



IOWA PRELIMINARY MONTHLY WEATHER SUMMARY – JUNE 2018

General Summary: Iowa temperatures averaged 73.0 degrees or 3.3 degrees above normal while precipitation totaled 7.53 inches or 2.53 inches more than normal. This ties 1987, 1991 and 2016 as the 10th warmest June on record. This was also the 10th wettest June in the observational record. Compared to last June, the state was 1.8 degrees warmer and 4.00 inches wetter.

Temperatures: June began warm and sustained unseasonable warmth for most of the month. Above-average temperatures prevailed across the state on every day besides the period between the 21st through the 26th. On the 5th, Sioux City observed a high of 94 degrees, 15 degrees above average. The second full week of June began 6 to 8 degrees above normal in southern Iowa. Lamoni observed 91 degrees on the 11th and Shenandoah reported 94 degrees on the 12th. Midweek saw statewide temperatures averaging in the mid-80s, six degrees above normal. The middle of the month had above average highs, with a short-lived heatwave from the 15th to the 18th. Little Sioux observed the highest temperature of the month at 99 degrees on the 17th. The following week began with highs averaging 4 to 8 degrees above normal. Donnellson, in Lee County, observed highs of 96 degrees (18th) and 98 degrees (19th), almost 14 degrees above normal. Midweek saw temperatures fall below normal, with average departures up to 8 degrees in the north and west. On the 21st, Sioux Center reported a high of 65 degrees, almost 20 degrees below normal. The week ended unseasonably cool with average highs 10 to 12 degrees below normal in Iowa's southern third. The following week continued this cool period with Audubon recording a high 12 degrees below normal, at 71 degrees (27th). Hot temperatures returned to the state on the 29th, with Logan (Harrison County) observing a high of 98 degrees. Daytime average highs reached the mid-80s, 3 to 6 degrees warmer than average, for the remaining days of June.

Cooling Degree Day Totals: Home air conditioning requirements, as estimated by cooling degree day totals, averaged 47% greater than normal and 18% more than seen during a cooler June 2017. Cooling degree day totals are running 83% more than normal so far in 2018 and 62% more than last year at this time.

Precipitation: Much of Iowa received above average precipitation in June, with some locations in the northwest reporting accumulations of 4 to 8 inches above normal; Lyon County observed almost 12 inches. The month started off with thunderstorms across a wide swath of the state. Between the 4th and the 5th, there were only a few reports of measurable precipitation from pop-up thunderstorms; Dubuque observed 0.05 inches on the 5th. Midweek, thunderstorms brought above normal rainfall, around 0.2 to 0.4 inches, to central Iowa. From the 7th to the 10th, flooding occurred in northeastern Iowa, including Mitchell and Floyd Counties, as slow moving thunderstorms produced multiple inches of rain. Iowa's southern third reported accumulating rainfall on the 10th, as storms propagated across the region. The following week greeted central Iowa with widespread thunderstorms that moved through during the morning hours of the 11th. The storms advanced through western Iowa, producing measurable rainfall. Southeastern Iowa also received accumulating rain, though still well below normal amounts. Early on the 14th, a warm front triggered widespread thunderstorms across the middle of Iowa. A portion of the state between Sheldon and Ames experienced flash flooding. Ames had the highest one-day precipitation total



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of the week at 4.25 inches; this was Ames wettest June on record, with 12.75 inches of rainfall. Much of east and southeast Iowa also received afternoon rainfall from the same system. Ottumwa reported 1.77 inches from two lines of storms. An active period beginning around the 18th produced flash and short-term flooding in many places and lasted for the rest of the month. On the 19th, Council Bluffs reported rainfall of 5.52 inches, as thunderstorms moved through southern Iowa. A low pressure center brought measurable rain to the state on the 20th and 21st as it propagated into Missouri. Many stations saw measurable rainfall on a majority of the final days of the month. A large low pressure system in western Nebraska and Iowa spun up thunderstorm statewide on the 25th and 26th, with Sioux Center reporting 4.61 inches of rain. A combination of a cold front and surface low passage brought torrential rain to the state late on the 30th into July 1st. This system dumped 10 inches on Ankeny (Polk County) and caused record flooding from the Des Moines metro area to Waterloo, in Black Hawk County.

Severe Weather: Severe thunderstorms were reported somewhere in the state on 18 days during the month with the bulk of the activity occurring on the 6th (23 counties impacted) and 20th (19 counties). On both the 1st and 2nd of June, there were reports of severe winds causing tree damage in Butler County and a blown over semi in Blencoe. On the 11th, there were multiple reports of severe straight-line winds in the southwest corner of the state; nine semis were blown over in Fremont County. On the 20th, there were weak tornadoes spotted in four counties, with Perry and Scranton experiencing snapped and uprooted mature trees. A rain wrapped tornado lofting debris was reported in Delphos (Ringgold County) in the late afternoon of the 25th. During the morning and afternoon of the 28th, a complex of thunderstorms east of Omaha, Nebraska propagated towards southwest Iowa with over 40 reports of hail and high winds on a path from Harrison County southeast to Lee County. Observations from Adair County had 65 mph sustained winds, nickel-sized hail and large trees down. Severe weather closed out June as a cold front moved across the state, bringing large hail and damaging winds from Creston, north to Mason City and east to Decorah.

