Oklahoma Monthly Climate Summary

JULY 2016

OKLAHOMA CLIMATOLOGICAL SURVEY

The state's sizzling summer continued unabated through July, at least for most Oklahomans. The Oklahoma Mesonet recorded at least one triple-digit temperature in the state on 25 of the month's 31 days. Goodwell and Hooker led all Mesonet sites with highs of 108 degrees on the 11th. Those temperature extremes were reflected in the statewide average for the month. According to preliminary data from the Oklahoma Mesonet, the statewide average temperature was 82.8 degrees, 1.3 degrees above normal to rank as the 43rd warmest July since records began in 1895.

July 2016 Statewide Extremes

Description	Extreme	Station	Day
High Temperature	108°F	Goodwell, Hooker	11
Low Temperature	55°F	Eva	15, 16
High Precipitation	11.77 in.	Pawnee	--
Low Precipitation	0.23 in.	Durant	--

That does not paint the complete picture of the miserably hot weather, however. Those temperatures combined with the stifling humidity to boost heat index values well into the dangerous category throughout the month. The Mesonet's 121 stations recorded 984 instances of daily maximum heat indexes of at least 105 degrees, and 89 times at or above 110 degrees. Kingfisher took the top spot in that category at 116 degrees. The climatological summer season, which runs from June 1 through August 31, stands 2 degrees above normal to rank as the 24th warmest June-July on record. Hooker topped the seasonal triple-digit count with 22 days at or above 100 degrees. The January-July statewide average of 61.5 degrees was 2 degrees above normal as well, the ninth warmest such period on record.

Intermittent episodes of very heavy rainfall kept much of the northern half of the state well above normal while far southern Oklahoma was not quite as fortunate. Thirty-four Mesonet sites recorded at least 5 inches of rain during July with Pawnee leading the state at 11.77 inches. Most of central though east central Oklahoma had generous totals of 6-9 inches. That was not the case for southeastern Oklahoma, however. Several stations in that region failed to register an inch of rain for the month with Durant recording the lowest total at 0.23 inches. The statewide average of 3.84 inches was nearly an inch above normal to rank as the 32nd wettest July on record. Thanks to a dry June, the first two months of summer remained on the dry side at nearly a half-inch below normal, although west central and southwestern Oklahoma had a soggier start with their 37th- and 28th-wettest June-July periods, respectively. The first seven months of the year combined for a statewide average of 20.97 inches, about an inch below normal.

The heavy rains from central through northeastern Oklahoma put a halt to the spread of flash drought in those regions, counteracting dry weather that began back in late April.

July 2016 Statewide Statistics

Temperature

	Average	Depart.	Rank (1895-2016)
Month (Jul)	82.8°F	1.3°F	42nd Warmest
Year-to-Date (Jan-Jul)	61.5°F	2.0°F	9th Warmest

Precipitation

	Total	Depart.	Rank (1895-2016)
Month (Jul)	3.85 in.	0.97 in.	32nd Wettest
Year-to-Date (Jan-Jul)	20.97 in.	-0.94 in.	53rd Wettest

Depart. = departure from 30-year normal

Unfortunately, the aforementioned lack of rain across southern Oklahoma led to flash drought erupting in that region by month's end. The July 5 U.S. Drought Monitor report had four percent of the state in moderate drought and an additional 15 percent in "abnormally dry" conditions – a drought precursor. The final Drought Monitor of the month had over nine percent of the state in moderate drought, mostly across southeastern Oklahoma, and 29 percent was considered abnormally dry. A small section of Bryan and Choctaw counties had intensified to severe drought. The Drought Monitor's intensity scale slides from moderate-severe-extreme-exceptional, with exceptional being the worst classification. Several state lakes had begun to show signs of drought stress according to the Oklahoma Water Resources Board. Broken Bow Lake in McCurtain County fell 6 feet below normal as of July 27 and Lake Stanley Draper in central Oklahoma was 10 feet down at that time. Lugert-Altus, Foss, Atoka and Skiatook were some of the other major reservoirs that had dipped below normal.

JULY 2016 DAILY SUMMARIES

JULY 1-4: The beginning of July and subsequent holiday weekend experienced widely scattered rain showers and thunderstorms. Some storms became severe with flooding reported in Pawnee County on the 1st and in Cleveland County on the 3rd. In addition, 70 mph winds were reported in Norman and Boise City, as well as an EF-1 tornado in Payne County on the 3rd. A passing cold front provided little relief as temperatures remained high. The highest maximum temperature each day was 99 degrees in Grandfield on the 1st, 101 degrees in Grandfield on the 2nd, 97 degrees in Burneyville, Waurika, and Chickasha on the 3rd, and 99 degrees in Kingfisher, Erick, Grandfield, and Bessie on the 4th. The lowest maximum temperature was 76 degrees in Medford on the 1st and in the low to upper 80s the following three days. The highest minimum temperatures ranged from 76 degrees to 80 degrees and the coolest temperatures in the state decreased from 63 degrees in Boise City and Eva on the 1st to 56 degrees in Kenton by the 4th. Rain was fairly heavy every day with the highest rainfall amount measuring 5.82 inches in Pawnee on the 1st, 1.36 inches in Beaver on the 2nd, 6.39 inches in Nowata on the 3rd, and 1.21 inches in Clayton on the 4th. Daily average wind speeds were generally less than 12 mph on the 1st and 3rd, less than 16 mph on the 2nd, and less than 9 mph on Independence Day.

JULY 5-8: Temperatures continued to soar, reaching into the triple digits. The highest maximum temperatures were 103 degrees in Kingfisher and Goodwell on the 5th, 104 degrees in Hobart and Goodwell on the 6th, and 105 degrees in Goodwell on the 7th. The lowest maximum temperature occurred in Jay every day, measuring between 89 and 91 degrees. The highest minimum temperatures were between the upper 70s and low 80s and the lowest minimum temperatures were between the upper 50s and low 60s. Rainfall and storms continued, with maximum daily rainfall amounts measuring .34 inches in Mangum on the 5th, .74 inches in Hollis on the 6th, and .27 inches in Miami on the 7th. The rainfall wasn't as heavy as the rain from the previous weekend, however, the combination of triple-digit temperatures, rainfall, and strong storms created very muggy and uncomfortable conditions. A few of the passing thunderstorms became severe with a 74 mph and 80 mph severe wind gust in Gould on the 6th, as well as an 82 mph severe wind gust in Eldorado. Daily average wind speeds were roughly 5-20 mph.

