

Sometime around the third week of May, with wildfires scorching the state and drought continuing to intensify, Oklahomans were in search of a miracle. The spring rainy season at that point seemed like a figment of Mother Nature's imagination amongst one of the driest January-May periods in state history. Finally, the miracle did arrive in the form of an upper-level low pressure system that brought the state some of its most substantial moisture since the previous fall. That system turned on the spigot and the moisture has continued largely unabated since that point. It is not unusual for Oklahoma to see big rains during May and June. That is Oklahoma's rainiest part of the year, after all. It is a bit uncommon, however, for those rains to continue deeper into the summer, but that is exactly what has occurred. And for Oklahoma, a rainier summer generally means a milder summer. According to preliminary data from the Oklahoma Mesonet, Oklahoma experienced its third coolest and 15th wettest July on record. The first two months of climatological summer (June and July) finished as the 16th coolest and 15th wettest on record. The January-July temperature was similar with a ranking of 15th coolest, but long-term moisture deficits remained with a ranking of 38th driest, more than 4 inches below normal.

July 2014 Statewide Extremes

Description	Extreme	Station	Day
High Temperature	107°F	Buffalo, Freedom, Grandfield	26, 26, 27
Low Temperature	49°F	Vinita, Miami	3
High Precipitation	11.30 in.	Clayton	
Low Precipitation	1.61 in.	Beaver	

The statewide average temperature was 77.3 degrees, 4.3 degrees below normal and the statewide average precipitation came in at 4.68 inches, 1.94 inches above normal. Most Oklahomans will recall that just three years ago the state's July 2011 statewide average of 89.2 degrees broke the record for the hottest month – of any calendar month – ever recorded in any state. The coolest Oklahoma July occurred both in 1906 and 1950 with a statewide average of 76.4 degrees. The Mesonet site at Slapout recorded an October-like high of 62 degrees on July 17, the 12th coolest high temperature ever recorded in Oklahoma

during July. Vinita reached a low temperature of 49 degrees on July 3, which is the normal low on October 19 for that part of the state. The month's highest temperature of 107 degrees was recorded at three separate locations.

The abundant July moisture led to relief of both short- and long-term drought impacts, and some of those July rainfall totals were quite impressive. The Mesonet site at Clayton led the state with 11.3 inches. Three Oklahoma City Mesonet stations recorded at least 9 inches of rainfall, although the official observing site at Will Rogers Airport recorded only 4.18 inches. A total of 43 Mesonet sites recorded at least 5 inches of rain during July. Beaver brought up the rear with only 1.6 inches, about an inch below normal. The final U.S. Drought Monitor map of the month portrayed 76 percent of the state in drought, although only 23 percent was considered in extreme-to-exceptional drought, the Monitor's worst two categories. Additionally, that final map did not consider heavy rains that fell in July's final few days.

July 2014 Statewide Statistics

Temperature

	Average	Depart.	Rank (1895-2014)
Month (July)	77.3°F	-4.3°F	3rd Coolest
Season-to-Date (Jun-July)	77.2°F	-1.9°F	16th Coolest
Year-to-Date (Jan-July)	57.5°F	-1.7°F	15th Coolest

Precipitation

	Total	Depart.	Rank (1895-2014)
Month (July)	4.68 in.	1.94 in.	15th Wettest
Season-to-Date (Jun-July)	10.26 in.	3.36 in.	15th Wettest
Year-to-Date (Jan-July)	17.63 in.	-4.26 in.	38th Driest

Depart. = departure from 30-year normal

Severe weather was sporadic during July with various reports of wind or hail damage and flash flooding. The most noteworthy event was the 106 mph wind gust recorded by the Burneyville Mesonet site late in the evening of July 30. A possible microburst was the culprit, and more than 3 inches of rain fell in just a few hours following the 106 mph gust. The reading tied a wind gust at Idabel on May 4, 2006, as the fourth highest ever recorded since the Mesonet began

in 1994. The top two gusts of 151 mph and 131 mph were both associated with the May 24, 2011, EF5 tornado that brushed the El Reno Mesonet site. Preliminary numbers from the National Weather Service show 13 tornadoes for Oklahoma thus far in 2014. The 1950-2013 average for January-July is 48, and the annual average is 56. Only 1988 saw fewer tornadoes through July with 10. That year also ended with the lowest annual total of 17. The 2014 tornado totals are subject to change with further investigation from NWS personnel.

JULY 2014 DAILY SUMMARIES

JULY 1-3: Stormy weather and precipitation continued into July. A cold front that pushed south brought slightly cooler temperatures to the far northeast, precipitation, and thunderstorms. The coolest maximum temperature was 80 degrees in Boise City and ahead of the front, maximum temperatures warmed into the mid-90s. The highest maximum temperatures on the 2nd and 3rd were much cooler, only measuring 88 degrees in Walters and Kenton. Low maximum temperatures were in the mid-70s on those two days. Minimum temperatures which initially ranged from 61 degrees in Kenton to 74 degrees in Tulsa on the 1st dropped between 49 degrees in the northeast and 69 degrees in the south by the 3rd. As the front continued through the area, some storms became severe with 71mph and 70mph wind gusts reported in Freedom and Cherokee on the 1st. On the 2nd, flooding was reported in Milburn. The heaviest rainfall was reported in Fittstown on the 1st (1.92 inches), Tishomingo on the 2nd (3.12 inches), and Burneyville on the 3rd (.75 inches). Average wind speeds were generally less than 13mph, 12mph, and 18mph each consecutive day.

JULY 4-7: Showers and thunderstorms ended and temperatures climbed for the holiday weekend. The highest maximum temperatures increased from 95 degrees in Butler and Tipton on the 4th to 103 degrees in Butler and Cherokee on the 7th. There was a slight bump up to 104 degrees in Hooker on the 6th. The lowest maximum temperatures ranged from 83 degrees in Westville (July 4) to 90 degrees in Westville and Jay (July 7). Low temperatures were between the mid-60s and mid-70s for the majority of the state. Average wind speeds were gusty on the 4th, blowing between 5-20mph. Slightly less breezy the following days, the highest average wind speeds were 18mph on the 5th, 17mph on the 6th, and 15mph on the 7th.

JULY 8-10: A front swung its way back through the state, which brought some hefty amounts of precipitation to the northeastern half of Oklahoma. Rainfall amounts varied from one-tenth of an inch to .83 inches in Wister on the 8th, but became substantial on the 9th and 10th with nearly 4 inches in Oklahoma City and Skiatook. The increased storm activity

on the 10th caused flooding in Sperry and Vera. The highest maximum temperatures in the state wavered in the upper 90s and low 100s. The coolest maximum temperatures were in the low 80s on the 8th and 9th and dropped an additional 10 degrees on the 10th. It was on that Thursday that Tulsa broke its daily low maximum temperature record at 75 degrees. Minimums ranged from the low 60s to mid-70s. Average wind speeds were less than 13mph on the 8th and less than 16mph on the 9th and 10th. The highest wind gust during this three-day period peaked at 65mph in Kenton on the 9th.

JULY 11-12: Skies were sunny and warm as the highest maximum temperatures in the state increased from 98 degrees in Tipton and Hooker to 101 degrees in Tipton and Grady the following day. Even the lowest maximum temperatures were still a balmy 88 and 90 degrees in Jay. Minimum temperatures fell pleasantly between 65 degrees in Boise City and 76 degrees in Butler on the 11th, and Oklahoma City, Guthrie, and Marshall on the 12th. Average wind speeds ranged from calm to 19mph on the 11th and 17mph on the 12th.

JULY 13-17: The peak maximum temperature in Oklahoma was a toasty 103 degrees in Walters before a front moved through the region. Highs dwindled from the 80s and 90s range to a range of 62-75 degrees by the 17th. Lows were much cooler, ranging from the mid-60s to mid-70s at the start of this period, and ending between the 50s and low 60s. The coolest Mesonet reading was 51 degrees at Jay, Nowata, Vinita, and Miami on the 16th. Some strong to severe thunderstorms initiated in western Oklahoma on the 13th and moved into central OK along the front. Showers and storms continued throughout this five-day stretch. Rain spread throughout areas in the north on the 14th and spread to the south and southeast by the 17th. The highest amount of rainfall measured each day at the Oklahoma Mesonet sites were .77 inches in Butler (13th), 1.46 inches in Breckinridge (14th), .46 inches in Beaver (15th), 3.82 inches in Altus (16th), and 3.41 inches in Durant (17th). Although Thursday witnessed the heaviest rainfall, both Wednesday and Thursday experienced record temperatures. On the 16th, Oklahoma City broke its daily coolest maximum temperature (72 degrees) and McAlester and Muskogee broke their daily low temperature record at 58 and 56 degrees, respectively. On the 17th, Oklahoma City again broke its daily coolest minimum temperature (62 degrees) and coolest maximum temperature (68 degrees) record, McAlester broke its daily low (58 degrees) and daily low maximum temperature (67 degrees) record, and Tulsa broke its daily low maximum temperature record (68 degrees). Flooding was also reported in Walters on the 17th. The 13th and 16th had peak wind gusts in the 50s range, however, Camargo made it to the top of the list with 67mph wind gusts on the 14th. Although the 14th also had the most calm wind speeds on average (less than 9mph), most of the

days in this period had average wind speeds measuring less than 10 and 15mph.

