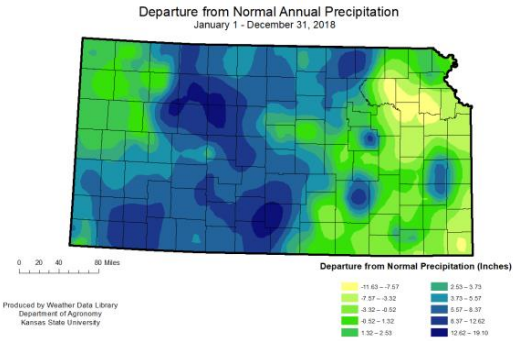
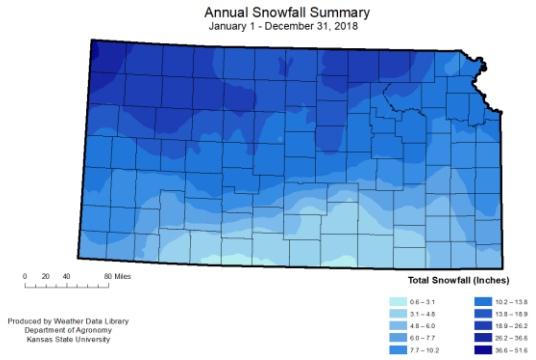
KANSAS CLIMATE SUMMARY
Annual Summary 2018

Dry to Wet

The dry pattern that dominated the Fall of 2017 continued through the first part of 2018. Drought conditions from abnormal dry to severe drought covered the entire state as of the 2nd of January. By the first of May, pockets of drought free conditions were present at the Northwest and Southeast corners of the state, but the drought had intensified in the remainder of the state. Just over 8 percent of the state, particularly in the Southwest and South Central divisions, were in exceptional drought. More abundant rainfall was seen in the western third of the state in June, with improving conditions in those areas. By the first of July, drought free conditions were at 27 percent, mainly in the Northwest and North Central divisions. Exceptional drought had been erased. State-wide average precipitation was less than 50 percent of normal for the first 4 months of the year, and ranks as the 5th driest start since 1895. In, May, precipitation began to return, from west to east. October had the largest surplus, with a statewide average of 5.88 inches, 258 percent of normal. However, parts of eastern Kansas never recovered the deficit, and remained below normal for the year. The greatest annual total for the year at a National Weather Service Cooperative station was 52.04 inches at Willowdale 1SW, Kingman County. The greatest annual total for a CoCoRaHS station 50.43 inches at Latham 0.2 W, Butler County. The driest reporting station was Elkhart, in Morton County, with 16.11 inches. The greatest 24hr precipitation total reported at a CoCoRaHS station was 11.00 inches at Manhattan 9.8 NW, Riley County, on September 3rd. The greatest 24hr precipitation total reported at a NWS station was 8.37 inches at Independence, Montgomery County, on August 15th.

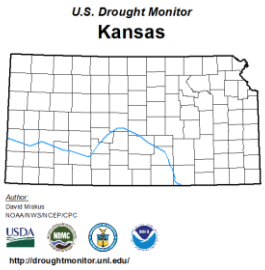


Snow was more of an issue than in previous years, with several large events. While there were several small events during the January-March period, the first significant snow occurred in October A total of 257 stations reported snowfall in October, with monthly totals ranging from trace amounts in eastern Kansas to 9 inches at the CoCoRaHS station north of St. Francis, Cheyenne County. November was highlighted with blizzard-conditions across most of the central and northern areas of the state on the 25th and 26th, creating difficulty for holiday travelers. Sadly, there was one fatality when a stranded motorist attempted to walk to safety and died from exposure. There was another winter storm event after Christmas, with blizzard-conditions across most of the western areas of the state on the 26th and 27th. Sadly, again there was a fatality when a stranded motorist died from exposure. The greatest snowfall total for the year at a CoCoRaHS station was 51.53 inches at St. Francis 12.1 NW, Cheyenne County. The greatest snowfall total at a NWS COOP station was 36.6 inches at Plainville, Rooks County. The state average annual snowfall for 2018 was 11.5 inches, well above the last three years' averages: 4.2 inches in 2017; 6.6 inches in 2016 and 8.6 inches in 2015.



