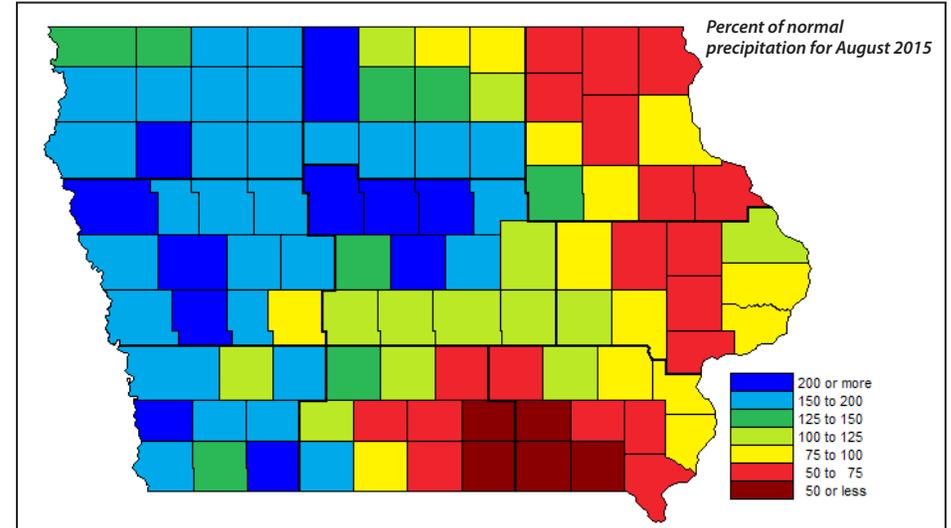
## Drought Monitor

National Drought Mitigation Center and partners



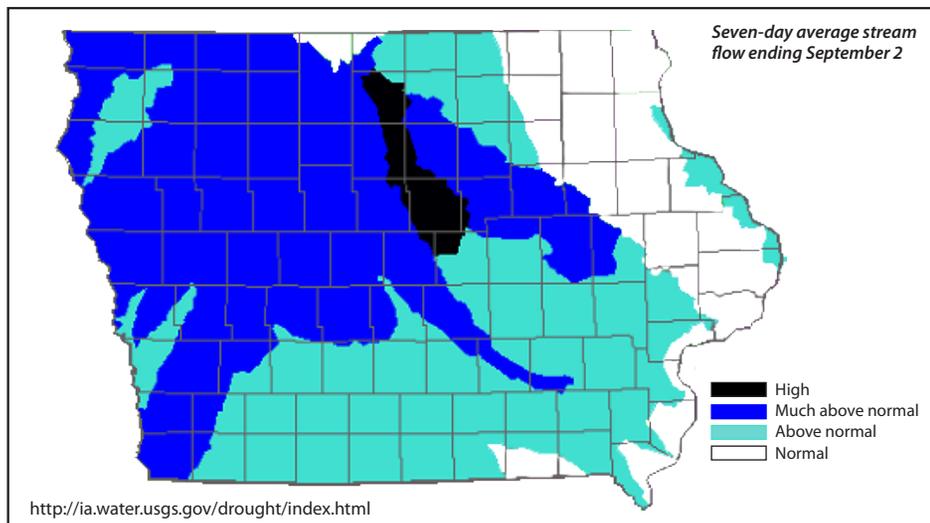
## Precipitation

State Climatologist



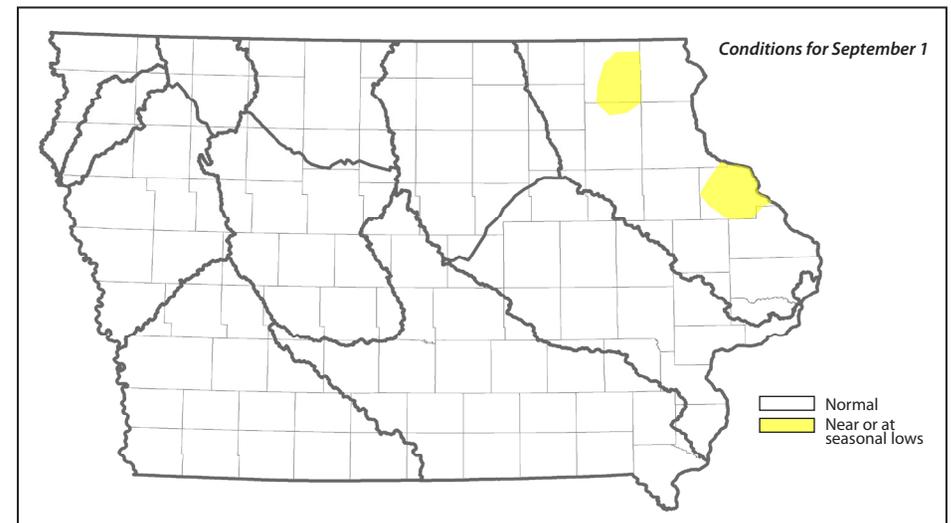
## Stream Flow

US Geological Survey



## Shallow Groundwater

Iowa DNR and IHR-Hydroscience and Engineering



## Recent Developments and Changes

### Overall Conditions

Continued rains have resulted in continuing drought free conditions for the state. Streamflow remains normal to above normal in all areas except the northeast, which is considered abnormally dry. Groundwater levels are slightly below normal in areas of Dubuque and Winneshiek Counties. However, the overall assessment of the state's conditions is "near-normal".

### Drought Monitor

The state is 96 percent drought free. Dubuque and Winneshiek Counties are the only exception, where conditions are considered abnormally dry. Conditions continue to improve in nearby states as well. Most of the drought conditions in the United States remain west of the Rocky Mountains.

### Stream Flow

Streamflow conditions were above or much above normal for the majority of the state. Since the last water summary update, streamflows across south central Iowa have decreased in a few basins from much above normal conditions, and moved into the above normal conditions, and a few western, north western, and north central basins have moved into the much above normal category. The Iowa River above Marshalltown has moved into the high streamflow condition. As a result of the recent heavy rains, USGS field crews have been making additional measurements to verify stage-discharge relations at many streamgages.

### Precipitation

There were similarities between July and August, with both months averaging unseasonably cool. The first half of both months were on the dry side, while the second half was very wet in many areas. The northeast and east central part of the state were on the dry side of normal in both July and August. However, south central and southeast Iowa shifted from very wet in July to