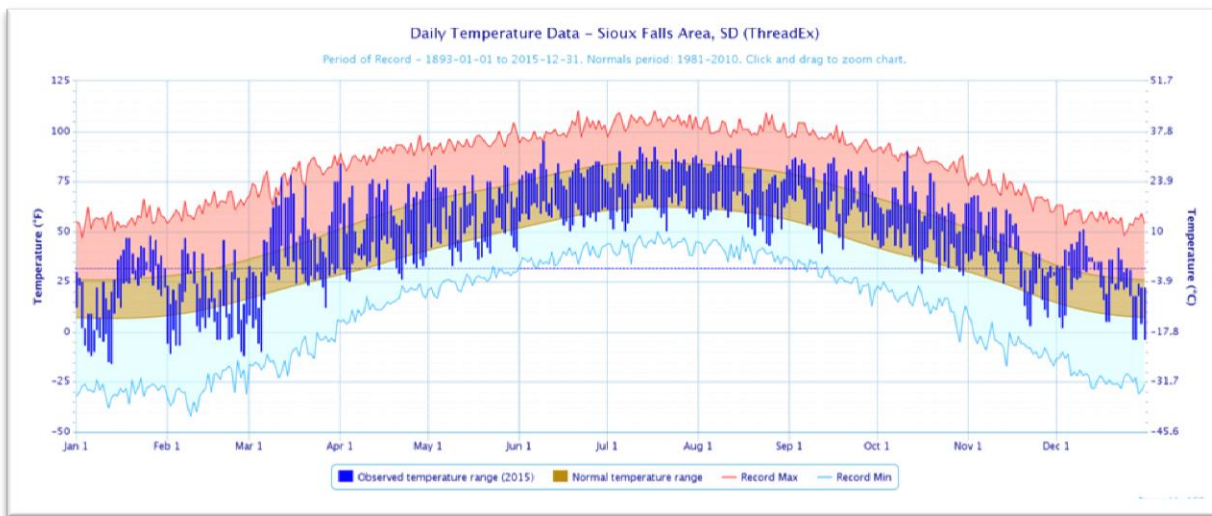


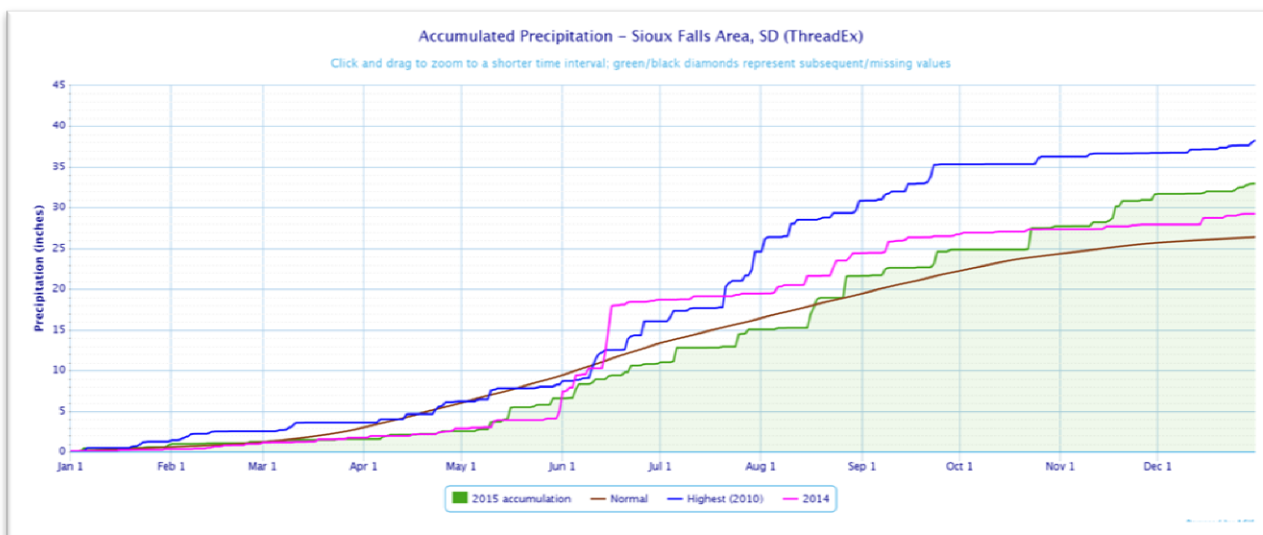
While we waited patiently for El Nino to develop in 2015, the Sioux Falls area would experience strong variation as well as a few extreme weather events during much of the year.



