

## IOWA PRELIMINARY MONTHLY WEATHER SUMMARY – FEBRUARY 2019

General Summary: Temperatures averaged 15.1 degrees or 8.9 degrees below normal while precipitation totaled 2.53 inches, 1.48 inches above normal. This was the 4th wettest February on record and ties 2007 as the 15<sup>th</sup> coolest among 147 years of records.

Temperatures: February began still under the influence of the Arctic intrusion that blanketed Iowa in frigid, unseasonable coldness over the last few days of January. Overnight lows reported at 7:00 am on February 1<sup>st</sup> were dangerously cold with the coldest readings in northeast Iowa; lows dipped into the -30s. As the trough of extremely cold polar air moved east, a thermal ridge built into the state on the 2<sup>nd</sup> and 3<sup>rd</sup>, rebounding temperatures substantially. Many stations reported temperature swings of 60 to 80 degrees from the extreme coldness. Over 40 stations observed daytime highs above 50 degrees on the 3<sup>rd</sup>. After this brief period of unseasonable warmth, the remaining days of February were below average. Widespread daytime highs only made it above freezing on the 2<sup>nd</sup>, 3<sup>rd</sup>, 14<sup>th</sup>, 20<sup>th</sup> and 23<sup>rd</sup>. A substantial snowpack across much of the state also helped hold down temperatures. February 8<sup>th</sup> into the late morning of the 9<sup>th</sup> had observed temperatures dipping into the negative teens; Estherville Airport reported -11 degrees at 8:00 am with a wind chill of -34 degrees. Other notable days of unseasonable coldness occurred from the 18<sup>th</sup> through the 19<sup>th</sup>. Overnight lows bottomed out into the negative teens in northern Iowa to negative single digits farther south. In terms of monthly temperature extremes, the warmest daytime high of 59 degrees was reported in Shenandoah (Page County) on the 3<sup>rd</sup>, 23 degrees above average. Pocahontas (Pocahontas County) reported the coldest overnight low of -20 degrees on the morning of February 19<sup>th</sup>. This reading was 34.4 degrees below average.

Heating Degree Days: Home heating requirements, as estimated by heating degree day totals, averaged 9% more than last February and 21% more than normal. Heating degree day totals are running 6% more than last year at this time and 6% more than normal.

Precipitation: An active jet pattern brought multiple winter systems through the state during the month, the first of which moved through Iowa over February 6<sup>th</sup> and 7<sup>th</sup>. Northern Iowa received snowfall generally in the range of two to four inches; Estherville (Emmet County) reported five inches. Another system moved through Iowa over the 9<sup>th</sup> and 10<sup>th</sup>, leaving a swath of four to six inches from southwestern Iowa northeast Des Moines (Polk County) where 7.1 inches were observed. Shortly thereafter, a winter storm moved into Iowa from the southwest during the early morning hours of the 11<sup>th</sup>. Eastern Iowa received the brunt of the snowfall, ranging from six to eight inches; Strawberry Point (Clayton County) reported 10.1 inches of new snow. The southwestern quadrant of Iowa generally reported snowfall totals between two to four inches. One of the most potent and widespread winter storms of the season moved through the state between the 16<sup>th</sup> and the 17<sup>th</sup>. The highest snowfall totals occurred in a narrow band between Red Oak (Montgomery County) northeast to Waterloo (Black Hawk County). Atlantic (Cass County) observed 10.7 inches. Three-quarters of Iowa received snowfall above five inches. A relatively fast system propagated across Iowa over a 24-hour period beginning late afternoon on the 19<sup>th</sup>. Measurable snow fell across the entire state with the northeastern and northwestern corners of Iowa receiving six to ten inches; locally heavier amounts were reported in New Hampton (Chickasaw County) and Ringsted (Emmet County) where nine inches were measured. The final winter storm of February produced all forms of precipitation, from rain in southeastern Iowa to sleet, freezing rain and snow moving northwest. A

