



## IOWA ANNUAL WEATHER SUMMARY ó 2013

General Summary. Temperatures averaged 46.5° or 1.6° below normal while precipitation totaled 35.38 inches or 0.11 inches above normal. This ranks as the 25<sup>th</sup> coolest and 37<sup>th</sup> wettest year among 141 years of records. The annual temperature was a 5.4° drop from 2012 and is the largest year-to-year temperature change (up or down) on record (old record was a 5.0 degree decline between 1931 and 1932).

Temperatures. The lowest temperature of the 2012-2013 winter arrived on New Year's Day with a -15° reading at Elkader. This -15° reading tied with the winter of 1930-1931 for the highest statewide winter extreme minimum temperature. Relatively mild winter weather prevailed until February 15 when a cold (and mostly wet) pattern began. Statewide daily temperatures averaged below normal on 73 of the 106 days between February 15 and June 10. However, in the midst of this cold and wet pattern strong southwesterly winds allowed exceptionally hot and dry air to briefly push into Iowa on May 14. Triple-digit heat spread across about the northwest one-third of Iowa with Sioux City reaching 106°. This was to be the highest temperature for the calendar year in Iowa. The previous earliest date for temperatures of 106 or higher in Iowa came on May 29, 1934. However, this was not the earliest date that the statewide annual maximum temperature extreme has been recorded. During the mild summer of 1994 Logan recorded Iowa's highest temperature of the year with a 99° reading on April 18. Relatively cool weather continued through much of the summer with Battle Creek recording a morning low temperature of 39° on July 27 while Cresco saw an afternoon high of only 58° that day. Temperatures were below normal for all but one day between July 23<sup>rd</sup> and August 19<sup>th</sup>. However, the heat finally did return with triple-digit temperatures recorded over portions of southern Iowa on August 28 & 30 and September 7, 9 and 10. The highest late summer temperatures were recorded at Des Moines and Fort Madison with 104° readings on August 30 while Iowa City recorded the year's highest heat index at 108° on August 28. The late summer heat helped to speed crop maturity which was greatly lagging the normal pace owing to late planting and relatively cool summer weather. However, the heat also greatly increased moisture stress on the crops. Fortunately, the first freeze of the fall season came later than usual across most of Iowa. A hard freeze was recorded over portions of northern Iowa on October 13 (about two weeks later than usual) with nearly all of the state seeing a freeze by October 25. The second one-half of October was mostly on the cold side and temperatures remained below normal for much of the final two months of the year. The first subzero temperature (-1°) of the winter was recorded at Spencer on the morning of November 12 and was the earliest such occurrence since November 4, 1991. There were six dates in November when temperatures dropped to zero or lower in Iowa which equaled the total of the previous twelve Novembers combined. The lowest temperatures of 2013 came in December with Sheldon recording a wind chill of -38° on the 11<sup>th</sup> and Osceola having the lowest actual temperature at -27° on the 24<sup>th</sup>. These were the lowest temperatures and wind chills recorded in the state in nearly four years (January 2, 2010).

Precipitation. Iowa entered 2013 with large drought concerns. However, the first three months of the year each brought slightly more precipitation than normal. The weather then turned exceptionally wet beginning April 8 with Iowa recording the wettest April among 141 years of records, as well as its wettest May. Swisher reported the most rain in April with 10.24 inches while Zeiring reported 17.12 inches during May. Flooding was widespread, particularly in May and over the northeast one-half of the state. Thanks to the record April and May precipitation totals Iowa registered its wettest spring of record with 17.56 inches of rain, 7.34 inches more than normal and 2.20 inches more than the previous record total set in 1892. Needless to say the heavy rains erased all trace of the 2011-2012 drought. Snow was frequent in April across northwest Iowa where Sibley reported 16.5 inches. Snow also made a record appearance over the first three days of May. Britt and Forest City set new one-day snow records for May with 11 inches on the 1<sup>st</sup>-2<sup>nd</sup> while Osage set a new state record for May monthly snowfall with 13 inches. All but the far eastern portion of Iowa recorded measurable snow with a new record statewide average

