

## IOWA MONTHLY WEATHER SUMMARY – MAY 2022

General Summary: Temperatures averaged 61.4 degrees or 1.5 degrees above normal while precipitation totaled 3.46 inches or 1.38 inches below normal. May 2022 ranks as the 53<sup>rd</sup> warmest and the 57<sup>th</sup> driest May in 150 years of statewide records. A warmer May occurred in 2018, which was also the 3<sup>rd</sup> warmest, while a drier May occurred last year.

Temperatures: Warmer than average temperatures were reported at most of the National Weather Service's co-op stations across the state with the warmest readings in southeastern Iowa. Pockets of near-average temperatures were observed in western and north-central Iowa.

A notable early season heat event blanketed much of the central United States during the second week of May as a strong and stable atmospheric thermal ridge built into the region. Combined with southerly winds, temperatures over the next several days would be well above average with many stations breaking daily record highs and overnight lows. The statewide average temperature from May 9-13 was 74.9 degrees, 15.6 degrees above normal.

May's statewide average maximum temperature was 72.2 degrees, 1.1 degrees below normal while the average minimum temperature was 50.5 degrees, 1.7 degrees above normal. Little Sioux reported the month's high temperature of 100 degrees on the 12<sup>th</sup>, 29 degrees above normal. Several northern stations reported the month's low temperature of 29 degrees on the 4<sup>th</sup>, on average 13 degrees below normal.

Heating Degree Days: Home heating requirements, as estimated by heating degree day totals, averaged 23% less than last May and 17% less than normal. Heating degree day totals are running 2% less than last year at this time and 2% less than normal.

Precipitation: Most of Iowa's National Weather Service co-op stations reported below-average totals during the month, especially in north-central and southeastern Iowa where isolated pockets of three to four inch deficits were observed. Only sections of southwestern and northeastern Iowa measured above-average totals.

Light rain began pushing into southwestern Iowa just after 7:00 am on Monday (2nd) in advance of a large area of low pressure. The disturbance, along with pockets of moderate rainfall, continued to propagate through Iowa overnight into Tuesday (3rd) as the backside of the low held light showers in eastern Iowa. Event rain totals varied from 0.50 to 0.75 inch across a broad swath of the state with only the northwest corner missing out; the statewide average rainfall was 0.65 inch with 25 stations measuring at least an inch. An upper-level disturbance brought light showers into western Iowa overnight into the morning of the 5<sup>th</sup> with totals between 0.10 and 0.25 inch, though heavier pockets were observed in the northwest; Remsen (Plymouth County) measured 0.40 inch. Rain showers finally dissipated along the Iowa-Missouri border very early on the 6<sup>th</sup> as skies cleared through the afternoon. Clouds increased into the nighttime hours as another disturbance brought showers and thunderstorms into Iowa's western half early on the 8<sup>th</sup> and continued to move across central and eastern Iowa through the afternoon. A pocket of heavy rain from sluggish storms was reported across Story, Hardin and Grundy counties with over 20 stations in the vicinity observing at least an inch.

A cold front moving through the Upper Midwest forced strong to severe thunderstorms into northeast Iowa as cold air clashed with warm and humid conditions close to midnight. Thunderstorms dissipated a few hours later with rain totals reported at 7:00 am on the 10<sup>th</sup> isolated to the northeast corner with a narrow band stretching southwest. About half of the stations reporting rainfall had amounts above 0.40 inch with Greenfield (Adair County)

measuring 1.20 inches. A strong low pressure fired several severe thunderstorms in northwestern Iowa during the late evening with rain above 0.20 inch reported at a handful of stations; Sibley (Osceola County) observed 1.48 inches. An active weather day set up across western Iowa on the 12<sup>th</sup> with a serial derecho and a thunderstorm-induced dust storm hitting extreme northwest Iowa. A secondary thunderstorm line formed along a cold front and left measurable rain across much of western Iowa. Most stations reporting rainfall had totals under 0.25 inch; a few measured over 0.50 inch with 0.62 inch reported at Little Sioux (Harrison County). With a clash of air masses late in the afternoon on the 14<sup>th</sup>, a few isolated severe-warned thunderstorms fired in the afternoon in central Iowa and then later in the night. Moderate rainfall occurred in west-central and southern Iowa with totals reported early on the 15<sup>th</sup> were in the 0.25 to the 0.50-inch range. The remaining showers dissipated across central and eastern Iowa into the evening.

