

IOWA MONTHLY WEATHER SUMMARY – MAY 2024

General Summary: Temperatures averaged 62.0 degrees or 2.1 degrees above normal while precipitation totaled 7.43 inches or 2.59 inches above normal. May 2024 ties 1980 as the 47th warmest and ranks as the 8th wettest May in 152 years of statewide records. A warmer May occurred just last year while a wetter May occurred in 2019, which was the 5th wettest.

Temperatures: Temperatures through May were above normal statewide with the warmest conditions found in southeastern Iowa. Davenport Municipal Airport (Scott County) reported the month's high temperature of 91 degrees on the 21st, 17 degrees above average. Forest City (Winnebago County) and Storm Lake (Buena Vista County) reported the month's low temperature of 32 degrees on the 5th, on average 12 degrees below normal. May's statewide average maximum temperature was 73.8 degrees, 2.8 degrees above normal while the average minimum temperature was 50.0 degrees, 1.3 degrees above normal.

Heating Degree Days: Home heating requirements, as estimated by heating degree day totals, averaged 6% more than last May and 16% less than normal. Heating degree day totals are running 14% less than last year at this time and 17% less than normal.

Precipitation: A vast majority of Iowa's National Weather Service co-op stations reported anomalously wet conditions during the month with many experiencing 200% of normal rainfall. Only a small swath of southeast Iowa observed below-normal totals. Monthly precipitation totals ranged from 2.80 inches at a Community Collaborative Rain, Hail and Snow (CoCoRaHS) network rain gauge in Fort Madison (Lee County) to 14.38 inches at a CoCoRaHS gauge in Vining (Tama County). If you would like to be a CoCoRaHS observer or would like more information on the network, visit cocorahs.org or send an email to justin.glisan@iowaagriculture.gov.

Showers and thunderstorms overspread the state through May 2nd, bringing widespread, moderate rainfall to much of Iowa. Rain continued across eastern Iowa into the afternoon hours with stubborn showers holding over the southeast corner where flood warnings were issued. Rain totals reported at 7:00 am on the 3rd for the last 36 hours showed almost 200 stations receiving at least the weekly climatological average, which is just shy of an inch. Nearly 30 stations had 2.00 inches or more with 2.10 inches in Sigourney (Keokuk County) to 4.10 inches in Centerville (Appanoose County); the statewide average was 0.98 inch. Another low pressure center entered western Iowa early on the 4th with thunderstorms forming a narrow line along the attendant cold front. Rain totals were highest across west-central to north-central Iowa where amounts were in the 0.75-1.00 range; many of the state's remaining stations collected 0.20-0.50 inch.

A southerly shifting wind brought warmer and more humid air into the state in advance of a strong low pressure system spinning over the Dakotas. Instability increased as a warm front pushed north over southwestern Iowa, providing atmospheric energy for the low's attendant cold front to fire a

long line of strong thunderstorms; the complex entered western Iowa during the evening hours with multiple severe thunderstorm and tornado warnings in central Iowa. Two EF-1 tornadoes spun up near Glenwood (Mills County) and at multiple locations in Pottawattamie County along with straight line wind reports. Moderate to heavy rain also fell as the line advanced rapidly to the east along with additional high wind reports. Rain totals reported on the 7th were highest in southwestern Iowa though nearly 140 stations across the state's western half picked up at least an inch. Forest City (Winnebago County) registered 2.04 inches while 2.60 inches was observed in Corning (Adams County); the statewide average was 0.85 inch with totals generally under 0.75 inch in eastern Iowa. Another low pressure disturbance spinning over the Upper Midwest fired thunderstorms, a few producing hail and strong winds, across northwest and then central Iowa through the evening before the storms overspread northern Iowa after midnight on the 9th. Morning rain totals highlighted a pocket of 1.00-2.00-inch readings across several counties in central to north-central Iowa. Algona (Kossuth County) observed 1.58 inches, Iowa Falls (Hardin County) hit 1.80 inches with 1.92 inches in Mason City (Cerro Gordo County); much of northern Iowa received at least 0.25 inch. Showers persisted in eastern Iowa through the day with some embedded thunderstorms, one of which spun up a brief land spout near Charles City (Floyd County) along with 2.01 inches of rain. Several stations in Black Hawk County observed over an inch of rain with many stations reporting 0.20 to 0.40 inch.

Heavier, slow-moving thundershowers were also reported in central Iowa on the 13th with two Indianola (Warren County) stations collecting 3.20 inches. Showers eventually dissipated as the disturbance propagated east, though overcast skies remained on the backside of the system. Widespread event rain totals of at least 0.50 inch were reported across Iowa's southern one-third. Nearly 60 stations in south-central and southwestern Iowa measured an inch or more; New Market (Taylor County) observed 2.02 inches while 3.02 inches fell in Russell (Lucas County). Clouds increased in western Iowa as showers and thunderstorms developed along a cold front into the evening of the 15th. Rainfall was reported across Iowa's northwestern half as a drier atmosphere helped dissipate showers in eastern Iowa. Totals reported at 7:00 am on the 16th were generally under 0.20-0.30 inch though embedded pockets of heavier totals were also observed; a 0.78-inch measurement was taken at Emmetsburg (Palo Alto County) with 1.45 inches in Blencoe (Harrison County). Scattered strong thunderstorms rumbled across the state into the afternoon and evening of the 19th with a more organized line forming in eastern Iowa towards midnight. Event rain totals were highest across a southwest to northeast swath with 18 central to south-central stations receiving at least 2.00 inches; Osceola (Clarke County) observed 2.80 inches while 2.95 inches was reported in Sully (Jasper County). Widespread 0.50-1.00-inch totals were also reported with a statewide average of 0.67 inch. Thunderstorms fired across northern and western Iowa along a warm front after sunset with several storms becoming severe and tornado warned.

