

IOWA ANNUAL WEATHER SUMMARY – 2019

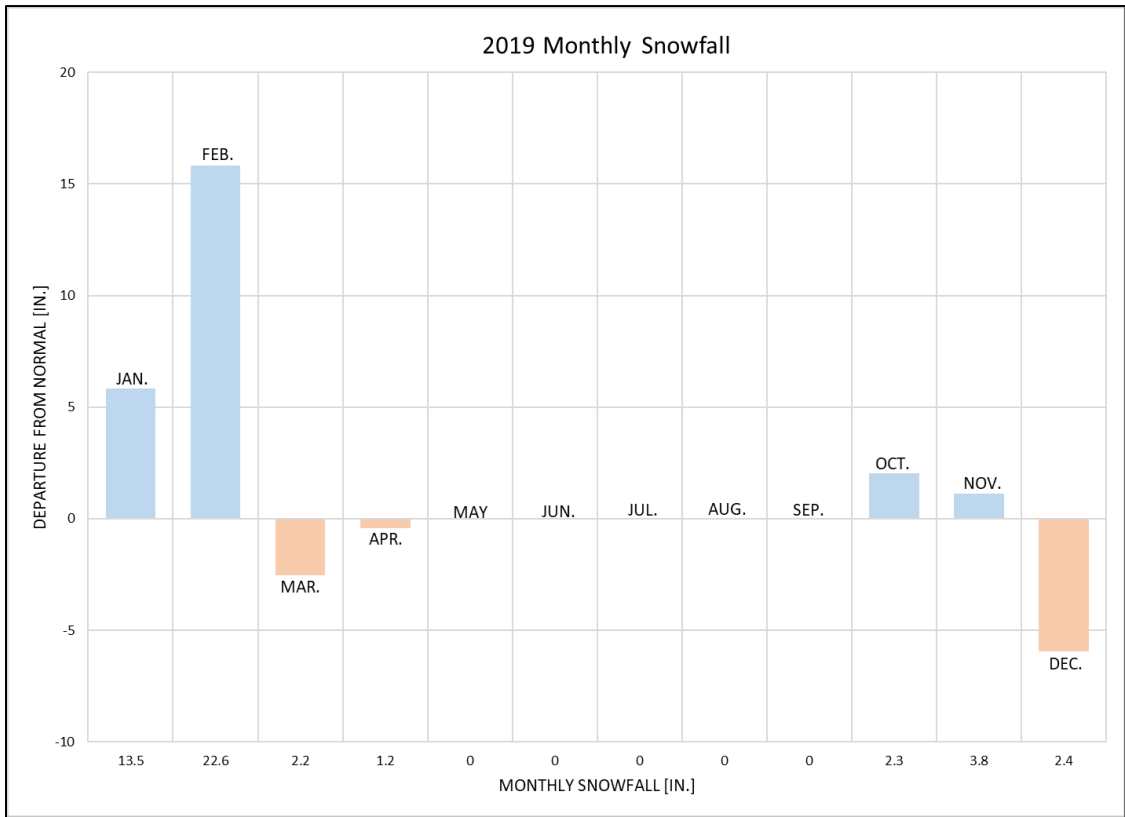
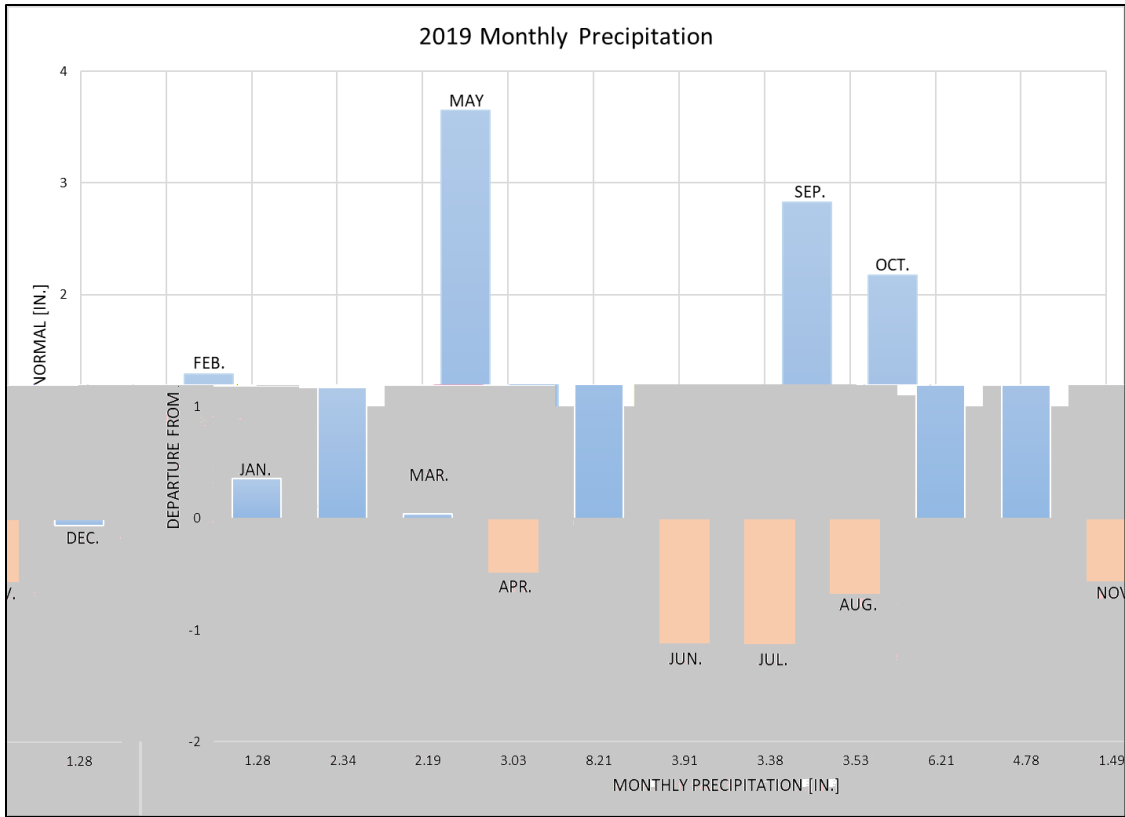
General Summary: Iowa temperatures averaged 46.8 degrees or 1.2 degrees below normal while precipitation totaled 41.63 inches or 6.36 inches more than normal. This ranks as the 29th coldest and 12th wettest year on record. A colder year was last recorded in 2014. A wetter year occurred last year with 45.08 inches falling across the state, making it the 2nd wettest year on record. In fact, the 24-month period from January 2018 through December 2019 is the wettest two-year period on record. This is also the 8th snowiest calendar year among 132 years of records, tying with 1905 at 48.0 inches, 15.8 inches above average. A snowier year was last reported in 2008 when an average of 49.3 inches fell.