Clouds streamed into northern Iowa overnight into the 16<sup>th</sup> as light showers formed ahead of a low pressure center transiting through Nebraska. The disturbance slowly moved through Iowa on the 17<sup>th</sup> with stronger thunderstorms firing in the southwest where moderate rainfall was observed. Most of Iowa's stations reported measurable rainfall with 25 stations measuring an inch or more; Numa (Appanoose County) observed 1.01 inches while Logan (Harrison County) registered 2.44 inches with the statewide average coming in at 0.31 inch. Multiple rounds of showers and thunderstorms moved through Iowa on the 19<sup>th</sup> as a strong low pushed across Minnesota. Northern Iowa experienced showers and thunderstorms from late morning into the early afternoon hours with isolated, stronger storms forming later in the afternoon along the Iowa-Minnesota border. A third round of thunderstorms, some turning severe, fired along the low's attendant cold front in the late-night hours and early into the 20<sup>th</sup>. Gusty winds and one-inch hail were reported in west-central Iowa where Denison (Crawford County) measured a 63-mph gust from a severe-warned thunderstorm. Moderate rainfall was observed across Iowa's northern quarter with general totals in the 0.10 to 0.30-inch range; Storm Lake (Buena Vista County) measured 0.38 inch. Another quick-moving severe-warned cell moved through Lee County dropping one-inch diameter hail and 0.35 inch of rain at Augusta's station.

Thunderstorms fired along a surface boundary just after midnight on the 30<sup>th</sup> before fizzling out after a few hours. There was a lull in thunderstorm activity for much of the morning and early afternoon until the line refired in western Iowa ahead of the dry line, a demarcation boundary for higher dewpoint temperatures. A second wave of strong thunderstorms fired along the cold front as it pushed into central Iowa with afternoon temperatures in the upper 80s and 90s fueling atmospheric instability. The line was narrow and fast-moving with locally heavy downpours and additional hail and high wind reports. Event rain totals at 7:00 am on the 31<sup>st</sup> were highest in northwestern Iowa with over 20 stations reporting at least an inch; Lake Park (Dickinson County) observed 2.07 inches while Spencer (Clay County) measured 2.27 inches. Stations in southern Iowa saw totals between 0.30-0.50 inch with lesser amounts farther east. The system finally moved out of southeastern Iowa in the early afternoon hours, where rain totals were at or under a few tenths of an inch, though Keokuk Lock and Dam (Lee Country) reported 1.31 inches.

Monthly precipitation totals ranged from 1.79" at a Community Collaborative Rain, Hail and Snow (CoCoRaHS) network rain gauge in Swea City to 7.30" at a CoCoRaHS gauge in Nevada.

Spring Summary: Temperatures for the three spring months of March, April and May averaged 47.4 degrees, 0.9 degree below normal. This ties Spring 1915 and 1926 as the 63<sup>rd</sup> warmest on record. Precipitation totaled 9.37" or 1.13" below normal. This spring ranks as the 64<sup>th</sup> wettest/87<sup>th</sup> driest in 150 years of records; Spring 2021 was drier while 2019 was wetter and the 10<sup>th</sup> wettest on record.

Severe Weather: May 12<sup>th</sup> was a remarkable weather day in the Midwest with a late afternoon severe-warned squall line racing northeast through Nebraska and South Dakota, clipping Iowa's northwest corner. The thunderstorm line

was classified as a derecho, the third to impact Iowa since 2020. Rain-evaporated cold air outflow in front of the derecho lofted dry topsoil, producing a rare dust storm known as a “haboob.” Hot temperatures fed the instability with a statewide average high hitting 93 degrees, 23 degrees above normal.

A strong low pressure center over northern Minnesota fired severe thunderstorms along a cold front just after midnight on the 30<sup>th</sup> with several northwestern counties reporting severe straight-line winds and hail. There was a lull in thunderstorm activity for much of the morning and early afternoon until the line re-fired in western Iowa ahead of the dry line, a demarcation boundary for higher dewpoint temperatures. A second wave of strong thunderstorms fired along the cold front as it pushed into central Iowa with afternoon temperatures in the upper 80s and 90s fueling atmospheric instability. The line was narrow and fast-moving with locally heavy downpours and additional hail and high wind reports.

US Drought Monitor: As of the first week of May, D0 (Abnormally Dry) - D2 (Severe Drought) categories covered 44% of the state, the lowest extent of the year. The categorical breakdown was as follows: D0 – 31%, D1 (Moderate Drought) – 10%, D2 – 3%. Wet conditions through the first week of May allowed for the removal of a small D1 region in north-central Iowa as well as swath of D1 in the existing D1-D2 region in western Iowa. Near-normal to cooler than average temperatures along with climatologically expected rainfall across the drought and abnormally dry regions of the state held the map status quo for the rest of May. The current breakdown of D0-D2 conditions as of the first week of June is: D0 – 33%, D1 – 7%, D2 – 2%; D0-D2 currently encompasses 33% of Iowa, the lowest extent since June 2020, when the current drought began ramping up.