JULY 8-9: Rainfall intensified as a cold front entered northwest Oklahoma. The top three rainfall amounts on the 8th were 2.53 inches in Altus, 1.88 inches in El Reno, and 1.83 inches in in Tipton. On the 9th, the top three ranking rain gauge measurements from the Mesonet were Centrahoma (2.90 in.), Burneyville (1.82 in.), and Wister (1.49 in.). Some of the more intense storms caused 2.50 inch hail in Cushing and flooding in Warr Acres and Altus on the 8th as well as flooding in Fillmore and Cherokee on the 9th. The hottest temperatures in the state were 101 degrees in Grandfield on the 8th and 102 degrees in Hooker on the 9th. The lowest maximum temperatures were in the low 80s. Minimum temperatures ranged from 64 degrees in Kenton to 78 degrees in Madill and Talihina on Friday and from 56 degrees in Boise City to 75 degrees in portions of the southeast on Saturday. Daily average wind speeds were less than 15 mph on the 8th and less than 12 mph on the 9th.

JULY 10-13: Muggy conditions continued as temperatures remained in the triple digits and showers and thunderstorms continued. The warmest temperatures in the state ranged from 103 degrees to 108 degrees with Goodwell and Hollis coming in 1st place with the heat. The lowest maximum temperatures were in the upper 80s and low 90s. The warmest minimum temperatures were between 75 and 80 degrees. The coolest minimum temperatures occurred in the panhandle and ranged from 58 degrees to 65 degrees. Rain fell each day with the heaviest amounts measuring between a quarter of an inch to just over half an inch in northwest, north-central, and eastern Oklahoma. Stronger storms moved over north-central portions of the state on the 13th and produced hail as big as 2.17 inches in Garfield County. The highest wind gusts each day were 44 mph in Cheyenne on the 10th, 53 mph in Medford and Cherokee on the 11th, 44 mph in Freedom on the 12th, and 63 mph in Breckinridge on the 13th. Average wind speeds were a little gusty with the highest daily averages in the state measuring between 19 and 25 mph.

JULY 14-16: Strong to severe thunderstorms made their way into Oklahoma from the Texas panhandle and southwest Kansas. Rain and storms passed through primarily western Oklahoma on the 14th, western, northern, and central Oklahoma on the 15th, and northwest and southern Oklahoma on the 16th. The top rainfall amounts each consecutive day were 2.22 inches, 3.14 inches, and 1.12 inches. As storms became severe, the state racked up a number of severe wind and flood reports. On the 14th, 70-75 mph wind gusts were measured in Stillwater, Bixby, Eufaula, and Tahlequah; 80 mph wind gusts were measured in Muskogee and Haskell; a 90 mph wind gust was measured in Tullahassee; and flooding was reported in Tulsa and Henryetta. On the 15th, 70-78 mph wind gusts were measured in Minco, Union City, Olustee, and Beaver, and flooding was reported in Oklahoma City and Bluejacket. The highest maximum temperatures were in the low 100s in portions of the panhandle and southeast and the lowest maximum temperatures ranged from 80 to 87 degrees in Jay and Altus. The highest minimum temperatures were in the 70s and the lowest minimum temperatures were 61 degrees in Elk City on the 14th and 55 degrees in Eva on the 15th and 16th. Daily average wind speeds were less than 17mph on the 14th and 16th, and less than 15mph on the 15th.

JULY 17-19: Although temperatures remained high, the warmest maximum temperatures decreased slightly each day from 104 degrees to 100 degrees. The lowest maximum temperatures recorded were 90 and 91 degrees in Jay. The highest minimum

temperatures occurred in Tulsa each day, measuring 77-79 degrees and the lowest maximum temperatures were in the panhandle, decreasing from 66 degrees on the 17th to 59 degrees by the 19th. Isolated showers occurred in the panhandle on the 17th and in eastern Oklahoma the following two days. The daily maximum rainfall amounts were .12 inches in Boise City on the 17th, .16 inches in Webbers Falls on the 18th, and .57 inches in Wister on the 19th. The highest daily average wind speeds recorded in the state decreased each day from 22 mph in Cheyenne on the 17th, to 17 mph in Cheyenne on the 18th, and finally to 14 mph in Kenton on the 19th.

JULY 20-22: Skies were rain-free and temperatures gradually increased. The highest temperatures recorded each day were 103 degrees in Alva on the 20th, 105 degrees in Hooker on the 21st, and 107 degrees in Alva on the 22nd. Jay reported the lowest maximum temperature each day, increasing from 92 degrees on the 20th to 95 degrees on the 22nd. The highest minimum temperatures were between 79 and 81 degrees and the lowest minimum temperatures were in the low to mid-60s in the panhandle. Wind speeds averaged 3-18 mph on the 20th, 3-17 mph on the 21st, and less than 14mph on the 22nd. The highest wind gust recorded was 36 mph each day.

JULY 23-24: Despite some isolated storms in eastern Oklahoma and a few light showers in the panhandle, an upper-level ridge allowed for predominantly clear skies. Two Mesonet sites observed rainfall on the 23rd: .92 inches in Idabel and .85 inches in Valliant. On the 24th, light rain fell in the panhandle and southeast OK. The highest amount of rain measured that day was .40 inches in Goodwell. All other Mesonet sites received around a tenth of an inch or less. Cherokee reported the highest temperature in the state both days with 105 degrees on the 23rd and 106 degrees on the 24th. Northern Oklahoma had the coolest maximum temperatures which were in the low to mid-90s. Minimum temperatures ranged from 65 degrees to 81 degrees. Peak wind gusts were in the low 40s and daily average wind speeds were less than 12 mph.

JULY 25-27: Widespread showers and thunderstorms persisted through the 25th before becoming more concentrated in central and southwest Oklahoma on the 26th and in the central portion of the state on the 27th. Along with the storms came heavy rain and frequent lightning. The maximum rainfall amounts each day were 3.16 inches in Shawnee on the 25th, 3.22 inches in Minco on the 26th, and 1.26 inches in Broken Bow on the 27th. There was a stalled warm front over the state on the 26th followed by a weak cold front in the north the next day. Over the three-day stretch, the warmest maximum temperatures fell from 102 degrees in Grandfield to the upper 90s. The coolest maximum temperatures were in the mid-upper 80s in eastern Oklahoma. The warmest daily minimum temperatures decreased from 79 degrees to 74 degrees and the coolest daily minimum temperatures were in the low 60s in the panhandle. Some areas experienced wind gusts in the upper 40s and 50s with the highest reported gust measuring 51 mph in Weatherford on the 27th. Daily average wind speeds were less than 12 mph on the 25th and less than 9 mph the following two days.

JULY 28-29: Strong to severe storms entered the state, first hitting western, northern, and central Oklahoma with heavy rain, strong winds, and lightning on the 28th before moving into southern and southeast Oklahoma on the 29th. The highest rainfall amount measured by the Mesonet on the 28th was 1.16 inches in Perkins and Stillwater. On the 29th, Haskell reported the highest amount of rain with a hefty 4.12 inches. With the deluge of passing showers, flooding was reported in Kay County that Thursday. Maximum temperatures ranged from 84 degrees in central and northern Oklahoma to 100 degrees in Bessie and Grandfield. Minimum temperatures ranged from 58 degrees in Eva to 74 degrees in the east. An outflow boundary caused strong wind gusts with the maximum gust measuring 59 mph in Hinton on the 28th and 70 mph in Breckinridge on the 29th. Apart from the gustiness brought on by storms, average wind speeds were generally less than 13 mph.

