WATER SUMMARY UPDATE

No. 39

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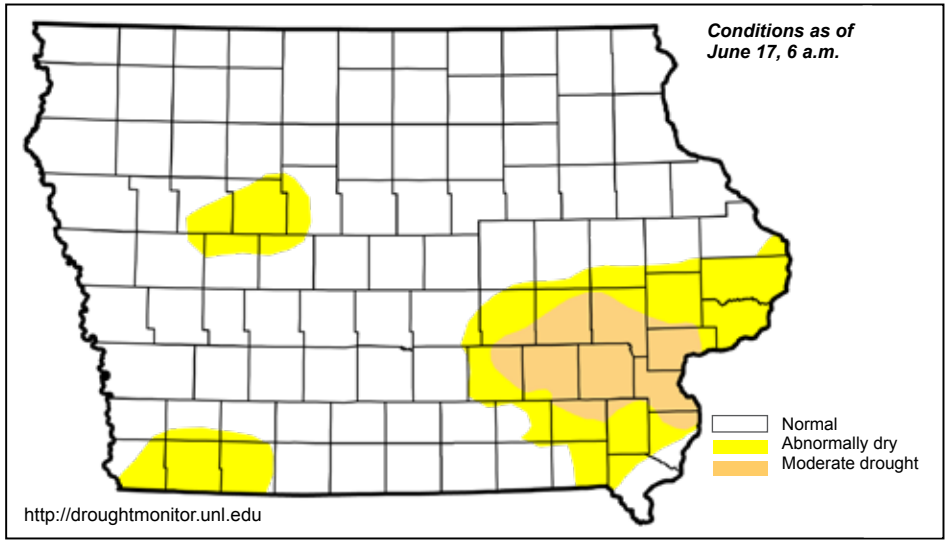
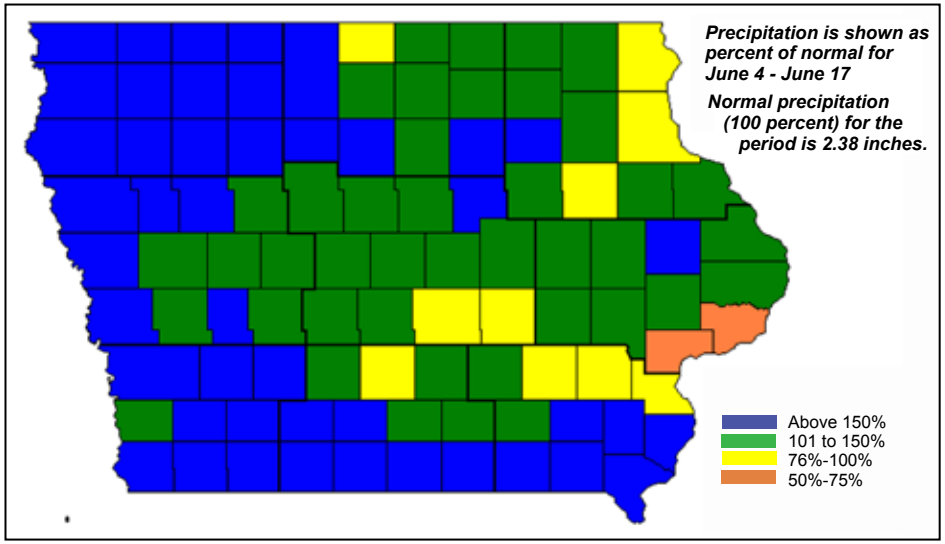
Drought Monitor

