IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP

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IOWA MONTHLY WEATHER SUMMARY – SEPTEMBER 2020

General Summary: Temperatures averaged 61.9 degrees or 1.3 degrees below normal while precipitation totaled 4.06 inches or 0.68 inch above normal. September 2020 ranks as the 39th coldest on record with a colder September last occurring in 2011. The month ranked as the 55th wettest September in 148 years of statewide records with a wetter one occurring just last year.

Temperatures: For the month, negative temperature departures of one to three degrees were reported across eastern and southern Iowa with near normal conditions reported in Iowa's northwest corner. September's statewide average maximum temperature was 73.3 degrees, 1.9 degrees below normal, while the average minimum temperature was 50.6 degrees, 0.6 degrees below normal. Spencer Municipal Airport (Clay County) reported the month's high temperature of 96 degrees on the 6th, 18 degrees above normal. Mason City Municipal Airport (Cerro Gordo County) reported the month's low temperature of 35 degrees on the 18th, 12 degrees below normal.

Multiple stations reported record low high temperatures for the date of September 8th, breaking records from the late 1800s. Des Moines (Polk County) and Waterloo (Black Hawk County) both observed 51 degrees, breaking their records of 54 and 58 degrees, respectively, set in 1898.

Cooling Degree Days: Home air conditioning requirements, as estimated by cooling degree day totals, averaged 68% less than last September and 36% less than normal. Cooling degree day totals since January are running 5% more than last year at this time and 11% more than normal.

Precipitation: Much of the eastern two-thirds of Iowa reported above average precipitation totals with the highest amounts occurring in eastern Iowa; four to six inches of above average rainfall were recorded across more than ten counties. On the other side of the state, precipitation deficits from one to two inches were found. Northwest Iowa observed the driest conditions of two or more inches below normal. Monthly precipitation totals ranged from 0.51 inch at Rock Valley (Sioux County) to 11.75 inches at Monticello (Jones County).

September began somewhat wet as a complex of thunderstorms moved into southern Iowa along a warm front early on the 1st and remained over eastern Iowa for most of the day. Rain totals reported on the 2nd for the previous 24 hours showed measurable totals across the state's southeastern half. Many gauges in south-central and eastern Iowa reported totals above 0.50 inch with several gauges in Wayne County reporting rainfall in the range of 0.89 inch to 1.07 inches; Bedford (Taylor County) observed 1.08 inches. The 5th was a warm day across western Iowa with highs reaching into the upper 80s and low 90s. During the late evening, thunderstorms began popping up in north-central Iowa and quickly pushed southeast. Stronger storms, some severe, were embedded within a larger rain shield that brought locally heavy rain through northeast Iowa. There were also several reports of large hail and severe straight-line winds; an 83 mph gust was reported in Titonka (Kossuth County). Widespread rain also fell across a large swath of eastern Iowa with over 60 stations reporting an inch or more at 7:00 am on the 6th. Several gauges in eastern Iowa collected over three inches of rain; Clinton No. 1 (Clinton County) reported 3.07 inches while Monticello (Jones County) reported 5.58 inches. The statewide average rain total was 0.58 inch

Thunderstorms with locally heavy rainfall were present in eastern Iowa on the afternoon of the 6th with light rain stretching into central Iowa. Clouds increased through the day on the 7th. Thunderstorms began forming along a stationary front during late evening and quickly expanded to cover much of southern Iowa. A secondary complex of thunderstorms associated with an upper level disturbance moved into northwestern Iowa overnight. The large-

scale flow configuration brought waves of showers and thunderstorms over the next several days. Two-day rain totals reported at 7:00 am on the 9th showed widespread amounts of at least an inch across a majority of reporting stations with nearly 100 stations observing over two inches. The highest totals were found in eastern Iowa ranging from 3.02 inches in Marengo (Iowa County) to 3.79 inches at Salem 1 S (Henry County); the statewide average rain total was 1.50 inches. Rain showers continued through the day with a lull during the late evening hours before another round of showers moved into southwestern Iowa overnight into the 10th. The rain shield spanned most of the state and slowly pushed out of eastern Iowa during late afternoon. Much of the central southwest to northeast one-third of Iowa received rainfall in the 0.50 to 1.00 inch range. Only a few stations in northwest Iowa did not report measurable rain. Elma (Howard County) observed 1.73 inches while the statewide average was 0.56 inch. Dreary conditions continued through the 11th with widespread, persistent rainfall across Iowa's eastern half. Western Iowa also saw wet conditions, though spottier than in the east. Rain gauge measurements at 7:00 am on the 12th had the highest totals in eastern Iowa, where one to two inch totals were frequently found; over 25 stations reported two inches or more with a gauge in Hopkinton (Delaware County) collecting 2.86 inches. Totals across the state's central one-third were in the 0.30 to 0.75 inch range with lighter amounts towards the Iowa-Nebraska border.