JULY 18-20: Rainfall was negligible apart from an isolated refreshment of .26 inches in Boise City on the 19th. The highest maximum temperatures began to rebound from the previous cooling trend and climbed from 88 degrees in Kenton on the 18th to 101 degrees in Hooker on the 20th. The lowest maximums increased from a cool 68 degrees in Lahoma to 81 degrees in Cookson. Minimum temperatures generally ranged from the 50s to the upper 60s. Despite the warm-up, however, multiple cities broke daily records for low temperatures and low maximum temperatures. On the 18th, Tulsa broke its low temperature record at 59 degrees and McAlester broke its low maximum record at 71 degrees. The following day, Oklahoma City broke its minimum temperature record at 63 degrees and Tulsa broke its low temperature record at 58 degrees. Average wind speeds were less than 14mph on the 18th, less than 16mph on the 19th, and less than 18mph on the 20th.

JULY 21-22: Skies were primarily sunny except for brief thunderstorm activity on the 21st that dropped .61 inches of precipitation in Hooker, .36 inches in Boise City, and .13 inches in Goodwell. Maximum temperatures were anywhere between 87 degrees in Broken Bow and 103 degrees in Hooker. The highest low was recorded at 76 degrees at the Oklahoma City West Mesonet site and the coolest low was 60 degrees in Wister. Although slightly breezy on the 21st with wind speeds averaging between 5 and 15mph, winds calmed down the following day with averages less than 10mph.

JULY 23: Fog blanketed areas around Oklahoma during the morning of the 23rd and storms developed in eastern Oklahoma by the afternoon. Rainfall measurements were anywhere from one-tenth of an inch in towns such as Webbers and Sallisaw to 1.22 inches in Broken Bow. Highs were between 87 degrees in Copan and Foraker and 103 degrees in Butler. Lows ranged from 64 degrees in Cookson to 76 degrees in west Oklahoma City. The highest wind gust in the state was 53mph in Westville and wind speed averages were mild at less than 10mph.

JULY 24-26: As showers and thunderstorms began to cease in the region, temperatures climbed and skies were mostly clear. Southerly winds added to the humidity which made conditions hot and muggy over most of the state. The highest maximum temperatures increased from 102 degrees in the panhandle to 107 degrees in Buffalo and Freedom. Few cities experienced any relief in temperatures as the lowest maximum temperatures increased from a warm 84 degrees in Westville on the 24th to 92 degrees in Mt. Herman on the 26th. Minimums climbed from the 61-73 degree range to the 66-80 degree range during this period. Heat indices well

into the 100s caused heat advisories and excessive heat warning for parts of southwest, south-central, central and eastern Oklahoma. The highest daily average wind speeds fluctuated a bit during these three days with the highest being 18mph in Kenton on the 24th, 20mph in Cheyenne, Beaver, and Freedom on the 25th, and 15mph in Watonga on the 26th.

JULY 27-31: Another cold front, which had become a familiar scene in July, passed through the state and caused a drastic decline in temperatures. The highest maximum temperature of 107 degrees in Grady was short lived as the highest maximums dropped all the way to 82 degrees by the 31st. Low maximums dropped from 83 degrees in Slapout on Sunday to 67 degrees in Mt. Herman on Thursday. Upper minimum temperatures decreased from the upper 70s to upper 60s, and low minimums decreased from the mid-60s to mid-50s. The frontal passage caused a number of rain and storm events with a 71mph wind gust in Kenton (30 July), a strong wind gust of 106mph in Burneyville (30 July), flooding in Choctaw (30 July), and flooding in McAlester (31 July). A large number of daily records were broken at the end of the month. On July 30th, Oklahoma City broke its low maximum temperature (73 degrees) and daily rainfall record (1.67 in.), Tulsa broke its low maximum temperature record (78 degrees), and McAlester broke its low maximum temperature (73 degrees) and daily rainfall record (3.65 in.). Tulsa and McAlester broke their daily low maximum temperature record again on the 31st at 76 and 72 degrees, respectively. Many areas in Oklahoma got soaked during these five days with the highest precipitation amounts measuring .22 inches in Kenton on the 27th, 1.39 inches in Cheyenne on the 28th, .88 inches in Kenton on the 29th, 4.89 inches in Spencer on the 30th, and 5.02 inches in Clayton on the 31st. Although the record event reports show some strong wind gusts in Kenton and Burneyville, average wind speeds throughout the state were fairly mild. Daily wind speed averages were less than 15mph on Sunday, less than 10mph on Monday, less than 14mph on Tuesday, less than 15mph on Wednesday, and less than 12mph on the last Thursday of the month.

JULY 2014 SEVERE WEATHER

Hail (2 inches in diameter or greater)

Size (in.)	Location	County	Day
2.50	13 W Walters	Cotton	23

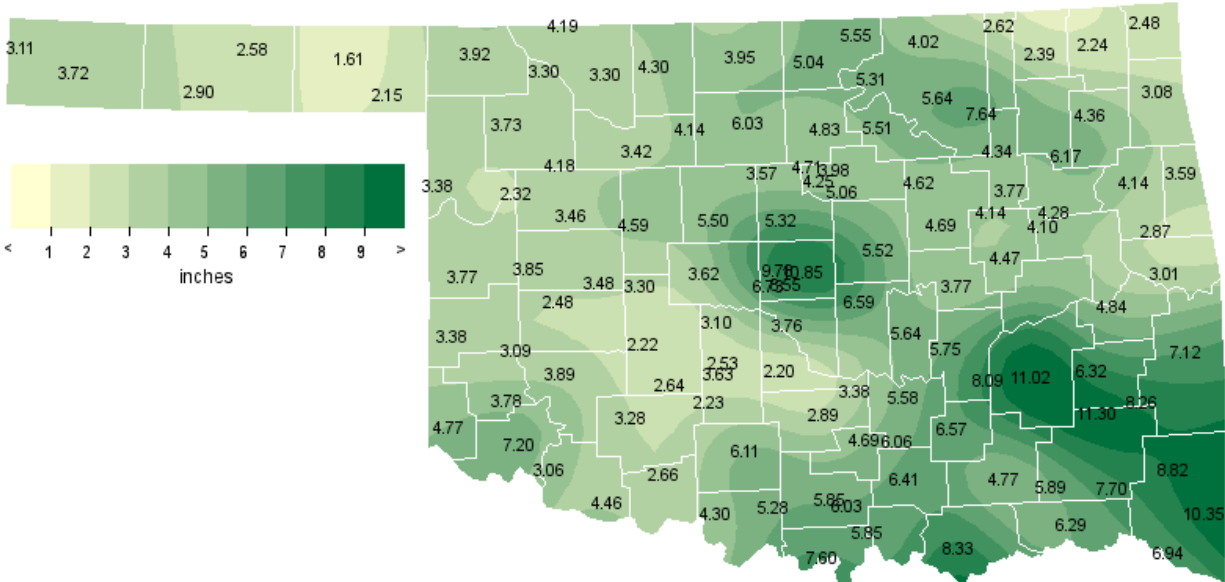
Wind Gusts (70 mph or greater)

Speed (m.p.h)	Location	County	Day
71	16 NNE Freedom	Woods	1
70	Cherokee	Alfalfa	1
71	5 SE Kenton	Cimarron	30
106	2 ESE Burneyville	Love	30

