

## IOWA MONTHLY WEATHER SUMMARY – AUGUST 2022

General Summary: Temperatures averaged 72.0 degrees or 1.0 degree above normal while precipitation totaled 3.37 inches or 0.76 inch below normal. August 2022 ties 1932, 1972, 1978 and 2020 as the 70<sup>th</sup> warmest August in 150 years of statewide records; it also ties 1896 and 1904 the 62<sup>nd</sup> driest on record. August 2021 was warmer while 2020 was drier and the 3<sup>rd</sup> driest on record.

Temperatures: August temperatures were anywhere from one to two degrees above average across Iowa with near-normal temperatures reported in northern and northeastern Iowa where cloud cover and rain were more pervasive. August's statewide average maximum temperature was 83.1 degrees, 1.4 degrees above normal while the average minimum temperature was 60.9 degrees, 0.6 degree above normal. Sioux City Airport (Woodbury County) reported the month's high temperature of 102 degrees on the 2<sup>nd</sup>, 18 degrees above normal. Anamosa (Jones County) reported the month's low temperature of 47 degrees on the 10<sup>th</sup>, 14 degrees below normal.

Cooling Degree Days: Home cooling requirements, as estimated by cooling degree day totals, averaged 9% less than last August and 10% above normal. Cooling degree day totals since January are running 4% less than last year at this time and 11% more than normal.

Precipitation: August was unseasonably dry for the southwestern three-quarters of Iowa with precipitation deficits from one to three inches below normal; south-central Iowa experienced the driest conditions with deficits over three inches below normal. Only northeastern Iowa reported wetter than average conditions with pockets of three to four inches of above normal totals. Monthly precipitation totals ranged from 0.25 inch at Keokuk Lock and Dam (Lee County) to 9.06 inches at a Community Collaborative Rain, Hail and Snow (CoCoRaHS) network gauge near Center Junction (Jones County).

A line of thunderstorms developed in the early morning hours of the 1<sup>st</sup> with a few severe-warned cells racing southeast. A handful of stations along the path reported heavier downpours with a gauge near Solon (Johnson County) measuring 1.78 inches; four other stations reported at least an inch. Daytime temperatures were near-seasonal across northern Iowa with isolated mid-90 degree readings in southwestern Iowa. Another isolated severe-warned thunderstorm fired in north-central Iowa, expanding into a smaller line and propagating into southeastern Iowa before sunrise on the 2<sup>nd</sup>. Higher rain totals fell along the narrow swath with Gilbert (Story County) observing 0.78 inch while West Liberty (Muscatine County) observed 0.89 inch. Showers and thunderstorms formed along and ahead of the attendant cold front through the daylight hours of the 3<sup>rd</sup> with a few severe storms forming in eastern Iowa. Widespread rainfall was reported across much of eastern Iowa with totals generally between 0.20 to 0.40 inch. Manchester (Delaware County) measured 2.11 inches from stronger and slow-moving thunderstorms. Another low pressure system initially brought showers and thunderstorms across Iowa's northern quarter on the 6<sup>th</sup> before an additional wave brought widespread and heavy rainfall over Iowa's northern one-third. Rain totals reported on the morning of the 7<sup>th</sup> were in north-central and northeast Iowa where strong to severe storms formed. Over forty stations measured at least an inch with 15 of those stations observing over three inches; Forest City (Winnebago County) dumped out 3.75 inches while Anamosa (Jones County) registered 4.50 inches. Scattered showers and thunderstorms continued through the afternoon and evening. A few isolated cells were severe-warned in central and east-central Iowa with heavier downpours reported. More persistent cells formed in eastern Iowa overnight into the 8<sup>th</sup> before dissipating during the late morning hours. Event rain totals were highest across pockets of western and east-central Iowa with nearly 30 stations measuring at least an inch. Stations in Clinton, Jackson and Jones counties observed over two inches with Anamosa reporting 3.41 inches.