September 13th through the 23rd was an extended stretch of dry conditions over the entire state. A stable and large-scale dome of high pressure kept storm tracks away from the state with no measurable rainfall reported across Iowa. The circulation configuration also brought in high-level haze from western wildfires, lending many days of whited sun and vivid, copper-colored sunrises and sunsets. The pattern finally transitioned on the 24th as a sluggish low pressure center sat over western Iowa with a smaller, secondary disturbance pushing through northeastern Iowa through late afternoon; both systems produced some showers and isolated thunderstorms. Several stations in Allamakee, Fayette and Winneshiek counties reported rain gauge totals above 0.10 inch; Lansing (Allamakee County) reported 0.60 inch while a station in Decorah (Winneshiek County) reported 0.88 inch. A cold front pushed through Iowa during the 27th bringing measurable rainfall across the state. Totals at 7:00 am on the 28th were highest across southeastern Iowa where nearly 20 stations reported an inch or more; Bloomfield (Davis County) observed 1.00 inch while Cantril (Van Buren County) reported 1.43 inches. Rain amounts tapered off moving northwest with general totals between 0.25 inch and 0.50 inch.

US Drought Monitor: As of August 4th, D3 (Extreme Drought) conditions were introduced across several counties in west-central Iowa as timely rainfall had yet materialized. This was the first D3 introduction since July 17th, 2018. Abnormal dryness also expanded across most of northeast Iowa. Drought conditions continued to expand from the west-central core in all directions. The most recent drought depiction released on September 1st showed that 99% of Iowa was in the D0-D3 category which was the largest expanse since August 27th, 2013. Moderate Drought to Severe Drought (D2-D3) condition covered 37% of the state with D3 condition over 15% of Iowa.

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September 2020

WEATHER BY DISTRICTS

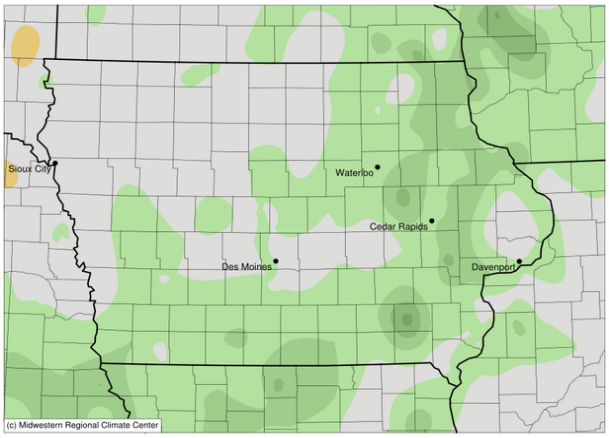
DISTRICT	TEMPERATURE (F)		COOLING DEGREE DAYS				PRECIPITATION (inches)			
	September 2020		September 2020		Since Jan., 1, 2020		September 2020		Since Jan.1, 2020	
	Average	Departure*	Average	Departure*	Average	Departure*	Average	Departure*	Average	Departure*
Northwest	61.4	-0.4	45	-8	892	+174	1.23	-2.00	17.07	-8.65
North Central	60.8	-0.5	33	-12	771	+107	3.23	+0.04	24.44	-4.39
Northeast	59.9	-2.0	23	-18	693	+68	6.50	+3.15	31.32	+1.41
West Central	62.6	-0.5	59	-11	982	+160	2.65	-0.51	17.41	-10.43
Central	62.1	-1.0	48	-18	897	+96	4.05	+0.73	23.59	-6.68
East Central	61.9	-1.9	38	-23	858	+62	7.12	+3.80	29.66	+0.03
Southwest	63.0	-1.8	66	-24	1035	+83	2.79	-0.62	19.90	-9.94
South Central	62.8	-1.4	60	-27	1002	+72	4.27	+0.45	25.78	-5.44
Southeast	63.5	-1.9	63	-23	964	+6	5.06	+1.28	27.87	-3.33
STATE	61.9	-1.3	45	-19	880	+85	4.06	+0.68	23.96	-5.32

* 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

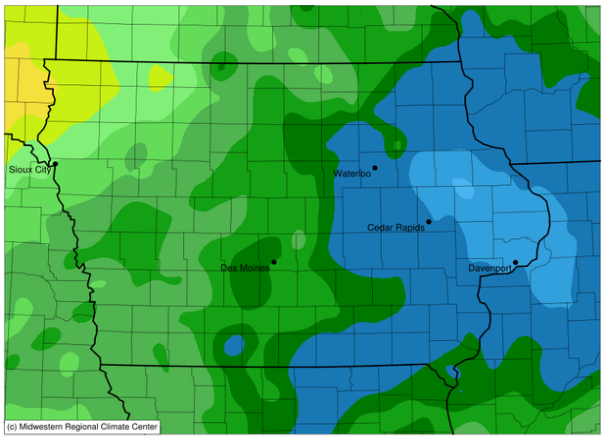
September 01, 2020 to September 30, 2020



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: 10/6/2020 10:30:59 AM CDT

Accumulated Precipitation (in)

September 01, 2020 to September 30, 2020



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Midwestern Regional Climate Center
cli-MATE: MRCC Application Tools Environment
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