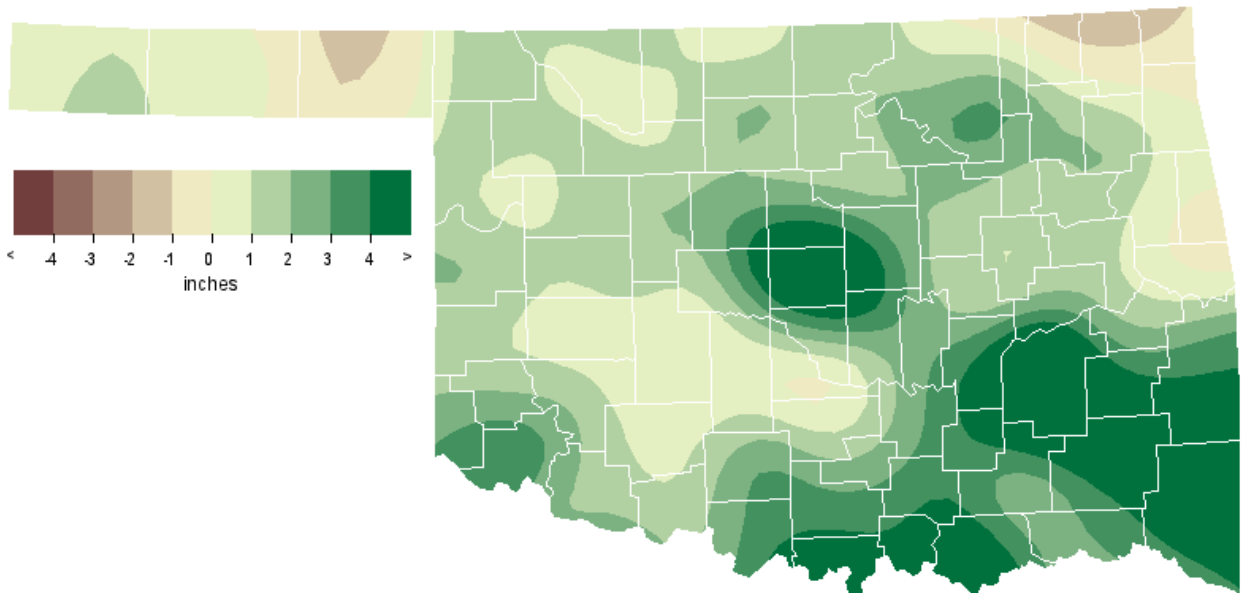
Flooding

Location	County	Day
3 NE Milburn	Johnston	2
7 NNE Sperry	Tulsa	10
2 S Vera	Tulsa	10
16 W Walters	Cotton	17
Optima	Texas	21
Choctaw	Oklahoma	30
McAlester	Pittsburg	31

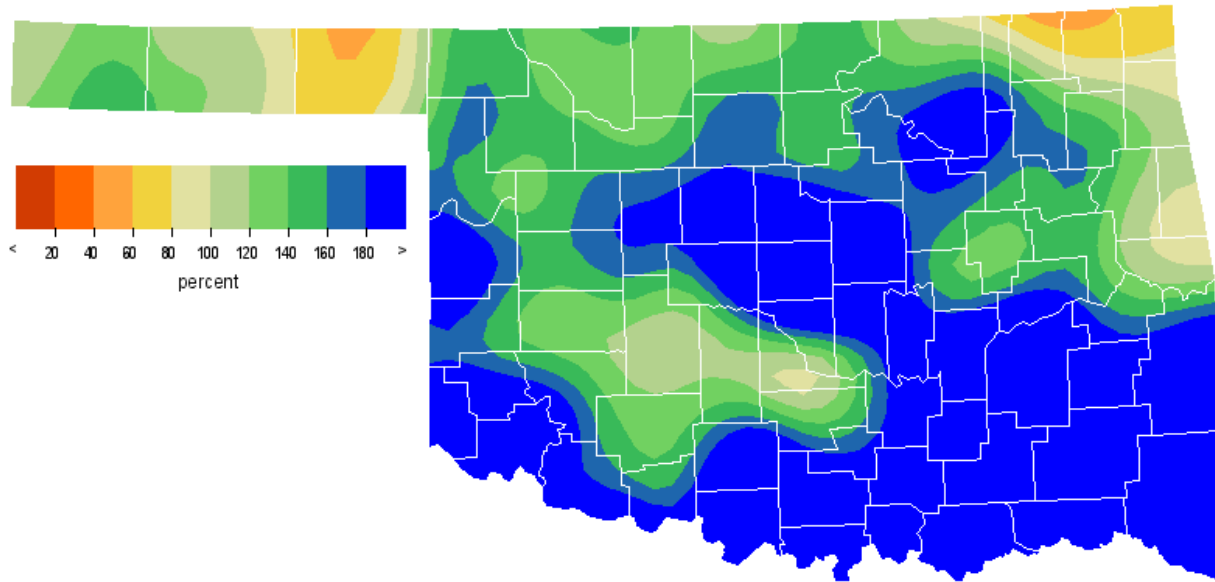
JULY 2014 OBSERVED PRECIPITATION



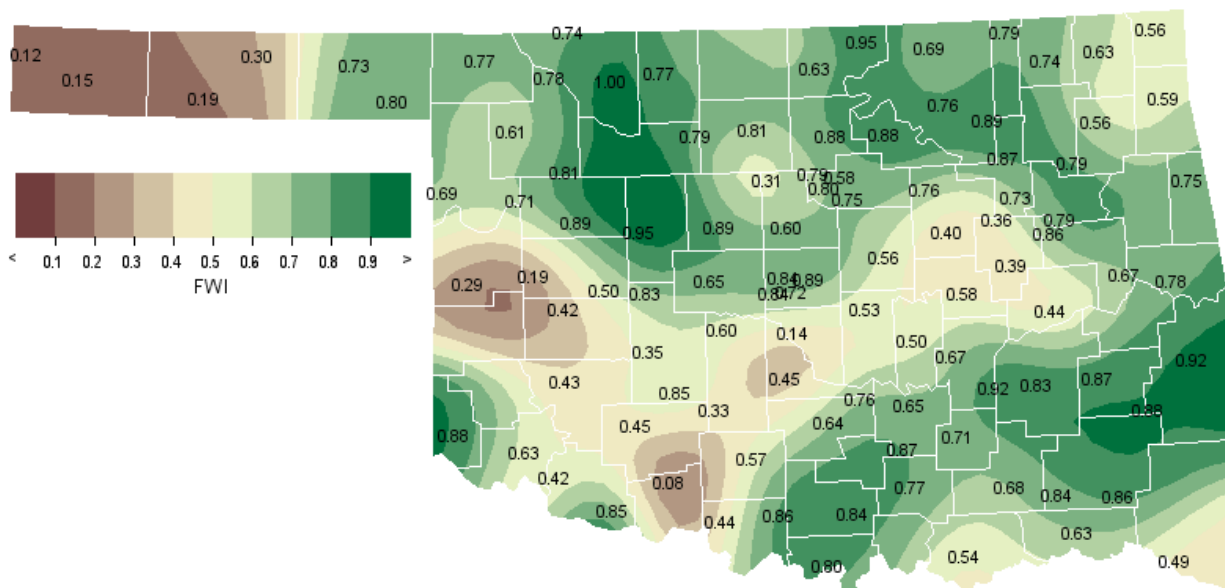
JULY 2014 DEPARTURE FROM NORMAL PRECIPITATION