A narrow line of thunderstorms formed in north-central Iowa and pushed southeast through east-central Iowa into the afternoon of the 11<sup>th</sup>. A severe-warned thunderstorm dropped nickel to quarter-sized hail on Zearing (Story County), producing isolated crop damage. Stations receiving rain registered totals generally under 0.30 inch with higher totals under slower-moving thunderstorms; Iowa Falls (Hardin County) observed 0.52 inch while Lake Mills (Winnebago County) measured 1.80 inches. Additional thundershowers spun into northeastern Iowa overnight into the 12<sup>th</sup> and remained for much of the day. Rain totals reported at 7:00 am on the 13<sup>th</sup> were mostly under 0.20 inch though Calmar (Winneshiek County) reported 1.06 inches. Cloud cover temporarily decreased over western Iowa through the afternoon of the 14<sup>th</sup> as another weather disturbance approached. Rain showers moved into northwestern Iowa through the evening hours before a more widespread shield of showers and thunderstorms pushed in overnight and for the majority of the 15<sup>th</sup>. Slow-moving thunderstorms formed in southwestern Iowa into the late night and early morning hours of the 16<sup>th</sup>. Measurable rain fell over much of Iowa's southwestern two-thirds with event totals over 0.20 inch for most stations; more than 20 stations measured at least an inch with Shenandoah (Page County) reporting 2.23 inches and a statewide average of 0.39 inch.

Winds swung to the southwesterly direction with increasing relative humidity as a fall-like low pressure center pushed into northwestern Iowa on the 18<sup>th</sup>. Strong to severe thunderstorms formed along the low's attendant cold front into the evening with heavier downpours reported in stronger storms and localized reports of tennis ball-sized hail in Sioux County. The line continued southeast into central Iowa before losing steam into the morning of the 19<sup>th</sup> over the southeast. Rain totals at 7:00 am were heaviest in northwest and north-central Iowa with 1.04 inches at Iowa Falls and 2.58 inches at Estherville Municipal Airport (Emmet County). Many stations measured between 0.25- 0.75 inch with lighter totals east. The low center continued to spin in spotty thunderstorms for the rest of the day over much of the state. A fast-developing severe thunderstorm fired directly over the Des Moines (Polk County) metro around 2:30 pm, producing an extremely isolated pocket of golf to tennis ball-sized hail in West Des Moines and Clive; this hail event produced damage to multiple vehicles, schools and retail stores as well as heavy rain and vivid lightning at the Iowa State Fairgrounds. Several other severe thunderstorms formed later in the evening over eastern Iowa. Most of Iowa's stations observed measurable rainfall with higher totals under stronger and slow-moving cells; several Des Moines stations reported from 1.68 to 2.46 inches. The low continued to move across the Great Lakes into the 20<sup>th</sup> producing enough localized atmospheric spin to create funnel clouds in eastern Iowa. Several eastern stations measured totals from 0.55 inch at Le Claire Lock and Dam (Scott County) to 1.18 inches in DeWitt.

Clouds increased through the nighttime hours into the 23<sup>rd</sup> as winds picked up in northwestern Iowa ahead of a low pressure system. An isolated line of thundershowers pushed into northwestern Iowa early on the 24<sup>th</sup> ahead of a cold front. Isolated storms fired along the boundary into the evening, becoming more numerous in eastern Iowa after midnight. An additional wave formed in western Iowa just before sunrise but fizzled out during the late morning hours of the 25<sup>th</sup>. Event rain totals were highest at eastern and southwestern stations with many locations reporting at least 0.20 inch; Red Oak (Montgomery County) measured 1.00 inch while Clinton (Clinton County) observed 2.08 inches.

A north-south-oriented stationary front set up later in the muggy afternoon hours of the 27<sup>th</sup>. Ample moisture flow into the atmospheric boundary forced sluggish thunderstorms with locally heavy rain rates from southwestern Iowa through central and northeastern Iowa. Initial storm development brought several severe-warned storms to eastern Iowa and then farther west before the cells consolidated into a widespread rain shield. The disturbance persisted past midnight as it slowly pushed east. Rainfall totals at 7:00 am showed more than 50 stations measuring at least an inch, 24 of which were at or above 2.00 inches across a narrow swath from Adams to Story County; most stations receiving rain had at least 0.40 inch with the statewide average coming in at 0.86 inch. These showers and thunderstorms continued to push out of eastern Iowa through the afternoon as clouds cleared across western

Iowa. A secondary cold front moved through Iowa overnight, producing spotty thunderstorms in western and central Iowa just before sunrise. Rain totals reported at 7:00 am on the 29<sup>th</sup> were highest in northeastern and east-central Iowa, with more than 0.50 inch measured at 20 stations; Calamus (Clinton County) reported 1.13 inches while Cresco (Winneshiek County) observed 1.40 inches. A narrow line of severe-warned thunderstorms continued through central and southern Iowa through the late morning hours before crossing the Iowa-Illinois border before noon. Accumulating rains were isolated to Iowa's southeastern one-quarter with Chariton (Lucas County) picking up 0.22 inch and a 0.64 inch total found in Muscatine (Muscatine County).