Blizzard Warning was issued for much of northwestern Iowa. A sharp gradient in snowfall was also present along and west of a line from Creston (Union County) through Des Moines to Waterloo; Polk County stations reported between one to three inches. Webster County, two counties to the northwest, reported totals between nine and eleven inches. Forest City (Winnebago County) measured 12 inches. Precipitation totals varied across the state from 4.83 inches at Muscatine (Muscatine County) to 1.32 inches in Sioux City (Woodbury County); statewide precipitation was above average at all stations. Several winter systems moved through Iowa during the month, leaving behind a statewide average snowfall of 22.6 inches, making this February the snowiest on record. New Hampton (Chickasaw County) reported 41.5 inches of snowfall while Bloomfield (Davis County) observed only 4.6 inches.

Winter Summary: Iowa temperatures for the three winter months of December, January and February averaged 20.7 degrees or 1.4 degrees below normal while precipitation totaled 5.84 inches, 2.53 inches more than normal. This ranks as the 56<sup>th</sup> coldest and 3<sup>rd</sup> wettest winter among 147 years of records.

Outlook: Soil profiles across Iowa's northwestern two-thirds are still frozen to a depth of one to two feet as of the beginning of March. The southeastern part of the state has a frost depth less than 11 inches; four inch soil temperatures are at or above freezing in this region with temperatures ranging into the mid to upper 30s in the extreme southeastern counties. Current short-term outlooks show one last blast of frigid air into the first week of March. After this, longer days and a gradual increase in air temperatures will allow frozen soil to gradually thaw. The current Climate Prediction Center outlook favors a cooler than normal March with an equal change for above, below or climatologically normal precipitation. There is also a probability of wetter than average conditions moving into spring. Drought continues to be absent from the Midwest with only abnormally dry (D0) conditions over the panhandle of Nebraska. Drought and abnormally dry conditions have not been present in Iowa since November 6<sup>th</sup>, 2018 due to an extremely wet autumn and continuing above average wetness across the state. Current modeled soil moisture rankings have most of Iowa at the 99<sup>th</sup> percentile; southwest Iowa is ranked at the 95<sup>th</sup> percentile. These percentile rankings indicate surplus top and sub-soil moisture moving into the growing season. The above average snowpack across the northern two-thirds of Iowa has a snow-water equivalent of two to four inches of water. Combined with ample sub-surface moisture, infiltration of additional precipitation or melted snow may be impeded and increase surface run-off into streams and rivers.

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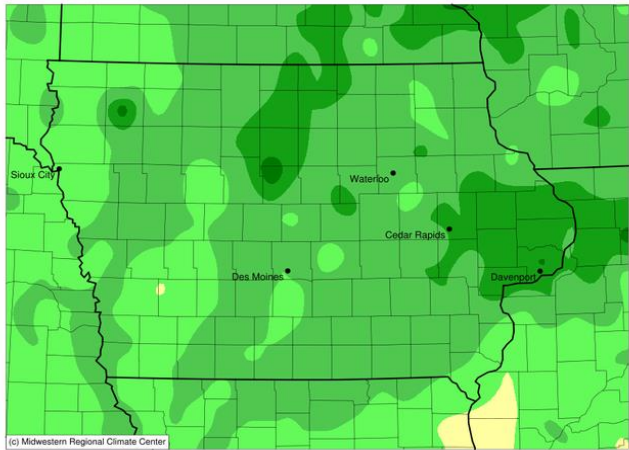
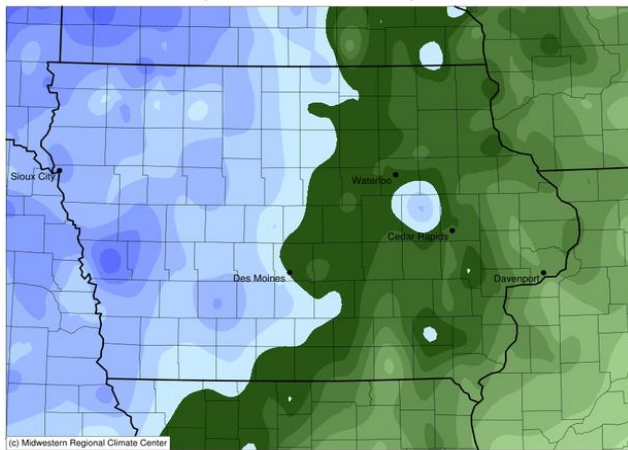
# February 2019

