

## IOWA MONTHLY WEATHER SUMMARY – JUNE 2019

General Summary: Iowa temperatures averaged 69.3 degrees or 0.4 degrees below normal while rainfall totaled 3.91 inches or 1.11 inches below normal. This was the 56<sup>th</sup> driest June on record; a drier June last occurred in 2017. This was also the 64<sup>th</sup> coldest June in 147 years of statewide records, tying 1910; a cooler June last occurred in 2013.

Temperatures: Average temperatures for June were near the 30-year climatological normal for the month due to distinct periods of warmer and cooler than average temperatures. There were 15 days in which temperatures were below average across Iowa with two periods of extended coolness. The first stretch of days occurred from the 9<sup>th</sup> through the 13<sup>th</sup> where the statewide average temperature was 63.2 degrees, seven degrees below average; Estherville Municipal Airport (Emmet County) reported a low of 40 degrees on the 13<sup>th</sup>, 17 degrees below average. June 12<sup>th</sup> was the coldest day of the month with average temperatures 11 degrees below normal. The longest stretch occurred between the 17<sup>th</sup> and 24<sup>th</sup> during a period of cloud cover and multiple waves of showers and thunderstorms. High temperatures were generally in the low to mid 70s north and mid to upper 70s south, six to ten degrees below average.

There were 10 days of above average temperatures across Iowa spanning two five day periods. June 4<sup>th</sup> through the 8<sup>th</sup> had an average temperature of 73.0 degrees, five degrees above average. Hawarden and Sioux Center (Sioux County), as well as Rock Rapids (Lyon County) reported highs of 91 degrees on the 6<sup>th</sup>; these readings were on average 13 degrees above normal. The last five days of June were unseasonably warm with average temperatures at 79.0 degrees, six degrees above normal. June 29<sup>th</sup> was the month's warmest day. The average high was 93 degrees, nine degrees above average, while the average low was also nine degrees above average at 71 degrees.

Spencer Municipal Airport (Clay County) reported the month's high temperature of 99 degrees on the 30<sup>th</sup>, 15 degrees above normal. The coolest daytime high of 63 degrees was reported at Northwood (Worth County) on the 11<sup>th</sup> and Sibley (Osceola County) on the 23<sup>rd</sup>, 14 and 19 degrees below average, respectively. Guttenberg Lock and Dam (Clayton County) reported the month's low temperature of 39 degrees on the 13<sup>th</sup>, 21 degrees below average.

Cooling Degree Day Totals: Home air conditioning requirements, as estimated by cooling degree day totals, averaged 7% less than normal and 56% more than seen during June 2018, which was the tenth warmest on record. Cooling degree day totals are running 20% less than normal and 54% less than last year at this time.

Precipitation: A majority of Iowa experienced drier than normal conditions in June. Portions of west-central Iowa had rainfall deficits between two and three inches. Sections of southeastern and northeastern Iowa had above average rainfall, ranging from one to two inches. Rainfall totals for the month varied from 1.48 inches in Audubon (Audubon County), 3.49 inches below average to 7.66 inches in New Hampton (Chickasaw County), 2.17 inches above average.

A fast moving wave of showers and thunderstorms entered western Iowa in the early morning hours of the 3<sup>rd</sup>. The system moved through southern Iowa for most of the day until it dissipated Monday evening. Rain totals were highest in southwestern and eastern Iowa with lighter totals in between. Randolph (Fremont County) reported 1.55 inches, while across the state in Dubuque (Dubuque County), 1.67 inches was reported, 1.36 inches above average. The swath of Iowa in between generally saw totals from 0.10 to 0.50 inches. June 4<sup>th</sup> was active across northeastern Iowa as showers and thunderstorms moved through from late evening through early morning on the 5<sup>th</sup>. Rain totals were highest in the northeast quadrant with four stations reporting above an inch; Cascade (Dubuque County) reported 1.77 inches. Remaining totals across this region ranged from 0.25 to 0.75 inches with an average total around 0.44 inches. A low and attendant cold front continued to move through on the 12<sup>th</sup>, bringing measurable rain across much of Iowa. Two-day rain totals, reported at 7:00 am on the 13<sup>th</sup>, ranged from 0.10 inches in Van Meter (Dallas County) to 0.86 inches in Waukon (Allamakee County).

As the afternoon progressed, strong storms began to pop-up in central Iowa and eventually consolidated into a squall line that moved into eastern Iowa during the evening hours. There were pockets of moderate to heavy rainfall with totals ranging from 0.22 inches in Dakota City (Humboldt County) to 2.28 inches in Toledo (Tama County); nearly 20 stations reported measurements above one inch. The statewide average rainfall was 0.74 inches, 0.57 inches above average.

A weak low pressure system moving through northern Missouri brought showers to southern Iowa early on the 19<sup>th</sup>. Additional development over central and southeastern Iowa during the afternoon and evening hours brought locally heavy rainfall to a handful of stations across three counties in extreme southeast Iowa; Salem (Henry County) reported 2.74 inches while Keokuk Lock and Dam (Lee County) observed 1.77 inches. A stagnant low pressure system sat over the Midwest beginning on the 20<sup>th</sup>, bringing waves of showers and thunderstorms through the weekend. Isolated showers and a few thunderstorms moved through Iowa during Thursday morning and afternoon. Western Iowa reported the highest totals with Sac City (Sac County) observing 2.40 inches, 2.21 inches above average.

