

## IOWA MONTHLY WEATHER SUMMARY – JUNE 2020

General Summary: Temperatures averaged 72.9 degrees or 3.2 degrees above normal while precipitation totaled 4.85 inches or 0.17 inch below normal. June 2020 ties 1954 and 2005 as the 18<sup>th</sup> warmest on record. The month also tied 1957 as the 66<sup>th</sup> wettest/82<sup>nd</sup> driest June in 148 years of statewide records. A warmer and wetter June last occurred in 2018 while a drier June occurred just last year.

Temperatures: Iowa experienced warmer than normal temperatures statewide during June. Positive departures were reported across the state with locations in western Iowa observing up to five degrees above normal; isolated pockets in eastern Iowa reported near-average conditions. June's statewide average maximum temperature was 83.7 degrees, 3.1 degrees above normal while the average minimum temperature was 62.1 degrees, 3.3 degrees above normal. Le Mars (Plymouth County), Sioux Center 2 SE (Sioux County) and Spencer Municipal Airport (Clay County) reported the month's high temperature of 100 degrees on the 2<sup>nd</sup>, on average 22 degrees above normal. Sioux Center 2 SE also reported 100 degrees on the 7<sup>th</sup>. Fayette (Fayette County) reported the month's low temperature of 44 degrees on the 1<sup>st</sup>, eight degrees below normal.

A few notable dates in June include the 2<sup>nd</sup> as the warmest day of the month, with daytime highs in the mid to upper 90s across a majority of Iowa. The hottest conditions were found in northwestern Iowa, where some stations reported triple digit heat indices. Multiple stations broke their high temperatures for the date with the statewide average high of 92 degrees, 15 degrees above normal. The 7<sup>th</sup> was windy, hot and sunny with highs reaching into the mid to upper 90s across much of Iowa. Skies remained clear overnight into the 8<sup>th</sup> with morning lows ranging from the upper 60s east to mid 70s west; the statewide average low was 69 degrees, 12 degrees above normal.

Cloudless conditions persisted overnight on the 14<sup>th</sup> and through the 15<sup>th</sup> as with gusty southerly winds across northwestern Iowa. High temperatures were again warmer in western Iowa, generally in the upper 80s with some 90-degree readings; upper 70s and low 80s were observed in eastern Iowa. Morning lows on the 16<sup>th</sup> remained in the upper 60s and low 70s across the western three-quarters of Iowa with positive departures of up to 15 degrees; Rock Rapids (Lyon County) reported a low of 72 degrees. In stark contrast and on the opposite corner of Iowa, Burlington Municipal Airport (Des Moines County) reported a low of 54 degrees, nine degrees below average.

Cooling Degree Days: Home air conditioning requirements, as estimated by cooling degree day totals, averaged 48% more than last June and 39% more than normal. Cooling degree day totals since January are running 44% more than last year at this time and 17% more than normal.

Precipitation: While the statewide average precipitation was near average, there couldn't be a starker contrast between eastern and western Iowa. Much of Iowa's eastern half reported totals from 2.00 inches to 6.00 inches above average. On the other hand, western Iowa reported precipitation deficits of up to 4.00". Monthly precipitation totals ranged from 0.46 inch at Atlantic Municipal Airport (Cass County) to 12.26 inches at Oelwein 1E (Fayette County).

Clouds began to increase as a warm front lifted through the state into the morning of the 1<sup>st</sup>, bringing light to moderate rain showers across portions of Iowa. Heavier rain fell in northern Iowa, especially from Worth through Howard counties, where Elma reported 0.92 inches. Amounts quickly tapered off to a few tenths of inch in the two immediate southwest counties. Showers and strong thunderstorms began to fire along a strong frontal boundary along the Iowa-Minnesota border during the evening hours of the 2<sup>nd</sup>. A few isolated severe thunderstorms re-fired in southwestern and central Iowa in the early morning hours of the 3<sup>rd</sup>. The system moved southeast through Iowa

and cleared the state just before noon. Rain totals were highest in eastern Iowa where multiple stations reported totals over an inch with lighter amounts farther west; Davenport Municipal Airport (Scott County) reported 1.91 inches.