Annual temperatures averaged out to 48.2 degrees (2.5 degrees above normal), making for the **13th warmest year** on record. This was almost 4 degrees warmer than 2014, and the warmest since 2012. Minimum temperatures were **11th warmest on average** (37.6 degrees – 2.8 degrees above normal) and once again carried a bit more weight of the warmer annual mean, compared to the 22nd warmest average annual maximum temperature (58.8 degrees – 2.3 degrees above normal). Greatest monthly departures were concentrated at the beginning and end of the year, with six months registering in the top 25 warmest for the particular month. The highest ranking departure occurred in December (+7.0), while the warmest ranking month was September (7th warmest). The coolest month compared to average occurred in February (-6.0), yet was only the 39th coolest on record. None of the four months below normal (February, May, July and August) ranked within the top 25 coolest for that month. The warmest temperature of the year was 95 degrees on June 9, and this tied for the 17th coolest maximum temperature recorded during a year, matching the recent years of 2009 and 1999, among others. In fact, there were only nine days with high temperatures of 90 degrees or above, occurring in June, July, August and October. There were the **17th fewest 90 degree days** for any year on record, and fewer than the average of 14. The coolest reading of the year at -16 was attained on January 13.

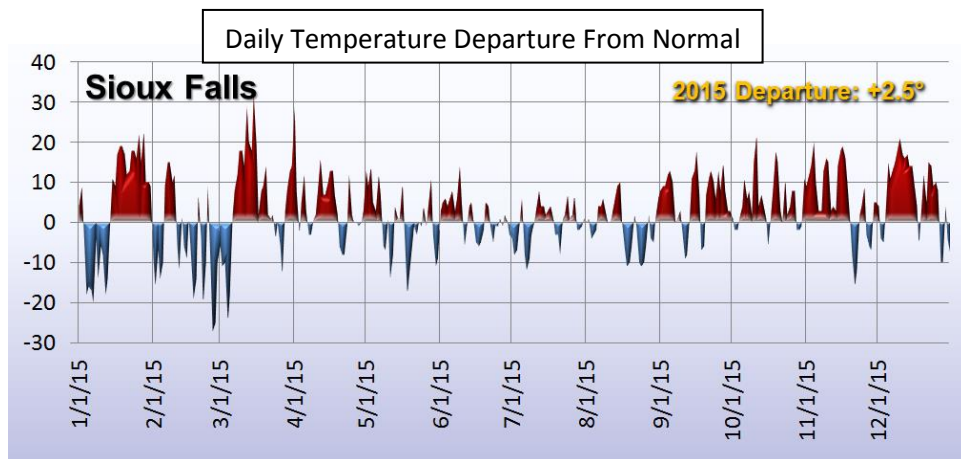
Sioux Falls, SD

Month	Average Temperature			Departure from normal	Extremes		Temperature Rank
	Max	Min	Mean		High	Low	
January	29.2	12.3	20.8	4.2	48	-16	26th warmest
February	26.1	4.9	15.5	-6.0	47	-12	39th coolest
March	52.1	24.6	38.4	5.5	78	-10	18th warmest
April	63.9	37.1	50.5	4.1	84	25	22nd warmest
May	68.4	47.0	57.7	-0.3	83	33	52nd coolest
June	79.5	58.6	69.0	1.2	95	50	44th warmest
July	83.0	61.4	72.2	-0.8	92	50	45th coolest
August	80.2	58.7	69.4	-1.3	91	43	29th coolest
September	77.2	57.0	67.1	5.8	87	39	7th warmest
October	64.3	41.4	52.8	4.9	90	28	22nd warmest
November	47.3	29.2	38.2	5.6	68	3	21st warmest
December	33.9	18.6	26.2	7.0	51	-4	18th warmest
Year	58.8	37.6	48.2	2.5	95	-16	13th warmest