Temperatures averaged almost exactly normal, although there were wide swings between above average and below average temperatures. State-wide average temperature in 2018 was 54.0 ºF, which places it as the 63rd warmest, almost exactly in the middle of the 124-year distribution. April set a new record as the coldest since 1895. The state-wide average temperature for the month was 46.7 ºF, 6.5 degrees cooler than normal. May represented the other side of the pendulum, with an average temperature of 70.6 ºF. This was 7.2 degrees warmer than normal, and ranked as the second warmest. The swing from the cold of April to the warmth of May was the largest change on record at 23.7 degrees, and created a lot of difficulty for crops Extremes ranged from the coldest reading of -15 ºF at Bailyville, Nemaha County, on January 1st to the highest temperature of 112 ºF at Ashland, Clark County, on July 21st. The earliest start to the growing season was a last freeze on April 16th at various locations. The latest freezing temperatures were reported at multiple locations on April 28th. The first fall freeze was mostly seasonal state-wide. The average date was October 14th. The earliest first frost was reported on October 10th at multiple locations, with Goodland, in Sherman County, dropping to 27 ºF. The latest first frost was reported at Independence, Montgomery County, on November 9th. The average length of the growing season was 176 days. The shortest growing season was at Atwood, Rawlins County, with 164 days. The station with the longest growing season was the Coffeyville Municipal Airport, Montgomery County, with a growing season of 206 days.

Drought conditions have shifted over the year, ending with drought free conditions. The year started with much of the western third of the state in moderate to severe drought. Rains gradually picked up in the northwestern parts of the state, then pushed south and east. By August, the extreme drought was concentrated in east Central Kansas. Heavy rains to start September and October further concentrated the severe drought into extreme eastern KS along the Missouri border. Precipitation in November erased that area of drought, but didn't penetrate to the southern parts of the state. By the end of November, abnormally dry conditions had begun to creep into southeast, south central and southwestern KS. Ample moisture in December removed all drought from the state. The cool temperatures and extremely wet conditions in the fall created problems with harvest and with planting and establishment of fall seed crops, such as winter wheat and canola. Many acres of wheat were never planted. Some fall crops still remain to be harvested as well. The excess moisture could continue to be an issue if normal spring precipitation occurs. Streams and reservoirs are high, increasing the possibility of flooding.



January 1, 2019
(Released Thursday, Jan. 3, 2019)
Valid 7 a.m. EST

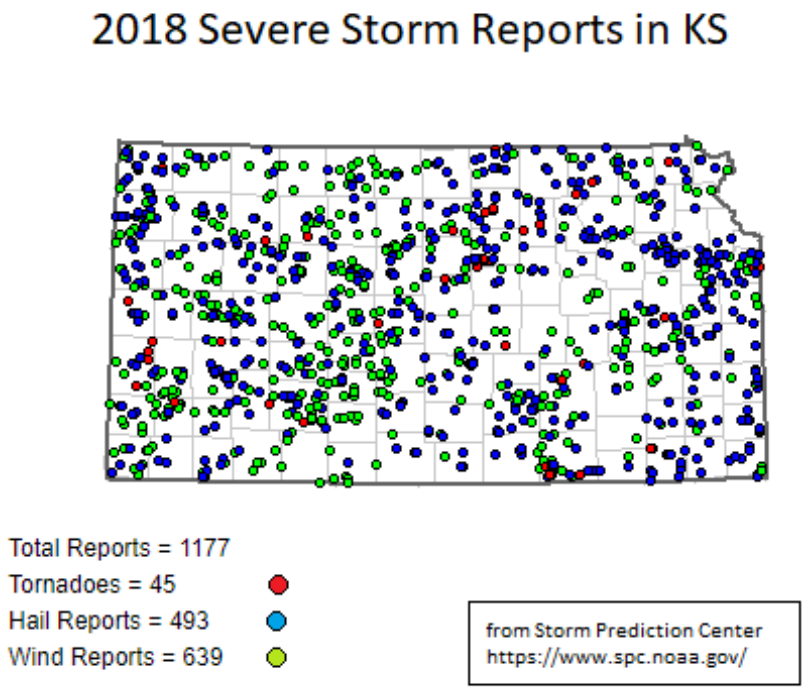
Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	100.00	0.00	0.00	0.00	0.00	0.00
Last Week 12-25-2018	94.75	5.25	0.00	0.00	0.00	0.00
3 Months Ago 10-02-2018	77.69	7.51	5.07	4.06	5.29	0.38
Start of Calendar Year 01-01-2018	100.00	0.00	0.00	0.00	0.00	0.00
Start of Water Year 09-25-2018	78.54	6.98	5.07	4.06	5.29	0.38
One Year Ago 01-02-2018	0.00	67.30	23.95	8.75	0.00	0.00

