



## IOWA MONTHLY WEATHER SUMMARY – JULY 2020

General Summary: Temperatures averaged 75.3 degrees or 1.7 degrees above normal while precipitation totaled 2.87 inches or 1.63 inches below normal. July 2020 ties 1911 and 2001 as the 47<sup>th</sup> warmest on record with a warmer July last occurring in 2012. The month ranked as the 41<sup>st</sup> driest July in 148 years of statewide records with a drier one last occurring in 2013.

Temperatures: Positive departures of one to three degrees were reported across a majority of Iowa with embedded pockets of near average temperatures. July's statewide average maximum temperature was 86.0 degrees, 1.7 degrees above normal while the average minimum temperature was 64.7 degrees, also 1.7 degrees above normal. Little Sioux 2NW (Harrison County) reported the month's high temperature of 98 degrees on the 18<sup>th</sup>, 12 degrees above normal. Mason City Municipal Airport (Cerro Gordo County) reported the month's low temperature of 44 degrees on the 16<sup>th</sup>, 17 degrees below normal.

Cooling Degree Days: Home air conditioning requirements, as estimated by cooling degree day totals, showed no change compared to last July and 19% more than normal. Cooling degree day totals since January are running 16% more than last year at this time and 18% more than normal.

Precipitation: Unseasonably dry conditions persisted across most of Iowa during July. A good portion of the state reported precipitation departures on the order of two to four inches with only a small swath of southwestern and eastern Iowa reporting above-average rainfall. Dry conditions allowed drought conditions to advance across much of western Iowa. Monthly precipitation totals ranged from 0.28 inch at Holstein 5 NNW (Iowa County) to 8.79 inches at a rain gauge near Morning Sun (Louisa County).

A line of strong thunderstorms entered western Iowa early on the 1<sup>st</sup>, bringing measurable rain across much of the state's western one-third. A secondary, narrow band of thunderstorms popped up across southeastern Iowa ahead of the primary system, bringing locally heavy rain before dissipating. Rain totals were highest in both the southwest and southeast corners with Red Oak (Montgomery County) observing 1.60 inches while Ottumwa Industrial Airport (Wapello County) reported 2.42 inches; the statewide average rainfall was 0.21 inch. A few nearly-stationary thunderstorms popped up over Lee and Van Buren counties during the morning hours of the 2<sup>nd</sup> which led to flash flood warnings. Scattered thunderstorms, some severe, formed across eastern Iowa during the afternoon hours of the 7<sup>th</sup> with multiple reports of high wind gusts and tree damage. Radial damage to crops and trees in Quasqueton (Buchanan County) was likely a result of strong straight-line microburst winds; a 90-mph wind gust was also observed near Mount Joy (Scott County). The storms lingered into the late night hours and cleared eastern Iowa early the next day. Measurable rain was reported east of a line from the Quad Cities to Waterloo (Black Hawk County); Davenport Municipal Airport (Scott County) reported 1.24 inches with Dubuque (Dubuque County) observing 0.63 inch.

Balmy conditions on the 9<sup>th</sup> helped fire a line of severe thunderstorms through the evening hours, leading to a widespread severe wind event across northeastern Iowa. Heavy rain from the stronger storms was also reported in northern and eastern Iowa. Over 70 stations reported at least one inch with the statewide average rainfall at 0.51 inch. Swisher (Johnson County) observed 2.90 inches and was one of over 20 stations to report two inches or more of rainfall. A complex of thunderstorms pushed into western Iowa overnight into the 11<sup>th</sup> along an existing outflow boundary; additional storms fired in extreme northeast Iowa. Unstable conditions lead to another active weather day across Iowa's eastern half. Strong thunderstorms moved through the state's eastern one-third through the afternoon as another line of severe thunderstorms marched from north-central Iowa into the southeastern corner.

There were widespread reports of severe straight-line winds and large hail on the order of 1.25 to 2.00 inches which caused additional crop damage. Rainfall reported at 7:00 am on the 12<sup>th</sup> showed totals in the range of 0.25 inch to 0.75 inch in Iowa's northeastern one-third; St. Ansgar (Mitchell County) observed 1.88 inches.

With warm and humid conditions in the state's eastern half, strong thunderstorms fired in the late afternoon of the 14<sup>th</sup> and sped east and southeast through the evening. Some storms in central Iowa turned severe with several reports of straight-line winds; widespread crop damage was observed around Sandyville (Marion County). There were also a few severe hail reports with two-inch diameter hail in Grimes (Polk County). A secondary low pressure system moving from Kansas into Missouri brought additional thunderstorms across southern Iowa with locally heavy rainfall. The system persisted through the 15<sup>th</sup> before pushing out of eastern Iowa during the evening hours. Rain totals showed many of Iowa's stations receiving measurable rainfall. Gauges across Iowa's southern one-third reported widespread totals between 0.50 inch to over three inches. More than 100 stations observed an inch or more with locally heavier amounts in south-central Iowa; Creston (Union County) observed 3.08 inches while Ackworth (Warren County) reported 3.53 inches. The statewide average total was 0.72 inch with some stations in northwestern Iowa reporting no measurable rainfall.