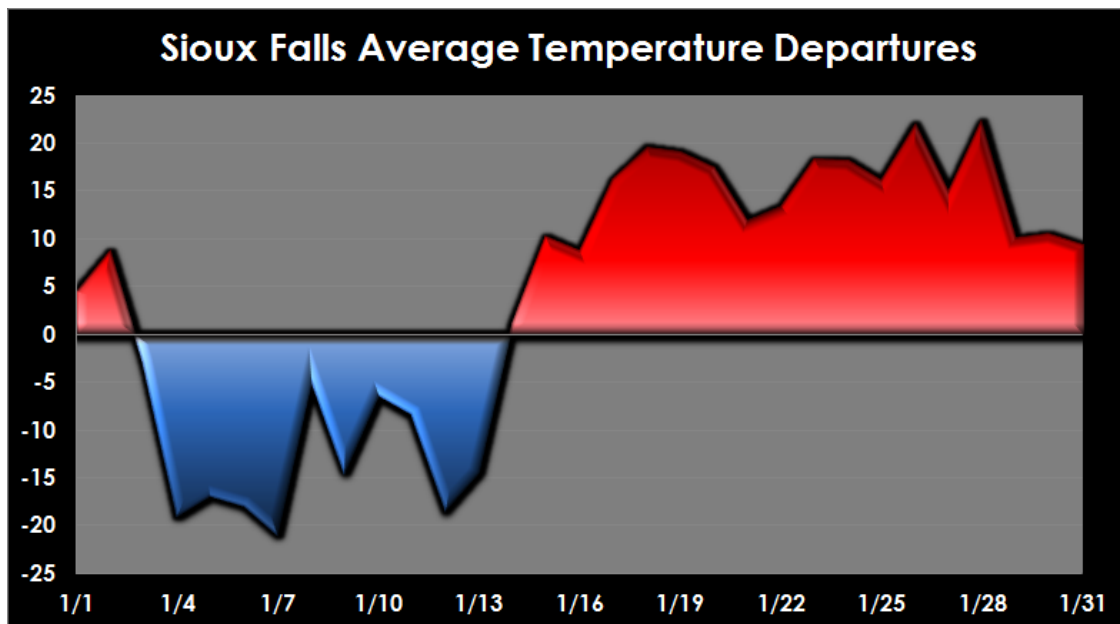


For the year, precipitation tallied 32.94 inches, ranking at the **9th wettest year on record**. The year started out much drier than average, with three of the first four months registering below normal precipitation and snowfall, including the 10th driest March on record. This would set the stage for a very active fire weather season across the area. Starting mid May, precipitation began coming at fairly regular intervals, punctuated by a few heavier events. Every month after May registered above normal precipitation. Finally, with heavy precipitation mid to late August, departures would close on and exceed normal, which carried on through years end. Snowfall in 2015 was heavily weighted to the end of the year. The **7th earliest last measurable snowfall** occurred on March 3rd, and the early end to the snow season helped to build a nearly 10 inch deficit heading into the late 2015. 36.4 inches of snowfall buried the Sioux Falls area after November 1st (20.8 inches above normal), second only to the final two months of 1968 during which 43.0 inches of snowfall was recorded. November and December tallied the **most 6 inch or greater snowfalls on a calendar day** (3) on record.

Sioux Falls, SD						
Month	Precipitation (in.)		Snowfall (in.)		Precipitation Rank	Max Wind Gust Direction/MPH/Date
	Amt.	Departure	Amount	Departure		
January	0.81	0.25	9.8	2.1	32nd wettest	NW 56 mph on 8th
February	0.41	-0.19	6.2	-0.7	48th driest	N 42 mph on 11th
March	0.33	-1.43	1.7	-6.7	10th driest	NW 50 mph on 29th
April	1.00	-2.01	T	-4.6	17th driest	NW 46 mph on 20th
May	4.00	0.60	T	0.0	49th wettest	W 48 mph on 17th
June	4.29	0.37	0.0	0.0	51st wettest	N 72 mph on 22nd
July	4.19	1.10	0.0	0.0	28th wettest	NE 43 mph on 5th
August	6.57	3.52	0.0	0.0	9th wettest	NW 47 mph on 18th
September	3.24	0.47	0.0	0.0	41st wettest	S 40 mph on 15th
October	2.90	0.73	T	-1.3	22nd wettest	NW 48 mph on 12th
November	3.89	2.53	17.3	9.9	2nd wettest	NW 53 mph on 18th
December	1.31	0.62	19.1	10.9	21st wettest	S 44 mph on 22nd
Year	32.94	6.56	54.1	9.6	9th wettest	June 22 - N 72 mph



January 2015 started with a brief moderation from the chill that ended the previous year, but the first wintry system of the year would change this abruptly on the 3rd. While snowfall with the system was minimal, winds increased to around 40 mph in the rush of arctic air, creating brief blizzard conditions. The next four days would feature temperatures 15 to 20 degrees colder than normal, along with a winter storm on the 5th that brought record precipitation and snowfall for the date to Sioux Falls (0.39/5.0 inches). The chilly period continued through the 13th as exceptionally strong high pressure built across the northern plains. On the morning of the 7th, the barometric pressure reached the **highest reading on record** at 31.15 inches. Blizzard conditions and bitterly cold wind chills of 20 below to 35 below zero followed on the 8th, with the strongest gust of the month at 56 mph. Below normal readings continued through the 13th with the coldest reading of the year of -16, but an about-face would mean no days below normal for the remainder of the month. There was truth to the term “January Thaw”, with only a single day seeing a high below freezing during the last half of the month. A winter storm to close to exceptionally warm period commenced late afternoon on the 31st, and brought the largest 24 hour snowfall of the month through midday on the 1st of February, at 6.4 inches.



While the heavy snowfall would greet the start of February, precipitation was much sparser for the remainder of what was a topsy-turvy month. The 6th to 10th would bring the warmest temperatures of the month, while the coldest days would congregate during the final week. A mean temperature of -2 on the 26th was the second coldest day of the year, only behind the record high pressure day on January 7. With only eight days warmer than normal, February would end up 6 degrees below normal.

Sioux Falls, SD					
Season	Average Temperature				Temperature Rank
	Max	Min	Mean	Departure	
Winter '14-'15	29.2	11.6	20.4	1.4	42nd warmest
Spring '15	61.5	36.2	48.9	3.1	21st warmest
Summer '15	80.9	59.6	70.2	-0.3	39th coolest
Fall '15	62.9	42.5	52.7	5.4	4th warmest

The winter season of Dec. 2014-Feb. 2015 with a mean temperature of 20.4 degrees would go down as the 42nd warmest on record, with the departure of +1.4 degrees a shade warmer than average. There were 26 days with temperatures below zero, just above the 30-year normal of 24 days. Of those below zero days, 12 days had low temperatures of -10 or colder, the second greatest number of days with lows of -10 or colder in the last 15 years. Overall, winter precipitation (2.55 inches) was a bit above normal, with snowfall (21.9 inches) a little below normal for the period. Snowfall generally came in small amounts throughout the winter, with the greatest 24 hour accumulation on January 5 (5.0 inches).