JULY 2014 PERCENT OF NORMAL PRECIPITATION



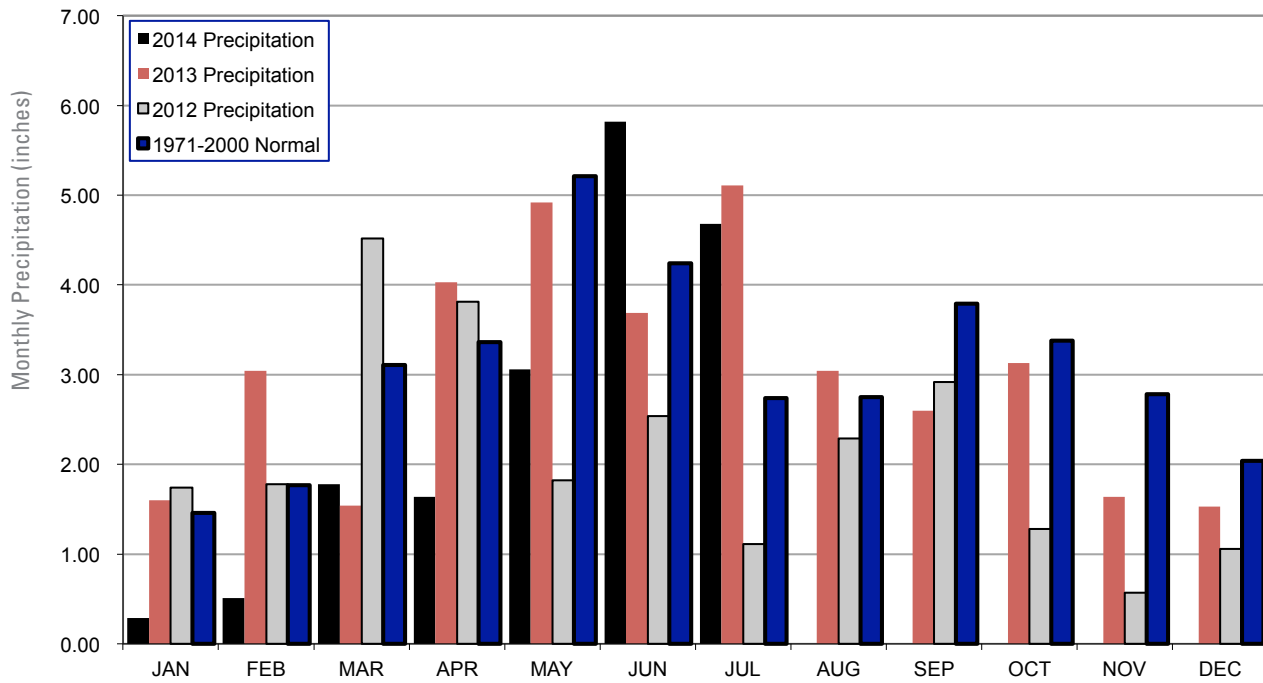
JULY 2014 AVERAGE SOIL MOISTURE AT 25CM



MESONET MONTHLY SUMMARY FOR JULY 2014

NAME	MEAN TEMP	HIGH TEMP	LOW TEMP	DAY	DAY	HDD	CDD	TOT PPT	HIGH 24-HR	DAY	NAME	MEAN TEMP	HIGH TEMP	LOW TEMP	DAY	DAY	HDD	CDD	TOT PPT	HIGH 24-HR	DAY
PANHANDLE																					
Arnett	76.7	102	26	57	17	5	369	3.38	1.29	30	Goodwell	76.9	105	25	56	18	6	375	2.90	.98	30
Beaver	77.5	106	25	54	31	10	397	1.61	.59	30	Hooker	77.7	105	25	55	31	5	398	2.58	.94	16
Boise City	75.9	102	25	56	31	0	340	3.72	1.00	30	Kenton	76.9	105	25	55	31	0	369	3.11	.88	29
Buffalo	78.6	107	26	58	31	7	429	3.92	2.09	30	Slapout	76.6	105	25	56	31	10	370	2.15	.76	30
NORTH CENTRAL																					
Alva	77.2	103	26	57	19	7	386	3.30	1.22	16	May Ranch	76.7	103	26	57	3	9	370	4.19	1.71	16
Blackwell	76.2	101	7	55	3	3	351	5.04	2.46	30	Medford	77.2	104	26	56	15	****	****	3.95	2.03	30
Breckinridge	41.9	100	26	***	28	4	350	6.03	1.68	16	Newkirk	75.3	97	26	54	15	4	325	5.55	2.57	30
Cherokee	78.3	105	26	58	19	5	416	4.30	1.78	16	Red Rock	76.8	100	7	55	3	4	371	4.83	1.49	30
Fairview	78.4	105	26	56	19	4	418	3.42	1.56	30	Seiling	77.4	104	26	58	17	4	388	4.18	1.71	30
Freedom	77.5	107	26	58	31	8	396	3.30	1.72	30	Woodward	77.7	106	26	57	31	7	401	3.73	2.26	30
Lahoma	77.8	105	26	57	19	5	403	4.14	1.69	16											
NORTHEAST																					
Bixby	77.6	100	13	57	16	0	390	3.77	1.73	30	Pawnee	76.7	100	7	56	19	3	367	5.51	1.93	30
Burbank	75.1	98	7	53	3	4	317	5.31	2.37	30	Porter	76.4	96	7	56	16	0	355	4.28	1.61	30
Copan	75.5	99	26	53	3	3	327	2.62	1.20	30	Pryor	75.2	95	26	53	3	1	317	4.36	2.15	30
Foraker	74.7	99	26	52	15	3	302	4.02	2.38	30	Skiatook	75.9	96	7	57	19	2	338	7.64	3.75	10
Inola	75.1	94	13	55	16	1	314	6.17	3.18	10	Tulsa	77.6	98	13	58	3	1	393	4.34	1.94	10
Jay	73.6	95	26	50	3	4	270	3.08	1.84	30	Vinita	74.5	96	26	49	3	5	298	2.24	.62	30
Miami	74.9	94	26	49	3	2	307	2.48	.78	30	Wynona	75.9	98	7	55	3	1	341	5.64	2.97	30
Nowata	74.8	99	26	51	3	4	309	2.39	.99	30											
WEST CENTRAL																					
Bessie	79.7	104	25	58	19	2	458	2.48	1.13	30	Putnam	77.4	101	26	58	17	4	387	3.46	1.51	30
Butler	79.6	105	25	57	19	2	454	3.85	1.39	30	Retrop	79.1	102	25	59	19	1	437	3.09	1.11	30
Camargo	77.3	104	26	59	17	3	383	2.32	1.10	30	Watonga	77.5	102	26	58	17	4	391	4.59	2.26	30
Cheyenne	78.0	102	25	58	16	3	406	3.77	1.39	28	Weatherford	78.5	101	26	59	19	3	421	3.48	1.44	30
Erick	78.6	102	26	58	16	1	424	3.38	1.32	30											
CENTRAL																					
Acme	79.5	104	27	60	19	0	449	2.23	1.26	30	Ninnekah	79.4	102	25	61	19	0	447	3.63	2.46	30
Bowlegs	76.8	97	13	57	16	1	368	5.64	2.41	30	Norman	78.9	101	13	61	17	1	432	3.76	1.39	30
Bristow	76.1	99	13	53	16	3	347	4.69	2.06	30	Oilton	76.2	100	13	54	3	3	350	4.62	1.36	10
Lake Carl Blac	77.0	100	7	57	19	3	376	4.71	1.52	17	OKC East	*****	***	***	***	***	*****	*****	8.55	3.91	9
Chandler	77.4	99	13	58	16	2	385	5.52	2.24	30	OKC North	78.6	99	26	59	16	2	425	9.78	3.44	30
Chickasha	79.5	102	26	60	19	0	450	2.53	1.99	30	OKC West	79.1	100	26	61	17	1	437	6.73	2.58	30
El Reno	77.3	100	26	55	19	2	384	3.62	1.99	30	Okemah	77.0	100	13	56	16	0	371	3.77	1.70	30
Guthrie	78.7	101	13	58	16	4	429	5.32	2.53	30	Perkins	77.8	101	13	57	3	4	399	5.06	2.32	17
Kingfisher	79.1	106	26	58	19	2	439	5.50	2.42	30	Shawnee	78.1	101	13	60	16	2	407	6.59	2.89	30
Marena	78.0	99	13	57	16	****	****	4.25	1.69	17	Spencer	77.7	97	7	59	16	3	396	10.85	4.89	30
Minco	78.2	100	26	60	19	1	410	3.21	2.27	30	Stillwater	77.7	100	13	58	16	3	396	3.98	1.69	17
Marshall	78.0	102	7	57	19	3	405	3.57	1.15	16	Washington	78.7	102	26	61	20	0	424	2.20	1.30	30
EAST CENTRAL																					
Cookson	74.3	95	26	52	16	6	295	2.87	1.32	10	Sallisaw	75.8	96	26	54	16	1	336	3.01	1.36	30
Eufaula	77.1	96	26	56	16	0	375	*****	*****	***	Stigler	76.2	96	13	54	16	1	350	4.84	1.51	30
Haskell	76.0	95	7	55	16	0	340	4.10	1.42	30	Stuart	76.7	95	27	58	16	2	365	8.09	2.77	30
Hectorville	77.3	98	7	56	16	2	382	4.14	1.55	30	Tahlequah	74.8	94	26	53	16	2	307	4.14	1.82	30
Holdenville	76.8	95	8	60	16	1	368	5.75	1.84	30	Webbers Falls	76.2	95	26	57	16	1	349	*****	*****	***
McAlester	76.6	95	8	56	16	1	359	11.02	4.28	30	Westville	74.2	93	26	52	16	3	286	3.59	1.50	30
Okmulgee	75.8	97	13	54	16	1	337	4.47	2.46	30											
SOUTHWEST																					
Altus	80.2	104	27	61	19	0	471	7.20	3.82	16	Hollis	80.1	102	25	60	16	0	467	4.77	1.52	17
Apache	78.1	100	27	56	19	1	406	2.64	1.39	30	Mangum	44.2	102	27	***	9	1	417	3.78	1.54	17
Fort Cobb	78.9	101	25	58	19	1	431	2.22	1.05	30	Medicine Park	79.9	103	27	60	17	0	462	3.28	.86	2
Grandfield	81.7	107	27	61	19	0	518	4.46	1.83	17	Tipton	46.7	104	27	***	8	0	493	3.06	.92	28
Hinton	78.2	101	13	59	19	2	412	3.30	1.97	30	Walters	80.8	106	27	62	17	0	489	2.66	1.21	17
Hobart	79.5	102	13	59	19	2	451	3.89	.90	16											
SOUTH CENTRAL																					
Ada	77.2	97	13	56	16	2	382	5.58	2.85	17	Lane	77.2	98	27	55	16	0	379	4.77	1.85	17
Ardmore	79.0	102	27	60	16	1	434	6.03	2.48	30	Madill	79.2	102	27	61	16	1	441	5.85	3.30	30
Burneyville	79.5	103	27	59	16	0	451	7.60	4.40	30	Newport	79.0	102	27	61	16	1	435	5.85	1.74	30
Byars	78.2	98	26	60	17	1	410	3.38	1.72	30	Pauls Valley	79.2	103	27	61	17	0	442	2.89	1.65	30
Centrahoma	76.9	97	27	57	16	1	371	6.57	2.57	30	Ringling	79.4	104	27	62	16	0	448	5.28	2.15	30
Durant	79.2	101	27	58	16	0	440	8.33	3.41	17	Sulphur	77.8	99	27	60	16	0	396	4.69	1.84	17
Fittstown	76.2	98	27	60	16	2	351	6.06	1.94	17	Tishomingo	*****	***	***	***	***	*****	*****	6.41	3.12	2
Ketchum Ranch	79.1	105	27	61	16	0	438	6.11	2.43	30	Waurika	80.1	104	27	62	17	0	467	4.30	2.14	2
SOUTHEAST																					
Antlers	76.2	97	13	55	16	1	348	5.89	2.30	17	Idabel	77.8	99	13	57	16	0	397	6.94	2.67	17
Broken Bow	75.6	95	13	56	16	0	329	10.35	3.79	31	Mt Herman	75.7	94	13	56	16	2	333	8.82	3.82	31
Clayton	76.3	96	27	55	16	1	351	11.30	5.02	31	Talihina	75.8	96	27	54	16	2	337	8.26	1.89	9
Cloudy	75.8	94	13	58	16	2	338	7.70	2.64	17	Wilburton	76.2	94	26	56	16	1	348	6.32	1.26	31
Hugo	77.9	98	13	59	16	0	400	6.29	2.56	17	Wister	75.4	95	8	55	16	1	323	7.12	1.28	31