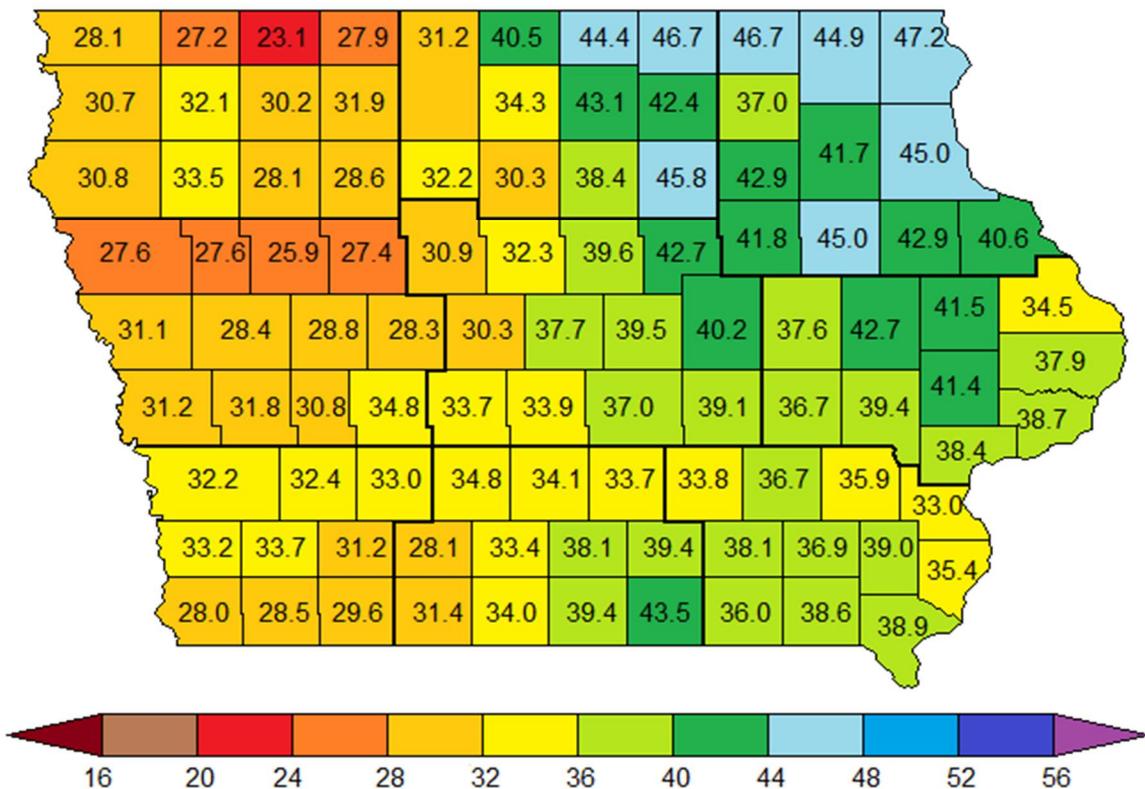
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snowfall of 3.3 inches, nearly triple the previous record of 1.2 inches set in 1947 (which all fell on May 28!). The very wet weather pattern continued well into June across northeast and east central Iowa with 14.48 inches of rain falling at Dorchester during June. However, the weather began to dry over portions of western and southern Iowa during June. The dry weather was welcomed at first but became problematic as dryness intensified in July and August. A few locations set record low July rain totals such as at Carroll with just 0.18 inches. August was even drier with numerous record low totals set including Keokuk and Mount Pleasant where no rain occurred. Excellent sub soil moisture reserves from the heavy spring rain, plus mild mid-summer temperatures allowed crop yields to be much better than in 2012 despite seeing the second driest July to September period of record in 2013. Better rains finally returned in October but were followed by lower than normal totals in November and December. Nevertheless, soil moisture reserves going into the 2013-2014 winter were better over most of the state than was seen at the end of the 2011 and 2012 growing seasons. Annual precipitation totals varied from 21.12 inches at Spirit Lake to 49.58 inches at Saint Ansgar. At Cresco and Lake Mills this was the second wettest year on record. The 2013 statewide average precipitation was 8.84 inches greater than in 2012. However, there were a few scattered locations over far western Iowa where more precipitation fell in 2012 than in 2013.

