



## IOWA PRELIMINARY MONTHLY WEATHER SUMMARY – JULY 2018

**General Summary:** Statewide temperatures averaged 73.1 degrees or 0.5 degrees below normal while precipitation totaled 3.36 inches or 1.14 inches less than normal. This ranks as the 50<sup>th</sup> coolest July, tying 1900, 1946, 2003, and 2008. This was also the 56<sup>th</sup> driest July on record. A cooler July was last recorded in 1898 and a drier one in 1989.

**Temperatures:** After the 10<sup>th</sup> warmest June on record, temperatures moderated during the first week of July. Average temperatures ranged from the mid-70s in the northern half and low 80s in the south, one to three degrees above average. The following week had statewide temperatures three to six degrees warmer than normal. Towards the weekend, high temperatures, combined with high humidity, pushed heat index values into the triple digits. Lamoni (Decatur County) recorded the month's high temperature of 101 degrees on July 13<sup>th</sup>. The middle of the month saw a pattern shift, in which multiple cold fronts brought cooler conditions across Iowa. Daytime highs were two to four degrees below average in the eastern and western thirds. The end of the month continued the cooler than normal trend. Daytime highs over most of the state were in the lower 80s, two to three degrees below normal. Overnight lows were cooler as well, dipping into the upper 50s, four to six degrees below normal. The month's low temperature of 48 degrees occurred on July 27<sup>th</sup> and 28<sup>th</sup> in Sheldon (O'Brien County), Stanley (O'Brien County) and Waukon (Allamakee County); this was a departure of 12 degrees.

**Cooling Degree Day Totals:** Home air conditioning requirements, as estimated by cooling degree day totals, averaged 16% less than last July and 4% less than normal. Thus far this season air conditioning requirements are running 19% more than at this time last year and 35% greater than normal.

**Precipitation:** June 30<sup>th</sup> into the 1<sup>st</sup> of July will be remembered for record breaking rainfall across central Iowa. The following two days were relatively quiet, until thunderstorms fired up on Independence Day. Ames (Story County) recorded 2.81 inches of rain. Pocahontas (Pocahontas County) observed 2.90 inches on the 5<sup>th</sup>; 2.74 inches above normal. The following week continued the below average precipitation trend, with only the northwest and northeast corners of the state having above average rain, anywhere from 0.50 to 1.5 inches of additional precipitation. Thunderstorms propagated into northern Iowa late Thursday (12<sup>th</sup>) in advance of a low pressure system that moved across Iowa on Friday, the 13<sup>th</sup>, bringing widespread measurable rainfall. Monticello, in Jones County, observed the week's highest accumulation of 3.94 inches. The middle of the month experienced a pattern shift in which much of the precipitation that fell across the state came from cold frontal passages. Monday (16<sup>th</sup>) into Tuesday (17<sup>th</sup>) had a series of fast-moving cold fronts move across the state, bringing measurable rainfall to eastern and southern Iowa. Fairfield (Jefferson County) reported 0.59 inches on the 16<sup>th</sup>. On Wednesday (18<sup>th</sup>), a thunderstorm complex moved into Iowa during the evening hours. Pottawattamie, Fremont and Taylor Counties all reported rainfalls of over an inch. Most of the state was relatively dry to end the month. The final full week of July had spotty thunderstorms statewide, with the southern counties receiving much needed rain between the 28<sup>th</sup> and 29<sup>th</sup>. Rathbun Dam observed 0.98 inches, which was the week's highest accumulation. Spotty isolated storms from a lingering low pressure system dotted the state on the 30<sup>th</sup> and 31<sup>st</sup>.



## IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP

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**Severe Weather:** Severe weather was reported on five days during the month, with strong thunderstorms firing up in western Iowa on Independence Day. Many of the severe reports came in from Dickinson County, where straight-line winds snapped trees and tree branches. On July 13<sup>th</sup>, 25 reports of severe straight-line winds and large hail were received by the National Weather Service. The severe weather impacted Shenandoah to Clinton in the east, and north to Decorah. The most extensive outbreak occurred on July 19<sup>th</sup>, with at least 12 confirmed tornadoes. A strong low pressure system over Minnesota and an attendant warm front draped over central Iowa fired up discrete severe supercell thunderstorms. Marshalltown and Pella received direct hits from EF-3 rated tornadoes, with wind gusts estimated at 144 mph. Bondurant (Polk County) was hit with an EF-2 rated tornado, with estimated winds at 115 mph. July 25<sup>th</sup> was the last day of severe weather for the month. There were reports of hail and high winds from Ames (Story County) to the Iowa-Minnesota border. Mason City (Cerro Gordo) reported large hail and broken tree branches.

