



WATER SUMMARY UPDATE

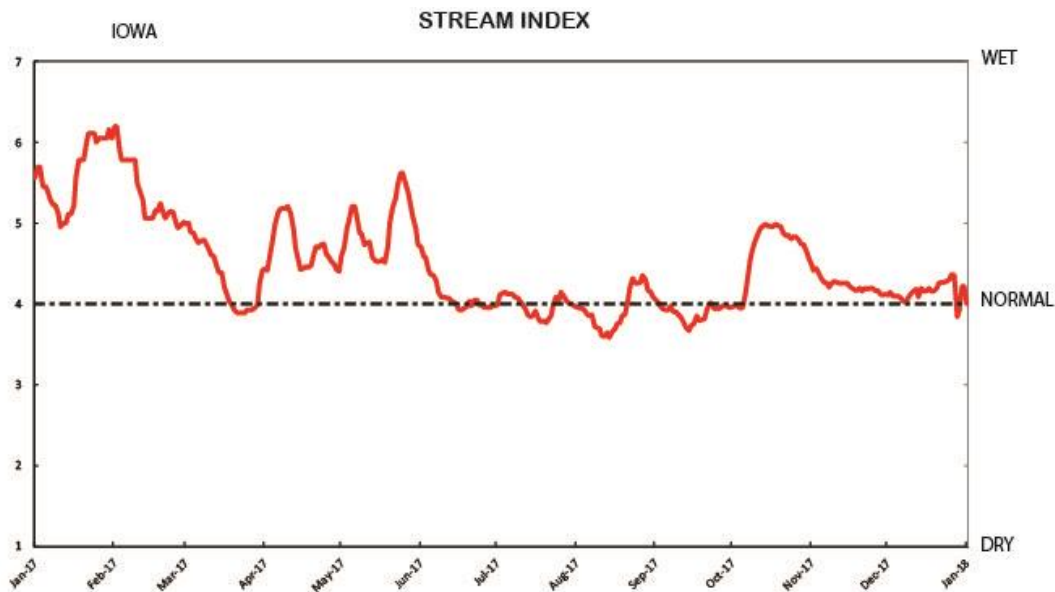
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A review of water resource trends from 2017

2017 in Iowa began with a wetter than normal spring, followed drier than normal summer and fall months, with the exception of a very wet October. By the end of 2017 Iowa received just over 33 inches of rainfall, or more than two inches less than normal. However, some parts of Iowa were much drier, with areas of southeast Iowa ending the year with a deficit of ten or more inches of precipitation. Streamflow has been generally normal for the second half of the year. Southeastern Iowa remains an area of concern after two consecutive years of drier than normal conditions.