JULY 30-31: The end of July concluded with a familiar theme of wet, hot, and muggy. The highest maximum temperature was 102 and 103 degrees in Grandfield on the 30th and 31st, respectively. The coolest maximum temperature was 83 degrees in Westville on the 30th and 92 degrees in Jay and Westville on the 31st. Minimum temperatures ranged from the upper 50s in Eva to the upper 70s in southern Oklahoma. Strong storms moved through on the 30th, leaving behind the heaviest amounts of rainfall in the western two-thirds of the state. The top three rainfall measurements that day were 1.54 inches in Skiatook, 1.31 inches in Westville, and 1.02 inches in Tahlequah. Only a few isolated showers continued the following day with Sallisaw receiving 1.44 inches of rain and other areas receiving trace amounts. The highest wind gusts were 56 mph in Wister on the 30th and 40 mph in Sallisaw on the 31st. Average wind speeds were less than 15 mph on Saturday and less than 17 mph on Sunday.

JULY 2016 SEVERE WEATHER

Flooding

Location	County	Day
Pawnee	Pawnee	1
1 S Stella	Cleveland	3
Norman	Cleveland	3
1 E Warr Acres	Oklahoma	8
Altus	Jackson	8
Fillmore	Johnston	9
Cherokee	Alfalfa	9
Tulsa	Tulsa	14
Henryetta	Okmulgee	14
Oklahoma City	Oklahoma	15
Bluejacket	Craig	15
Ponca City	Kay	28

Hail (2 Inches in Diameter or Greater)

Size (in)	Location	County	Day
2.50	7 E Cushing	Payne	8
2.17	1 SW Hillsdale	Garfield	13

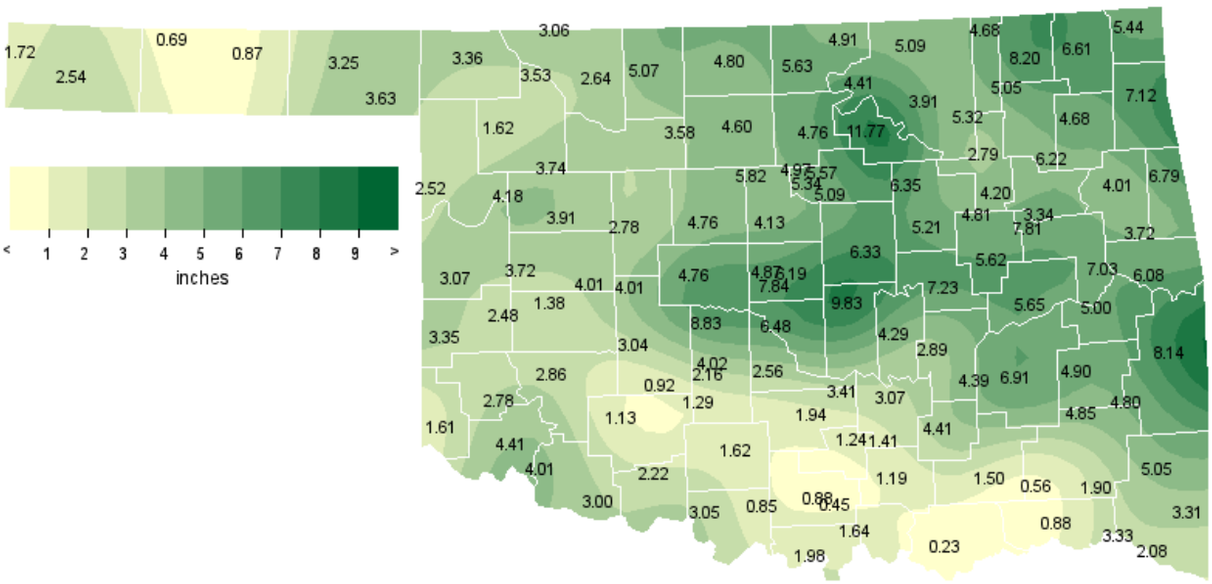
Significant Tornadoes (EF2 or Greater)

EF-Rating	County (Start/End)	Day
None		

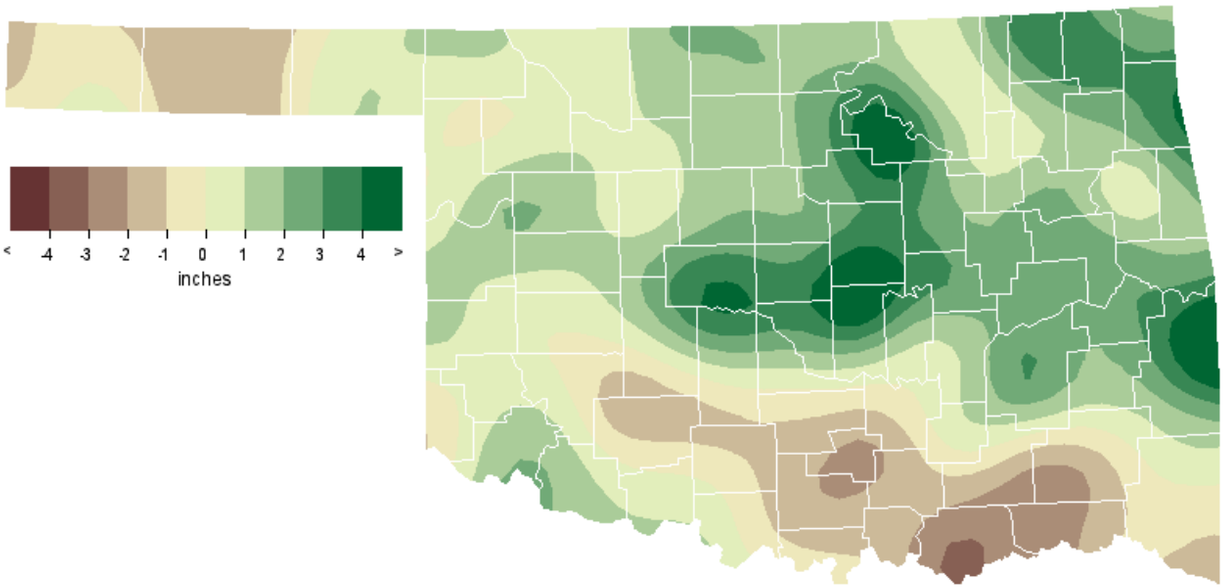
Wind Gusts (70 mph or Greater)

Speed (mph)	Location	County	Day
70.00	2 NE Norman	Cleveland	3
70.00	3 SSE Boise City	Cimarron	3
74.00	3 W Gould	Harmon	6
82.00	6 WNW Eldorado	Jackson	6
80.00	3 W Gould	Harmon	6
72.00	3 NW Stillwater	Payne	14
75.00	3 NW Stillwater	Payne	14
75.00	2 NW Bixby	Tulsa	14
80.00	Muskogee	Muskogee	14
72.00	Eufaula	McIntosh	14
70.00	Tahlequah	Cherokee	14
80.00	Haskell	Muskogee	14
90.00	2 E Tullahassee	Wagoner	14
70.00	2 SSW Minco	Grady	15
75.00	Union City	Canadian	15
70.00	NE Olustee	Jackson	15
78.00	NE Olustee	Jackson	15
75.00	Beaver	Beaver	15