Precipitation: January was slightly wetter than normal with 13.5 inches of snow falling, almost double the expected snowfall of 7.2 inches. February, on the other hand, saw very wet and snowy conditions with 2.34 inches of precipitation reported, making it the 7th wettest on record. Snowfall also amounted to a statewide average of 22.6 inches, 15.8 inches above normal, making it the snowiest February in 132 years of records. Parts of north-central Iowa reported accumulations between 30 to 40 inches; Algona and Swea City reported 41 inches. In general, winter saw 5.72 inches of precipitation and 38.9 inches of snow, ranking it as the 3rd wettest and 8th snowiest.

March and April were generally drier than average, especially in southwestern Iowa where stations reported over 2.50 inches of below average precipitation. Much of these deficits were eased or removed after the 5th wettest May on record brought 8.21 inches of rain, 3.65 inches above normal. Due to May's wetness, Spring 2019 ended up ranking as the 6th wettest on record with 13.43 inches of precipitation; this reading was 3.21 inches above normal.

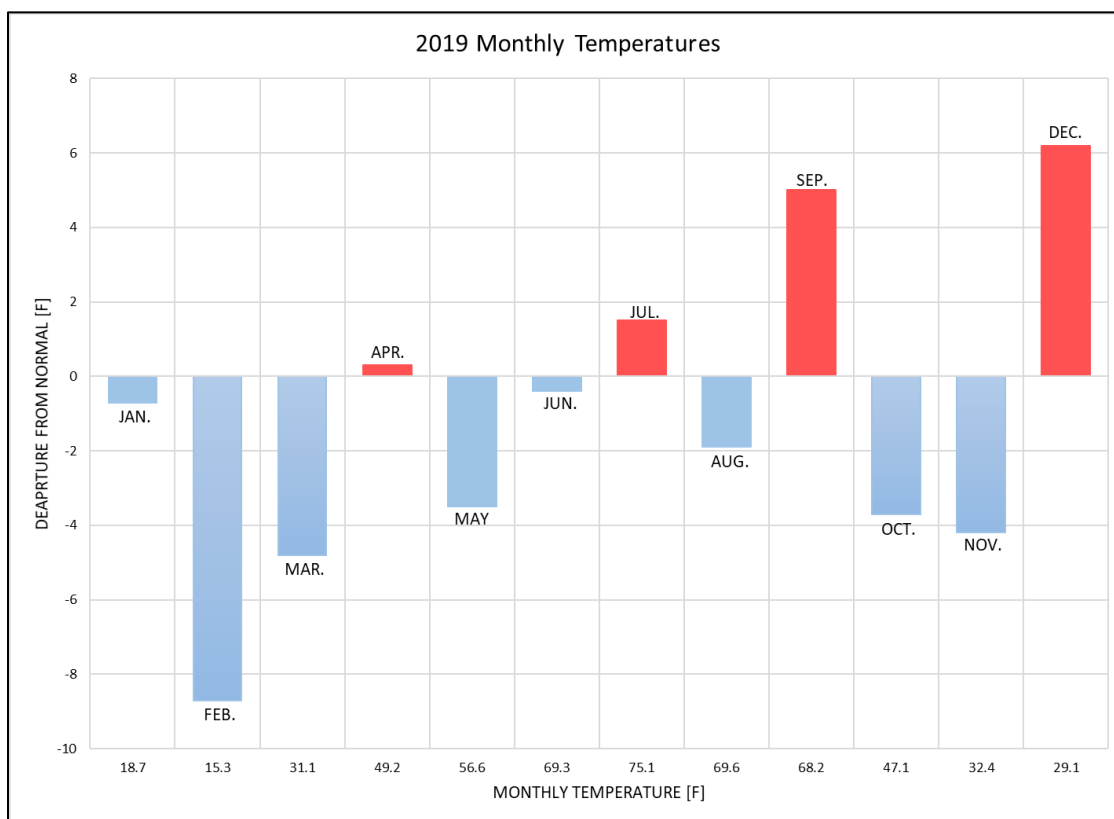
All three summer months reported below normal rainfall, though subsoil conditions helped mitigate meteorological dryness and agricultural stresses, aided by above-normal rainfall over the previous several months. Summer ended with 10.82 inches of rain, 2.89 inches below average and ranking it as the 41st driest since statewide record keeping started in 1872.

Wetness returned to Iowa during the 15th wettest September with 6.21 inches of rain, 2.83 inches above normal. All National Weather Service coop stations reported above-average totals, the highest of which were found in northeastern Iowa. Seventeen stations broke their September rainfall records with Dubuque #3 reporting 13.99 inches of rain for the month's highest total. October continued the wet trend as a majority of stations across Iowa's northwestern three-quarters reported above-normal precipitation. With 4.78 inches of precipitation, including the liquid-equivalent of 2.3 inches of snow, October was the 8th wettest and 5th snowiest on record. Slight precipitation deficits were reported for November. All-in-all, fall ranked as the 7th wettest on record with 12.48 inches of precipitation, 4.41 inches more than the 30-year average. December closed out the year with wetter than normal conditions across northwestern Iowa though drier conditions prevailed over the rest of Iowa.



Temperature: Iowa experienced variable temperature behavior during 2019, though eight months of the year had below average temperatures. January was trending warmer than average until the last three days of the month as an Arctic intrusion brought bitterly cold temperatures to much of the Midwest. Daytime highs, overnight lows and wind chill values were the lowest observed since 1996. Multiple overnight lows and record low daytime highs were also broken. The coldest conditions were reported near sunrise on January 30th with temperatures ranging from the -20s in southern Iowa to -30s in northern Iowa. Wind chill readings plummeted into the -50s in northern Iowa; Estherville Municipal Airport (Emmet County) reported a wind chill temperature of -59 degrees. Coldness persisted into February, where temperatures averaged 8.7 degrees below normal and ranking it as the 16th coldest February on record. Winter ended slightly below normal at 20.7 degrees, 1.4 degrees below normal. Spring into early summer trended on the cooler side with Spring 2019 ending up 2.7 degrees below normal. Summer conditions were cooler than average as well with only July having unseasonable warmth, at 1.5 degrees above the normal of 73.6 degrees. Summer ended slightly below average at 71.3 degrees, 0.3 degrees below normal.