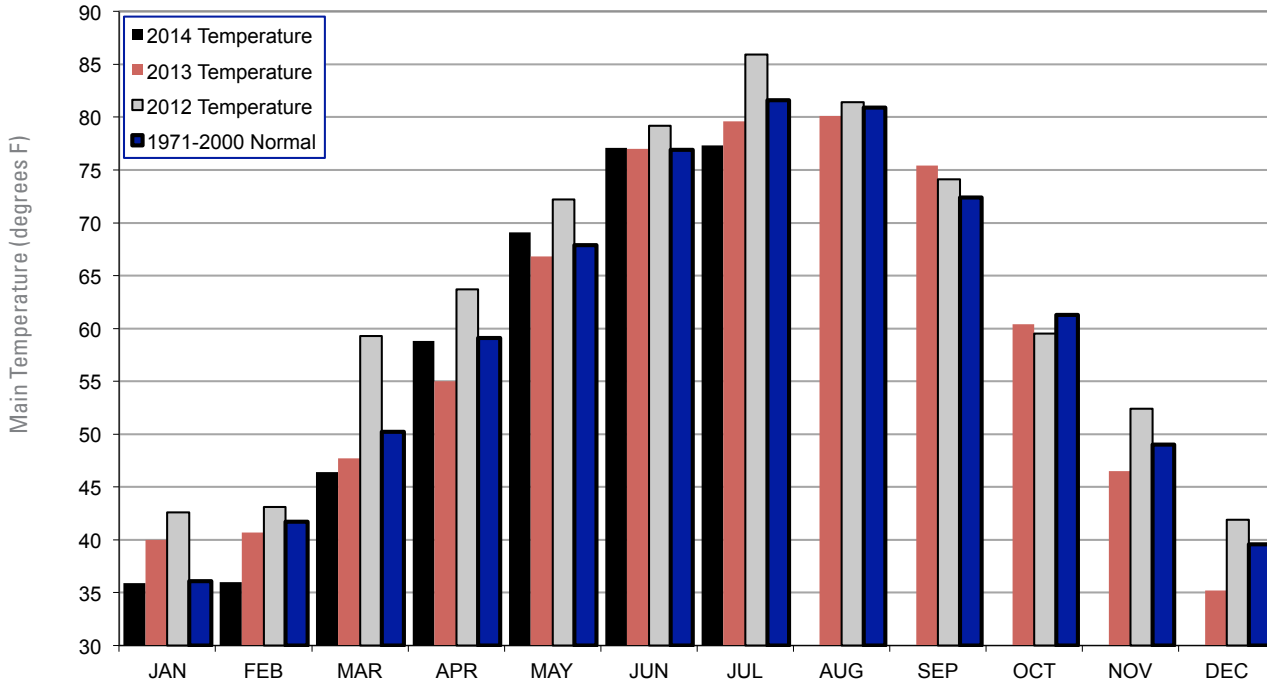
2012, 2013 AND 2014 STATEWIDE PRECIPITATION MONTHLY TOTALS VS. NORMAL



July 2014 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	July-13
Panhandle	2.92	0.40	40th Wettest	8.81 (1950)	0.44 (1983)	2.98
North Central	4.30	1.32	18th Wettest	8.59 (1950)	0.12 (1983)	6.32
Northeast	4.26	1.10	36th Wettest	9.52 (1959)	0.28 (1946)	5.93
West Central	3.38	1.25	26th Wettest	7.63 (1950)	0.04 (1983)	4.68
Central	5.01	2.44	14th Wettest	9.61 (1950)	0.16 (1980)	6.99
East Central	5.09	2.11	24th Wettest	10.03 (1950)	0.36 (1993)	4.93
Southwest	3.75	1.57	18th Wettest	6.60 (1950)	0.03 (1980)	4.85
South Central	5.61	3.07	12th Wettest	8.46 (1950)	0.11 (1998)	4.52
Southeast	7.90	4.32	8th Wettest	12.47 (1950)	0.19 (1993)	5.64
Statewide	4.68	1.94	15th Wettest	9.07 (1950)	0.42 (1980)	5.28

2012, 2013 AND 2014 STATEWIDE TEMPERATURE MONTHLY TOTALS VS. NORMAL



July 2014 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	July-13 (F)
Panhandle	77.1	-2.5	16th Coolest	86.0 (1934)	72.8 (1906)	78.6
North Central	76.8	-5.4	3rd Coolest	89.6 (2011)	75.9 (1950)	79.6
Northeast	75.6	-5.3	2nd Coolest	89.3 (1954)	75.4 (1950)	79.1
West Central	78.4	-3.3	10th Coolest	89.6 (2011)	75.9 (1906)	79.7
Central	77.7	-4.3	3rd Coolest	90.2 (2011)	76.7 (1950)	79.7
East Central	76.0	-5.3	1st Coolest	88.9 (2011)	76.2 (1906)	79.4
Southwest	79.3	-3.9	6th Coolest	91.7 (2011)	78.0 (1908)	81.6
South Central	78.5	-4.2	4th Coolest	90.5 (2011)	77.9 (1950)	80.3
Southeast	76.3	-4.6	3rd Coolest	87.5 (2011)	76.1 (1905)	78.7
Statewide	77.3	-4.3	3rd Coolest	89.2 (2011)	76.4 (1906)	79.6