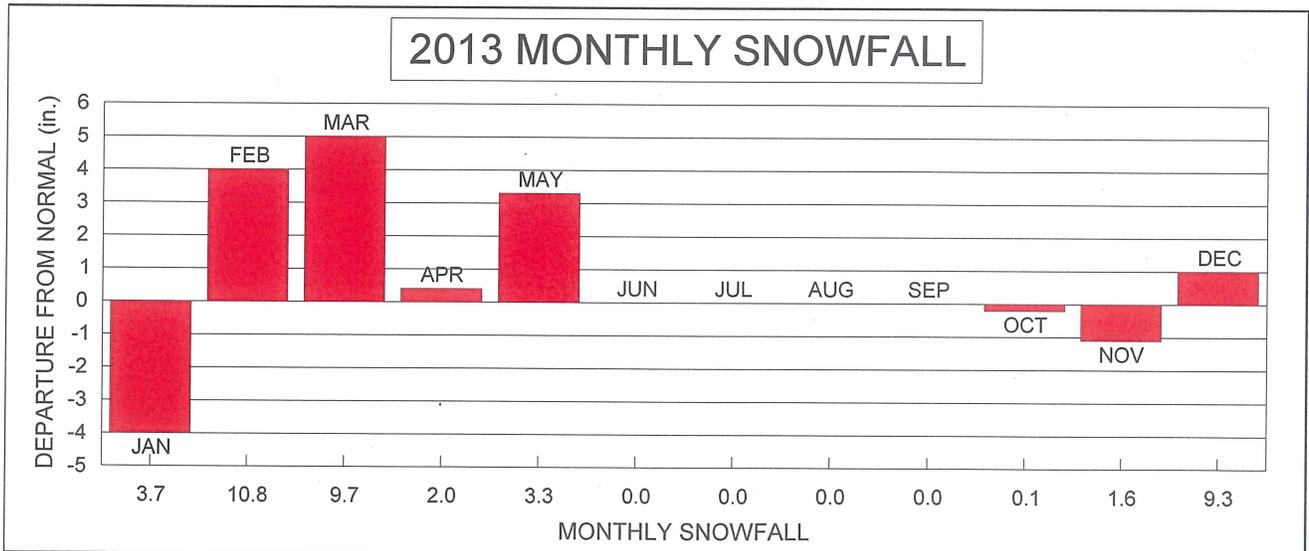
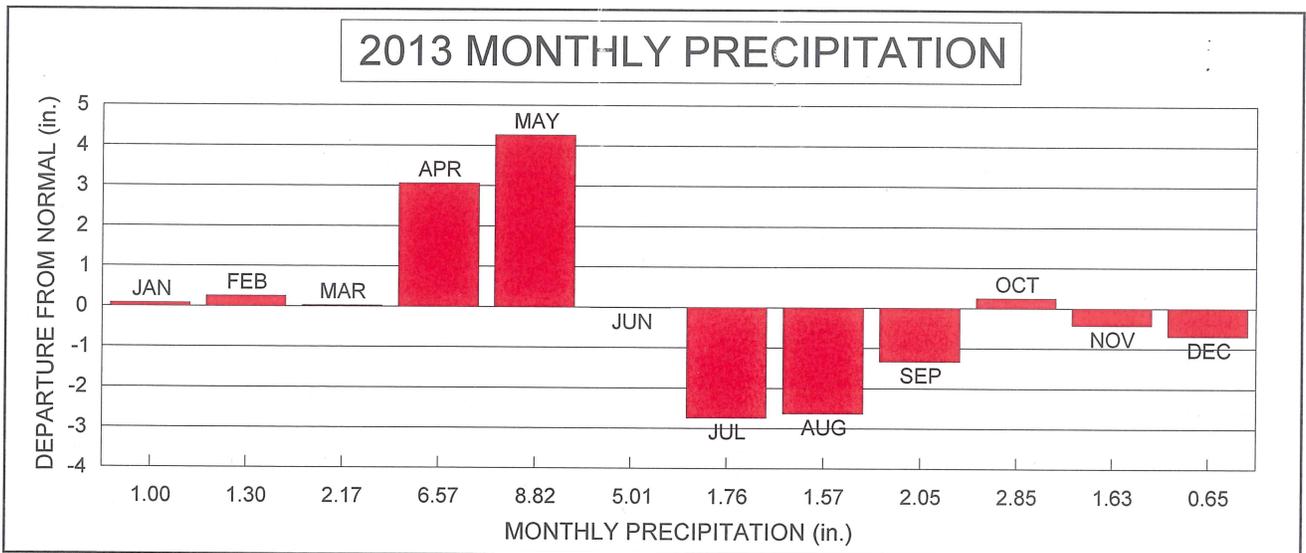
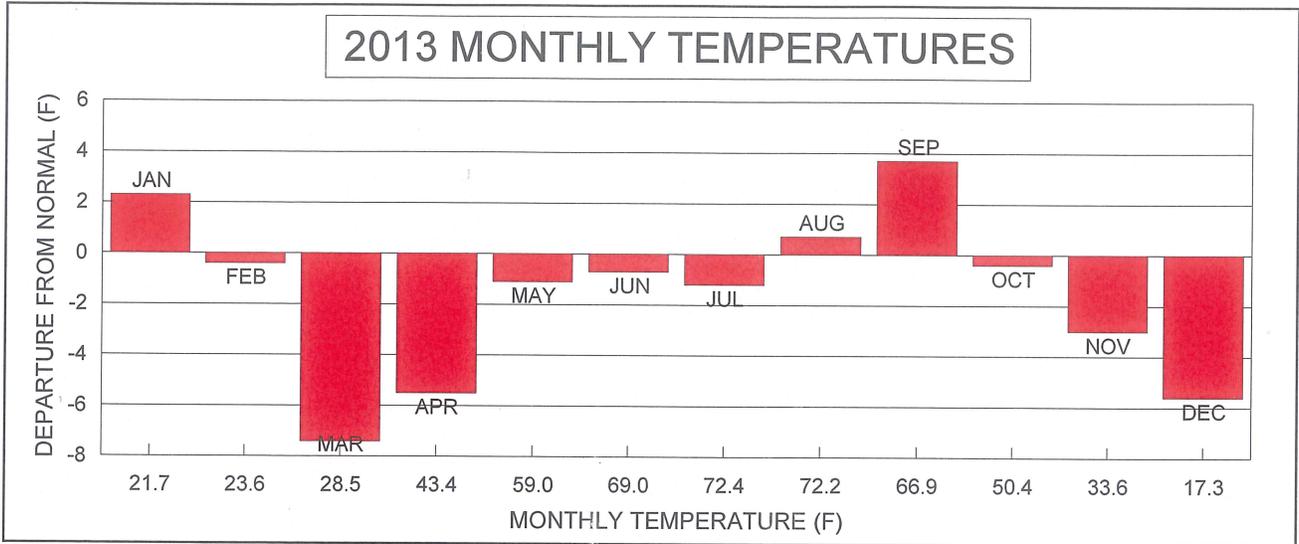
Severe Weather. An Iowa record of 359 consecutive days without a tornado finally came to an end on May 19, 2013. More records seemed possible as the 2013 tornado season appeared to be destined to be the shortest known with no tornadoes after June 26. However, a late season outbreak on October 4 brought 11 tornadoes to western Iowa, including one EF-4 storm near Pierson in Woodbury County. This was the state's largest late-season tornado outbreak since November 12, 2005. Nevertheless the annual total of 28 twisters was well below the typical total.