A low pressure disturbance spun showers across northeastern Iowa on Sunday (26th) afternoon with additional isolated thunderstorms popping up in the southwest into the evening. Winds shifted northerly as the system pushed east with general rain totals in the 0.25 to 0.75-inch range across Iowa's northeast quadrant; higher, but more localized amounts varied from 1.02 inches in McGregor (Clayton County) to 1.42 inches in Lansing (Allamakee County). Memorial Day (27th) started with mostly clear skies though additional scattered thunderstorms fired with the heat of

the day and propagated southeast through the evening hours. Rain totals were generally under 0.20 inch where it fell with pockets of heavier totals in eastern Iowa; Monticello (Jones County) collected 1.32 inches with 1.44 inches in Beford (Taylor County). Clouds increased in western Iowa as a line of showers pushed over the Nebraska border on the 30th. Showers lingered in southwestern Iowa before consolidating with another thin line into the afternoon hours. Many stations in the western quarter of Iowa collected at least 0.25 inch with stations near College Station (Page County) and Lake Park (Dickinson) observing 1.06 to 1.51 inches, respectively. A secondary disturbance brought light rain to eastern Iowa overnight into the 31st as a low pressure system approached the state from the west. Stronger thunderstorms dropped heavier rain across northwest counties with Ringsted (Emmett County) hitting 1.00 inch and Orange City (Sioux County) observing 4.12 inches; widespread totals of 0.30 to 0.50 inch were found farther south and east.

Severe Weather: May 21st was a notable severe weather day in that thunderstorms became more widespread through the morning hours as an initial squall line sped east and into Wisconsin by noon. Clearing skies in western Iowa along with anomalously high atmospheric instability and wind shear produced explosive convection near the Iowa-Nebraska border. A rare “Particularly Dangerous Situation” Tornado Watch was issued for most of Iowa as supercells became tornado-warned almost immediately. There were several reports of multi-vortex tornadoes in southwest Iowa with Greenfield (Adair County) taking a direct hit from a higher-end EF-4; sadly, there were 35 injuries and five fatalities. The long-track supercells sped at nearly 40 mph into central Iowa where additional tornadoes formed between Des Moines (Polk County) and Nevada (Story County). As the line evolved, widespread reports of severe straight-line winds continued into eastern Iowa along with moderate to heavy rainfall and some hail. Rain totals were unseasonably wet; over the preceding 36 hours, 140 stations reported over 2.00 inches with remarkable totals in the 4.00 to 6.00 inch-range in central to western Iowa; Polk City (Polk County) registered 4.01 inches with a 6.14-inch total at Missouri Valley (Harrison County) and a statewide average of 1.57 inches.

An intense squall line raced out of Nebraska on the morning of the 24th, spawning at least 18 tornadoes as it plowed across Iowa. The line bowed out in the center as a rear-inflow jet strengthened straight-line winds along the length of the line. Hail and heavy rain were also reported across the length of squall. With numerous wind gusts at or above 58 mph along the path length of at least 400 miles, the event was categorized as a derecho. Thunderstorms continued to fire through the afternoon hours before dissipating around sunset. Rain totals at 7:00 am on the 25th were highest in eastern Iowa with nearly 100 stations receiving at least an inch with 20 approaching 2.00 inches; Dubuque (Dubuque County) measured 1.50 inches while Chariton (Lucas County) hit 1.96 inches. Another disturbance pushed into Iowa on the 26th bringing isolated severe-warned thunderstorms and additional heavy rain, especially in northeast Iowa; many of the stations received totals between 0.75-1.50 inches

Spring Summary: Temperatures for the three spring months of March, April and May averaged 51.1 degrees, 2.8 degrees above normal. This ties Spring 1878 and 1894 as the 16th warmest on record. Precipitation totaled 14.22 inches or 3.73 inches above normal. This spring ranks as the 6th wettest in 152 years of observations; Spring 2013 was wetter (wettest on record) while 2012 was warmer (warmest on record).

USDM: The current US Drought Monitor map reflects significant improvement in conditions over the last four weeks. At the start of May nearly half of Iowa was in some level of drought designation, including over two percent rated as Extreme Drought (D2). By the end of May, the USDM showed that the worst conditions in Iowa as only Abnormally Dry (D0). Three-quarters of the state is free from any drought or dryness with only 25 percent of Iowa designated as D0. The removal of Moderate Drought (D1) from Iowa on May 28 came 204 weeks after its introduction into Iowa in late June 2020. This was the longest drought in Iowa in the USDM period of record starting in 2000 and the longest drought since 1954-1959.

