

## IOWA MONTHLY WEATHER SUMMARY – MARCH 2019

General Summary: Iowa temperatures averaged 31.1 degrees or 4.8 degrees below normal while precipitation totaled 2.19 inches or 0.04 inches above normal. This ties 1885 as the 33<sup>rd</sup> coldest March in 147 years of statewide observational records. March 2019 was also the 51<sup>st</sup> wettest March on record, tying 1892. A colder March last occurred in 2014; a wetter March was last recorded last year.

Temperatures: Below average temperatures experienced in February across Iowa continued through March. The first eleven days of the month were unseasonably cold with March 3<sup>rd</sup> and 4<sup>th</sup> being the coldest two days of the month. Daytime highs on the 3<sup>rd</sup> ranged from the single digits in southern Iowa to negative single digits in the north. Overnight lows into the 4<sup>th</sup> were negative at all NWS coop stations. A brisk northwest wind pushed wind chill values into the -30s across northern Iowa; Estherville Municipal Airport (Emmet County) reported a wind chill value of -42 degrees. March 12<sup>th</sup> through the 14<sup>th</sup> had above average temperatures statewide due to a warm front that lifted into the state ahead an intense low pressure system propagating into the Midwest from Colorado. A strong pressure gradient developed across Iowa on the 13<sup>th</sup>, producing strong southeasterly winds that boosted highs and lows across southern Iowa into the upper 50s. Both daytime highs and overnight lows remained above freezing for an extended period of time leading to rapid melting of the anomalously deep snowpack across the central and northern Iowa. As the low moved northeast through western Iowa the central pressure dropped to 985 millibars, making this “bomb cyclone” one of the strongest lows across the continental US in decades. A bomb cyclone is defined as a low that strengthens at least 24 millibars in 24 hours. Colder than average air moved into Iowa behind the system on the 15<sup>th</sup> and remained through the 18<sup>th</sup>. In total, 13 days were warmer than average across Iowa with the longest stretch of warm weather occurring between March 19<sup>th</sup> and the 28<sup>th</sup>. October 27<sup>th</sup> was the warmest day of this period; highs across the entire state were in the mid to upper 60s; southwest Iowa reported low 70s, 15 – 20 degrees above normal. Little Sioux (Harrison County) reported the month’s highest temperature of 73 degrees on the 27<sup>th</sup>. This reading was about 19 degrees warmer than expected. Lake Park (Dickinson County), Primghar (O’Brien) and Sibley (Osceola County) observed the month’s overnight low temperature of -20 degrees on the 3<sup>rd</sup>, an average of 38 degrees below normal.

Heating Degree Days: Home heating requirements, as estimated by heating degree day totals, averaged 14% more than normal. Heating degree day totals so far this season (since July 1st, 2018) are running 5% more than last season at this time and 9% more compared to last March.

Precipitation: Western and southern Iowa observed wetter than average conditions during March with the remainder of the state slightly below average. Multiple systems, generally fast moving, brought rain and snow showers across much of Iowa during the first 10 days of March. Snow totals generally ranged between one to three inches statewide with extreme north and western totals in the four to eight inch range. A winter system moved through Iowa on the 6<sup>th</sup> and 7<sup>th</sup>, bringing measurable snow to the southwestern two-thirds of the state. Snow totals were generally in the two to four inch range. The most notable event of the month occurred between March 12<sup>th</sup> and 14<sup>th</sup> when an anomalously strong low pressure system (bomb cyclone) moved out of Colorado toward Nebraska and Iowa. Scattered showers and a few thunderstorms moved through Iowa beginning late morning on the 12<sup>th</sup>; thunderstorms with locally heavy rain moved

through central Iowa later that evening. Eastern Nebraska experienced extremely heavy rainfall transitioning to blizzard conditions moving farther west. Western Iowa was on the warmer and relatively drier side of the system, though the spatial extent of the low pressure brought measurable rainfall to the entire state through the 14<sup>th</sup>; nearly 50 stations reported totals above one inch with Little Sioux (Harrison County) observing 3.17 inches. Above freezing temperatures, combined with heavy rainfall on top of a substantial snowpack and frozen soil led to rapid melting and runoff into streams and river across the state. Historical flooding occurred in western Iowa and eastern Nebraska as all levees below Council Bluffs (Pottawattamie County) were breached. Locations in Mills and Fremont counties experienced extensive damage. The week following this event was generally quiet with spring-type showers moving through portions of Iowa every few days. The final week of March was dry until showers moved into the southern quarter of Iowa ahead of a cold front on the 28<sup>th</sup> becoming more widespread the 29<sup>th</sup> into the morning of the 30<sup>th</sup>. The state's southern third observed rain totals above 0.50 inches with totals ranging from one to nearly three inches along the eastern half of the Iowa/Missouri border. Monthly precipitation totals (rain plus liquid equivalent of snow) varied from only 0.59 inches at Marshalltown (Marshall County), 1.69 inches below average to 5.24 inches at Keokuk (Lee County), 2.66 inches above average. The statewide average snowfall was 2.20 inches or 2.50 inches below average. Sibley (Osceola County) reported 9.5 inches of snow, 1.6 inches above average. This ranks as the 28<sup>th</sup> lowest March total in 132 years of statewide observational records.

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# March 2019

## WEATHER BY DISTRICTS

DISTRICT	TEMPERATURE (F)		HEATING DEGREE DAYS				PRECIPITATION (inches)				SNOWFALL Mar 2019 Average
	March 2019 Average	Departure*	March 2019 Average	Departure*	Since Jul., 1, 2018 Average	Departure*	March 2019 Average	Departure*	Since Jan.1, 2019 Average	Departure*	
Northwest	28.7	-4.4	1125	+160	7254	+570	2.51	+0.63	4.56	+1.37	3.5
North Central	28.0	-4.8	1147	+171	7251	+518	1.73	-0.23	4.90	+1.25	2.9
Northeast	28.6	-5.5	1128	+171	7050	+443	1.40	-0.57	5.82	+1.73	1.7
West Central	31.1	-4.6	1051	+168	6733	+547	2.30	+0.19	4.34	+0.63	2.4
Central	31.2	-4.7	1048	+164	6647	+474	1.59	-0.60	4.94	+0.81	1.9
East Central	32.6	-4.6	1004	+140	6440	+431	1.86	-0.42	7.21	+2.44	1.6
Southwest	33.3	-5.1	983	+175	6319	+599	3.01	+0.78	5.98	+1.91	2.8
South Central	33.8	-4.4	967	+158	6213	+534	2.88	+0.59	7.26	+2.84	2.0
Southeast	34.7	-4.8	939	+141	6110	+535	2.88	+0.31	8.34	+2.94	1.5
STATE	31.1	-4.8	1042	+159	6644	+491	2.19	+0.04	5.81	+1.69	2.2

\* 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**    **Accumulated Precipitation (in): Departure from 1981-2010 Normals**  
 March 01, 2019 to March 31, 2019