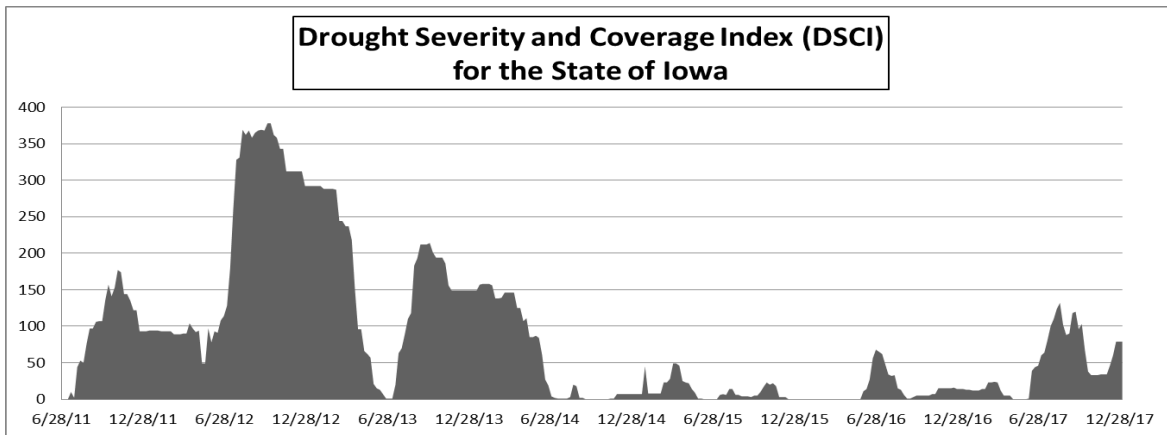
2017 STREAM FLOW

2017 began with the high streamflow levels from the very wet late fall in 2016. By early spring of 2017 statewide average streamflow had fallen to normal, or just below normal. The wet weather from April to June pushed the average streamflow up to above normal conditions. By the middle of June streamflow had fallen back to normal condition and remained around normal until October. October rain brought streamflow across the state back to the above normal condition until November. Since that time, the average streamflow has dropped slightly, but remains at or slightly above normal. Current conditions are normal for the majority of the state. Many streams in Iowa are ice covered and USGS crews continue to make streamflow measurements throughout the winter to verify real-time values.

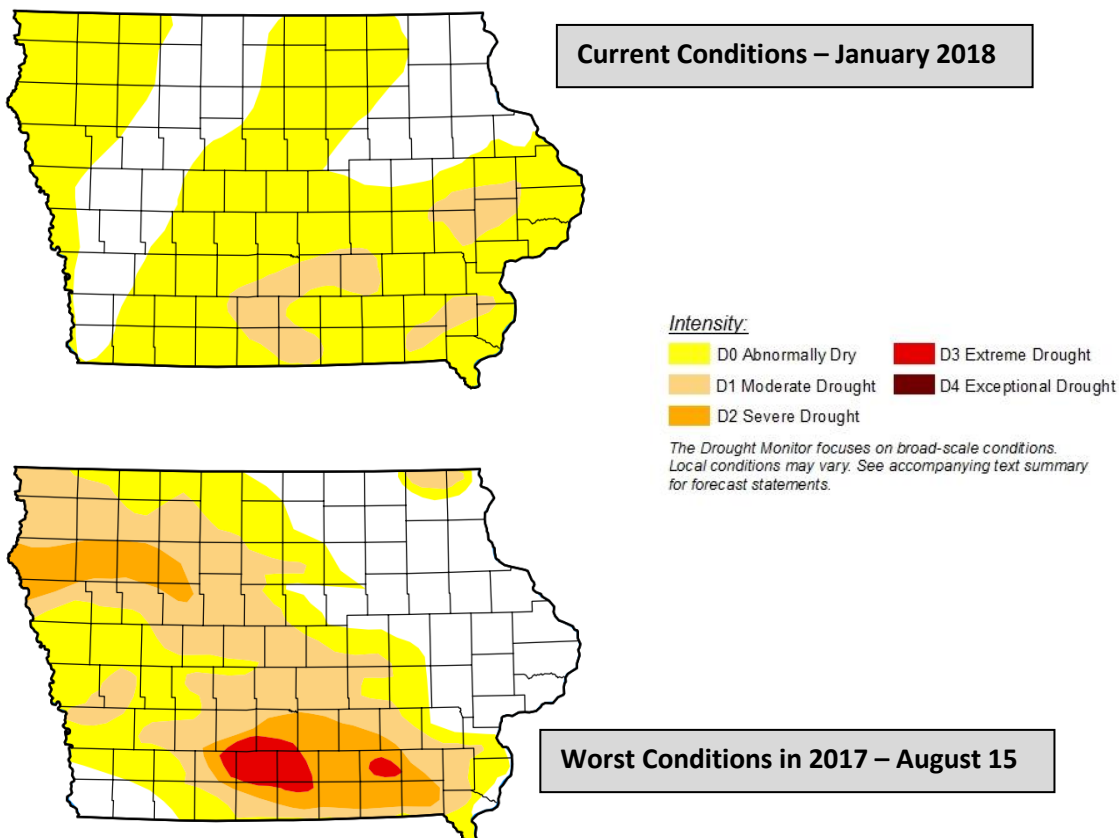


DROUGHT MONITOR FOR 2017

Over the past year the conditions in Iowa ranged from drought-free during May and June, to almost 70 percent of the state showing some form of drought in August. The National Drought Mitigation Center has developed a way of measuring the severity of drought conditions – called the Drought Severity and Coverage Index, or DSCI. This index looks at both the amount of area covered by dryness or drought, as well as the severity of the drought conditions over those areas. At the height of the drought in 2012, the DSCI for Iowa was as high as 375. This year, on August 15, the DSCI topped out just over 130. So, while Iowa experienced some periods of significant drought this year, the conditions were much less severe than in 2012. The DSCI also shows that the drought conditions in Iowa were more significant in the later parts of the year.



