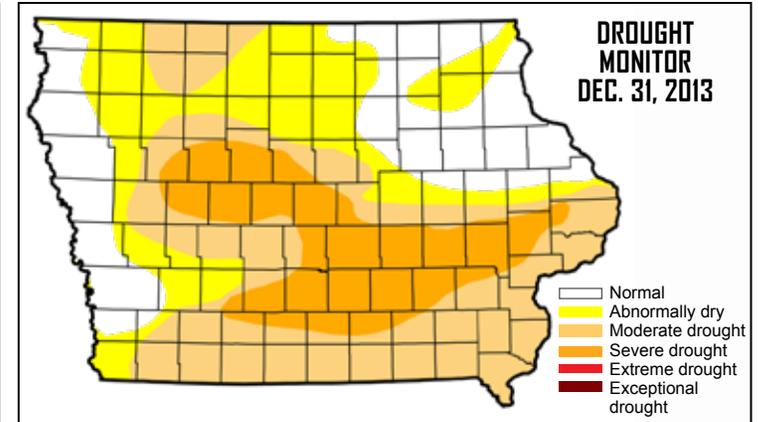
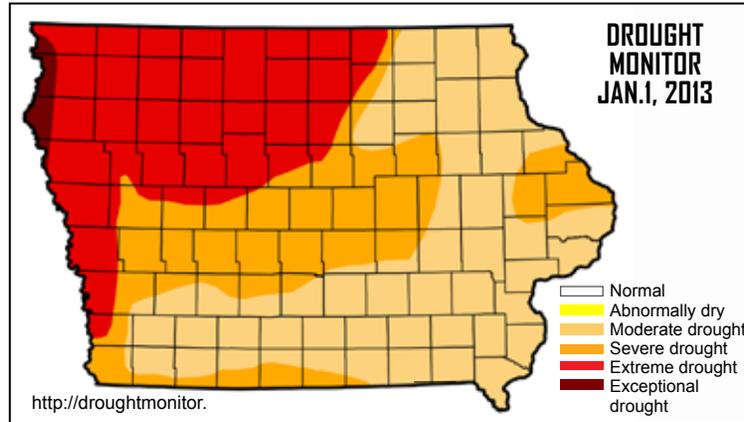


2013 WATER SUMMARY REVIEW

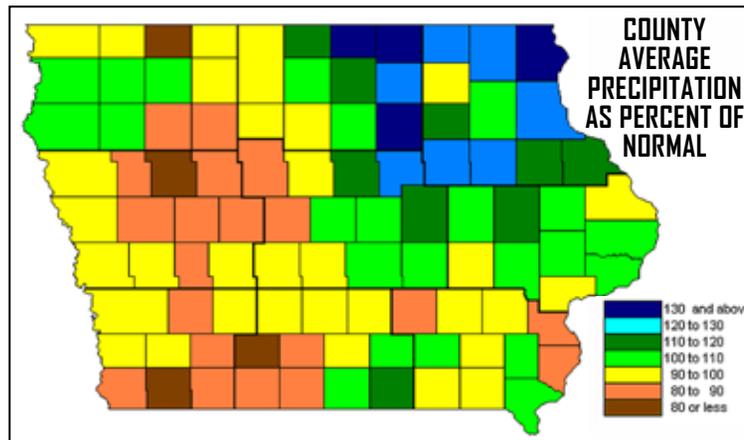
Drought Monitor January 1 to December 31

The drought monitor showed considerable improvement in 2013, with only 20 percent of the state rated in severe drought, plus 30 percent in moderate drought by the end of the year. Both categories are down significantly from the year's start, when the entire state was in at least moderate drought, with 30 percent of the state in extreme drought.



Percent of Normal Precipitation for 2013

The first three months of 2013 brought slightly more precipitation than normal, and then the weather turned exceptionally wet. April and May were the wettest months on record, and Iowa recorded its wettest spring of record with 17.6 inches of rain — 7.4 inches more than normal.

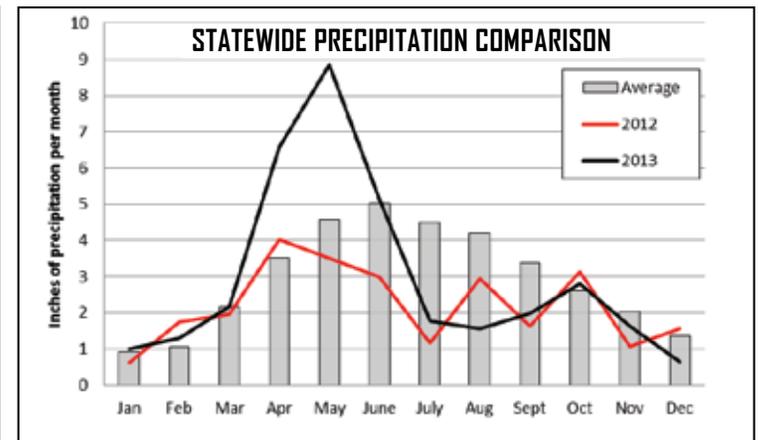


The second half of 2013 saw over seven inches less than normal rainfall with the year ending just 0.1 inch above normal.