Soil moisture levels and streamflow have also improved across the state in response to recent rainfall events. The USDM, one measure reflected in the Iowa Drought Plan (IDP), shows only limited areas of D0, with no drought areas indicated for the first time since June 2020. According to the IDP, all five monitoring regions are drought free, with conditions continuing to improve. After above normal precipitation in six of the last eight months, all areas of the state are now in “Normal” condition for the first time since the start of the IDP, and according to the US Drought Monitor, the state is free from drought and dryness for the first time in four years.

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May 2024

WEATHER BY DISTRICTS

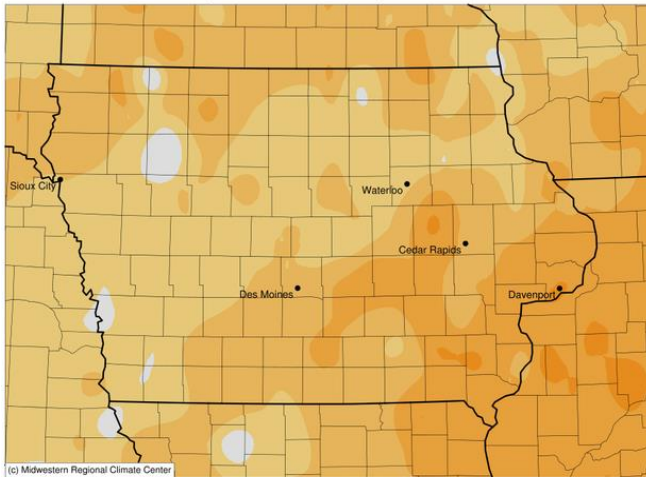
DISTRICT	TEMPERATURE (F)		HEATING DEGREE DAYS				PRECIPITATION (inches)				SNOWFALL May 2024 Average
	May 2024 Average	Departure	May 2024 Average	Departure	Since Jul. 1, 2023 Average	Departure	May 2024 Average	Departure	Since Jan. 1, 2024 Average	Departure	
Northwest	60.7	+1.9	198	-46	6218	-1185	7.29	+3.02	15.89	+5.15	0.0
North Central	60.4	+1.9	202	-46	6171	-1293	9.07	+4.19	17.35	+4.84	0.0
Northeast	60.4	+2.0	197	-50	6111	-1219	8.03	+3.31	16.50	+3.49	0.0
West Central	61.2	+1.2	183	-30	5792	-1028	8.14	+3.42	15.75	+4.03	0.0
Central	61.8	+1.7	172	-39	5632	-1173	8.16	+3.20	16.33	+3.53	0.0
East Central	63.6	+3.0	139	-61	5501	-1127	5.31	+0.69	15.45	+2.17	0.0
Southwest	62.7	+1.4	153	-30	5412	-850	7.77	+2.49	14.64	+1.93	0.0
South Central	63.4	+2.3	140	-47	5218	-1021	7.44	+2.22	16.18	+2.64	0.0
Southeast	64.4	+2.7	124	-51	5181	-956	5.05	-0.07	18.00	+3.90	0.0
STATE	62.0	+2.1	165	-46	5665	-1124	7.43	+2.59	16.25	+3.61	0.0

* Departures are computed from 1991-2020 normals.

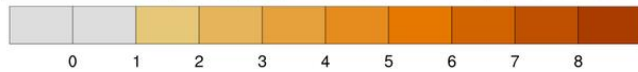
The weather data in this report are based upon information collected by the U. S. Dept. of Commerce, NOAA National Weather Service.

Average Temperature (°F): Departure from 1991-2020 Normals

May 01, 2024 to May 31, 2024

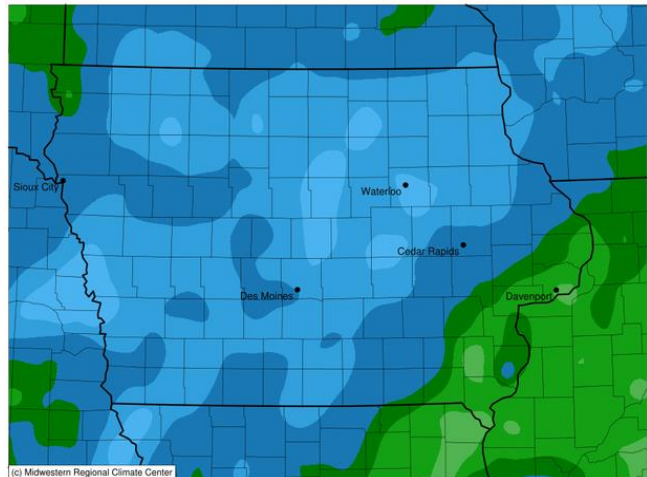


(c) Midwestern Regional Climate Center



Accumulated Precipitation (in)

May 01, 2024 to May 31, 2024



(c) Midwestern Regional Climate Center