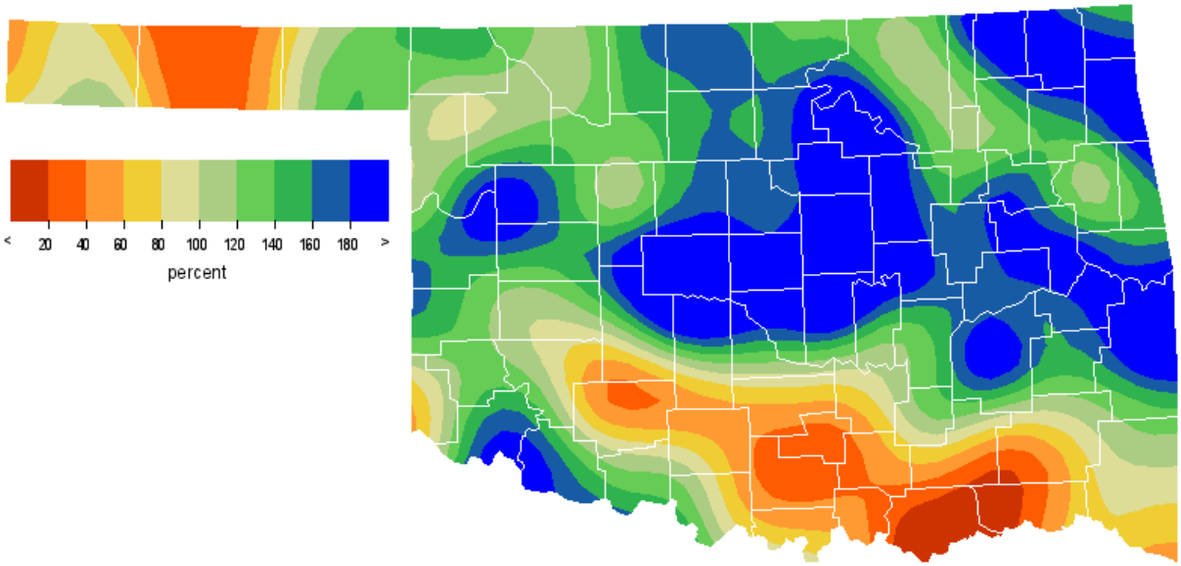
JULY 2016 OBSERVED PRECIPITATION



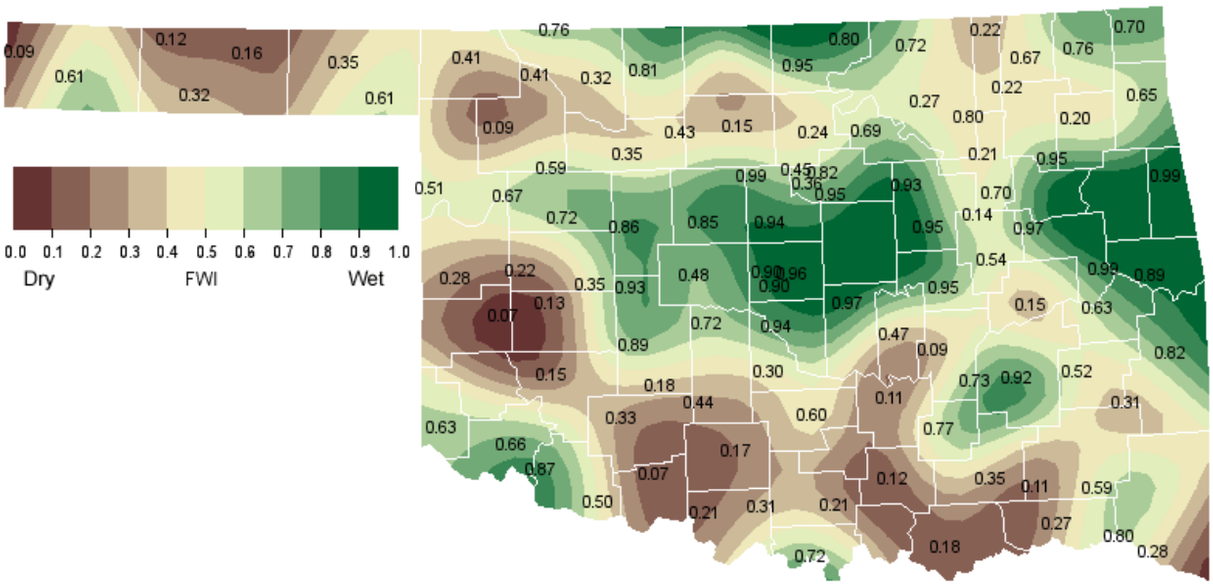
JULY 2016 DEPARTURE FROM NORMAL PRECIPITATION



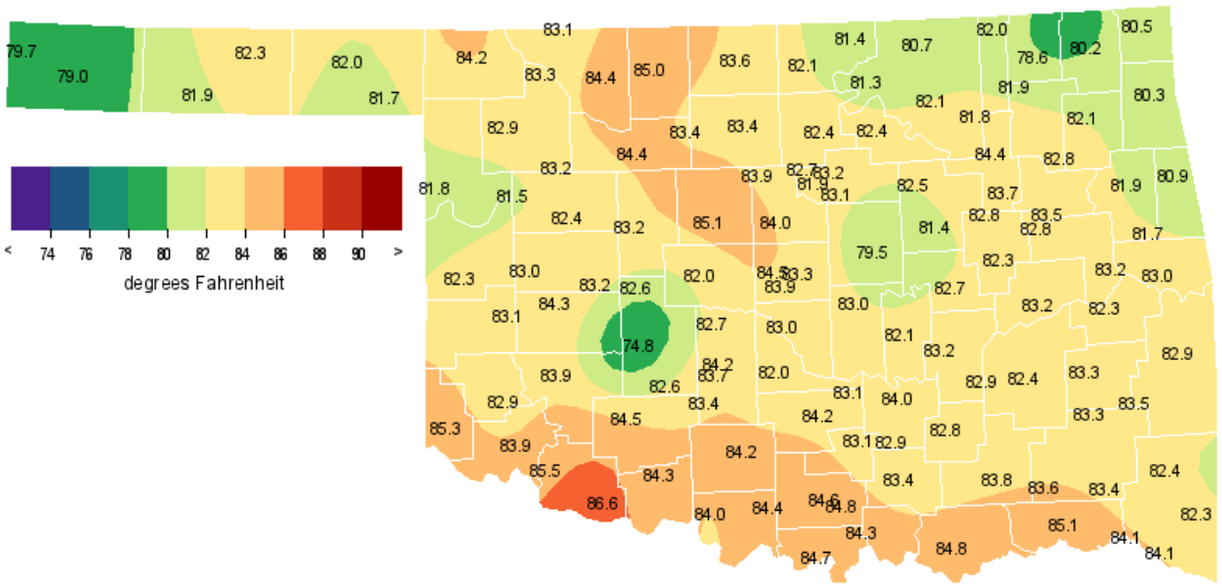
JULY 2016 PERCENT OF NORMAL PRECIPITATION