Intensity:
D0 Abnormally Dry
D1 Moderate Drought
D2 Severe Drought
D3 Extreme Drought
D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

The severe weather season wasn't as active as last year, nor as active as the 5-year average. Preliminary numbers from the Storm Prediction Center (SPC) show a total of 45 tornadoes in 2018, compare to 74 in 2017; 99 tornadoes in 2016, and the five-year average (2008-2012) of 116 tornadoes. Hail reports were also lower in 2018, with 493 hail reports compared to 590 in 2017 and 569 hail reports in 2016. Damaging wind reports were higher with 639 in 2018, 580 in 2017 and 539 damaging wind reports in 2016. Data on other severe weather events are available from the National Climatic Data Center (NCDC) storm database, but currently aren't accessible due to the government shutdown. From preliminary reports, major events were flooding in May in Gove County, flooding in September in Riley County, and widespread flooding in South Central KS in October. There were at least 2 cold weather fatalities, one in November and one in December.



Appendix:

Annual Summary Kansas Climate Division Summary							
	Precipitation (inches)			Temperature (ºF)			
	2018 through December					Monthly Extremes	
Division	**Total**	**Dep. [1]**	**% Normal**	**Ave**	**Dep. [1]**	**Max**	**Min**
Northwest	24.59	3.23	114	51.1	-0.5	104	-10
West Central	25.94	5.17	123	52.8	-0.1	107	-10
Southwest	26.40	6.50	132	55.0	-0.1	112	-9
North Central	33.41	5.37	119	52.8	-0.5	104	-12
Central	33.23	3.94	114	54.6	-0.2	107	-10
South Central	36.79	5.47	118	56.0	-0.3	103	-14
Northeast	34.49	-0.51	99	53.1	-0.1	106	-16
East Central	32.34	-5.58	84	54.6	0.0	104	-11
Southeast	40.73	-0.76	98	56.2	-0.2	103	-7
STATE	32.17	2.78	112	54.0	-0.2	112	-16

1. Departure from 1981-2010 normal value

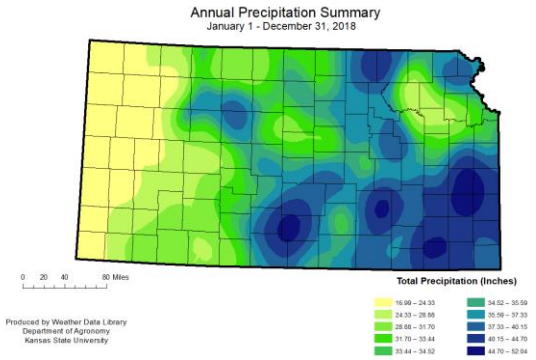
2. State Highest temperature: 112 oF at Ashland, Clark County, on July 21st.

3. State Lowest temperature: -15 oF at Bailyville, Nemaha County, on January 1st

4. Greatest Annual Precipitation: 52.04 inches at Willowdale 1SW, Kingman County (NWS); 50.43 inches at Latham 0.2 W, Butler County (CoCoRaHS).

Source: KSU Weather Data Library

Maps:


