

## IOWA PRELIMINARY ANNUAL WEATHER SUMMARY – 2011

General Summary. Iowa temperatures averaged 48.7° or 0.6° above normal while precipitation totaled 32.01 inches or 3.26 inches below normal. This ranks as the 52<sup>nd</sup> warmest and 69<sup>th</sup> driest year among 139 years of records.

Temperatures. The first one-half of 2011 was mostly on the cool side of normal yet brought a few high temperature extremes as well. Elkader reported the lowest actual temperature for the year with a -30° reading on the morning of January 21 while Storm Lake reported the lowest wind chill at -42° on February 8. Major warm-ups, on December 30, 2010 and in mid-February 2011 provided two welcome breaks from cold, snowy weather and made the winter of 2010-2011 much more tolerable than the previous winter when the lack of any substantial mild period allowed deep snow cover to persist throughout the winter. A hard freeze impacted much of Iowa on May 3 with temperatures falling to 20° at Spencer and Sibley. Lower May temperatures have occurred in only four other years in the past century. However, just one week later the temperature soared to 100° at Jefferson. This was Iowa's earliest occurrence of triple digit heat since April 22, 1980. The summer was Iowa's hottest since 1988 thanks mainly to very high humidity which kept overnight low temperatures persistently higher than usual. July brought the state its hottest calendar month since August 1983 and hottest July since 1955 despite most locations remaining below the century mark. However, very dry soils and a very warm air mass allowed southeast Iowa temperatures to soar well above 100 degrees on August 2 when Fairfield reached 106°. This was Iowa's highest official temperature since Washta reached 106 on July 19, 2006. The high humidity allowed heat indices to reach 117° at Spencer on July 18 and at Iowa City on August 2. Warmer than normal weather prevailed for most of the second half of the year with two notable exceptions. A freeze impacted nearly one-half of the state on September 15 with Jefferson and Cedar Rapids tying for the earliest freeze on record at those locations. Mason City was the cold spot during the mid-September event with a low of 26°, Iowa's lowest temperature for so early in the fall since Sibley reported a low of 23° on September 11, 1955. Finally, on December 6 Sheldon reported a low of -19° for the lowest Iowa temperature for so early in the winter since 1991. Nevertheless, the year ended with 21 consecutive days of above normal temperatures.

Precipitation. Precipitation was greater than normal for five of the first six months of the year which continued the very wet pattern that had prevailed from 2007 to 2010. The most noteworthy event came on February 1 when a major blizzard struck southeast and east central Iowa. Snow totals reached 18.5 inches at Lowden and a record-tying 18.4 inches at the Quad Cities while winds gusted as high as 66 mph at Clinton. June was the wettest month with record calendar month precipitation totals at Keosauqua (16.14 inches) and at Bloomfield (14.60 inches). However, extremely dry conditions quickly developed across southeast Iowa during July where Fairfield recorded only 0.20 inch of rain for the month. The dryness spread to central and northwest Iowa during August and to most of the state during September. In the midst of this dry pattern came a record rain event in the Dubuque area on the night of July 26. The Dubuque Airport recorded a 24-hour rain total of 10.62 inches which was the greatest one-day total among 158 years of

record in that area. Unofficial totals were reported of as much as 14.5 inches just south of Dubuque. Nevertheless, according to the US Drought Monitor, drought conditions spread to 68% of the state by the first of November, the largest Iowa drought area since December 2003. A series of storm systems passing to the southeast of Iowa brought widespread rain to much of the state during November and December. Keokuk reported their third wettest November on record with 8.23 inches of rain. However, the rain mostly missed northwestern Iowa where Sioux Center reported only 0.03 inch of November precipitation, their fourth driest November of record. December precipitation, mostly in the form of rain, was again well above normal across the southeast but was near to slightly above normal over the northwest as well. At year's end the northwest one-quarter of Iowa was still classified as being in severe drought but the southeast was drought-free. Despite periodic dryness annual precipitation totals were above normal over much of southern and east central Iowa. However, large deficits were present across west central Iowa. Annual precipitation totals varied from only 19.52 inches at Battle Creek (Ida County) to 46.29 inches at the Dubuque Airport (their fourth consecutive year with more than 46 inches).

Severe Weather. The Iowa tornado season got off to a very quick start with eight tornadoes reported on March 22 and another twenty on April 9. The first of the April 9 twisters was an EF-3 storm that struck Mapleton causing widespread damage and 14 injuries. Lenox had the misfortune of being struck by two tornadoes on May 11. However, there were no tornadoes after July 11 to result in the earliest end to the tornado season since 1962. Overall, according to National Weather Service statistics, there were 50 tornadoes in Iowa in 2011, just slightly more than the recent average of 48. A pair of non-tornadic events also resulted in severe damage. The first was a derecho which swept across a wide path over east central Iowa in the early morning hours of July 11. Wind speeds were estimated as high as 130 mph in Benton County. The other event was a series of hail storms across southwest Iowa during the late afternoon and evening of August 18. Damage was scattered across eleven counties with parts of Council Bluffs pounded by baseball size hail and high winds. Finally, the largest weather event of the year was the flooding along the Missouri River in western Iowa. Flooding began in May and persisted without a break into September resulting from a series of hydrologic events well upstream of Iowa. Peak crests came in late June with a record crest along the Mills and Fremont County stretch of the river. Fortunately there were no major rain events within the Iowa portion of the Missouri watershed during the flood.

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