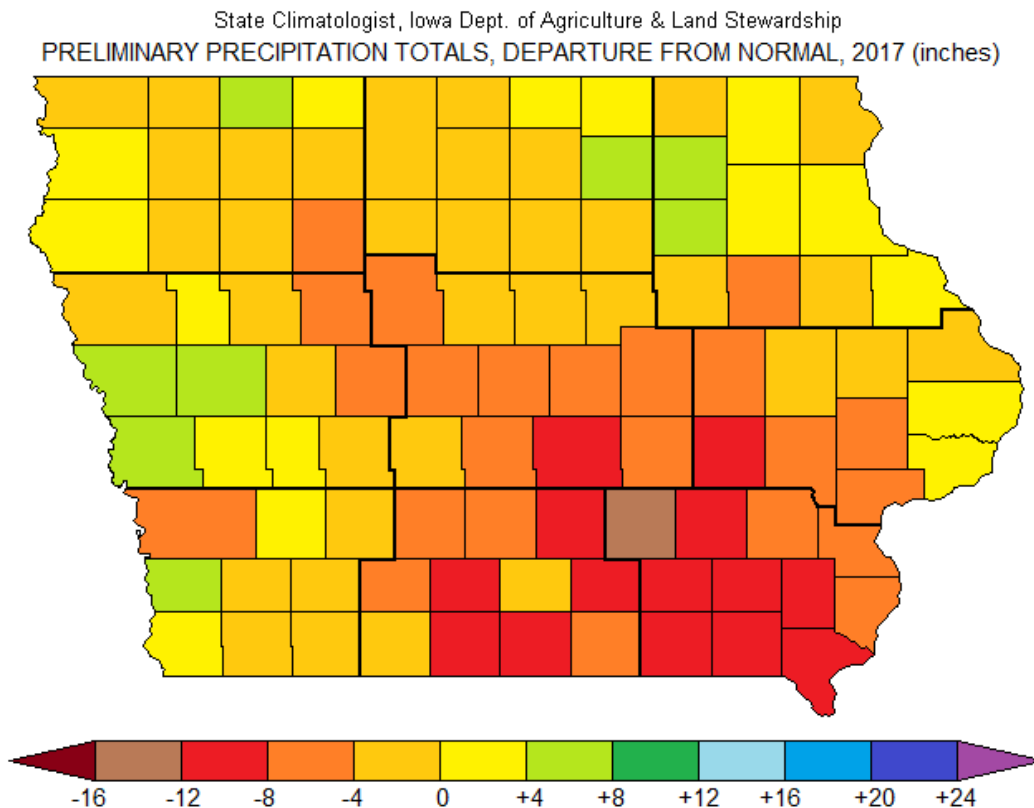
The drought conditions through much of 2017 were concentrated in southern and southeast Iowa. Currently 8 percent of the state is rated in D1-Moderate Drought. In August that number was almost 45 percent.



