

# 2014 WATER SUMMARY REVIEW

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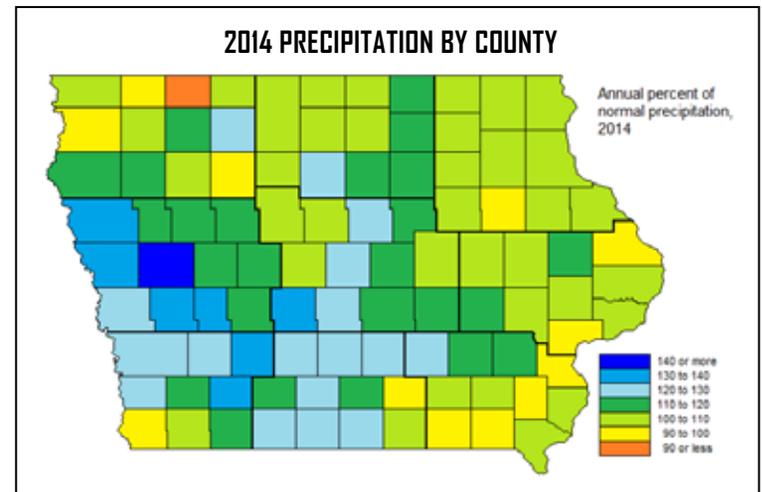
## Precipitation Ends 4.3 Inches above Normal Average

The unseasonably dry weather that prevailed across most of Iowa during the second half of 2013 continued into winter 2014. The spring, however, brought wet weather to much of the state, especially over west central sections. Heavy rains fell across the previously dry regions of northwest Iowa in mid-June, with very wet conditions and flooding spreading over much of the northern two-thirds of Iowa by late June. August brought very heavy rains across the southwest third of the state.

The late fall and early winter of 2014 were on the dry side of normal statewide. As a whole the statewide average precipitation was 39.6 inches or 4.3 inches above normal – ranking

as 15th wettest year among 142 years of state records. Several west central Iowa locations, such as Denison and Greenfield, set records for greatest annual precipitation. A few locations across northwest, extreme southwest, and far southeast and east central Iowa were a little below normal for precipitation during the year.

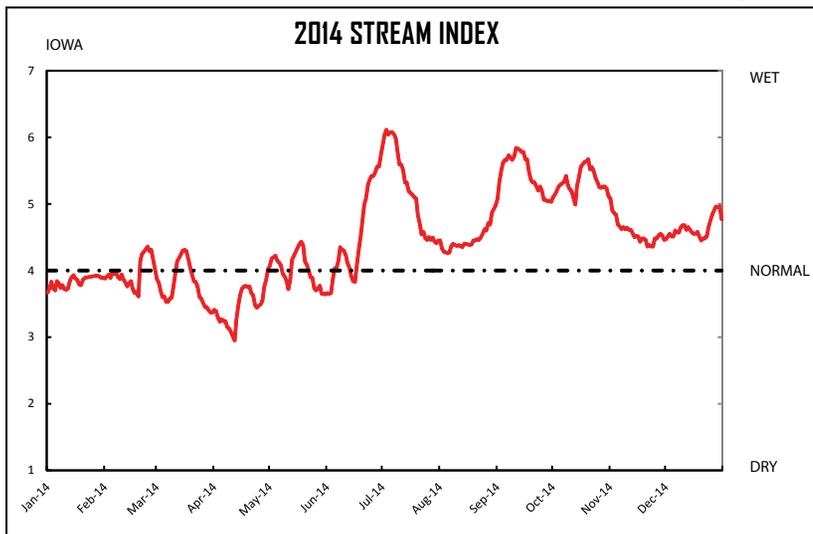
Meanwhile, 2014 was noteworthy for persistently cool weather. February, July and November all ranked among the top ten coldest for those months in the historical record, while December was the only month to average significantly above normal.



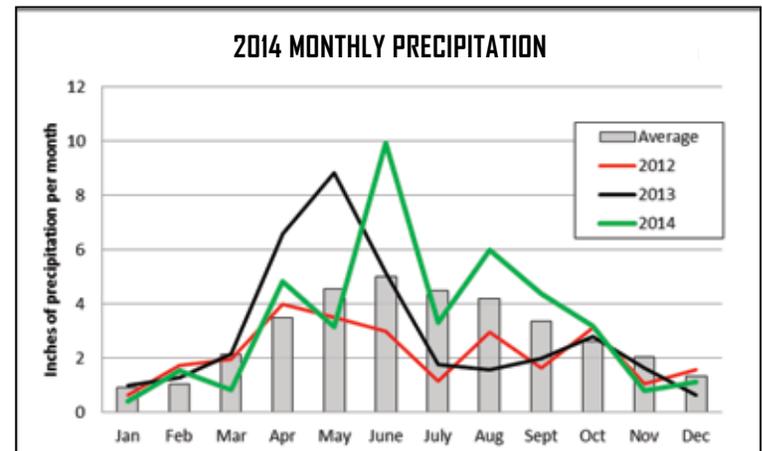
## Record Stream Flows in 2014

Stream flow index is an average of flows at all measuring points across the state compared

to the average flow at all those points at that time. Average flow is typically much lower