June 21<sup>st</sup> started off very wet as a line of strong thunderstorms sped across the state, leaving measurable rainfall at most stations. A second round of storms moved through southern Iowa in the late night hours into 22<sup>nd</sup>. Rain totals at 7:00 am were highest in central Iowa with Des Moines International Airport (Polk County) reporting 2.41 inches. Locations east and west had general totals between 0.20 and 1.00 inch; 20 stations reported over an inch with the statewide average at 0.45 inch, 0.28 inch above average. Thunderstorms moved into southwestern Iowa during the late afternoon and moved into central and eastern Iowa during the late evening hours. Some locations experienced torrential downpours and flash flooding in central Iowa from the large convective complex. The system slowly moved through Iowa into the morning of the 23<sup>rd</sup>. Rain totals ranged from 0.01 inch in Sac City (Sac County) to 1.98 inches in Des Moines (Polk County).

June 25<sup>th</sup> was another active weather day for Iowa's southern half. Thunderstorms began to pop up in the early afternoon hours with some becoming severe. Rainfall totals were in the general range of 0.25 to 1.00 inches across the southern third of Iowa. Locally heavy rain also accompanied some of these thunderstorms; Creston (Union County) reported 1.92 inches, 1.78 inches above average. Another organized convective system moved through eastern Iowa on the 27<sup>th</sup> producing locally heavy rainfall.

Thirteen stations reported rainfall above two inches with New Hampton (Chickasaw County) observing 3.52 inches, 3.34 inches above normal.

A large swath of east-central Iowa experienced thunderstorms on the 28<sup>th</sup> as a mesoscale convective system (MCS) moved south from Minnesota. The storms intensified as they moved into southern Iowa, producing locally heavy downpours. Much of eastern Iowa observed measurable rain with totals along the path of the MCS between 0.50 and 1.00 inch. Eight stations reported totals over an inch with Albia (Monroe County) observing 1.68 inches.

Severe Weather: Severe weather was reported on 14 days during June, mainly attributed to severe straight-line winds. There were multiple days in which severe weather was observed across a large portion of the state, the first being June 15<sup>th</sup>. Thunderstorms quickly began firing in an unstable atmosphere, initially across northern and eastern Iowa. Many of the thunderstorms turned severe almost immediately with multiple reports of hail and straight-line winds across 12 counties. A land spout tornado also reportedly caused barn damage in Whitten (Hardin County).

June 25<sup>th</sup> was another active severe weather day for Iowa's southern half. Thunderstorms began to pop up in the early afternoon hours. Thunderstorms continued to form over this region into the nighttime hours. There were multiple reports of hail across nine counties with Murray (Clarke County) reporting a 2.00 inch hailstone. There were also a few reports of severe straight-line winds causing tree damage from Decatur to Davis counties. Strong thunderstorms, some of which turned severe, moved across northern Iowa during the early morning hours of the 27<sup>th</sup>. Multiple occurrences of severe straight-line winds and large hail were reported from Sioux County to Jones County. Spencer (Clay County) reported a wind gust of 73 mph. Overall, nine counties were impacted.

Severe storms moved through east-central Iowa on the 28<sup>th</sup>. The storms intensified as they moved into southern Iowa, producing downpours and severe straight-line wind reports from Marion County to Des Moines County; 11 counties had high wind reports with minor tree and/or structural damage. Bloomfield (Davis County) also reported quarter-sized hail. On the 30<sup>th</sup> an intense squall line moved from north central Iowa through eastern Iowa producing severe wind reports across 20 counties causing tree and structural damage. Sustained wind gusts varied from 58 mph in Burlington (Des Moines County) to 76 mph in Dubuque (Dubuque County).

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June 2019										
WEATHER BY DISTRICTS										
DISTRICT	TEMPERATURE (F)		COOLING DEGREE DAYS				PRECIPITATION (inches)			
	June 2019		June 2019		Since Jan., 1, 2019		June 2019		Since Jan.1, 2019	
	Average	Departure*	Average	Departure*	Average	Departure*	Average	Departure*	Average	Departure*
Northwest	69.0	+0.2	145	-16	155	-62	3.32	-1.41	19.57	+4.71
North Central	68.0	-0.3	118	-35	128	-77	3.53	-1.66	19.01	+2.12
Northeast	67.1	-1.4	105	-32	115	-64	5.25	+0.15	21.43	+4.16
West Central	69.9	+0.0	168	-13	192	-52	2.90	-2.01	16.18	-0.35
Central	69.4	-0.2	145	-32	166	-74	4.29	-1.07	19.95	+2.16
East Central	69.3	-0.9	150	-25	177	-61	4.13	-0.82	23.92	+6.47
Southwest	70.8	-0.2	196	-6	237	-41	3.40	-1.73	19.93	+2.04
South Central	70.4	+0.2	173	-20	207	-56	3.89	-1.05	23.61	+5.48
Southeast	70.3	-1.2	180	-24	221	-61	4.57	-0.25	27.17	+8.48
STATE	69.3	-0.4	163	-22	190	-60	3.91	-1.11	20.96	+3.76

\* 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**  
 June 01, 2019 to June 30, 2019

**Accumulated Precipitation (in)**  
 June 01, 2019 to June 30, 2019