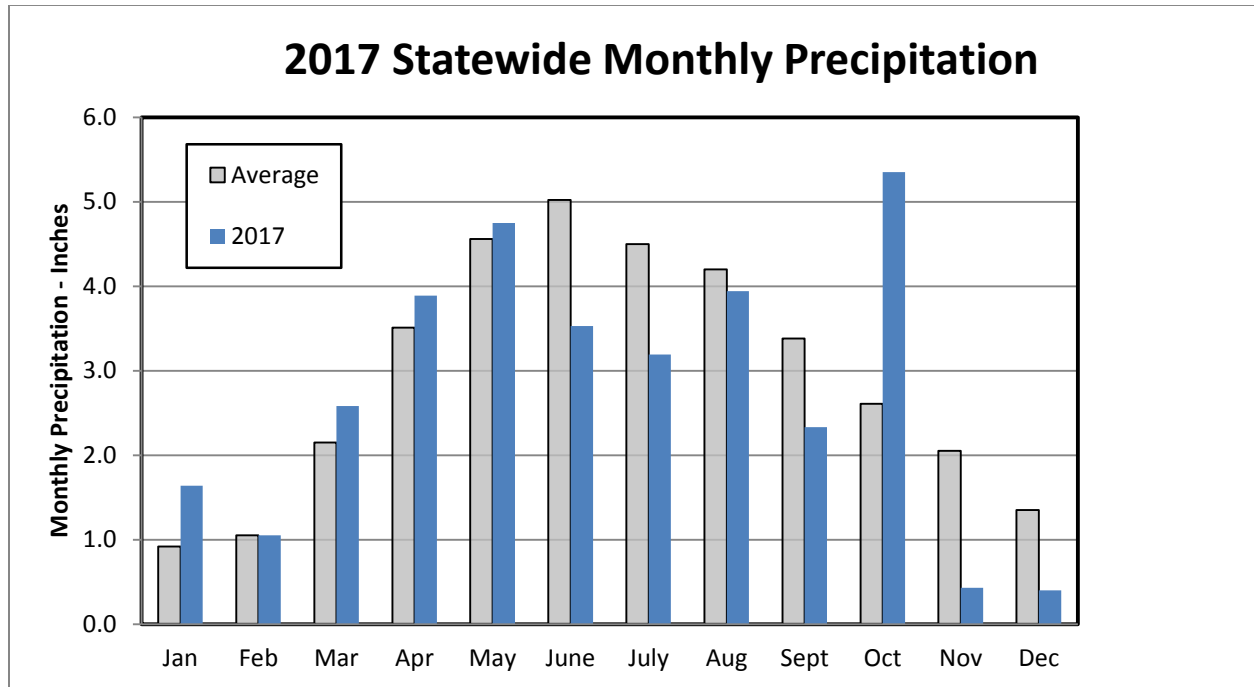
YEAR IN REVIEW PRECIPITATION

Precipitation was less than normal across most of Iowa in 2017 with a statewide average of 33.07 inches or 2.20 inches less than the 30-year normal. This was the lowest annual total since 2012. Driest conditions were over southeastern Iowa where rainfall was consistently below normal in most areas from late May through the end of the year. Annual precipitation deficits of ten inches or more were common across the area roughly bounded by Marion, Washington, Lee and Wayne counties. Much of this same area was also unusually dry in 2016 as well. Drought also spread into parts of central and northwest Iowa during the early to mid-summer but were ameliorated across those areas by a period of substantial rain from mid-August through early October. Widespread heavy rain during the first two weeks of October, especially over the northwest two-thirds of the state, resulting in a very delayed start to the harvest season. However, an exceptionally dry weather pattern prevailed statewide over the final two and one-half months of the year. A statewide average of only 1.58 inches of moisture fell after October 14, about one-third of the typical precipitation for that time period. Annual precipitation totals varied from only 24 to 25 inches at locations such as Cherokee, Oskaloosa, Ottumwa and Sigourney to over 47 inches at Fayette. There were some intense downpours, most notably on the night of July 21st in northeastern Iowa where Ionia was swamped with 9.52 inches of rain.

Meanwhile, 2017 was an unusually warm year with a statewide average temperature of 49.9° or 1.8° above normal. This ranks as the eighth warmest year of record. Heat was not particularly extreme with a statewide maximum temperature of 101° but was very persistent with only two months (May and August) averaging cooler than usual.



2017 Statewide Monthly Precipitation



2017 SHALLOW GROUNDWATER

Shallow groundwater levels varied considerably across Iowa in 2017. Dry conditions created near record low groundwater levels in southeast and south central Iowa during the summer and fall of 2017. Parts of northwest Iowa also experienced near record low groundwater levels during the summer, but rebounded considerably during the fall months. Parts of northeast and north central Iowa saw declining groundwater levels during the fall of 2017, but are still well above the 2012 to 2014 record levels. Shallow groundwater conditions in most of southwest Iowa are well above record low levels.

ADDITIONAL INFORMATION

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