Showers and thunderstorms continued to move through southern Iowa over the late morning hours of the 19<sup>th</sup>. Some storms turned severe as they pushed through Henry and Des Moines counties, where multiple incidents of severe straight-line winds were reported. Clouds increased overnight into the 20<sup>th</sup> as a small disturbance pushed into southwestern Iowa. Rainfall reported at 7:00 am was highest in Iowa's southern corners; a gauge in Sidney (Fremont County) observed 1.14 inches while New London (Henry County) reported 1.12 inches. The system continued over the state with some lingering showers across eastern Iowa. Much of Iowa's southern two-thirds reported measurable totals with the southwest accumulating between 0.25 inch to 0.75 inch; amounts tapered off to under 0.20 inch farther north and east. Scattered thundershowers popped up through on the 21<sup>st</sup> in advance of a cold front that swept across Iowa. Much of the state reported rainfall amounts between 0.20 inch to 0.50 inch with several gauges in Muscatine and Scott counties collecting over an inch.

On July 26<sup>th</sup>, an upper-level disturbance propagated through the state, bringing light to moderate rainfall to much of Iowa. Following closely behind, a sluggish cold front re-fired evening thunderstorms in southern Iowa. Showers and thunderstorms remained over southern Iowa into the 27<sup>th</sup> with rain totals for the previous 24 hours showing the highest amounts in southern Iowa. Many stations in the southwest reported over two inches with a gauge in Osceola (Clarke County) observing 3.01 inches; the statewide average rainfall was 0.41 inch.

A low pressure center in northern Missouri spun additional bands of scattered thunderstorms into eastern Iowa through the 30<sup>th</sup>. Morning rain totals along the Iowa-Nebraska border ranged from 0.30 inch to around one inch with locally heavier totals. There was also another pocket of heavier rain in east-central Iowa where Marengo (Iowa County) reported 2.44 inches. A pocket of thundershowers worked across southeastern Iowa during the evening hours and pushed southwest before dissipating; rainfall was generally under a few tenths of an inch.

Outlooks: August climatological outlooks indicate elevated chances of cooler than normal conditions across Iowa. In terms of precipitation, there is also an elevated probability of wetter conditions. Initial short-term outlooks for the first half of August show high probabilities of unseasonable warmth and chances of near-average rainfall. The current August-September-October outlooks show elevated chances of warmer temperatures and Equal Chances (EC) of above, below or near-average precipitation.

US Drought Monitor: In early July, Moderate Drought (D1) was introduced in eight west-central counties, centered on Greene County. Three counties in extreme northwest Iowa were also given the D1 designation; D0 conditions expanded northwest and southeast. As precipitation deficits continued to increase through the month, D1 conditions

expanded north and west. Severe Drought (D2) conditions were introduced across nearly six percent of west-central Iowa on July 14<sup>th</sup>. This region expanded through the end of the month, where D1 to D2 conditions covered over 34% of the state. As of August 6<sup>th</sup>, 11 counties in western Iowa were downgraded to Extreme Drought (D3). Abnormal dryness also pushed into wide swaths of northeastern Iowa. Overall, D0-D4 conditions cover 80% of the state, which is the widest expanse of abnormal dryness and drought since April 2014. Please send any impact reports that indicate agricultural dryness to the US Drought Monitor or to the contact information below.

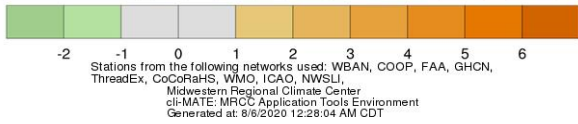
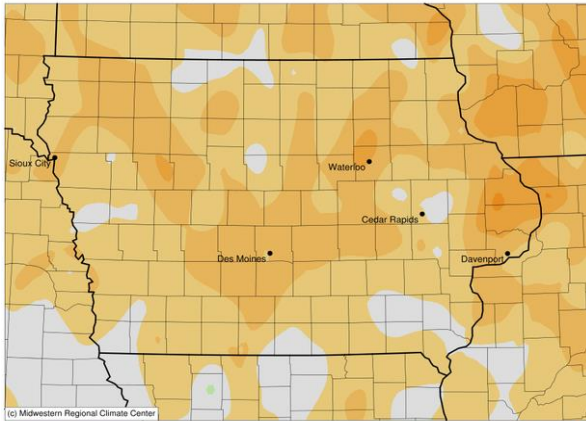
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July 2020										
WEATHER BY DISTRICTS										
DISTRICT	TEMPERATURE (F)		COOLING DEGREE DAYS				PRECIPITATION (inches)			
	July 2020		July 2020		Since Jan., 1, 2020		July 2020		Since Jan.1, 2020	
	Average	Departure*	Average	Departure*	Average	Departure*	Average	Departure*	Average	Departure*
Northwest	74.6	+1.9	305	+51	600	+129	3.42	-0.43	14.26	-4.45
North Central	73.8	+1.8	281	+45	537	+96	5.15	+0.51	18.58	-2.95
Northeast	74.0	+1.8	286	+60	486	+80	8.45	+3.78	23.07	+1.13
West Central	75.8	+1.9	340	+58	671	+145	2.88	-1.38	13.28	-7.51
Central	75.4	+1.9	327	+52	609	+94	5.33	+0.63	18.30	-4.19
East Central	75.6	+1.8	332	+58	581	+69	5.60	+1.24	21.57	-0.24
Southwest	76.1	+0.9	350	+32	713	+118	2.35	-2.39	16.35	-6.28
South Central	76.7	+2.1	367	+53	681	+104	3.82	-1.16	20.21	-2.90
Southeast	76.5	+0.9	360	+40	656	+54	6.43	+1.96	23.00	-0.16
STATE	75.3	+1.7	326	+52	600	+91	2.87	-1.63	18.57	-3.13

\* Departures are computed from 1981-2010 normals.

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, 2020 to July 31, 2020



**Accumulated Precipitation (in)**  
July 01, 2020 to July 31, 2020