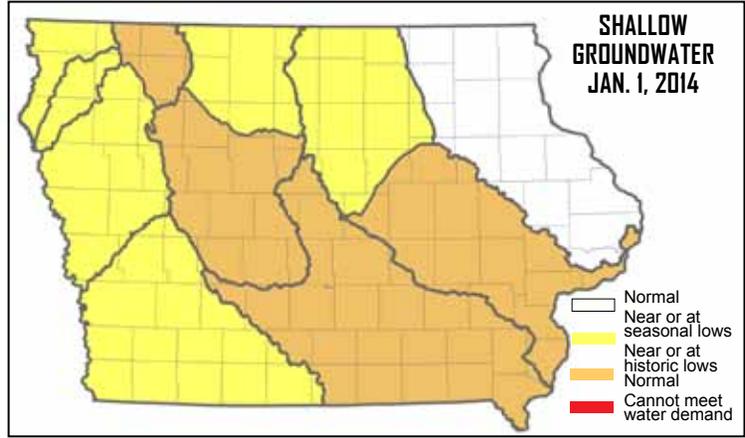
in the winter than in the spring and early summer. Stream flow began 2014 slightly below normal, and ended the year a bit above normal. In between, average flows across the state peaked in early summer (above levels that are normally high), and were also quite high during the fall months. Twenty-one stream gages had record discharges and/or gage height in 2014, including the two stream gages on the Rock River in north-



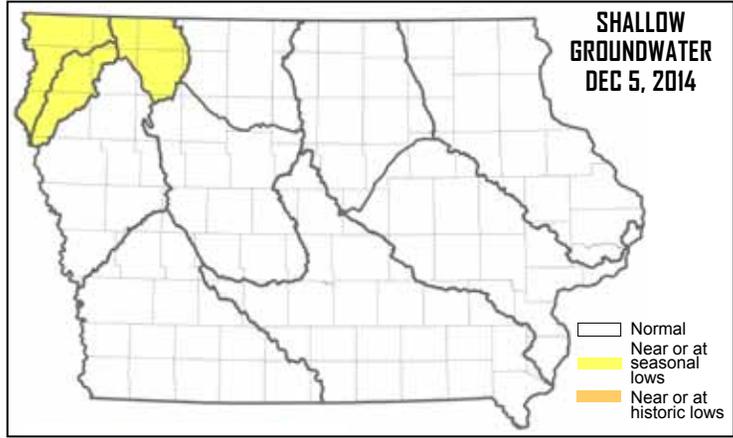
west Iowa (Rock Rapids and Rock Valley). U.S. Geological Survey field crews made stream flow measurements at almost all 21 sites to verify and report real-time stream flow to the National Weather Service, U.S. Army Corps of Engineers and other emergency-related agencies.

## Shallow Groundwater Improves, then Conditions Turn Dry in Northwest

Shallow groundwater conditions across Iowa varied considerably in 2014. Drought conditions existed during the winter and spring months over the southwestern two thirds of Iowa. Severe drought conditions existed in far northwest Iowa up until the heavy rainfall events and flooding that occurred in June. Groundwater conditions improved across most of Iowa during the late summer and early fall months of 2014, and shallow groundwater conditions returned to normal over most of the state. Cooler than normal temperature reduced the peak summer water use, which also



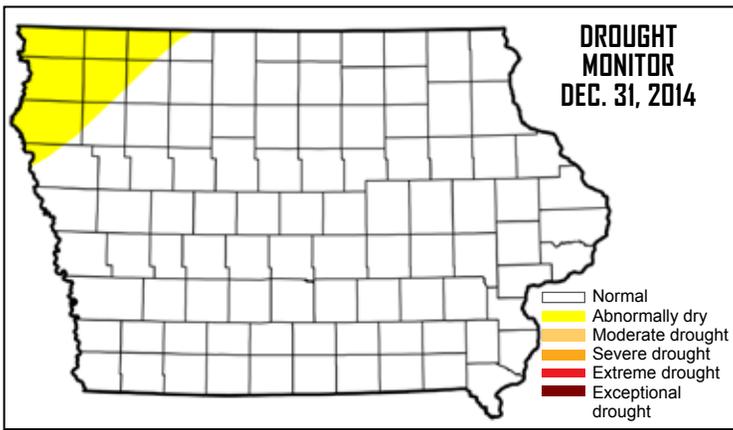
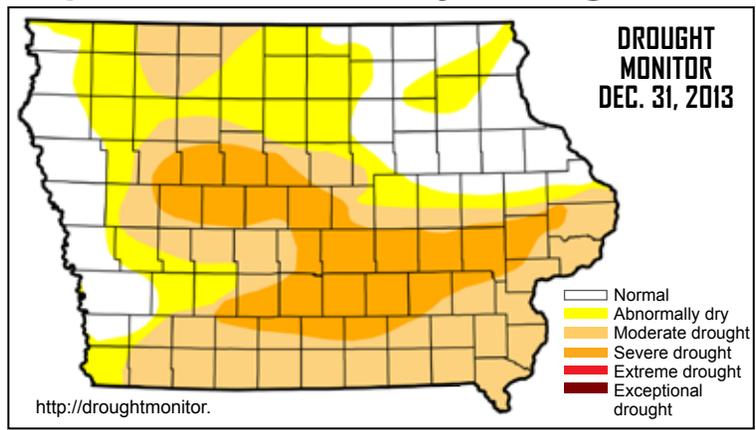
reduced the pumping stress and helped to maintain water levels. Dry conditions returned to far northwest Iowa during September to December, and this region was downgraded to



a slight drought classification. Adequate spring rainfall in 2015 will be critical across northwest Iowa to recharge the alluvial aquifers and prevent drought conditions from worsening.

## Drought Conditions Improve Considerably through Year

From January through mid-April about 80 percent of the state was rated in some level of drought, with over 50 percent of Iowa rated at least in moderate drought. In May, drought levels began to gradually decline, until by July drought conditions were nearly gone. While small areas of dryness emerged in northeast Iowa in August and then in northwest Iowa in November, widespread and significant drought ended in July 2014.



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