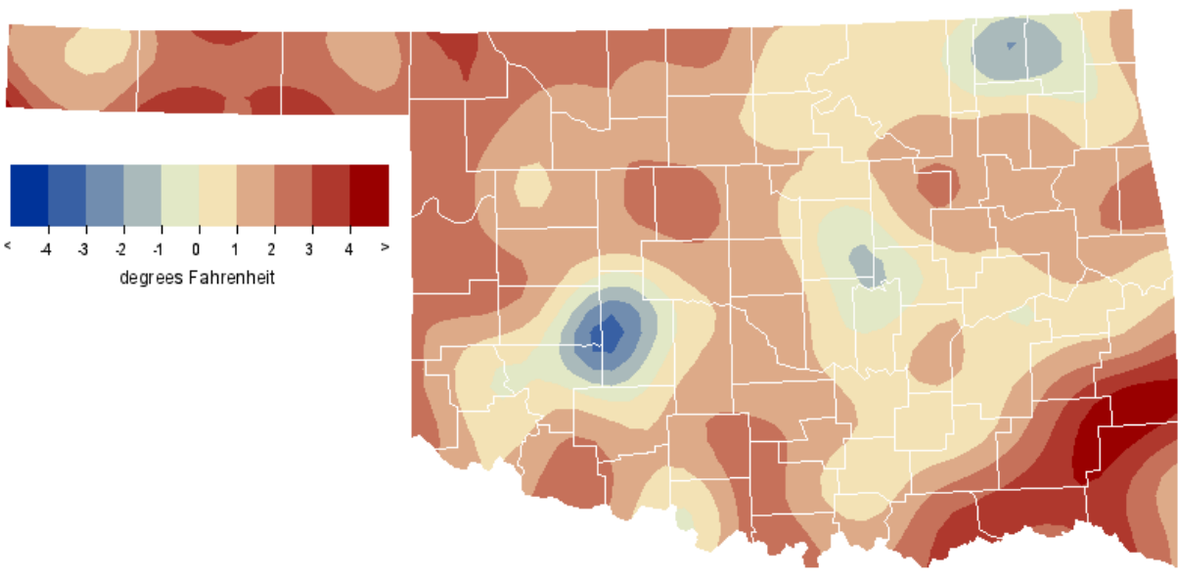
JULY 2016 AVERAGE SOIL MOISTURE AT 25CM



JULY 2016 AVERAGE TEMPERATURE



JULY 2016 DEPARTURE FROM NORMAL TEMPERATURE

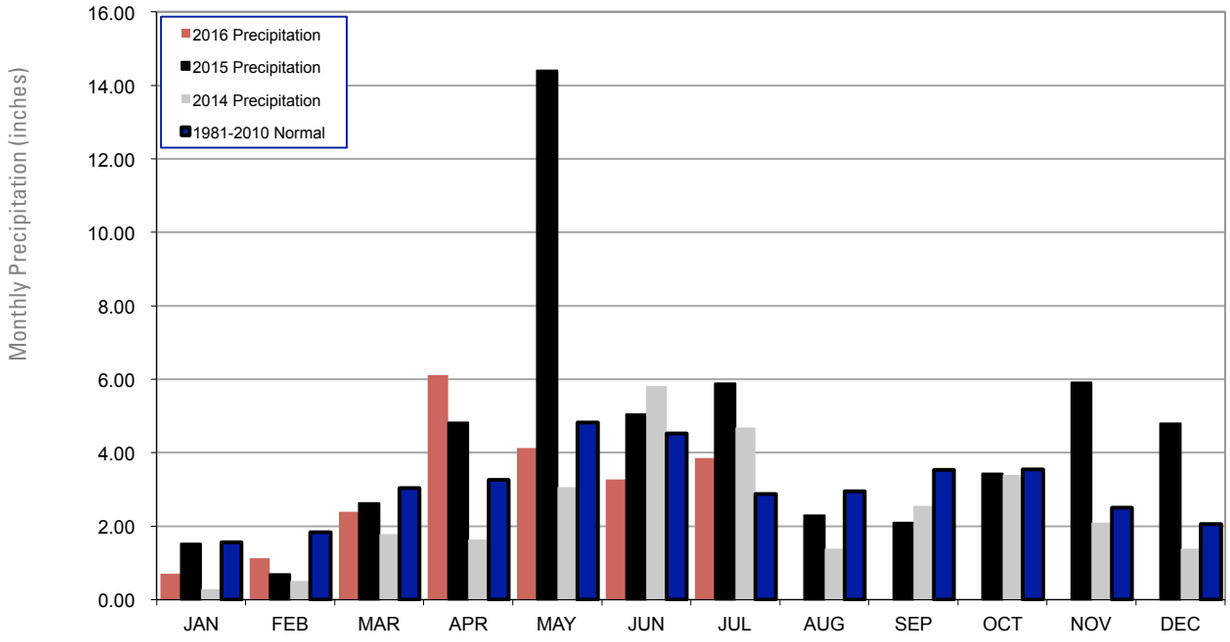


MESONET MONTHLY SUMMARY FOR JULY 2016

NAME	MEAN TEMP	HIGH TEMP	HIGH DAY	LOW TEMP	LOW DAY	HDD	CDD	TOT PPT	HIGH 24-HR	HIGH DAY
PANHANDLE										
Arnett	81.7	102	7	63	16	0	519	2.52	.85	15
Beaver	82.0	105	22	59	16	0	527	3.25	1.36	2
Boise City	79.0	102	22	56	9	0	435	2.54	1.00	29
Buffalo	84.1	105	22	63	16	0	593	3.36	1.89	1
Eva	*****	***	***	***	***	****	****	.69	.27	15
NORTH CENTRAL										
Alva	84.4	107	22	64	29	0	602	2.64	1.09	29
Blackwell	82.2	102	24	65	29	0	532	5.63	2.34	29
Breckinridge	83.5	105	24	65	29	0	573	4.60	1.55	29
Cherokee	85.0	106	22	67	29	0	619	5.07	2.45	29
Fairview	84.4	105	24	65	29	0	602	*****	*****	***
Freedom	83.3	105	22	63	16	0	568	3.53	.83	15
Lahoma	83.4	106	24	66	29	0	570	3.58	1.10	3
NORTHEAST										
Bixby	83.7	100	24	67	14	0	580	4.20	2.07	14
Burbank	81.3	99	24	65	14	0	505	4.41	1.84	3
Copan	82.0	101	24	66	29	0	526	4.68	2.10	3
Foraker	80.7	98	24	65	29	0	487	5.09	2.26	3
Inola	82.8	99	24	68	14	0	552	6.22	2.17	14
Jay	80.4	96	24	64	14	0	477	7.12	3.45	3
Miami	80.5	96	24	65	14	0	481	5.44	2.35	3
Nowata	81.2	98	24	64	30	****	****	8.20	6.39	3
WEST CENTRAL										
Bessie	84.4	103	24	65	14	0	600	1.38	.48	29
Butler	83.0	102	13	64	14	0	557	3.72	1.42	15
Camargo	81.5	100	13	63	16	0	510	4.18	2.33	15
Cheyenne	82.3	101	7	62	16	0	535	3.07	1.40	15
Elk City	83.2	102	13	61	14	0	564	2.48	1.40	15
CENTRAL										
Acme	83.4	99	23	66	15	0	570	1.29	.57	16
Bowlegs	82.1	99	31	67	14	0	529	4.29	1.77	3
Bristow	81.3	97	24	66	30	0	506	5.21	1.98	3
Lake Carl Blac	82.7	101	24	67	29	0	549	4.97	1.14	3
Chandler	82.1	97	24	69	15	****	****	6.33	1.80	3
Chickasha	84.3	103	23	66	15	0	597	4.02	1.84	26
El Reno	82.0	99	24	64	14	0	527	4.76	1.88	8
Guthrie	84.0	102	22	65	29	0	590	4.13	1.47	29
Kingfisher	85.1	104	7	66	29	0	624	4.76	2.19	14
Marena	81.9	101	24	66	29	0	524	5.34	1.50	3
Minco	82.8	98	23	65	29	0	551	8.83	3.22	26
Marshall	83.9	103	22	65	29	0	587	5.82	1.40	29
EAST CENTRAL										
Cookson	81.8	99	24	64	15	0	520	3.72	1.51	14
Eufaula	83.3	97	23	66	14	0	566	5.65	3.25	3
Haskell	82.7	99	23	66	14	0	550	7.81	4.12	29
Hectorville	82.9	99	24	66	14	0	554	4.81	1.93	3
Holdenville	83.2	100	23	67	14	0	565	2.89	1.67	3
McAlester	82.4	99	24	66	14	0	540	6.91	3.57	3
Okmulgee	82.3	97	24	66	14	0	537	5.62	2.17	14
SOUTHWEST										
Altus	83.9	102	7	66	15	0	587	4.41	2.53	8
Apache	82.6	99	31	66	15	0	547	.92	.52	16
Fort Cobb	82.8	99	7	66	15	****	****	3.04	.90	25
Grandfield	86.5	103	31	68	15	0	668	3.00	1.12	8
Hinton	82.6	100	24	65	15	0	546	4.01	2.22	14
Hobart	83.9	104	6	65	15	0	586	2.86	1.80	15
SOUTH CENTRAL										
Ada	83.9	101	24	68	10	0	586	3.07	1.81	3
Ardmore	84.7	100	23	66	10	0	610	.45	.39	15
Burneyville	84.8	100	24	68	9	0	613	1.98	1.82	9
Byars	83.1	99	24	67	15	0	561	3.41	1.88	3
Centrahoma	82.8	98	24	67	10	0	552	4.41	2.90	9
Durant	84.7	100	23	68	10	0	612	.23	.17	15