Annual Precipitation Summary
January 1 - December 31, 2018
0 20 40 80 Miles
Total Precipitation (Inches)
16.99 – 24.33
24.33 – 28.88
28.88 – 31.70
31.70 – 33.44
33.44 – 34.52
34.52 – 35.59
35.59 – 37.33
37.33 – 40.15
40.15 – 44.70
44.70 – 52.04
Produced by Weather Data Library
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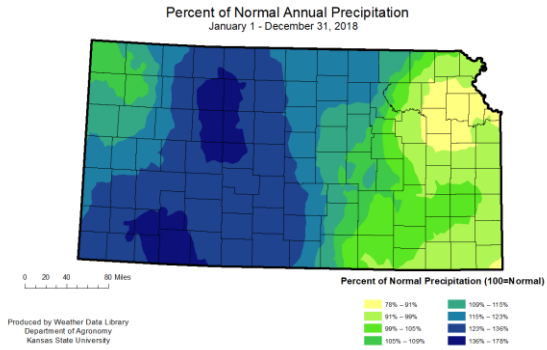
Percent of Normal Annual Precipitation
January 1 - December 31, 2018
0 20 40 80 Miles
Percent of Normal Precipitation (100=Normal)
78% – 91%
91% – 99%
99% – 105%
105% – 109%
109% – 115%
115% – 123%
123% – 136%
136% – 178%
Produced by Weather Data Library
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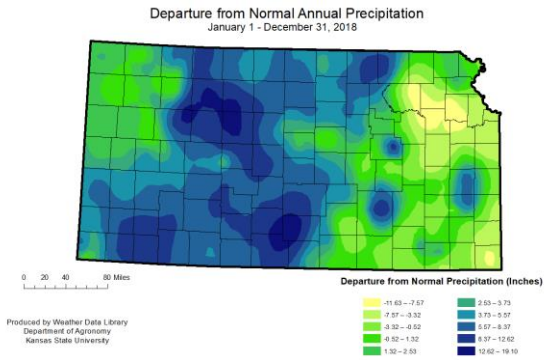
Departure from Normal Annual Precipitation
January 1 - December 31, 2018
0 20 40 80 Miles
Departure from Normal Precipitation (Inches)
-11.63 – -7.57
-7.57 – -3.32
-3.32 – -0.52
-0.52 – 1.32
1.32 – 2.53
2.53 – 3.73
3.73 – 5.57
5.57 – 8.37
8.37 – 12.62
12.62 – 19.10
Produced by Weather Data Library
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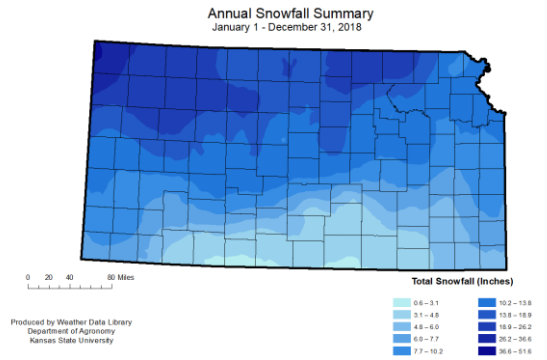
Annual Snowfall Summary
January 1 - December 31, 2018
0 20 40 80 Miles
Total Snowfall (Inches)
0.6 – 3.1
3.1 – 4.8
4.8 – 6.0
6.0 – 7.7
7.7 – 10.2
10.2 – 13.8
13.8 – 18.9
18.9 – 26.2
26.2 – 36.6
36.6 – 51.6
Produced by Weather Data Library
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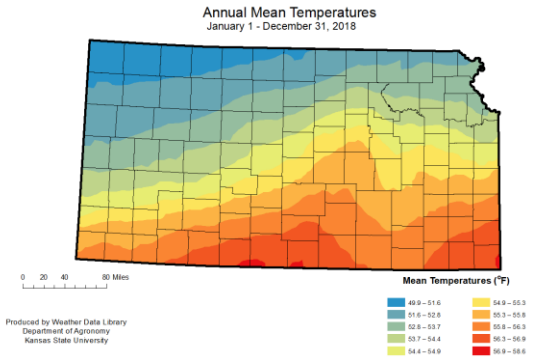
Annual Mean Temperatures
January 1 - December 31, 2018
0 20 40 80 Miles
Mean Temperatures (°F)
49.9 – 51.6
51.6 – 52.8
52.8 – 53.7
53.7 – 54.4
54.4 – 54.9
54.9 – 55.3
55.3 – 55.8
55.8 – 56.3
56.3 – 56.9
56.9 – 58.6
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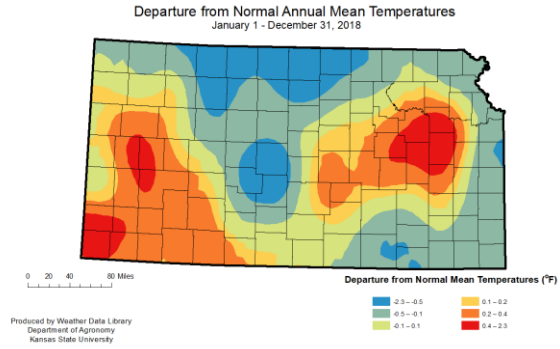
Departure from Normal Annual Mean Temperatures
January 1 - December 31, 2018
0 20 40 80 Miles
Departure from Normal Mean Temperatures (°F)
-2.3 – -0.5
-0.5 – -0.1
-0.1 – 0.1
0.1 – 0.2
0.2 – 0.4
0.4 – 2.3
Produced by Weather Data Library
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