The weather began to dry over portions of western and southern Iowa, intensifying

in July and August, with a few areas setting record low rainfalls.

Rains returned in October, but November and December had lower than normal rain totals. Nevertheless, soil mois-

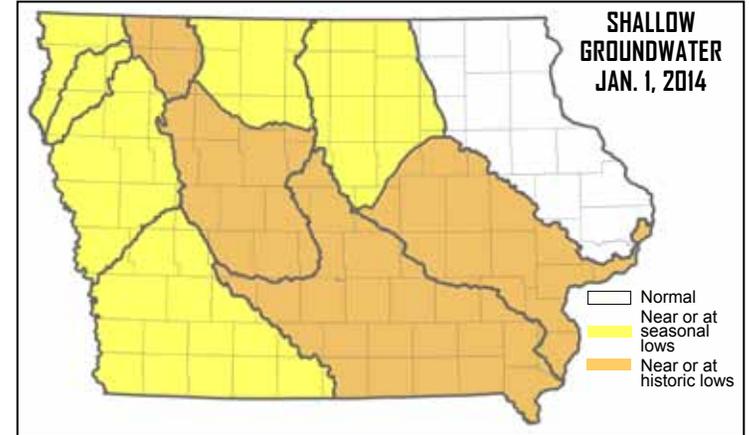
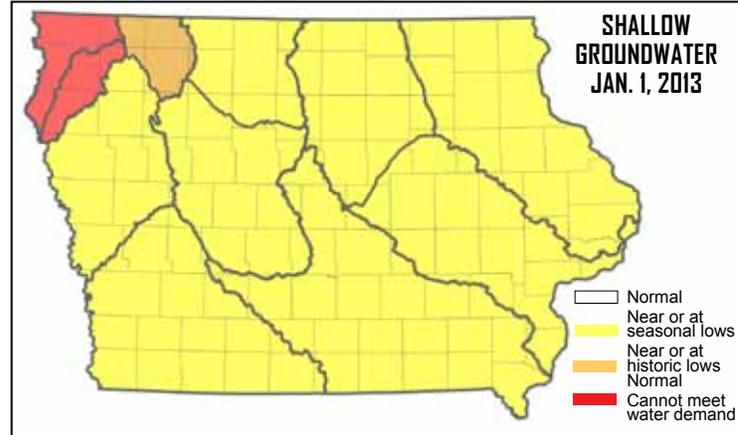


ture reserves going into this winter are better over most of the state than a year ago.

Temperatures averaged 46.5 degrees or 1.6 degrees below normal for the year.

Shallow Groundwater from January 1, 2013 to January 1, 2014

Groundwater conditions improved across the state compared to 2012. Shallow groundwater levels in Jan. 2014 were slightly above what they were a year ago in northwest and northeast Iowa. Some limited areas of the state had shallow groundwater levels slightly lower than a year ago, but only by 1.5 feet or less. Much of this improvement could be due to decreased demand with cooler temperatures, rather than increased recharge (given the dry 2013 summer).



Frost in the upper 48 inches of topsoil across the state has prevented any measurable groundwater recharge from occurring since late Nov. 2013. Adequate spring 2014 rainfall will be critical across most of Iowa to

recharge the alluvial and shallow bedrock aquifers and prevent drought conditions from reoccurring prior to peak summer water usage.

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.

Weekly Stream Flow Runoff January 1 to December 31

The year began with below normal stream flow until March 2013, when snow melt and spring weather quickly shifted the state above normal stream flow runoff. This persisted for approximately four months and several United States Geological Survey (USGS) stream gages recorded peak-of-record or near peak-of-record heights and discharge.

levels below normal compared to historical stream flows. This condition continued into 2014.

The Fox River at Bloomfield had the third highest gage height and discharge recorded in 95 years of records.

The Floyd River at Alton had the highest gage heights and third highest discharge ever recorded in 58 years of record.

Midsummer through fall the lack of significant rainfall caused streams to quickly recede and many USGS stream gages indicated stream flow

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