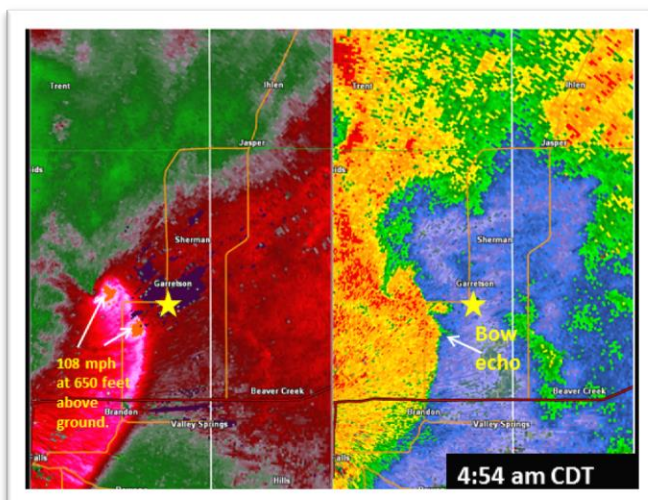
Sioux Falls, SD			
Season	Precipitation		Precipitation Rank
	Total	Departure	
Winter '14-'15	2.55	0.70	38th wettest
Spring '15	5.33	-2.84	32nd driest
Summer '15	15.05	4.99	9th wettest
Fall '15	10.03	3.73	8th wettest

For the second straight year, March started on the chilly side, bottoming out on the morning of March 5 with a low of -10. Typical for a transition month, a wild swing in temperatures occurred very quickly, and the week from the 9th to the 16th registered 7 consecutive days of highs above 60 degrees. Within this run, there were two record highs (77 on the 12th/ 78 on the 15th) and a record high minimum temperature (49 on the 15th). For good measure, another record high of 73 degrees was tied on the 20th. The average maximum temperature of 52.1 degrees was the 10th warmest on record. After the 5th, only 3 days would register below normal, and the month ended up the 18th warmest with a departure of +5.5 degrees. Only three days during March would record measurable precipitation (3rd, 8th, and 24th), and the month finished as the **10th driest on record**. Only a single day had measurable snowfall (March 3 – 1.7”), and this was the **7th earliest for the occurrence of last measurable snowfall**.

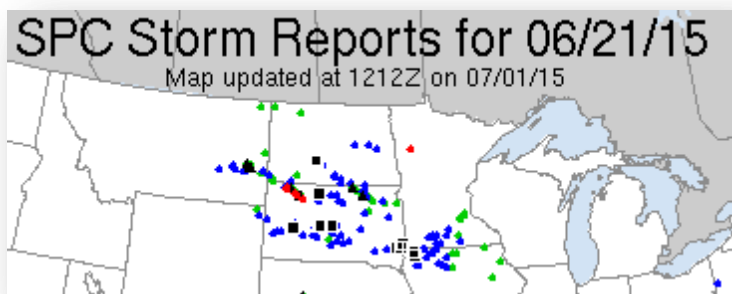
The atmosphere celebrated April Fools Day by allowing for the warmest day of the month to occur with a high of 84 degrees, and a **record high minimum of 54 degrees**. With strong south winds gusting from 35 to 45 mph and low humidity, it was one of the worst fire weather days of the year with numerous wildfires around the area. Some light rainfall and cooling temperatures to around normal for much of the following week would settle fire conditions for a while. April 7th brought one of the more interesting days, with the first thunderstorm of the year bringing nickel size hail to Sioux Falls, and hail up to quarter size just over the border in southwest Minnesota, all with temperatures in the upper 30s and lower 40s. The middle of the month was generally mild and dry, with only the rain/thunder on the 24th-25th of 0.35 inches exceeding a tenth of an inch. The final hard freeze for the spring occurred on the 22nd (26 degrees) with some frost noted again on the 27th (32 degrees). For the month, April ranked **22nd warmest and 17th driest**.

While the average temperature for May ended up fairly close to normal with a departure of -0.3, there were the typical swings associated with a transition season month. After a very warm and dry first week, other than two days with departures of +10 on the 16th and +11 on the 28th, temperatures were generally near to below normal for the rest of the month. A couple of chilly lows in the mid 30s brought frost to outlying areas on the 9th and 12th. A record low maximum temperature occurred on the 18th (45 degrees) and on that day, a mix of sprinkles and snow flurries occurred. This tied the **3rd latest occurrence of snow in Sioux Falls**. Emergence of convection during the mid and late month brought periods of modest rainfall, and the initially dry period from March through early May was reversed with slightly above normal precipitation for the month (4.00" / +0.60").