June 4<sup>th</sup> was another active weather day as an initial line of thunderstorms popped up in the evening across eastern Iowa. Many of the storms turned severe and produced multiple reports of hail and straight-line winds. Locally heavy downpours were also observed. A second round of strong thunderstorms moved into north-central and eastern Iowa overnight into the 5<sup>th</sup>. Some thunderstorms turned severe and produced over 40 reports of severe straight-line winds as they sped through central Iowa. Wind gusts of up to 70 mph were observed in multiple counties with widespread damage to trees. Measurable rain was reported across Iowa's northeastern three-quarters in the range of 0.25 inch to over 1.00 inch. Storm Lake (Buena Vista County) reported 1.82 inches with the statewide average of 0.34 inch.

On the 8<sup>th</sup>, winds gradually shifted from the east across southeastern Iowa in advance of the remnants of Tropical Storm Cristobal. Now a tropical depression, the system entered Iowa from northeastern Missouri in the early morning hours of the 9<sup>th</sup>. Cristobal became only the second tropical system on record to move through Iowa with the first occurrence happening on September 11<sup>th</sup>, 1900. While the depression was fast moving and cleared the state just after 9:00 pm, very heavy rain was reported across eastern Iowa through the day. Behind Cristobal, a strong low pressure system and attendant cold front pushed through western Iowa and brought additional rain to much of the state. The mid-latitude system moved out of Iowa just after noon on the 10<sup>th</sup>. Two-day rain totals showed over 200 NWS coop stations and CoCoRaHS rain gauges reporting at least an inch with all Iowa stations observing measurable totals. Ten gauges across a narrow south-to-north swath in eastern Iowa observed over four inches; Vinton (Benton County) reported 4.11 inches while Stanley (Buchanan County) observed 4.65 inches. Storm totals in western Iowa were generally above 0.50 inch with the statewide average total at 1.53 inches. Windy and cooler conditions built in behind the systems as cloud cover cleared into the afternoon hours.

Clouds began to increase across western Iowa on the 18<sup>th</sup> as a low pressure center pushed into the state. Widespread rain was reported as showers and thunderstorms fired along a cold front during the afternoon hours. Some storms were strong to severe with a brief spin-up tornado reported in Lakota (Kossuth County). Measurable rain was reported over most of Iowa with more than 60 stations reporting over an inch. A rain gauge in Missouri Valley (Harrison County) reported 3.62 inches with the statewide average of 0.52 inch. The system continued into eastern Iowa on the 19<sup>th</sup> leaving behind rainfall in the state's eastern quarter. The heaviest totals were found in northeastern and southeastern Iowa. Lansing (Allamakee County) reported 3.46 inches while Keosauqua (Van Buren County) observed 3.04 inches.

Thunderstorms began popping up across eastern Iowa during the afternoon on the 21<sup>st</sup> ahead of a strong disturbance that produced some severe thunderstorms across northern Iowa over the evening hours. There were several reports of one-inch hail and severe straight-line winds in excess of 60 mph; Sheldon (O'Brien County) reported a 62 mph wind gust. Further development occurred in the early morning hours as the complex over eastern Iowa consolidated, bringing locally heavy downpours and strong wind gusts. Additional storms, some severe, formed in southern and central Iowa through the morning on the 22<sup>nd</sup> morning and moved east as another round fired in west-central Iowa. The cold front finally cleared Iowa overnight into the 23<sup>rd</sup> with two-day rain totals at 7:00 am showing the highest amounts in eastern Iowa, where flash flood warnings were in place. All Iowa stations reported measurable rainfall with much of Iowa's northeast quadrant observing totals above 1.50 inches. Nearly 70 stations reported totals over 2.00 inches with a statewide average rainfall of 1.17 inches; Clutier (Tama County) reported 5.17 inches.