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# May 2022

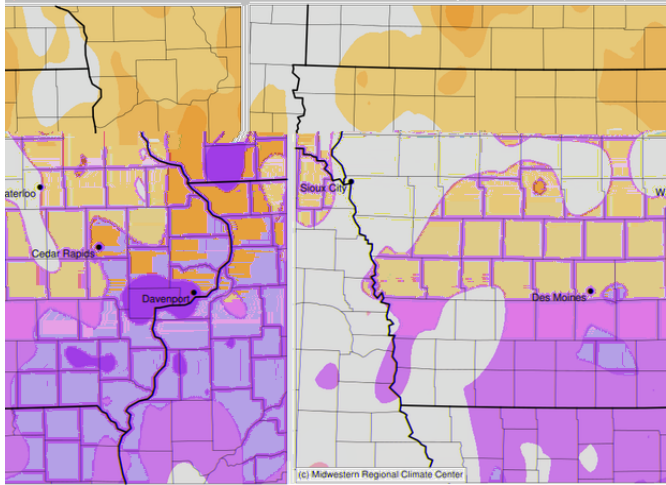
## WEATHER BY DISTRICTS

DISTRICT	TEMPERATURE (F)		HEATING DEGREE DAYS				PRECIPITATION (inches)				SNOWFALL May 2022 Average
	May 2022 Average Departure		May 2022 Average Departure		Since Jul., 1, 2021 Average Departure		May 2022 Average Departure		Since Jan. 1, 2022 Average Departure		
Northwest	59.6	+0.8	220	-24	7179	-224	3.39	-0.88	7.74	-3.00	0.0
North Central	59.7	+1.2	217	-31	7416	-48	3.24	-1.64	10.28	-2.23	0.0
Northeast	59.8	+1.4	209	-38	7317	-13	3.58	-1.14	11.51	-1.50	0.0
West Central	61.1	+1.1	185	-28	6460	-360	4.14	-0.58	9.30	-2.42	0.0
Central	61.4	+1.3	180	-31	6672	-133	3.24	-1.72	11.28	-1.52	0.0
East Central	62.8	+2.2	152	-48	6510	-118	2.79	-1.83	10.58	-2.70	0.0
Southwest	62.6	+1.3	154	-29	5952	-310	4.61	-0.67	11.50	-1.21	0.0
South Central	62.7	+1.6	151	-36	6068	-171	3.52	-1.70	11.60	-1.94	0.0
Southeast	63.6	+1.9	137	-38	6019	-118	3.71	-2.41	11.04	-3.06	0.0
STATE	61.4	+1.5	176	-35	6647	-144	3.46	-1.38	10.46	-2.18	0.0

\* Departures are computed from 1991-2020 normals.

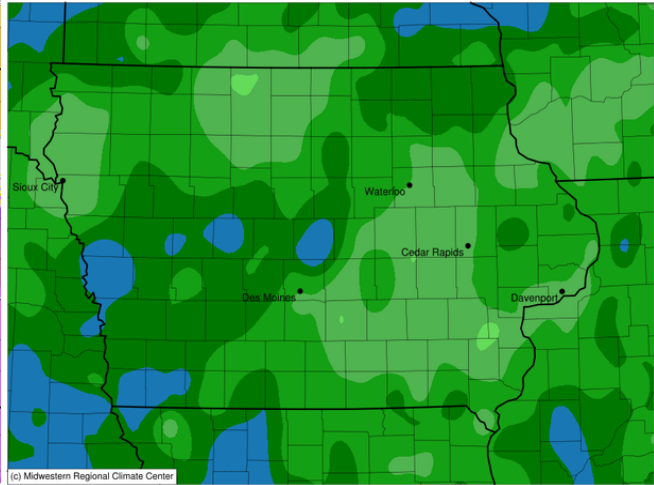
The weather data in this report are based upon information collected by the U. S. Dept. of Commerce, NOAA National Weather Service.

Average Temperature (F) Departure from 1991-2020 Normal  
May 01, 2022 to May 31, 2022



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WBAN, COOP, FAA, GHCN, I, n Tools Environment  
Stations from the following networks used: ThreadEx, CoCoRaHS, WMO, ICAO, NWSI, Midwestern Regional Climate Center, cli-MATE: MRCC Application Tools Environment  
Generated at: 6/8/2022 10:46:48 AM CDT

Accumulated Precipitation (in)  
May 01, 2022 to May 31, 2022



0.01 0.1 0.5 1 1.5 2 3 4 5 7.5 10 12.5 15  
Stations from the following networks used: WBAN, COOP, FAA, GHCN, ThreadEx, CoCoRaHS, WMO, ICAO, NWSI, Midwestern Regional Climate Center, cli-MATE: MRCC Application Tools Environment  
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