Outlook: Drought conditions continue to persist in the southern third of Iowa, especially in the southeast corner. Compared to last June, abnormally dry conditions covered a smaller part of Iowa. However, there is an area of moderate and severe drought, 6.93% of Iowa, which has increased by 5.64% since June 2017. Crop development was ahead of June 2017 and the five year average. Additionally, soil moisture levels coming into the growing season were lower in southwest, south central and particularly southeast Iowa compared to the same time in 2017. According to the USDA/NASS weekly reports, overall corn and pasture conditions are slightly better than this time last year. Soybeans are four days ahead of 2017 and six days ahead of the five year average. The current CPC outlook favors drier and warmer than normal conditions for at least the first two weeks of July.

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June 2018

WEATHER BY DISTRICTS

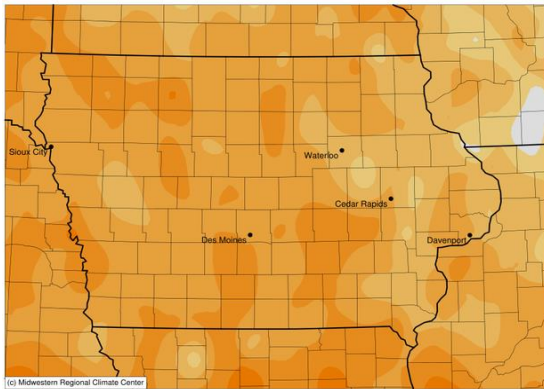
| DISTRICT | TEMPERATURE (F) | | COOLING DEGREE DAYS | | | | PRECIPITATION (inches) | | | |
|---------------|-----------------|------------|---------------------|------------|---------------------|------------|------------------------|------------|--------------------|------------|
| | June 2018 | | June 2018 | | Since Jan., 1, 2018 | | June 2018 | | Since Jan. 1, 2018 | |
| | Average | Departure* | Average | Departure* | Average | Departure* | Average | Departure* | Average | Departure* |
| Northwest | 72.6 | +3.8 | 244 | +89 | 366 | +165 | 9.20 | +4.56 | 20.87 | +6.16 |
| North Central | 71.7 | +3.4 | 221 | +79 | 346 | +166 | 8.26 | +3.10 | 22.27 | +5.40 |
| Northeast | 70.8 | +2.3 | 196 | +52 | 315 | +134 | 7.51 | +2.46 | 21.38 | +4.23 |
| West Central | 73.5 | +3.6 | 267 | +92 | 411 | +182 | 8.30 | +3.42 | 18.13 | +1.72 |
| Central | 73.4 | +3.8 | 264 | +95 | 426 | +207 | 8.04 | +2.79 | 19.22 | +1.66 |
| East Central | 72.9 | +2.7 | 248 | +66 | 405 | +166 | 6.65 | +1.82 | 17.86 | +0.58 |
| Southwest | 74.4 | +3.4 | 291 | +92 | 474 | +211 | 7.46 | +2.33 | 15.26 | -2.56 |
| South Central | 74.4 | +4.2 | 290 | +110 | 476 | +243 | 6.42 | +1.56 | 15.77 | -2.19 |
| Southeast | 74.3 | +2.8 | 287 | +75 | 470 | +186 | 5.00 | +0.23 | 15.08 | -3.50 |
| STATE | 73.0 | +3.3 | 253 | +81 | 407 | +184 | 7.53 | +2.53 | 18.66 | +1.66 |

* 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, 2018 to June 30, 2018

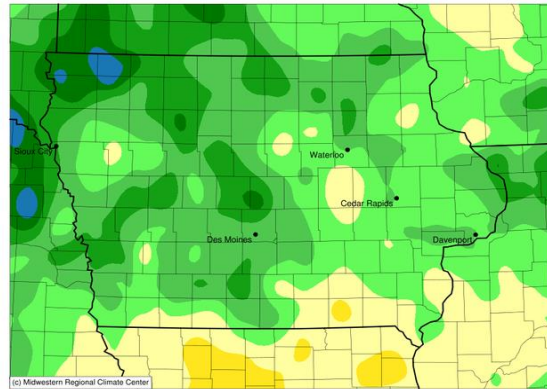


(c) Midwestern Regional Climate Center

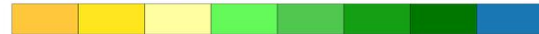


Stations from the following networks used: WBAN, COOP, FAA, GHCN, ThreadEx, CoCoRaHS, WMO, ICAO, NWSLI, Midwestern Regional Climate Center
 ci-MATE: MRCC Application Tools Environment
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Accumulated Precipitation (in): Departure from 1981-2010 Normals
June 01, 2018 to June 30, 2018



(b) Midwestern Regional Climate Center



Stations from the following networks used: WBAN, COOP, FAA, GHCN, ThreadEx, CoCoRaHS, WMO, ICAO, NWSLI, Midwestern Regional Climate Center
 ci-MATE: MRCC Application Tools Environment
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