## WEATHER BY DISTRICTS

DISTRICT	TEMPERATURE (F)		HEATING DEGREE DAYS				PRECIPITATION (inches)				SNOWFALL Feb 2019
	February 2019		February 2019		Since Jul., 1, 2018		February 2019		Since Jan.1, 2019		
	Average	Departure*	Average	Departure*	Average	Departure*	Average	Departure*	Average	Departure*	Average
Northwest	10.1	-11.2	1516	+313	6107	+388	1.70	+1.06	1.91	+0.60	22.9
North Central	10.8	-9.6	1490	+268	6087	+330	2.76	+1.90	3.52	+1.83	32.7
Northeast	14.6	-7.3	1379	+177	5878	+228	2.66	+1.56	4.41	+2.29	27.0
West Central	12.6	-11.3	1428	+304	5669	+366	1.72	+0.90	1.94	+0.34	23.5
Central	15.0	-8.8	1384	+250	5585	+296	2.40	+1.38	3.48	+1.54	25.8
East Central	18.7	-6.6	1271	+156	5377	+232	3.55	+2.21	5.68	+3.19	16.6
Southwest	16.0	-11.0	1357	+307	5343	+431	1.86	+0.82	2.80	+0.95	19.6
South Central	17.8	-8.8	1293	+244	5216	+346	2.44	+1.20	4.48	+2.35	14.1
Southeast	22.4	-5.5	1145	+103	5057	+280	2.67	+1.11	5.17	+2.34	7.3
STATE	15.1	-8.9	1369	+239	5583	+313	2.53	+1.48	3.77	+1.80	22.6

\* Departures are computed from 1981-2010 normals. Monthly estimates are preliminary and are likely to change.  
 The weather data in this report are based upon information collected by the U. S. Dept. of Commerce, NOAA National Weather Service.

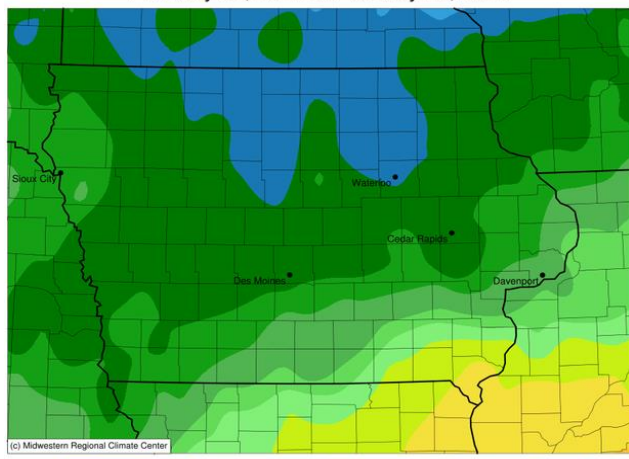
**Average Temperature (°F): Departure from 1981-2010 Normals Accumulated Precipitation (in): Departure from 1981-2010 Normals**  
 February 01, 2019 to February 28, 2019



-18 -13 -8 -3 2  
 Stations from the following networks used: WBAN, COOP, FAA, GHCN, ThreadEx, CoCoRaHS, WMO, ICAO, NWSLI, Midwest Regional Climate Center  
 cli-MATE: MRCC Application Tools Environment  
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 Stations from the following networks used: WBAN, COOP, FAA, GHCN, ThreadEx, CoCoRaHS, WMO, ICAO, NWSLI, Midwest Regional Climate Center  
 cli-MATE: MRCC Application Tools Environment  
 Generated at: 3/5/2019 12:45:44 AM CST

**Accumulated Snowfall (in)**  
 February 01, 2019 to February 28, 2019



0.01 1 2.5 5 7.5 10 15 20 30 40 50 60 80