The spring months of March through May accumulated a mere 5.33 inches of precipitation (2.84 inches below normal) and ended **32nd driest on record**. Stronger variations in temperatures present early in spring tended to damp down later in the season. More extreme warmth in March and early April were enough to make the spring season finish **21st warmest**, with a mean temperature of 48.9 degrees (3.1 degrees above normal).

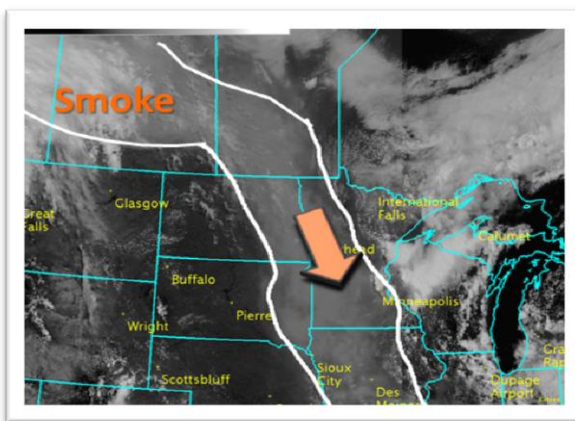


One of the most significant weather events of 2015 occurred early in the morning of June 22. A large scale bow echo pressed eastward in the overnight hours with a history of damaging wind. As storms approached the Sioux Falls area around 5 am, an enhancement in winds developed north of Sioux Falls, impacting Garretson and nearby locations with winds in excess of 100 mph. Winds in Sioux Falls were clocked at 73 mph.

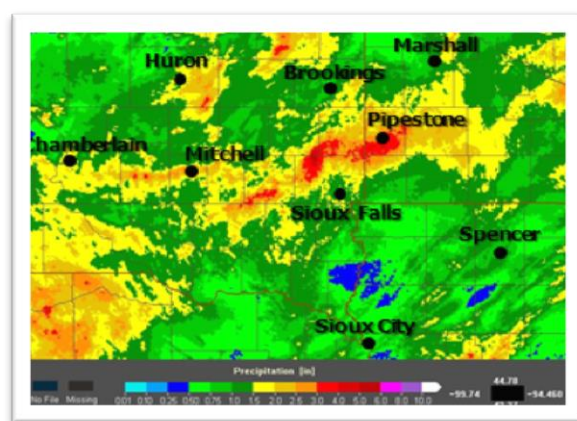


Storm Reports for early morning June 22 2015
(courtesy Storm Prediction Center archives)

June was generally characterized by modest temperatures and timely rainfall. Other than the severe weather event of June 22, it remained a very quiet severe weather season. A funnel cloud was observed northwest of Sioux Falls around 8 pm on the 25th. The only rainfall which exceeded an inch occurred on the 5th, but enough fell every few days to make a monthly total of 4.29 inches, 0.37 inches above normal and 51st wettest June. In terms of temperature, minor variations through the month with only 5 days during the months warm start with a departure more than 5 degrees either side of normal. A 1.2 degree above normal mean temperature of 69.0 degrees made for the 44th warmest June. The **warmest reading of the summer** was reached on the 9th at 95 degrees. By months end, weather in other parts of North America was bringing the largest impact to the Sioux Falls area, namely the western drought and extensive fire activity. A very active wildfire period produced a dense smoke plume that at times from late June into July would surface behind Canadian cold fronts, creating air quality and health concerns.



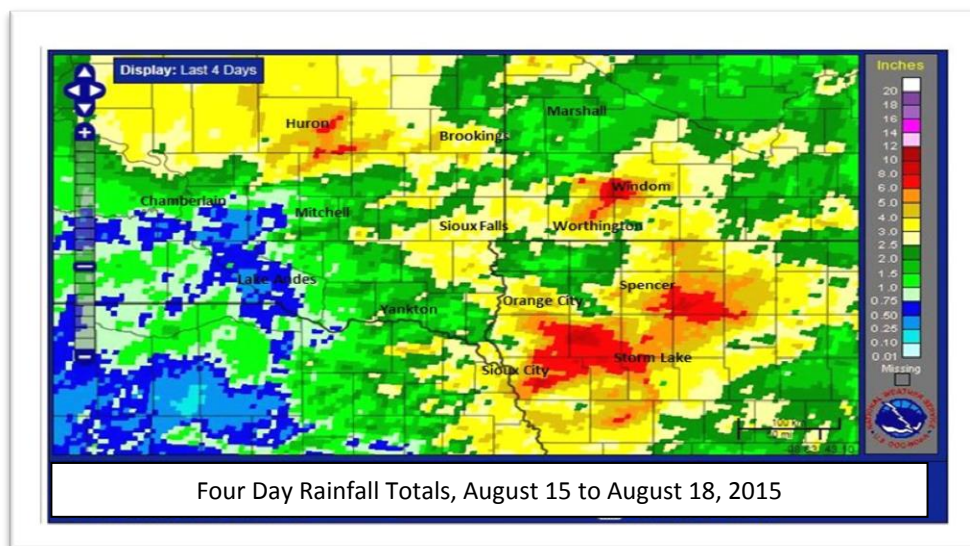
Smoke from Canadian Fires,
June 29, 2015