Early on the 26<sup>th</sup>, waves of showers and thunderstorms propagated across the state ahead of a low pressure center. Some severe storms moved through eastern Iowa through the evening hours, while overnight into the 27<sup>th</sup> a sluggish boundary draped over southern Iowa re-fired slow moving storms. Higher rainfall was reported in the southeast with totals generally between a few tenths of an inch to over two inches; Washington (Washington County) observed 2.21 inches. Spotty thunderstorms popped up across east-central Iowa as an arc of thunderstorms pushed into southwestern Iowa along with a trailing shield of showers. Totals reported at 7:00 am on the 28<sup>th</sup> across Iowa's southern half ranged from a few tenths of an inch in the southwest dropping off farther east. Williamsburg (Iowa County) reported 0.93 inch after multiple storms passed over the station. Showers and thunderstorms continued to push through Iowa during the afternoon with isolated thundershowers popping up into the evening hours. Twenty-four hour totals showed widespread rainfall between 0.10 inch to 0.25 inch. Heavier pockets of rain were reported in southeastern Iowa, where Keokuk Lock and Dam (Lee County) observed 0.81 inch. Cloud cover increased across eastern Iowa through the daytime hours; a small disturbance over northeastern Missouri spun several lines of slow moving showers and thunderstorms over southeastern Iowa just after midnight on the 30<sup>th</sup>. The system lingered for most of the day with totals ranging from 0.08 inch at Burlington Municipal Airport (Des Moines County) to 1.26 inches at Fort Madison (Lee County).

Outlooks: July climatological outlooks indicate elevated chances of warmer than normal conditions across Iowa. In terms of precipitation, there are Equal Chances (EC) of above, below or near-average conditions. Initial short-term outlooks for the first two weeks of July show high probabilities of unseasonable warmth and chances of near-average to drier conditions. The current July-August-September outlooks indicate elevated chances of warmer and wetter conditions.

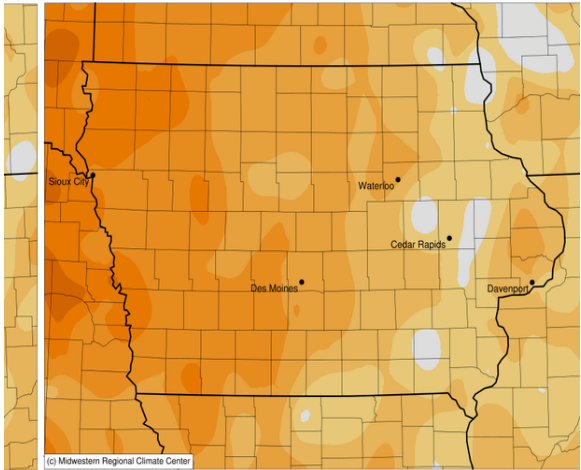
US Drought Monitor: With precipitation deficits accumulating across western Iowa, around 18% of the state was classified as D0 or "Abnormally Dry" by the US Drought Monitor at the end of June. Moisture stress from abnormally dry conditions manifests as rolled corn leaves and flipped soybean leaves. Lawns are also starting to go dormant. With warm and dry conditions continuing across portions of Iowa, D0 conditions will expand as well as the possibility of D1 or "Moderate Drought" conditions being introduced. Please send any impact reports that indicate agricultural dryness to the US Drought Monitor or to the contact information below.

Justin Glisan, Ph.D.  
State Climatologist of Iowa  
Iowa Dept. of Agriculture & Land Stewardship  
Wallace State Office Bldg.  
Des Moines, IA 50319  
Telephone: (515) 281-8981  
E-mail: Justin.Glisan@IowaAgriculture.gov