Fittstown	82.9	100	24	66	10	0	554	1.41	.76	15
Ketchum Ranch	84.2	100	24	66	15	0	594	1.62	.70	8
SOUTHEAST										
Antlers	83.6	102	22	68	1	0	576	.56	.26	4
Broken Bow	82.3	101	23	66	15	0	535	3.31	1.26	27
Clayton	83.3	99	22	68	14	0	567	4.85	2.05	14
Cloudy	83.4	102	23	67	15	0	569	1.90	.62	25
Hugo	85.1	101	24	69	15	0	624	.88	.35	15
Idabel	84.1	101	23	68	15	0	593	2.08	.92	23

NAME	MEAN TEMP	HIGH TEMP	HIGH DAY	LOW TEMP	LOW DAY	HDD	CDD	TOT PPT	HIGH 24-HR	HIGH DAY
Goodwell	81.9	108	11	58	16	0	524	*****	*****	***
Hooker	82.2	108	11	59	16	0	535	.87	.48	29
Kenton	79.6	105	10	56	16	0	454	1.72	.64	3
Slapout	81.7	103	22	61	16	0	518	3.63	1.35	2
May Ranch	83.2	105	22	63	16	0	563	3.06	1.47	29
Medford	83.6	105	24	66	29	0	577	4.80	2.24	29
Newkirk	81.3	99	24	65	14	0	506	4.91	1.10	14
Red Rock	82.4	102	23	67	1	0	540	4.76	1.74	1
Seiling	83.2	103	24	64	29	0	564	3.74	1.24	29
Woodward	82.9	103	22	61	16	0	555	1.62	.46	3
Pawnee	82.4	99	24	67	14	0	541	11.77	5.82	1
Porter	83.5	100	22	66	14	0	573	3.34	1.34	29
Pryor	82.1	100	23	67	16	0	529	4.68	1.95	3
Skiatook	81.9	99	24	66	14	0	523	5.32	1.66	14
Talala	81.9	99	24	66	29	0	523	5.05	3.87	3
Tulsa	84.4	100	24	67	14	0	602	2.79	1.23	14
Vinita	80.2	97	24	65	14	0	471	6.61	3.59	3
Wynona	82.1	100	24	66	14	0	530	3.91	1.57	3
Erick	*****	***	***	***	***	****	****	3.35	1.58	8
Putnam	82.4	100	24	63	29	0	538	3.91	1.83	15
Watonga	83.2	102	24	64	15	0	565	2.78	1.00	28
Weatherford	83.2	100	24	66	29	0	564	4.01	1.31	14
Ninnekah	83.8	100	24	66	15	0	582	2.16	.84	15
Norman	83.0	97	24	66	15	0	558	6.48	2.35	3
Oilton	82.6	98	24	66	14	0	545	6.35	1.89	14
OKC East	83.9	98	24	66	15	0	587	7.84	3.13	15
OKC North	84.5	101	23	67	29	0	604	4.87	2.27	25
Okemah	82.6	98	23	67	14	0	546	7.23	2.86	25
Perkins	83.1	101	23	67	13	0	561	5.09	1.25	14
Shawnee	83.0	98	23	67	15	0	559	9.83	3.16	25
Spencer	83.2	99	23	66	15	0	565	6.19	1.85	15
Stillwater	83.2	102	24	67	29	0	565	5.57	1.43	3
Washington	82.0	100	24	65	15	0	527	2.56	1.06	15
Sallisaw	82.9	100	24	66	15	0	556	6.08	1.80	3
Stigler	82.3	99	24	66	14	0	537	5.00	2.08	3
Stuart	82.9	99	24	66	14	0	554	4.39	3.03	3
Tahlequah	81.9	99	24	65	14	0	524	4.01	1.07	14
Webbers Falls	83.2	99	24	68	14	0	565	7.03	1.74	3
Westville	80.9	98	24	66	14	0	491	6.79	1.31	30
Hollis	85.3	104	23	65	15	0	629	1.61	.74	6
Mangum	82.9	100	7	64	15	0	553	2.78	1.14	15
Medicine Park	84.5	101	31	67	16	0	603	1.13	.47	16
Tipton	85.6	102	7	66	15	0	639	4.01	1.83	8
Walters	84.3	101	31	67	15	0	598	2.22	1.16	8
Lane	83.8	100	23	69	15	0	583	1.50	.77	15
Madill	84.4	99	24	66	10	0	600	1.64	.67	15
Newport	84.7	101	24	66	10	0	611	.88	.77	15
Pauls Valley	84.2	100	24	67	15	0	597	1.94	1.83	15
Ringling	84.4	99	24	68	15	0	601	.85	.37	16
Sulphur	83.2	99	24	67	9	0	563	1.24	.85	15
Tishomingo	83.4	100	23	66	10	0	570	1.19	.86	15
Waurika	84.1	99	25	67	10	0	591	3.05	.91	25
Mt Herman	82.3	100	22	66	15	0	537	5.05	1.65	25
Talihina	83.4	101	22	66	14	0	572	4.80	1.31	3
Valliant	84.1	102	22	67	1	0	593	3.33	1.88	29
Wilburton	83.4	100	24	66	14	0	569	4.90	2.87	3
Wister	82.8	99	23	66	14	0	552	8.14	1.90	14