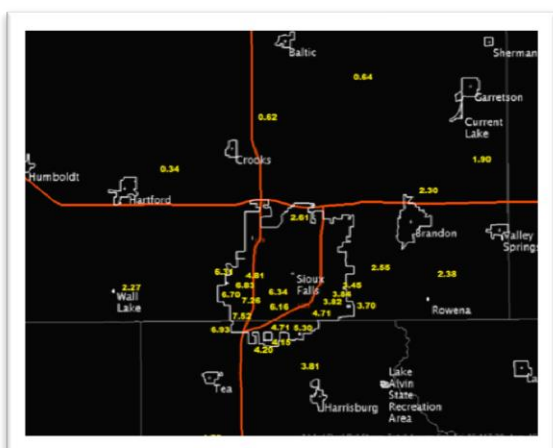
Rainfall, July 5-July 6

July 2015 again proved to have few extremes in temperature, but a bit more extreme on rainfall. The month commenced with a cooler period, interrupted by a brief holiday warmup. Thunderstorms from late on the 5th through early morning on the 6th would bring the first heavy rainfall of the month. While only 1.67 inches rainfall occurred at the airport in Sioux Falls, areas north and west of the city received 3 to 6 inches of rainfall. More cool air would follow for several days, but on the 12th, a surge of heat and humidity would push heat indices to around 105 degrees. Much of the next week would be warm and

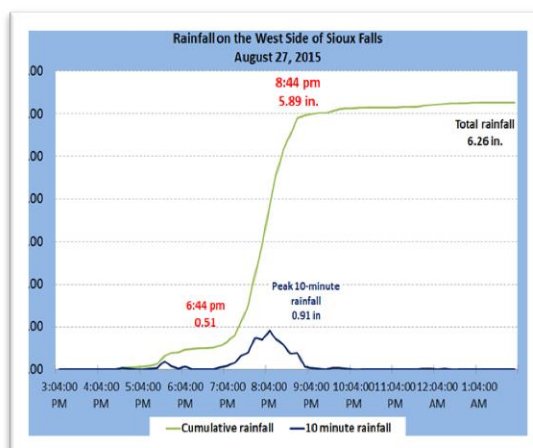
quite humid, however, temperature would settle back largely toward normal for much of the remainder of the month. One very warm anomaly on the 24th would be broken by thunderstorms with gusty winds on the 25th, which would also produce 1 to 2 inch rainfall amounts around the tri-state area. For the third straight month, precipitation would end up above normal, with temperatures 45th coolest on record, which was just on the cool side of normal.



Calmer conditions with a dry and fairly seasonable period reigned during the first half of August. A few thunderstorms on the 2nd, 6th, 9th and 14th brought little rainfall. Heat and humidity would build toward mid month with another period of heat indices from 95 to 100. This brief August heat would come to an end, and rainfall returned with a vengeance for the last half of August. The first heavy rainfall event was a three day deluge from the 16th -18th, during which much of the tri-state area received from 2 to 4 inches rainfall. The 1.61 inches received on the 16th was a **record precipitation for the date**.



Rainfall totals around Sioux Falls
on August 27, 2015

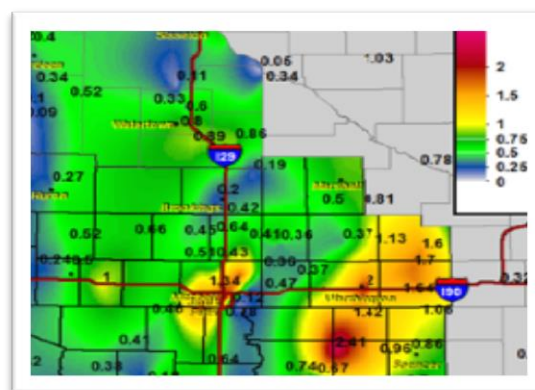


Rainfall in western Sioux
Falls on August 27, 2015

The weather event of the summer for Sioux Falls would follow a little over a week later, with torrential rainfall developing late in the afternoon of the 27th across southern portions of the city. The rainfall regenerated across the city through the evening, causing extensive flash flooding. While the official report at the airport would reach a **record 2.60 inches** for the date, much of the western and southern portions of Sioux Falls received from 3 to 8 inches of rainfall, most in a couple of hours. Worst of the flooding occurred across areas of the city between 41st and 57th Streets, especially around Empire Mall. Cars stalled in water several feet deep, and numerous businesses and homes had considerable water damage. The Big Sioux River rose to 3 feet above flood stage at Western Avenue, flooding most of the greenway in the southern and southeast portions of the city. At months end, it would be the **9th wettest August**, with clouds and precipitation of the month aiding a 29th coolest bid, with a mean temp 1.3 degrees below normal.

