IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP

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Secretary of Agriculture

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IOWA MONTHLY WEATHER SUMMARY – NOVEMBER 2019

General Summary: Iowa temperatures averaged 32.4 degrees or 4.2 degrees below normal while precipitation totaled 1.49 inches or 0.56 inches less than normal. This was 69th driest November on record, tying 1886. November 2019 also ties 1926 as the 22nd coldest. A colder November last occurred in 2018 while 2017 was drier.

Temperatures: November temperatures were below average statewide with eastern Iowa up to six degrees below normal. The first 14 days of the month were below average with coldest stretch of days from the 10th through the 12th. November 11th was the coldest day of the month with Iowa's average high temperature at 19 degrees, 29 degrees below average. Temperatures did not reach above average statewide until November 19th. The longest span of unseasonable warmth occurred over the last eight days of the month with November 24th seeing temperature departures of up to 20 degrees; the average statewide high was 53 degrees, 12 degrees above normal. Little Sioux (Harrison County) reported the month's high temperature of 65 degrees on the 9th. This reading was 15 degrees warmer than normal. Rockwell City (Calhoun County) observed the month's overnight low temperature of -8 degrees on the 12th, 35 degrees below normal.

Heating Degree Day Totals: Home heating requirements, as estimated by heating degree day totals, averaged 16% above normal but 6% less than reported for a colder November last year. Heating degree totals thus far this heating season are running 11% more than normal and 3% less than at this time last year.

Precipitation: Much of the southern three-quarters of Iowa received below average precipitation during November with departures in southern Iowa of up to two inches. Precipitation totals were slightly above average along the Iowa-Minnesota border. While precipitation was below average, a majority of the state had above average snowfall with up to six inches above normal in northern Iowa. Monthly precipitation totals varied from 0.45 inches in Shenandoah (Page County) to 2.92 inches in Osage (Mitchell County). The statewide average snowfall for the month was 3.8 inches, 1.3 inches above normal.

A center of low pressure moved through Iowa during the afternoon and evening on the 3rd, bringing light rainfall across the state's northern half. General totals varied from 0.01 inch to 0.03 inch from Des Moines (Polk County) to Waterloo (Black Hawk County) with the highest accumulations across north-central Iowa; Britt (Hancock County) reported 0.30 inch while Elma (Howard County) observed 0.36 inch. High pressure moved into the region during the day and was quickly followed by low pressure systems that brought snowfall along the Iowa-Minnesota border through early on the 6th. As the system was exiting eastern Iowa, another round of light snow moved through much of the state's northern three-quarters. Three to four inches fell across northern Iowa with locally heavier amounts near Decorah (Winneshiek County), where six inches was observed; snow totals tapered off to a dusting towards southern Iowa.
Snow showers moved across Iowa beginning during the evening of the 10th after a partly cloudy day. The system slowly moved out of southeastern Iowa by noon on Veterans Day. Accumulating snow was reported statewide with a swath of two to four inches across Iowa's central third; some stations in central

and eastern Iowa reported totals over four inches with Ames (Story County) reporting 4.5 inches and Cedar Falls (Black Hawk County) reporting the highest total of 4.8 inches. Another fast moving system propagated through Iowa on the 13th with a wintery mix observed in west-central Iowa and light snow reported through the evening hours across northern Iowa. The highest snow totals were reported in northeastern Iowa with Elkader (Clayton County) and Fayette (Fayette County) observing two inches. Cloud cover gradually increased through the evening hours on the 16th in advance of a cold front that brought light rainfall across northwestern Iowa. Totals at 7:00 am on the 17th were generally below 0.10 inch with 0.12 inch reported in Algona (Kossuth County).

A cold front continued to push across Iowa later on the 17th bringing light rain showers to the state. Rain totals at 7:00 am the 18th were generally under 0.25 inch with slightly higher totals in eastern Iowa; DeWitt (Scott County) reported 0.28 inch. Light showers pushed out of eastern Iowa through the morning hours. Clouds began to increase into the evening hours ahead of a low pressure system that moved across the state from late on the 20th into the 21st. Rain totals were highest in northern Iowa with Northwood (Worth County) reporting an inch; all stations across the state reported measurable rainfall with the statewide average total at 0.45 inch. The system exited northeastern Iowa during the early afternoon hours with cloudy conditions and northerly winds persisting. Isolated snowflakes were reported across extreme southeastern Iowa overnight into the 23rd as a fast-moving disturbance moved through northern Missouri.

Cloud cover began increasing on the 26th as winds shifted to the northeast ahead of the first low pressure to impact Iowa. A mix of rain and snow fell across central and southern Iowa and transitioned to moderate snow across northwestern Iowa during the nighttime and overnight hours. Near blizzard conditions were reported as strong northern winds built in behind the system. Sustained winds peaked above 30 mph with gusts in the 35-40 mph range; Estherville Municipal Airport (Emmet County) reported a peak wind gust of 47 mph with near whiteout conditions. Snow totals reported were highest in northwest and north-central Iowa with Sanborn (O'Brien County) observing 8.6 inches; over 40 stations reported totals above three inches. Thanksgiving Day was overcast with light rain and snow showers. Liquid equivalent totals were generally under 0.30 inch. An additional wave of moderate rain moved through Iowa on the 29th as temperatures remained above freezing. Heavier showers and isolated freezing rain were observed in Iowa's northwest corner with stations in O'Brien, Plymouth and Sioux counties reporting totals over an inch.