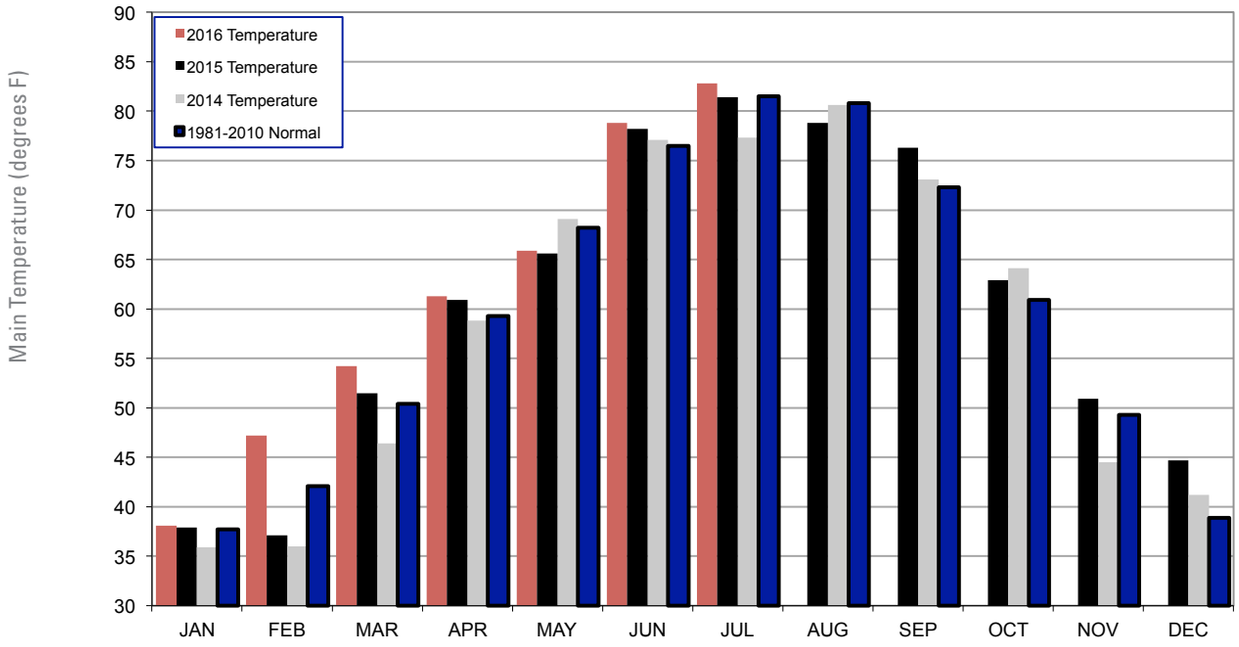
2014, 2015 AND 2016 STATEWIDE PRECIPITATION MONTHLY TOTALS VS. NORMAL



July 2016 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Jul-15 (inches)
Panhandle	2.32	-0.25	55th Driest	8.81 (1950)	0.44 (1983)	5.22
North Central	3.99	1.18	24th Wettest	8.59 (1950)	0.12 (1983)	6.18
Northeast	5.55	2.17	18th Wettest	9.52 (1959)	0.28 (1946)	6.22
West Central	3.21	0.95	32nd Wettest	7.63 (1950)	0.04 (1983)	5.36
Central	5.39	2.55	13th Wettest	9.61 (1950)	0.16 (1980)	5.67
East Central	5.44	2.15	21st Wettest	10.03 (1950)	0.36 (1993)	8.39
Southwest	2.73	0.46	44th Wettest	6.60 (1950)	0.03 (1980)	3.12
South Central	1.80	-0.95	44th Driest	8.46 (1950)	0.11 (1998)	5.13
Southeast	3.62	0.00	58th Wettest	12.47 (1950)	0.19 (1993)	2.98
Statewide	3.85	0.97	32nd Wettest	9.07 (1950)	0.42 (1980)	5.43

2014, 2015 AND 2016 STATEWIDE TEMPERATURE MONTHLY TOTALS VS. NORMAL



July 2016 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Jul-15 (F)
Panhandle	81.2	1.9	29th Warmest	86.0 (1934)	72.8 (1906)	79.7
North Central	83.3	1.5	37th Warmest	89.6 (2011)	75.9 (1950)	81.9
Northeast	81.8	1.0	51st Warmest	89.3 (1954)	75.4 (1950)	81.7
West Central	82.9	1.1	41st Warmest	89.6 (2011)	75.9 (1906)	82.4
Central	82.9	1.0	46th Warmest	90.2 (2011)	76.7 (1950)	82.0
East Central	82.5	1.3	41st Warmest	88.9 (2011)	76.2 (1906)	82.2
Southwest	83.4	0.2	56th Warmest	91.7 (2011)	78.0 (1908)	83.4
South Central	83.9	1.4	39th Warmest	90.5 (2011)	77.9 (1950)	83.3
Southeast	83.5	3.1	16th Warmest	87.5 (2011)	76.1 (1905)	82.4
Statewide	82.8	1.3	42nd Warmest	89.2 (2011)	76.4 (1906)	82.1