RECORD EVENT REPORTS JULY 2014

Description	Day	Location	Record	Previous Record	Year
Daily low maximum temperature	10	Tulsa	75	75	1905;1950
Daily coolest maximum temperature	16	Oklahoma City	72	74	1967
Daily low temperature	16	McAlester	58	61	1990
Daily low temperature	16	Muskogee	56	57	1967
Daily coolest minimum temperature	17	Oklahoma City	62	63	1917; 1953; 1967; 1992
Daily coolest maximum temperature	17	Oklahoma City	68	80	1900; 1950
Daily low temperature	17	McAlester	58	61	1990
Daily low maximum temperature	17	Tulsa	68	82	1950; 1989
Daily low maximum temperature	17	McAlester	67	82	1987
Daily low temperature	18	Tulsa	59	63	2009
Daily low maximum temperature	18	McAlester	71	76	1967
Daily minimum temperature	19	Oklahoma City	63	63	1898
Daily low temperature	19	Tulsa	58	61	1947
Daily low maximum temperature	30	Oklahoma City	73	73	1925
Daily rainfall	30	Oklahoma City	1.67	1.16	2013
Daily low maximum temperature	30	Tulsa	78	79	1971
Daily low maximum temperature	30	McAlester	73	78	2004
Daily rainfall	30	McAlester	3.65	2.65	1963
Daily low maximum temperature	31	Tulsa	76	79	1925
Daily low maximum temperature	31	McAlester	72	77	1969

MESONET EXTREMES FOR JULY 2014

Climate Division	High Temp (F)	Day	Station	Low Temp (F)	Day	Station	High Monthly Rainfall (inches)	Station	High Daily Rainfall (inches)	Day	Station
North Central	107	26th	Freedom	54	15th	Newkirk	6.03	Breckinridge	2.57	30th	Newkirk
Northeast	100	13th	Bixby	49	3rd	Vinita	7.64	Skiatook	3.75	10th	Skiatook
West Central	105	25th	Butler	57	19th	Butler	4.59	Watonga	2.26	30th	Watonga
Central	106	26th	Kingfisher	53	16th	Bristow	10.85	Spencer	4.89	30th	Spencer
East Central	98	7th	Hectorville	52	16th	Cookson	11.02	McAlester	4.28	30th	McAlester
Southwest	107	27th	Grandfield	56	19th	Apache	7.20	Altus	3.82	16th	Altus
South Central	105	27th	Ketchum Ranch	55	16th	Lane	8.33	Durant	4.40	30th	Burneyville
Southeast	99	13th	Idabel	54	16th	Talihina	11.30	Clayton	5.02	31st	Clayton
Statewide	107	26th	Buffalo	49	3rd	Vinita	11.30	Clayton	5.02	31st	Clayton

AUGUST OUTLOOK

NORMAN - According to published daily normal temperatures, the hottest period of the long Oklahoma summer extends from mid-July through mid-August. The gradually shortening days and the occasional arrival of cooler weather from the North frequently bring the state modest relief from the heat by late August. Overall, August, the third and final month of the climatological summer, is Oklahoma's second hottest, fifth driest, and least windy month. Tornado frequency is at its lowest of the March-through-October warm season. Lightning deaths are more frequent in August than during any other month.

The normal statewide monthly temperature is 80.9 degrees Fahrenheit. Oklahoma's hottest August, according to National Weather Service records that date from 1895, occurred in 2011 when the state's average monthly temperature was a scorching 87.9 degrees. The state's record daily maximum temperature of 120 degrees was equaled at Altus and Poteau on August 12 and 10, 1936, respectively. Relatively cool weather prevailed during August 1915, when the state recorded its lowest August statewide-average monthly temperature, 73.2 degrees. The lowest daily minimum temperature of 39 degrees was recorded at Dacoma on August 26, 1910.

Temperature

Mean	80.9 degrees
Warmest August	2011, 87.9 degrees
Coldest August	1915, 73.2 degrees
Hottest location	Waurika, 84.1 degrees
Coollest location	Boise City, 75.3 degrees
Hottest recorded	120 degrees, Poteau, August 10, 1936 Altus, August 12, 1936
Coldest recorded	41 degrees, Goodwell, August 15, 1915

Isolated or widely scattered thunderstorms provide most of the state's August precipitation. As a result, little systematic variation can be seen in the statewide precipitation pattern. At 3.76 inches, Pawnee has the greatest normal precipitation for the month. Meeker, near the center of the state, has the lowest normal monthly accumulation, 1.93 inches. Statewide-averaged monthly precipitation during August has ranged from 6.54 inches in 1906 to a dismal 0.14 inch during the droughty summer of 2000. The greatest August

precipitation recorded by any reporting station was 15.15 inches at Holdenville in 1906. A 10.34-inch deluge at Carter Tower in northern McCurtain County on August 28, 1947 is the greatest daily precipitation recorded at a regular observing station during August. Precipitation is observed (.01 inch or more) on an average of as many as 7.8 days at Stilwell and as few as 3.5 days at Bixby. Daily rainfall events of two inches or greater are no more than an every-other-year occurrence everywhere in the state.

Precipitation

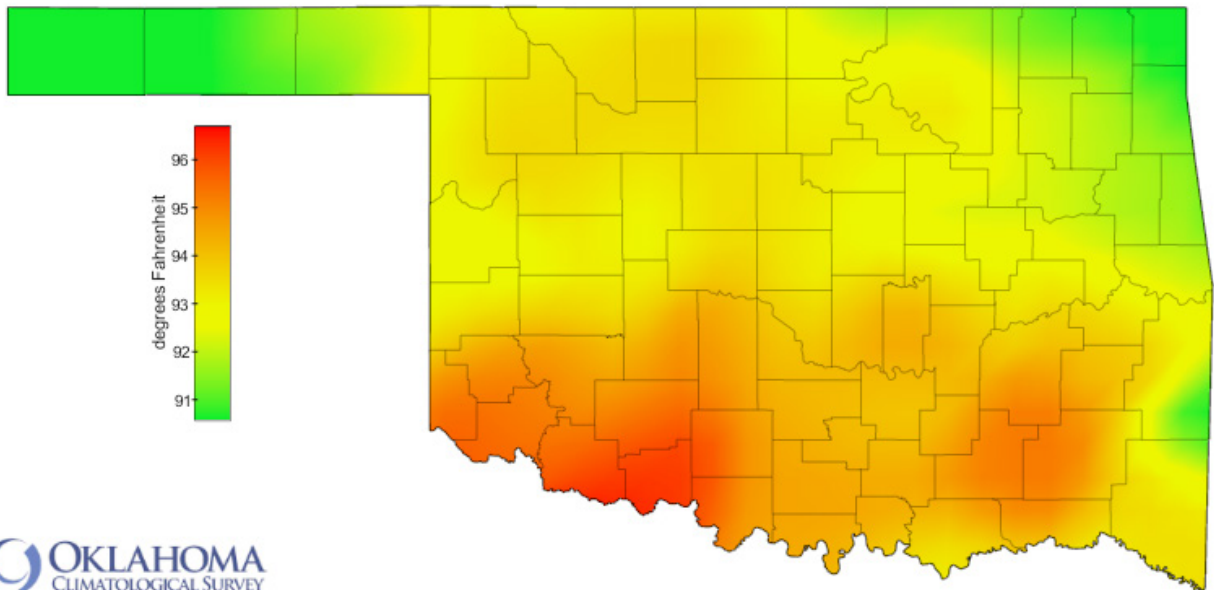
Mean	2.84 inches
Wettest August	1906, 6.54 inches
Driest August	2000, 0.14 inches
Wettest location	Pawnee, 3.76 inches
Driest location	Meeker, 1.93 inches
Most recorded	15.15 inches, Holdenville, 1906

Tornadoes

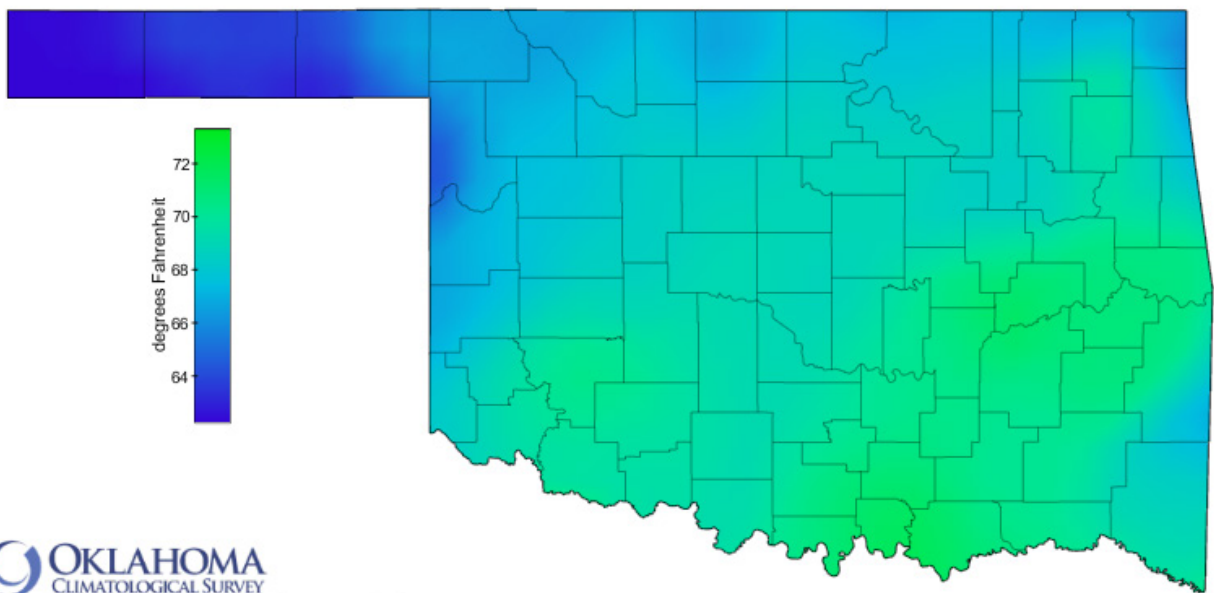
Average August Tornadoes (1950-2013)	1.4
Most	13 (1979)