Unstable atmospheric conditions during the late afternoon on the 30th allowed isolated strong thunderstorms to form across central Iowa. A brief spin-up rope tornado was reported near Guthrie Center (Guthrie County), though no damage was observed. Pea-sized hail was also reported around the Des Moines (Polk County) Metro area. As the last hours of November ticked away, the low pushed into Iowa, bringing light rain and snow showers across western Iowa as overnight lows hovered around the freezing mark

Fall Summary: Temperatures over the three autumn months averaged 49.2 degrees or 1.0 degrees below normal while precipitation totaled 12.48 inches or 4.41 inches above normal. This ranks as the 40th coldest, tying 1989 and 7th wettest fall among the period of record. A colder and wetter fall occurred just last year. The National Weather Service coop station in Osage (Mitchell County) had its wettest fall since the station was established in 1893 as it reported 17.28 inches of precipitation, 8.04 inches above average. A very wet end to the growing season across much of Iowa resulted in subsoil moisture levels being rated 82% adequate and 16% surplus according to the last USDA/NASS crop report of November.

Outlook: Current outlooks indicate elevated chances of above average temperatures towards the middle of December. During meteorological winter (December-January-February) the phase of the El Nino-Southern Oscillation (ENSO) climate signal can provide guidance in terms of seasonal temperature behavior. The Climate Prediction Center currently has a 70% probability ENSO-neutral conditions persisting through winter 2020. With a lack of an El Nino or La Nina signal, guidance moving through meteorological winter, temperatures outlooks are not robust. Hence, seasonal temperature outlooks have the upper Midwest categorized as having an Equal Chance (EC) of above, below or near-average conditions. Precipitation probabilities are above normal for December as well as through the winter.

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November 2019

WEATHER BY DISTRICTS

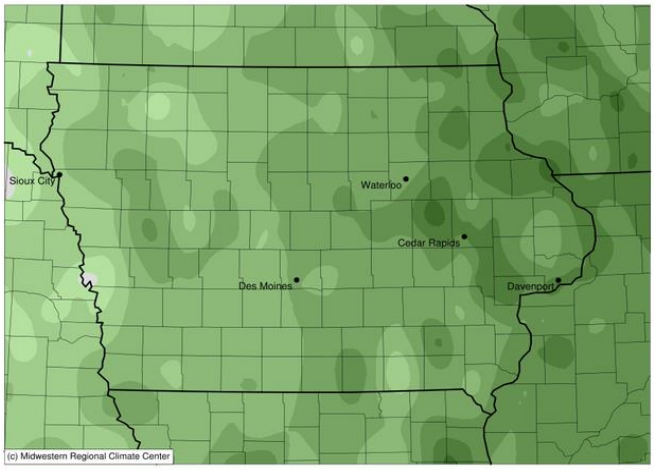
DISTRICT	TEMPERATURE (F)		HEATING DEGREE DAYS				PRECIPITATION (inches)				
	November 2019		November 2019		Since Jul., 1, 2019		November 2019		Since Jan.1, 2019		SNOWFALL Nov 2019
	Average	Departure*	Average	Departure*	Average	Departure*	Average	Departure*	Average	Departure*	Average
Northwest	30.7	-2.9	1029	+94	1772	+141	1.87	+0.34	37.90	+8.41	6.0
North Central	30.0	-3.8	1050	+127	1779	+153	1.98	+0.13	38.66	+5.61	5.2
Northeast	29.7	-5.8	1059	+163	1769	+174	2.01	-0.27	44.64	+9.87	5.3
West Central	33.0	-2.8	960	+96	1600	+128	1.26	-0.37	35.03	+3.15	4.7
Central	32.4	-4.1	978	+133	1611	+167	1.32	-0.82	38.82	+3.79	3.8
East Central	32.3	-5.9	981	+169	1562	+181	1.65	-0.76	43.47	+8.54	3.5
Southwest	35.2	-3.2	894	+99	1465	+137	0.75	-1.19	39.76	+5.36	0.8
South Central	34.9	-3.8	903	+128	1465	+161	1.01	-1.25	42.91	+6.57	1.4
Southeast	34.9	-5.3	903	+150	1444	+198	1.27	-1.30	43.78	+6.95	1.1
STATE	32.4	-4.2	980	+139	1608	+165	1.49	-0.56	40.35	+6.42	3.8

* 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

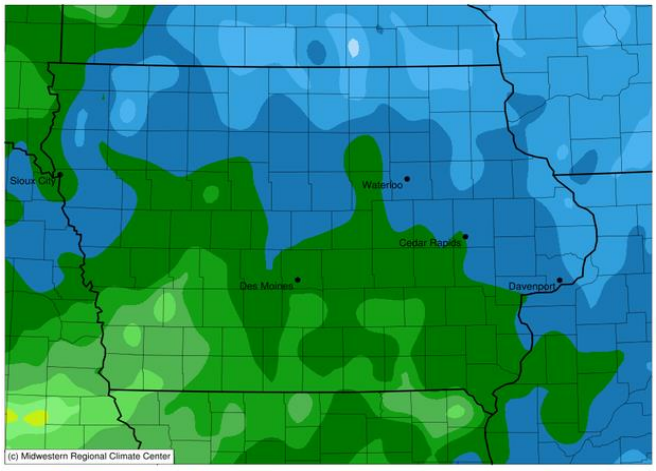
November 01, 2019 to November 30, 2019



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: 12/3/2019 3:40:55 PM CST

Accumulated Precipitation (in)

November 01, 2019 to November 30, 2019



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