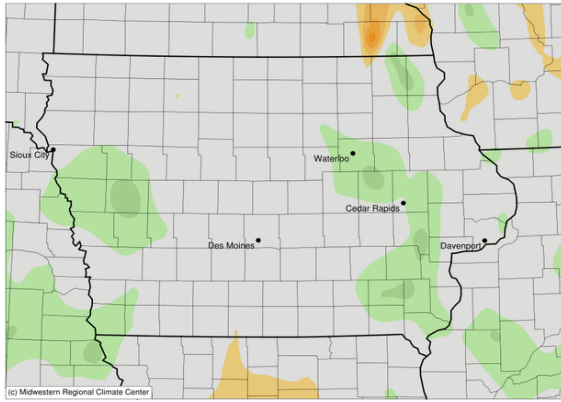
**Drought:** Drought conditions worsened in the southeast corner of the state, where extreme drought (D3) was introduced during the last part of the month by the US Drought Monitor. As of early August, the D3 category covered much of Davis County and some of western Appanoose County. Abnormally dry (D0) conditions covered around 12% of Iowa; combined D0 – D3 conditions covered around 23% of Iowa. At this time last year, D0 – D3 drought covered 67% of the state. From this time last month, the area of extreme to severe drought has increased by 1%, with abnormally dry conditions increasing in eastern Iowa by around 2%.

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July 2018										
WEATHER BY DISTRICTS										
DISTRICT	TEMPERATURE (F)		COOLING DEGREE DAYS				PRECIPITATION (inches)			
	July 2018 Average	Departure*	July 2018 Average	Departure*	Since Jan., 1, 2018 Average	Departure*	July 2018 Average	Departure*	Since Jan.1, 2018 Average	Departure*
Northwest	72.7	+0.0	247	+1	524	+77	3.87	+0.02	24.74	+6.19
North Central	71.8	-0.2	219	-7	458	+52	4.75	+0.11	27.02	+5.50
Northeast	72.0	-0.2	224	-8	423	+10	4.51	-0.16	25.89	+3.95
West Central	73.2	-0.8	254	-25	602	+94	3.01	-1.25	21.14	+0.49
Central	73.4	-0.1	263	-6	587	+99	2.31	-2.39	21.53	-0.70
East Central	73.2	-0.6	257	-20	543	+27	3.20	-1.16	21.06	-0.60
Southwest	74.3	-0.9	294	-24	656	+75	2.95	-1.79	18.21	-4.34
South Central	75.4	+0.8	326	+24	675	+140	1.90	-3.08	17.67	-5.22
Southeast	74.9	-0.7	312	-17	686	+73	2.43	-2.04	17.51	-5.52
STATE	73.2	-0.4	260	-13	567	+71	3.21	-1.29	21.87	+0.37

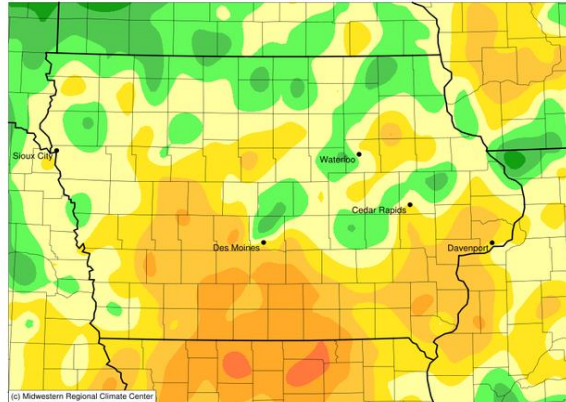
\* Departures are computed from 1981-2010 normals. Monthly estimates are preliminary and are likely to change.  
 The weather data in this report are based upon information collected by the U. S. Dept. of Commerce, NOAA National Weather Service.

**Average Temperature (°F): Departure from 1981-2010 Normals**  
 July 01, 2018 to July 31, 2018



(c) Midwestern Regional Climate Center  
 -4 -3 -2 -1 0 1 2 3 4 5  
 Stations from the following networks used: WBAN, COOP, FAA, GHCN, ThreadEx, CoCoRaHS, WMO, ICAO, NWSLI, Midwestern Regional Climate Center, cli-MATE: MRCC Application Tools Environment  
 Generated at: 8/2/2018 9:46:02 AM CDT

**Accumulated Precipitation (in): Departure from 1981-2010 Normals**  
 July 01, 2018 to July 31, 2018



(c) Midwestern Regional Climate Center  
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 Stations from the following networks used: WBAN, COOP, FAA, GHCN, ThreadEx, CoCoRaHS, WMO, ICAO, NWSLI, Midwestern Regional Climate Center, cli-MATE: MRCC Application Tools Environment  
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