Late year warmth returned to Iowa with the 9th warmest September on record. Statewide conditions were above average for a majority of the month with the average temperature five degrees above the normal of 63.2 degrees. October conditions reversed course and ended up at 3.7 degrees below normal and ranking it as the 13th coldest on record. November and December repeated behavior similar to the end of 2018. At 32.4 degrees, November's average temperatures was 4.2 degrees below normal, while December's average temperature of 29.1 was 6.2 degrees above normal.



2019 Statewide Monthly Temperature Extremes							Statewide Monthly Rank*	
Month	Max. Temp.	Day	Location	Min. Temp.	Day	Location	Temperature	Precipitation
January	64	7th	Keokuk	-35	31st	Manchester Maquoketa Vinton	71st coldest	43rd wettest
February	59	3rd	Shenandoah	-20	19th	Pocahontas	16th coldest	7th wettest
March	73	27th	Little Sioux	-20	3rd	Lake Park Primghar Sibley	33rd coldest	51st wettest
April	87	21st	Clarinda	16	1st	Denison	72nd warmest	77th driest
			Lamoni			Little Sioux		
			Red Oak					
May	94	16th	Clarinda	28	1st	Cresco	22nd coldest	5th wettest
June	99	30th	Spencer	39	13th	Guttenberg	64th coldest	56th driest
July	99	19th	Little Sioux	48	31st	Cresco	51st warmest	64th driest
August	92	5th	Muscatine	47	31st	Fayette	31st coldest	71st driest
September	93	15th 17th 18th	Multiple south-central stations	41	28th	Estherville	9th warmest	14th wettest
October	90	1st	Donnellson Lamoni	13	31st	Sanborn	13th coldest	8th wettest
November	65	9th	Little Sioux	-8	12th	Rockwell City	22nd coldest	69th driest
December	64	25th	Centerville Keosauqua Lamoni	-6	12th	Lake Park	25th warmest	87th driest

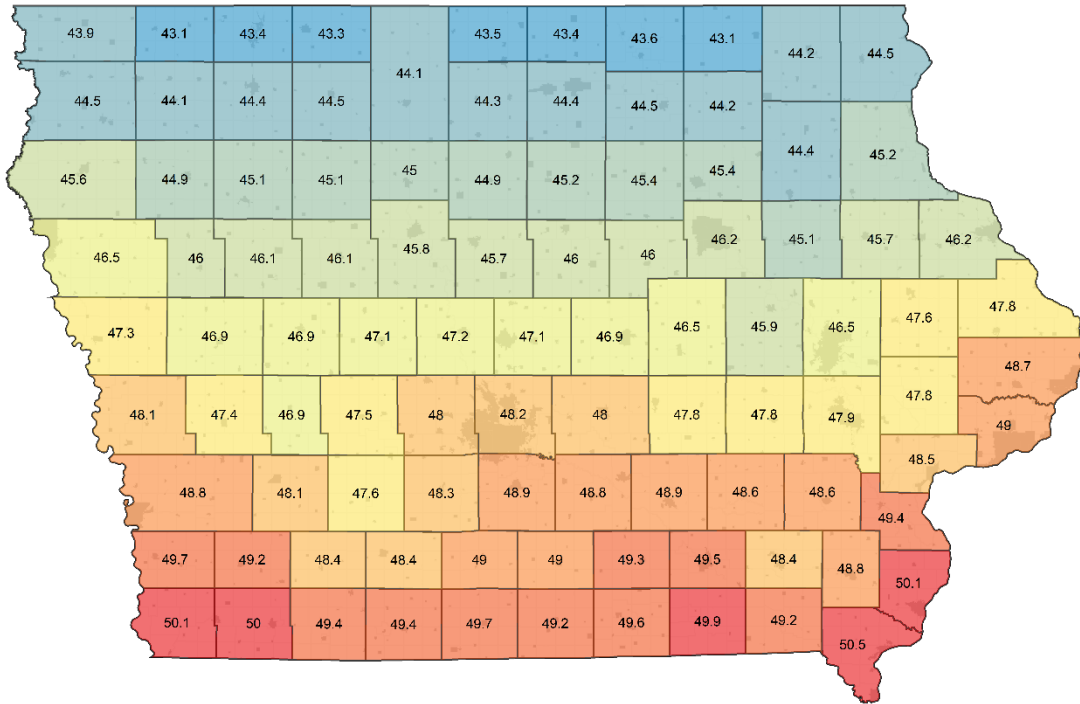
Drought Monitor: The year began with no abnormally dry (D0) or drought conditions across Iowa, as surface conditions were saturated from the third wettest fall and winter on record. Wet conditions continued through the spring months. It wasn't until early summer that conditions started to dry out across parts of Iowa. On July 23rd, Abnormally Dry (D0) conditions were introduced into Iowa for the first time since October 30th, 2018. Eleven counties in eastern Iowa and eight counties in southwestern Iowa had partial to full coverage representing 11.23% of the state.