June 2020										
WEATHER BY DISTRICTS										
DISTRICT	TEMPERATURE (F)		COOLING DEGREE DAYS				PRECIPITATION (inches)			
	June 2020 Average	Departure*	June 2020 Average	Departure*	Since Jan., 1, 2020 Average	Departure*	June 2020 Average	Departure*	Since Jan. 1, 2020 Average	Departure*
Northwest	73.4	+4.6	265	+104	294	+77	3.42	-1.31	11.99	-2.87
North Central	71.9	+3.6	226	+73	257	+52	5.15	-0.04	15.71	-1.18
Northeast	70.0	+1.5	178	+41	200	+21	8.45	+3.35	19.85	+2.58
West Central	74.7	+4.8	299	+118	332	+88	2.88	-2.03	11.36	-5.17
Central	72.8	+3.2	248	+71	282	+42	5.33	-0.03	16.18	-1.61
East Central	71.8	+1.6	219	+44	249	+11	5.60	+0.65	17.74	+0.29
Southwest	75.3	+4.3	316	+114	364	+86	2.35	-2.78	12.33	-5.56
South Central	73.6	+3.4	268	+75	315	+52	3.82	-1.12	15.88	-2.25
Southeast	73.0	+1.5	251	+47	298	+16	6.43	+1.61	19.22	+0.53
STATE	72.9	+3.2	241	+67	274	+39	4.85	-0.17	15.52	-1.68

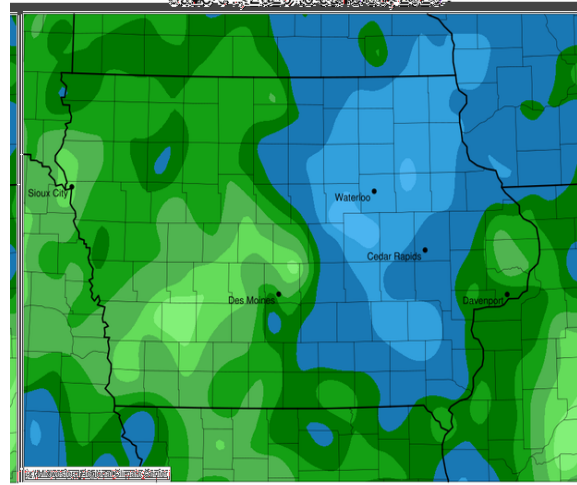
\* Departures are computed from 1981-2010 normals. Monthly estimates are preliminary and are likely to change.  
 The weather data in this report are based upon information collected by the U. S. Dept. of Commerce, NOAA National Weather Service.

June Average Temperature (F) - Departure from 1981-2010 Normals  
 June 01, 2020 to June 30, 2020



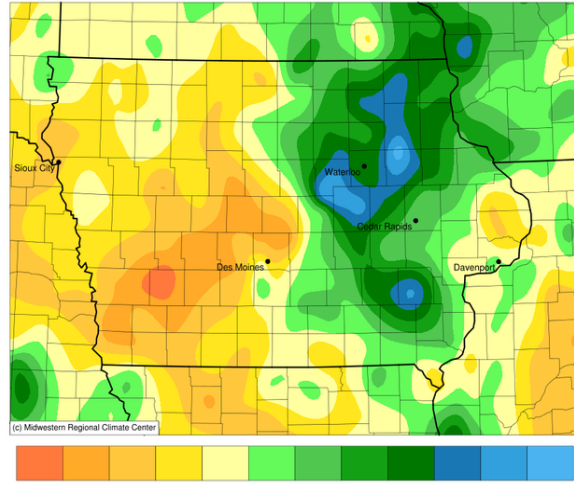
Stations from the following networks used: WBAN, COOP, FAA, GHCN, ThreadEx, CoCoRaHS, WMO, ICAO, NWSLI, Midwest Regional Climate Center  
 cli-MATE: MRCC Application Tools Environment  
 Generated at: 7/8/2020 10:54:50 AM CDT

Accumulated Precipitation (in)  
 June 01, 2020 to June 30, 2020



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: 7/8/2020 10:55:54 AM CDT

Accumulated Precipitation (in): Departure from 1981-2010 Normals  
 June 01, 2020 to June 30, 2020



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: 7/8/2020 10:58:34 AM CDT