Severe weather appears in the state during August, but its effects are more notable anecdotally than they are apparent in statistics. The exception is that August has presented the state with more lightning deaths (21) than any other month since such record-keeping began in 1959. Only July among the months accounts for more total casualties (deaths and injuries) from lightning strikes. The average number of tornado for the month of August is 1.4. Of the 80 August tornadoes reported in the state between 1950 and 2003, no fatalities and only three injuries (1 in 1959 and 2 in 1982) resulted. Oklahoma's August tornado totals include a high of 13 in 1979. No tornadoes were observed during 22 of the 54 years with comprehensive statistics.

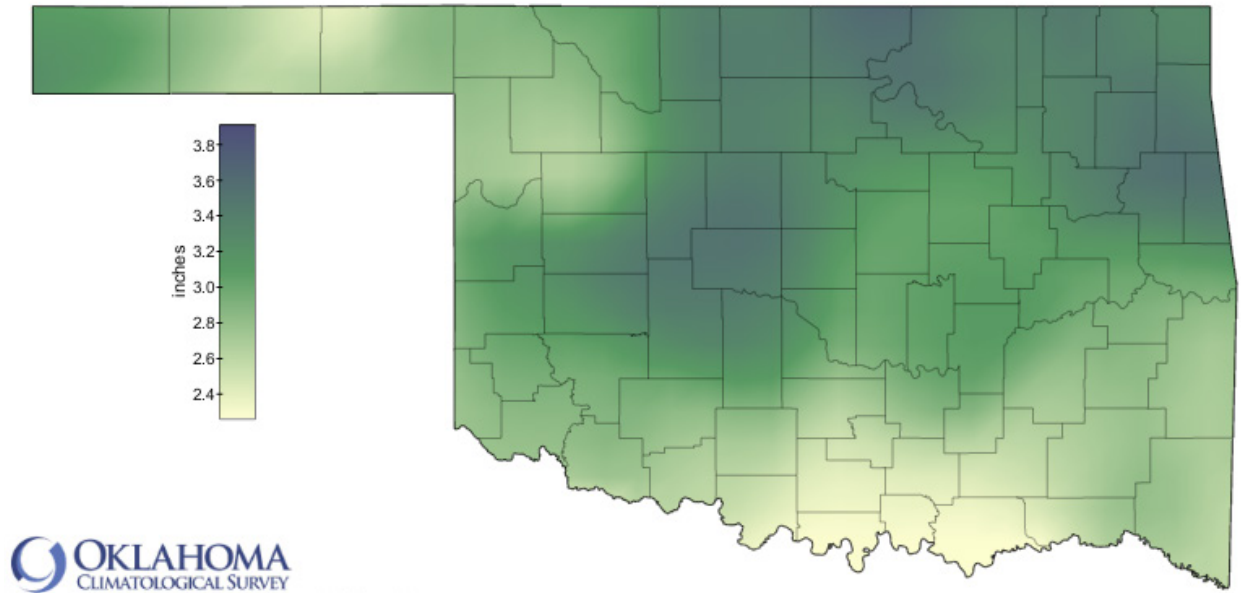
AUGUST NORMAL DAILY MAXIMUM TEMPERATURE (1981-2010)



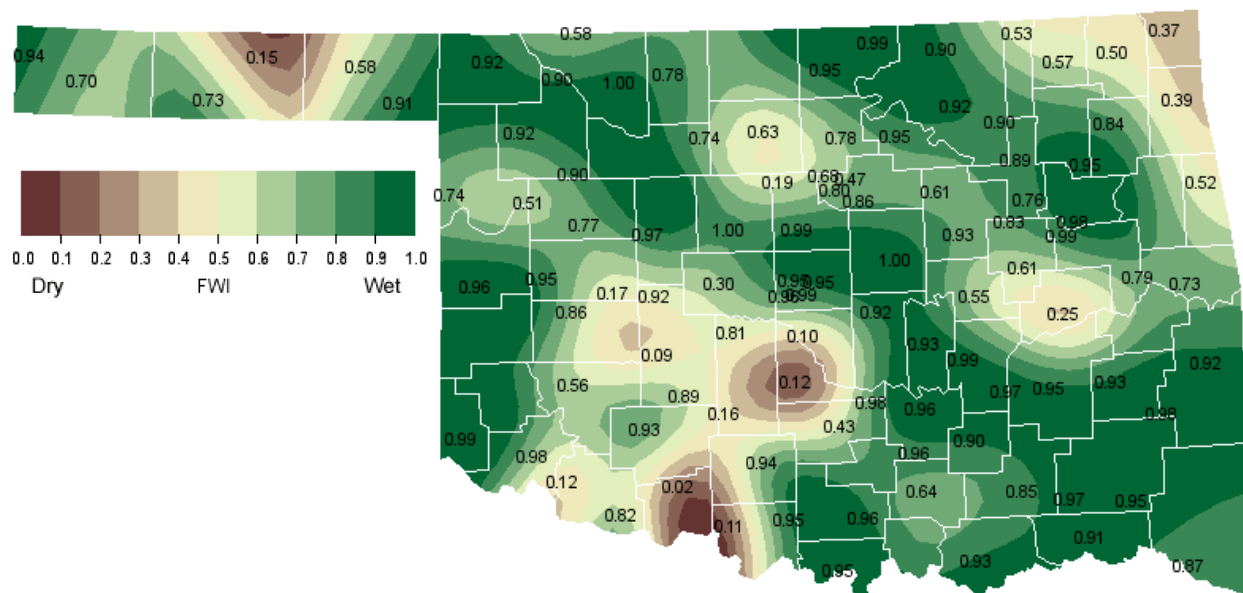
AUGUST NORMAL DAILY MINIMUM TEMPERATURE (1981-2010)



AUGUST NORMAL PRECIPITATION (1981-2010)



AUGUST 1, 2014 SOIL MOISTURE CONDITIONS AT 25CM



AUGUST 2014 DROUGHT INDICES

U.S. Drought Monitor Oklahoma

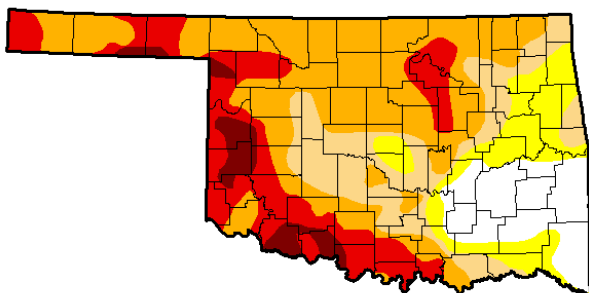
July 29, 2014

(Released Thursday, Jul. 31, 2014)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	12.06	87.94	76.16	60.09	23.36	4.48
Last Week 7/22/2014	10.52	89.48	75.48	60.09	23.55	5.57
3 Months Ago 4/29/2014	7.19	92.81	79.21	54.81	39.03	20.26
Start of Calendar Year 1/29/2014	50.84	49.16	38.17	18.99	4.84	2.40
Start of Water Year 1/01/2013	21.74	78.26	43.00	17.62	4.42	1.45
One Year Ago 7/29/2013	47.23	52.77	37.93	32.04	23.20	1.42



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:

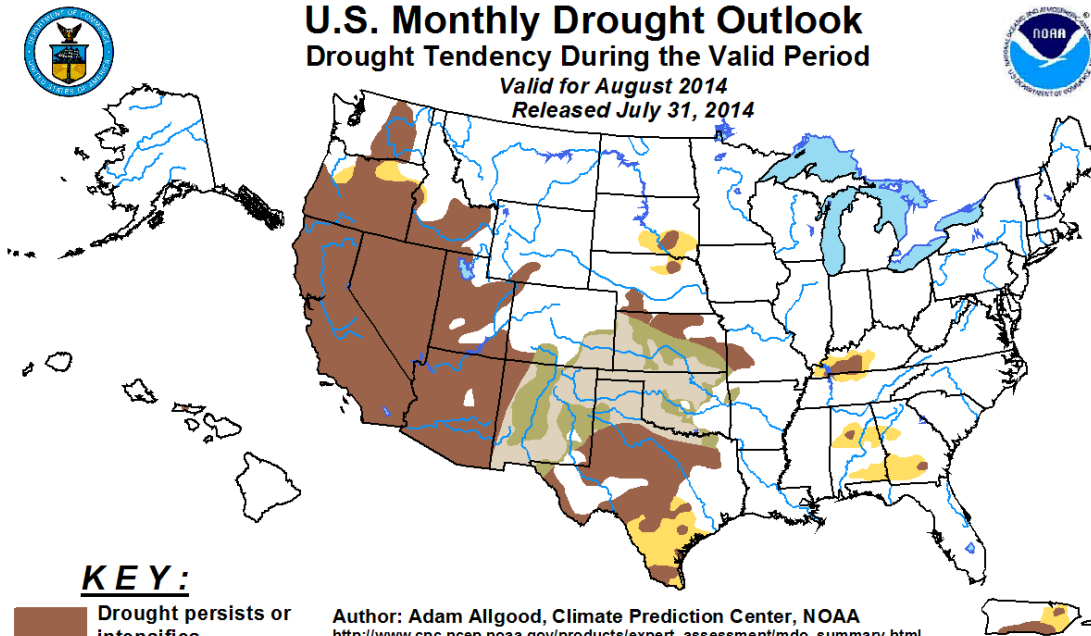
Brad Rippey
U.S. Department of Agriculture



<http://droughtmonitor.unl.edu/>

U.S. Monthly Drought Outlook Drought Tendency During the Valid Period

Valid for August 2014
Released July 31, 2014



KEY:

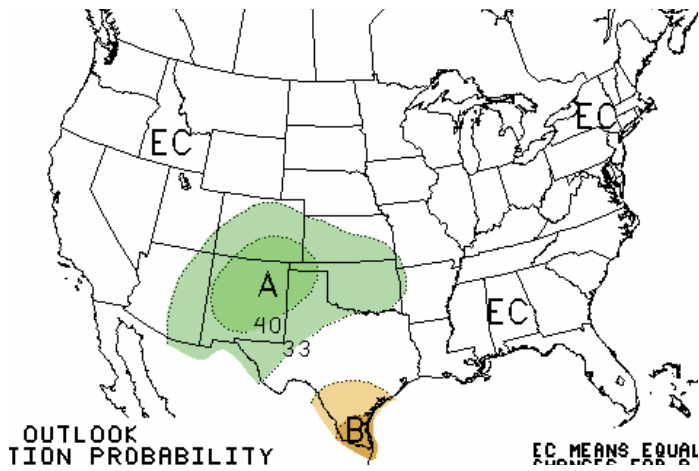
- Drought persists or intensifies
- Drought remains but improves
- Drought removal likely
- Drought development likely

Author: Adam Allgood, Climate Prediction Center, NOAA
http://www.cpc.ncep.noaa.gov/products/expert_assessment/mdo_summary.html

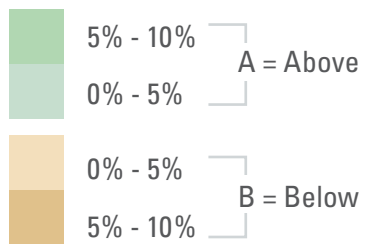
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor.

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period although drought will remain. The green areas imply drought removal by the end of the period (D0 or none)

AUGUST 2014 U.S. PRECIPITATION FORECAST

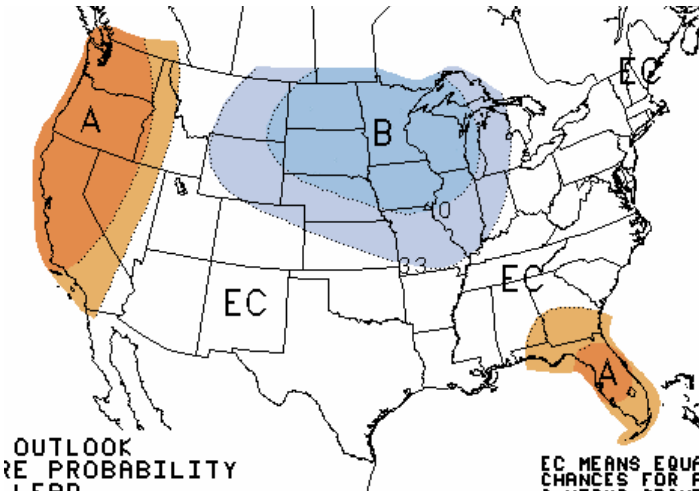


Percent Likelihood of Above or Below Average Precipitation*

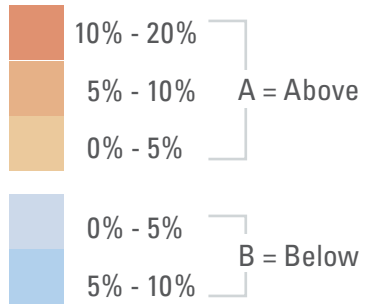


*EC indicates no forecasted anomalies due to lack of model skill.

AUGUST 2014 U.S. TEMPERATURE FORECAST



Percent Likelihood of Above or Below Average Temperatures*

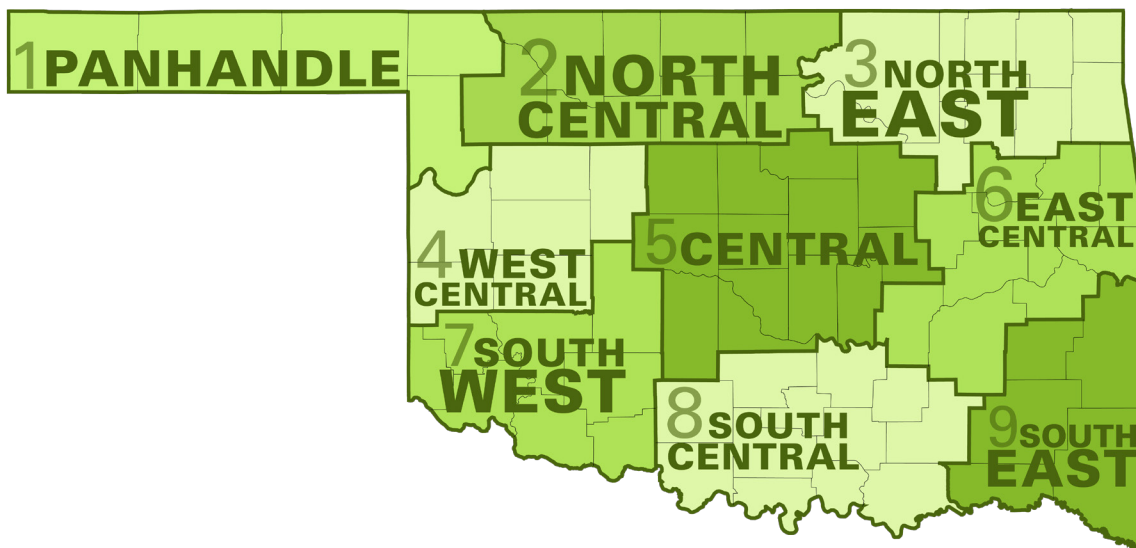


*EC indicates no forecasted anomalies due to lack of model skill.

AUGUST CLIMATE NORMALS

Climate Division	Max. Temperature (°F)	Min. Temperature (°F)	Avg. Temperature (°F)	Precipitation (inches)
1	91.3	64.5	77.9	2.70
2	93.2	68.4	80.8	3.22
3	91.8	68.8	80.3	3.24
4	93.2	68.3	80.7	3.01
5	93.2	69.5	81.4	3.10
6	92.6	69.2	80.9	3.03
7	94.7	70.0	82.4	2.77
8	94.5	70.5	82.5	2.60
9	92.4	68.4	80.4	2.82
Statewide	93.0	68.7	80.8	2.95

Oklahoma Climate Divisions



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 August differs 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 August 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/wwwcgi.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 is the State Climate Office for Oklahoma

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