On July 30th, the eastern D0 regions expanded northwest into seven new counties and a new region encompassing nine counties was introduced into central Iowa. With this expansion, D0 conditions covered 23.48% of Iowa. Abnormally Dry (D0) conditions continued to expand across Iowa in August, covering a little over 41% of the state. Moderate Drought (D1) conditions were also introduced into eastern and central Iowa on August 13th, as precipitation deficits continued to accumulate. As of September 3rd, D1 conditions covered almost 12 percent of Iowa.

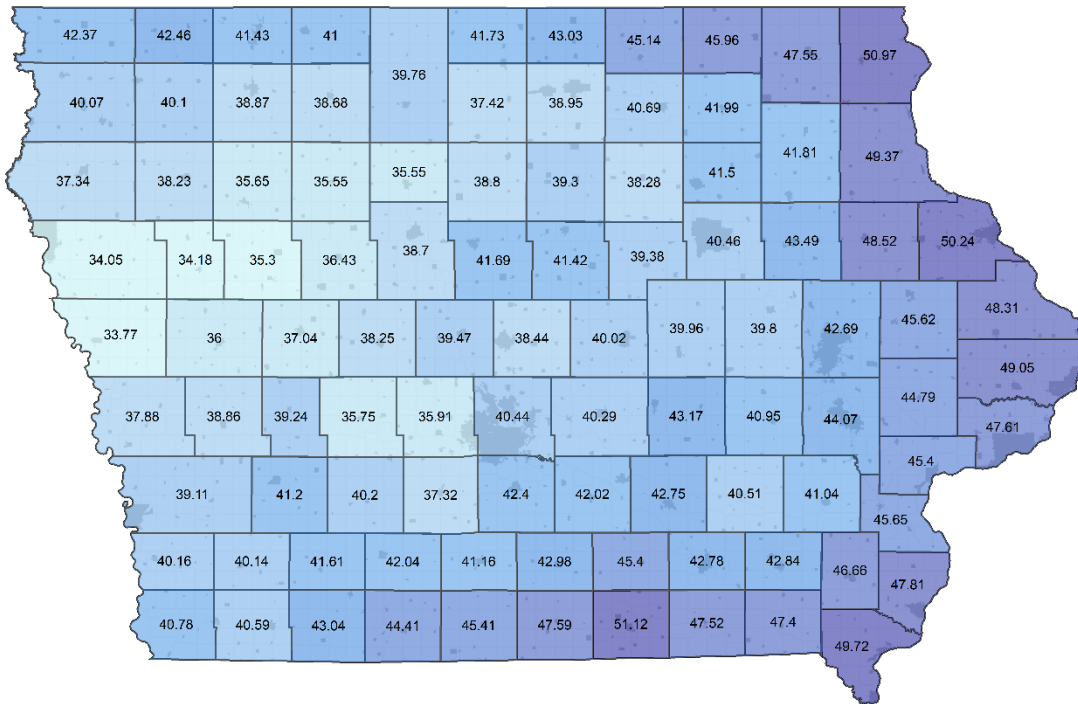
Abnormally Dry (D0) conditions peaked during the first week of September, covering 41% of the state. Moderate Drought (D1) conditions also covered the largest aerial extent at 12%, concentrating in central and eastern Iowa. As rainfall totals increased across the state through the month, D0 conditions continued to shrink from west to east; D1 also followed this pattern and were completely removed during the week of September 24th. With abnormally wet conditions during September into October, abnormally dry (D0) conditions were completely removed from Iowa as of the first week of October.

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2019 County-Level Average Temperatures (°F)



2019 County-Level Precipitation Totals (inches)



2019 County-Level Precipitation Totals, Departure from Normal (inches)