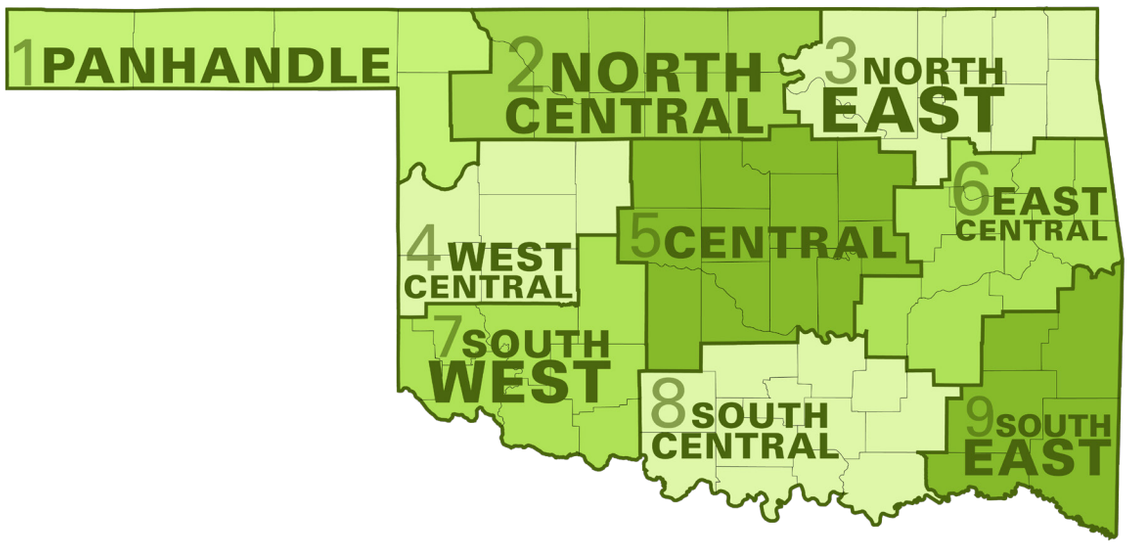
RECORD EVENT REPORTS JULY 2016

Description	Day	Location	Record	Previous Record	Year
NONE	--	--	--	--	--

MESONET EXTREMES FOR JULY 2016

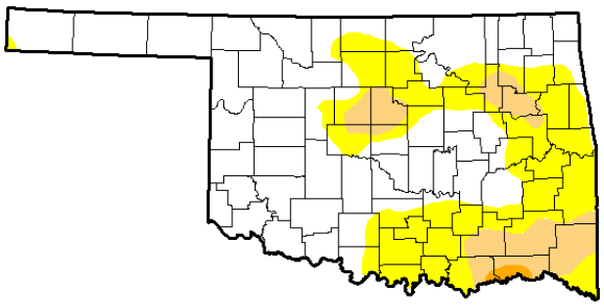
Climate Division	High Temp (F)	Day	Station	Low Temp (F)	Day	Station	High Monthly Rainfall (inches)	Station	High Daily Rainfall (inches)	Day	Station
Panhandle	108	11th	Goodwell	55	16th	Eva	3.63	Slapout	1.89	1st	Buffalo
North Central	107	22nd	Alva	61	16th	Woodward	5.63	Blackwell	2.45	29th	Cherokee
Northeast	101	24th	Copan	64	30th	Nowata	11.77	Pawnee	6.39	3rd	Nowata
West Central	103	24th	Bessie	61	14th	Elk City	4.18	Camargo	2.33	15th	Camargo
Central	104	7th	Kingfisher	64	14th	El Reno	9.83	Shawnee	3.22	26th	Minco
East Central	100	24th	Sallisaw	64	15th	Cookson	7.81	Haskell	4.12	29th	Haskell
Southwest	104	6th	Hobart	64	15th	Mangum	4.41	Altus	2.53	8th	Altus
South Central	101	24th	Newport	66	15th	Ketchum Ranch	4.41	Centrahoma	2.90	9th	Centrahoma
Southeast	102	23rd	Cloudy	66	15th	Mt Herman	8.14	Wister	2.87	3rd	Wilburton
Statewide	108	11th	Goodwell	55	16th	Eva	11.77	Pawnee	6.39	3rd	Nowata

Oklahoma Climate Divisions



U.S. Drought Monitor

Oklahoma



July 26, 2016

(Released Thursday, Jul. 28, 2016)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	61.25	38.75	10.00	0.53	0.00	0.00
Last Week 7/19/2016	65.26	34.74	7.54	0.00	0.00	0.00
3 Months Ago 4/26/2016	56.23	43.77	10.30	1.65	0.00	0.00
Start of Calendar Year 12/29/2015	100.00	0.00	0.00	0.00	0.00	0.00
Start of Water Year 9/29/2015	52.60	47.40	16.79	6.37	0.97	0.00
One Year Ago 7/28/2015	100.00	0.00	0.00	0.00	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.

Author:
Brad Rippey
U.S. Department of Agriculture

http://droughtmonitor.unl.edu/

INTERPRETATION INFORMATION

MEAN DAILY TEMPERATURE: Calculated from an average of the daily maximum and minimum temperatures. Daily averages are summed for each day, and then divided by the number of valid data points – typically the number of days in the month. Although this November differ from the "true" daily average, it is consistent with historical methods of observation and comparable to the normals and extremes for stations and regions of the state.

DEGREE DAYS: Degree Days are calculated each day of the month for which there is a temperature report and the mean temperature for the day is less than (Heating Degree Days) or greater than (Cooling Degree Days) 65 degrees. Daily values are summed to arrive at a monthly total. HDD/CDD are qualitative measures of how much heating/cooling was required to maintain a comfortable indoor temperature. Missing observations November result in an artificially high or low value.

SEVERE WEATHER REPORTS: Only the most significant events are listed. Tornadoes of F2 or greater strength (on the 0-5 Fujita scale), hail of two inches diameter or greater, and wind speeds of 70 miles per hour or above are listed. National Weather Service defines storms as severe when they produce a tornado, hail of three-quarters inch or greater, or wind speeds above 57 miles per hour (50 knots). For additional reports, contact the Oklahoma Climatological Survey, Storm Prediction Center, or your local National Weather Service forecast office.

SOIL MOISTURE: The soil moisture variable displayed is the Fractional Water Index (FWI), measured at a depth of 25 cm. This unitless value ranges from very dry soil having a value of 0, to saturated soils having a value of 1.

ADDITIONAL RESOURCES

SUNRISE / SUNSET TABLES
U.S. Naval Observatory: http://aa.usno.navy.mil/data

SEVERE STORM REPORTS
Storm Prediction Center: http://spc.noaa.gov/climo/

National Climatic Data Center (more than about 4-5 months old):
http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~Storms

SEASONAL OUTLOOKS
Climate Prediction Center:
http://www.cpc.ncep.noaa.gov/products/OUTLOOKS_index.html

CLIMATE CALENDARS AND OTHER LOCAL WEATHER AND CLIMATE INFORMATION
Oklahoma Climatological Survey:
http://climate.mesonet.org or http://climate.ok.gov/

OKLAHOMA CLIMATOLOGICAL SURVEY

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