Powered by three months of above normal rainfall, the summer season of June through August amassed 15.05 inches of rainfall (nearly 5 inches above normal) to finish 9th wettest on record, and was the third top 10 wettest summer since 2010. The average summer temperature was for lack of a better term - average, ranking 39th coolest with a mean temperature of 70.2 degrees. Much of the cold ranking can be attributed again to cooler mean maximum temperature (28th coolest), while the mean minimum temperature ended up slightly on the warmer half of the historical distribution (58th warmest).

Only five days during September were below normal, and with 12 days which were 10 degrees or more above normal, the month ranked as the **7th warmest September** on record. The monthly average minimum temperature was the **warmest on record** at 57.0 degrees, aided by nearly the full first week featuring lows in the upper 60s to lower 70s, and another shorter stretch mid month. Record high minimum temperatures were set on the 4th (73 degrees) and 16th (70 degrees). Monthly rainfall of 3.24 inches was again above normal, ranking 41st wettest. Most of the rainfall concentrated around a period of thunderstorms on the 8th and 9th (0.95 inches) and on the 24th (**record 1.51 inches**) as remnants of an eastern Pacific tropical disturbance lifted through the northern plains.

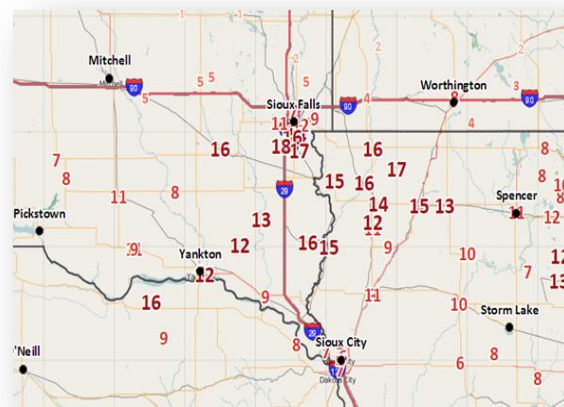
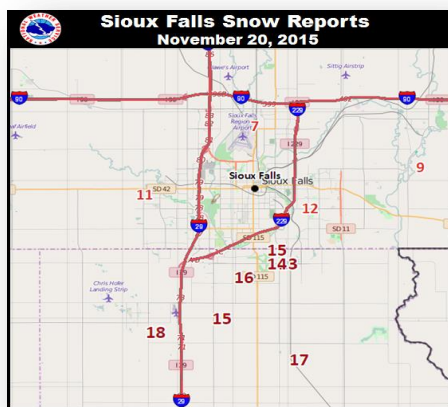


Rainfall totals from
October 23, 2015

Pleasantly warm and quiet weather carried over into October, as the first three weeks of the month found no measurable rainfall and temperatures above normal for all but 3 days. When the high tied a **record 90 degrees** on the 11th, it was the third latest 90 degree temperature on record (Oct. 15 in 1910 and 1958). The dry period came to an abrupt end on the 23rd, when a **record 2.62 inches** of rainfall

occurred in Sioux Falls, again prompting brief street flooding around the city. This rainfall represented over 90 percent of the monthly total of 2.90 inches in just a single day, and was the **third wettest day** ever in October. For the month, precipitation ranked as **22nd wettest**. A relatively cooler period closer to normal followed until a warm Halloween. October ended solidly above normal (+4.9 degrees, **22nd warmest**) with a mean of 52.8 degrees. Even with the warm temperatures, the area experienced the first freeze of the season on the 16th. The growing season was an impressive 171 days, 25 more than the average length of 146 days, and 8th longest on record. Two weeks later, a hard freeze occurred when the temperature dipped to 28 degrees on the 30th, making for 190 days since the last hard freeze on April 22. This was also the 8th longest period on record between hard freezes. A trace of snow on the 28th was first snowfall of the season.