Summer Summary: Temperatures for the three summer months of June, July and August averaged 72.6 degrees, which is 1.2 degrees above normal. Precipitation totaled 10.18 inches or 3.38 inches below normal. This ties 1970 and 1972 as the 58<sup>th</sup> warmest summer on record. It also ranks as the 29<sup>th</sup> driest summer in 150 years of records. A warmer summer occurred last year while a drier summer occurred in 2020.

US Drought Monitor (USDM): The USDM showed areas of improvement and degradation through August. Portions of southwest and central Iowa that received above-normal rainfall for the month saw an improvement in drought conditions. However, areas of southeast Iowa that missed out on normal precipitation through the month saw drought conditions deteriorate; Lee, Tama and Van Buren counties underwent a two-class degradation in August, with a large area of D2 (Severe Drought) covering over 20 counties in southeast Iowa. An area of D3 (Extreme Drought) persists in northwest Iowa, covering nearly all of Plymouth County as well as portions of surrounding counties. More than 62% of the state was experiencing some form of dryness or drought, with over 40% rated as D2-D3.

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# August 2022

## WEATHER BY DISTRICTS

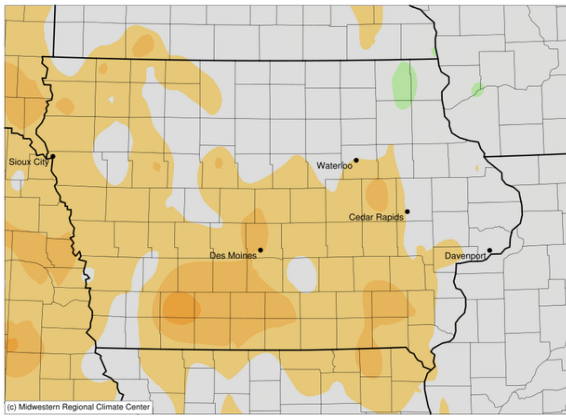
DISTRICT	TEMPERATURE (F)		COOLING DEGREE DAYS				PRECIPITATION (inches)			
	August 2022 Average	Departure*	August 2022 Average	Departure*	Since Jan., 1, 2022 Average	Departure*	August 2022 Average	Departure*	Since Jan. 1, 2022 Average	Departure*
Northwest	71.0	+1.0	208	+20	756	+90	2.89	-0.81	16.16	-6.69
North Central	69.8	+0.5	177	+6	664	+52	5.57	+1.42	23.08	-3.34
Northeast	69.6	+0.2	174	+1	606	+20	5.77	+1.58	26.93	-0.86
West Central	72.4	+1.3	246	+28	858	+110	2.54	-1.71	18.11	-6.67
Central	72.1	+1.1	237	+25	829	+96	2.94	-1.34	22.40	-4.31
East Central	72.0	+0.7	233	+15	811	+75	3.54	-0.60	22.74	-4.36
Southwest	74.0	+1.3	291	+31	951	+86	2.99	-1.18	19.99	-6.27
South Central	74.6	+1.9	308	+49	969	+124	2.11	-2.09	19.70	-7.45
Southeast	74.0	+1.2	290	+30	945	+82	1.62	-2.44	17.69	-9.72
STATE	72.0	+1.0	235	+21	809	+80	3.37	-0.76	20.80	-5.40

\* Departures are computed from 1991-2020 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 1991-2020 Normals**

August 01, 2022 to August 31, 2022



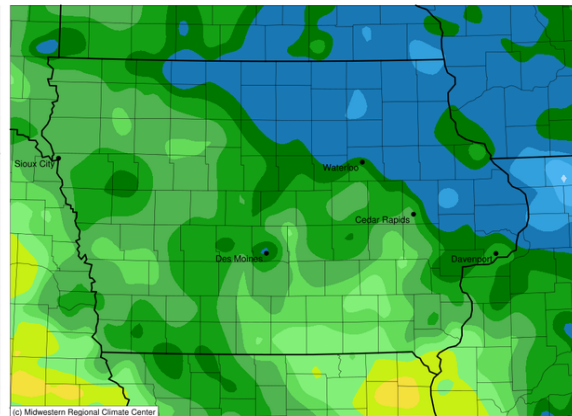
(c) Midwestern Regional Climate Center



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: 9/12/2022 3:34:19 PM CDT

**Accumulated Precipitation (in)**

August 01, 2022 to August 31, 2022



(c) Midwestern Regional Climate Center



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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