National Drought Mitigation Center and partners



Precipitation

State Climatologist

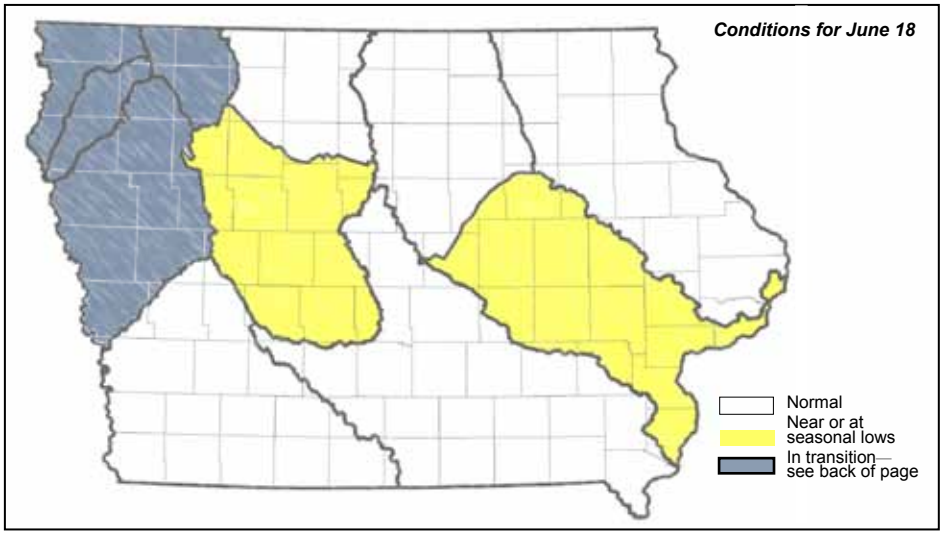


Stream Flow

US Geological Survey

Shallow Groundwater

Iowa DNR and IIHR-Hydroscience and Engineering



Recent Developments and Changes

Overall Conditions

The past two weeks have been the wettest for Iowa in over a year. As a result, almost 80 percent of the state is now free from any drought designation, and stream flow is normal to above normal in all locations. Extremely wet conditions in northwest Iowa have resulted in flooding conditions in some areas, which is a dramatic change from the drought conditions that existed there over the past several months.

Over the next few weeks the impact of the high stream flows and flooding on shallow groundwater supplies will be evaluated, allowing for updated designations for the shallow groundwater in those areas.

Drought Monitor

Persistent repetitive showers and thunderstorms inundated areas from eastern Nebraska and southeastern South Dakota into southern Minnesota and northern Iowa with anywhere from 3 to 8 inches of rainfall — these amounts may be conservative as radar-derived estimates are as high as 12 inches. Rain of this magnitude was more than sufficient to warrant a rare, but not unheard of, two-category improvement, eliminating moderate drought and abnormal dryness from the hardest-hit locales. Over the past two weeks the area of moderate drought has been reduced from 28 percent to 6 percent, and the area abnormally dry has been reduced from 28 percent to 14 percent. Overall, nearly 80 percent of Iowa is now designated as free from any drought conditions.

Precipitation

The past two weeks have been very wet over much of Iowa and slightly cooler than normal. There were four substantial rain events during the period with two accompanied by widespread severe weather. June 4 saw rain falling nearly statewide, especially in the southwest quarter of Iowa — with Lamoni reporting 5.7 inches of rain. June 7 brought rain statewide with the greatest amounts across far southern and southeast Iowa — with Bloomfield reporting 2.8 inches. June 14-15 brought very heavy rain to the northwest half of the state, with reports of 6.5 inches at Correctionville, 6.0 inches at Storm Lake, and 5.6 inches at Rock Rapids. The most recent event of June 16-17 brought rains of two inches or more to the northern half of Iowa. Rain totals with this last storm reached 4.8 inches at Emmetsburg and Linn Grove and 4.7 inches at Rock Rapids.

Precipitation totals over the past two weeks varied from 1.4 inches at Davenport to 12 inches at Rock Rapids. The Rock Rapids' two-week total surpasses all calendar month totals among 113 years of record at that location.

The statewide average precipitation was 4.01 inches while normal for the period is 2.38 inches. Larger two-week state averages were last recorded in late May and mid-April of 2013.

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

Shallow Groundwater

Record rainfall and flooding have improved drought conditions in both northwest and southwest Iowa. Shallow groundwater levels have risen approximately 1 to 7 feet in most of western Iowa in the past two weeks. Substantial rainfall also fell in parts of central and eastern Iowa during the week of June 16, and shallow groundwater levels in those parts will improve as well.

In other parts of central and southeast Iowa shallow groundwater levels are below normal.

Stream Flow

Stream flow conditions are normal for the majority of Iowa, with highest stream flow conditions in northwest Iowa where flows are much above normal. Stream flow conditions across the state have improved since the last Water Summary Update and the majority of the state has moved into the normal condition. The stream flow map shows the average flow over the past seven days compared to historical stream flow levels.

Due to the heavy rains this week, USGS field crews were out making flood measurements at several stream gages across northern Iowa, including the Rock River, Little Sioux River and Big Sioux River. Initial measurements indicate that record stream flows occurred at several locations on the Rock River, and in Perry Creek near Millnerville.

Shallow Groundwater in Northwest Iowa

Recharge of Groundwater Not Measureable Yet

A portion of northwest Iowa is shown as "in transition" — meaning that it is too early to assess the impact of the recent rainfall on shallow groundwater. It is often difficult to immediately evaluate a significant groundwater recharge event like the one currently taking place, although the impact will clearly be positive. With a major flood event like northwest Iowa is currently experiencing, groundwater levels (recharge) normally lag behind the surface water levels, especially if the wells are located a distance from the river. With significant flood water covering the river valleys, the question is when groundwater recharge will occur, not if it will occur. Even as flood waters recede over the next week, a tremendous quantity of recharge will occur, especially in old oxbows, sand and gravel pits, and in poorly drained areas. Evaluation of the impacts will be made over the next three weeks, and the results communicated in the next Water Summary Update scheduled for July 10.

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