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State Climatologist, Iowa Dept. of Agriculture & Land Stewardship  
 COUNTY PRECIPITATION ESTIMATES, ANNUAL 2013 (inches)



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2013 STATEWIDE MONTHLY TEMPERATURE EXTREMES							STATEWIDE MONTHLY RANK*	
MONTH	MAX TEMP	DAY	LOCATION	MIN TEMP	DAY	LOCATION	TEMPERATURE	PRECIPITATION
JANUARY	64	29th	Creston	-15	1st	Elkader	44th warmest	62nd wettest
	64	29th	Mount Ayr					
FEBRUARY	59	10th	Keokuk	-14	1st	Elkader	66th warmest	42nd wettest
				-14	1st	Osceola		
MARCH	70	15th	Bedford	-7	7th	Elkader	17th coolest	49th wettest
	70	15th	Lamoni					
	70	30th	Shenandoah					
APRIL	89	30th	Cedar Rapids	11	1st	Little Sioux	9th coolest	1st wettest
	89	30th	Iowa City	11	20th	Sibley		
	89	30th	Stanley					
MAY	106	14th	Sioux City	23	12th	Battle Creek	51st coolest	1st wettest
				23	12th	Sibley		
				23	12th	Spencer AP		
JUNE	94	21st	Sioux City	37	3rd	Elkader	55th coolest	61st wettest
	94	22nd	Muscatine					
JULY	98	19th	Keokuk	39	27th	Battle Creek	30th coolest	8th driest
AUGUST	104	30th	Des Moines	42	14th	Belle Plaine	62nd warmest	7th driest
	104	30th	Fort Madison	42	14th	Elkader		
SEPTEMBER	102	9th	Donnellson	32	21st	Battle Creek	19th warmest	29th driest
	102	9th	Keokuk	32	21st	Sheldon		
				32	21st	Spencer AP		
OCTOBER	88	2nd	Sioux City	18	25th	Mount Ayr	47th coolest	53rd wettest
	88	4th	Donnellson	18	25th	Stanley		
	88	4th	Fort Madison					
	88	4th	Keokuk					
NOVEMBER	72	16th	Clarinda	-5	27th	Stanley	37th coolest	66th wettest
DECEMBER	62	2nd	Shenandoah	-27	24th	Osceola	17th coolest	32nd driest
	62	28th	Sioux City					

\*Rankings based upon 141 years of data.

State Climatologist, Iowa Dept. of Agriculture & Land Stewardship  
 COUNTY PRECIPITATION ESTIMATES, DEPARTURE FROM NORMAL, 2013 (inches)