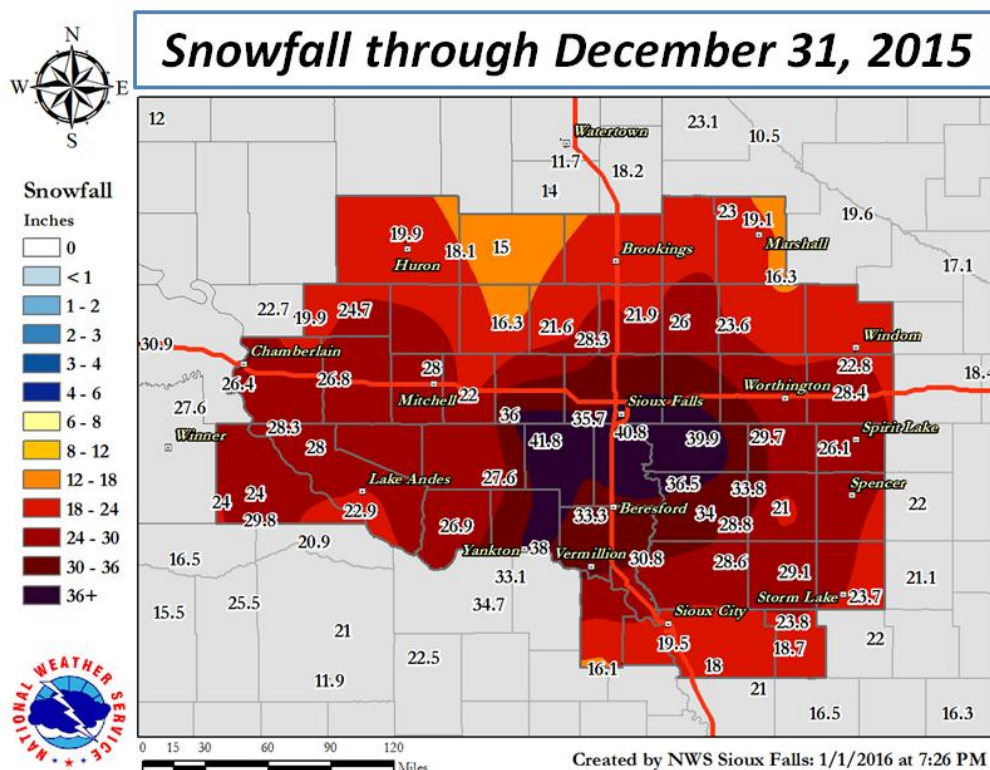
November was a very two-faced month on the temperature front. The first 18 days of the month averaged 47.0 degrees, the 2nd warmest period on record. Included in this period was a record high minimum temperature of 49 on the 16th. It was quite dry, other than a wet Veteran's Day. The latter half of the month would take a drastic turn, featuring cooler temperatures a pair of heavy snowfall events. Heavy rainfall of 1.45 inches on the 18th was a daily record, and the 7th wettest November day. The first measurable snowfall of the season would occur on the 20th, when an intense band of snow set up across southeast South Dakota. Highest snowfalls occurred over the extreme southern Sioux Falls metro area, with up to 18 inches near Harrisburg and Tea. Snowfall amount dropped off at a rate of an inch per mile or two northward across the city, with "only" a **record 7.2 inches** at the Sioux Falls airport, and 2 inches at Dell Rapids. The 7.2 inches of snowfall was the **9th greatest daily snowfall**, but only for a brief time as would be outdone by the **4th greatest and record daily snowfall of 8.7 inches** on the final day of the month.



The wettest month since August (3.89 inches), November ranked as the **2nd wettest** on record. Total snow of 17.3 inches was the 4th greatest monthly total on record, and the greatest November snowfall since 2000. Finally, temperatures for the month reflected the warmth of the first 18 days, and lack of any true arctic air even with snowfall. The mean temperature of 38.2 degrees ranked 21st warmest, with much of this attributed to minimum temperatures which ranked 9th warmest with a mean of 29.2 degrees.

Three months of highly ranked above normal temperatures made the fall season the 4th warmest on record with a mean temperature of 52.7 degrees, 5.4 degrees above normal. Similar consistency in above normal precipitation over the three months resulted in the 8th wettest fall with 10.03 inches of precipitation, and the wettest in 20 years.

December was just another month of two distinct halves, dominated by very warm and dry conditions the first half of the month, then mild and wet conditions the second half. December started with the ending of the snowfall event from November 30, tacking on an additional 0.9 inches to make for a storm total of 9.6 inches. The snow depth of 10 inches on the 1st and 2nd was the greatest of the year. However, mild temperature would make for a quick disappearing act, as within 5 days there would be little or no snow left around the area. From the 10th through the 15th, **6 straight days of temperatures above 30 degrees** tied a record for December from 1918 and 1913, but was much later into the month than those years. At the end of the warmer period, another snow event occurred across the tri-state area. It was a near miss for Sioux Falls proper with generally an inch or two of snowfall including some thunder. However, just west and north of town, a persistent band of snow in the early morning produced from 6 to 10 inches from near Humboldt to Colman. This was the 47th day with thunder for the year, above the 30-year normal of 39 thunder days for the year.



Temperatures continued mild through Christmas, with periods of light freezing drizzle surrounding the winter solstice. It was looking as if there would not be a white Christmas, but a late present in the form of snow from Christmas evening through midday on the 26th would leave behind 10.2 inches of snow at Joe Foss Field, **6.2 inches of this snow a record for the 26th**. The coldest period of the month followed,

with four of the final five days of the year colder than normal, along with additional accumulation of snow from 4 to 7 inches. At years end, the total snowfall so far this season has virtually equaled the expected total seasonal snow. The low temperature of -4 on the 27th was the first below zero reading of the late year, the **10th latest occurrence on record**.

Overall, December was the **18th warmest** on record, with the largest departure from normal for the year at +7.0 degrees. Much of this warmth could again attributed to the minimum temperatures, which ranked as a mean for the month as **10th warmest**. It was the **21st wettest month**, and despite the warmth, also the **6th snowiest**. December was also the gloomiest month of the year; with nearly half the month classified as “cloudy”, averaging more than 80 percent cloud coverage from sunrise to sunset.