quite dry. August rain totals varied from only 1.30 inches at the Ottumwa Airport up to 13.03 inches at Randolph in Fremont County. Overall, frequent rain across the northwest during August eliminated all of the 'abnormally dry' designation. Late August rains in the northeast allowed contraction of the 'abnormally dry' conditions for that area and improvement from 'moderate drought' to 'abnormally dry' for Dubuque County. Overall, the summer of 2015 ranked as the 7th wettest among 143 years of state records, owing to above normal statewide average rain totals in all 3 months.

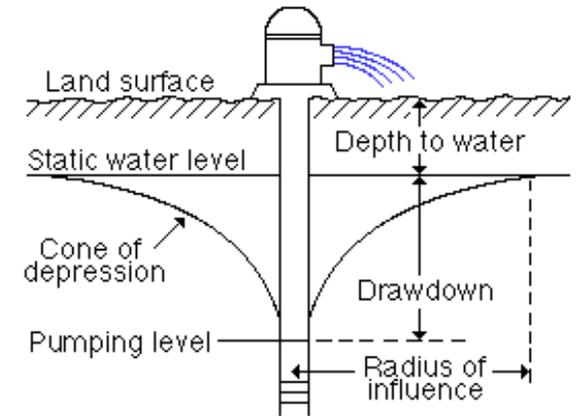
### Shallow Groundwater

Heavy rainfall occurred in August over much of Iowa. Precipitation in parts of northeast Iowa continues to be below normal, especially in Dubuque and Winneshiek counties, where slight drought conditions exist.

### Groundwater Withdrawal Impact

The impact of groundwater withdrawals is site-specific, and will vary according to the volume pumped, the properties of the source aquifer, the proximity of other water users, and the rate at which the aquifer is "recharged". While we think of water as being relatively abundant in Iowa, the distribution of groundwater availability and sustainability is far from uniform; and neither is the distribution of demand. This is why we can have localized issues even when precipitation is normal.

For near-surface, "water table" aquifers, pumping from a well results in a cone-shaped lowering of the water table around the well. This is called the "cone of depression", and an example is shown below. Dimensions of the cone again relates to volumes pumped and aquifer properties. The most common water table aquifers used for large-scale groundwater withdrawals are sand and gravel (alluvium) found along our streams and rivers. The upside to these aquifers is that they are readily recharged, and pumping them may pull stream water into the aquifer, giving an additional supply. The downside is they are more susceptible to drought than others.



## Contacts

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