Oklahoma Monthly Climate Summary

JUNE 2014

OKLAHOMA CLIMATOLOGICAL SURVEY

Although the spring rainy season got a late start in 2014, not arriving in earnest until the third week of May, it continued with sustained vigor through the last day of June. According to preliminary data from the Oklahoma Mesonet, the month finished as the 23rd wettest June on record for the state with an average total of 5.82 inches, a surplus of 1.56 inches. Those records date back to 1895. North central Oklahoma, one of the areas hit hardest by drought since the beginning of the year, saw its fifth wettest June with an average of 8.18 inches, 4.24 inches above normal. On the local level, six Mesonet stations recorded at least 9 inches of rain for the month, all located across northern Oklahoma. Buffalo led the state with 10.44 inches of rain, 6.36 inches above normal. Cherokee and Lake Carl Blackwell reported 10 inches with Alva, Breckenridge and Freedom exceeding 9 inches. Kenton recorded the state's lowest total at 0.83 inches. The Mesonet recorded at least an inch of rain somewhere in the state on 19 days during June. Not all areas were as fortunate with the plentiful moisture, unfortunately. Locations along the Red River fell 2-4 inches below normal for the month. Durant reported 2.44 inches, more than 3 inches below normal. The statewide average temperature was 77.1 degrees, 0.6 degrees above normal and the 54th warmest June on record. Grandfield topped the month's temperature scale with a high of 107 degrees on June 4 and Kenton reached 43 degrees on June 10 for the state's lowest reading. The last few days of June were oppressively hot with heat index values well into the triple-digits across most of Oklahoma.

Except for delaying the wheat harvest and localized areas of flash flooding, the excess moisture was of great benefit to the state. The U.S. Drought Monitor, which had already seen a bit of improvement during the last two weeks of May, continued to portray a drought of lessening intensity across much of Oklahoma. The percentage of the state in at least severe drought dropped from 73 percent at the end of May to 66 percent at the end of June, and the percentage of exceptional drought dropped from more than 26 percent to about 11 percent. The Drought Monitor's intensity scale slides from moderate-severe-extreme-exceptional, with exceptional being the worst classification.

June 2014 Statewide Extremes

Description	Extreme	Station	Day
High Temperature	107°F	Grandfield	4
Low Temperature	43°F	Kenton	10
High Precipitation	10.44 in.	Buffalo	
Low Precipitation	0.87 in.	Kenton	

June 2014 Statewide Statistics

Temperature

	Average	Depart.	Rank (1895-2014)
Month (Jun)	77.1°F	0.6°F	54th Warmest
Year-to-Date (Jan-Jun)	54.0°F	-1.3°F	21st Coolest

Precipitation

	Total	Depart.	Rank (1895-2014)
Month (Jun)	5.82 in.	1.56 in.	23rd Wettest
Year-to-Date (Jan-Jun)	13.05 in.	-6.10 in.	17th Driest

Depart. = departure from 30-year normal

Severe weather was sporadic and generally consisted of high winds and flooding, although there were reports of large hail with some of the stronger storms. The Mesonet site at Beaver recorded the top wind gust of 85 mph on June 30 with Minco right behind at 83 mph on June 23. Much of the Panhandle was hit by damaging winds on June 30. The Mesonet recorded severe wind gusts (57 mph or greater) on 13 of June's 30 days. Preliminary reports from the National Weather Service (NWS) indicate at least four tornadoes touched down in Oklahoma during June. All four were of the weaker variety (EF1 or lower), although the tornado that struck Adair on June 28 damaged several structures, including the Adair Fire Department. The other three confirmed twisters occurred in rapid succession in Beaver County on June 22. That brings the preliminary January-June twister count to 11, the second lowest total for the first six months of the year since accurate records began in 1950. Only 1988's count of 10 is lower. Oklahoma averages

eight tornadoes during June, and the average January-June total is 47. All tornado data for 2014 are considered preliminary until verified by NWS personnel.

JUNE 2014 DAILY SUMMARIES

JUNE 1-2: The beginning of June was welcomed by severe weather in parts of northwest Oklahoma. Hail measuring 2.75 inches in diameter fell in Arnett and Freedom experienced wind gusts of 70 and 74mph on the 1st. Rainfall and thunderstorms continued into the 2nd in northern and central Oklahoma and produced flash flooding in Wynona. Locally heavy rainfall accumulations measured between one-quarter and 1.91 inches (Cherokee) on the 1st. Over three inches of rain fell in Payne and Osage County on the 2nd with Wynona maxing out at an astonishing 5.14 inches. The environment was muggy as a moist atmosphere mixed with warm temperatures. The daily maximum temperatures ranged from 78 degrees in Kenton to 98 degrees in Hooker. Minimum temperatures were between 60 degrees in Kenton and 73 degrees in southern OK. Average wind speeds were between 5mph and a breezy 21mph the first day the storms moved through, and between 5 and 16mph the next. A gust as high as 74mph was reported at May Ranch.

JUNE 3-4: Apart from a gradual clouding over of skies on the evening of the 3rd, Tuesday and Wednesday were fairly sunny and hot. The highest temperatures in the state peaked at 99 degrees in Buffalo on the 3rd and a scorching 107 degrees in Grady on the 4th. Oklahoma City tied its daily high temperature record on the 4th at 95 degrees—a high for that day that hasn't been seen since 1913. As some areas in the panhandle cooled to 60 degrees, night time temperatures provided little relief with some Mesonet stations only measuring a low of 76 degrees. The maximum daily wind speed measured each day was 20mph in Boise City (3rd) and 18mph in Walters, Acme, and Minco (4th).

JUNE 5-9: A cold front swept through the region on the night of the 4th and set off a cooling trend throughout the state. The maximum temperature range fell from 83-102 degrees on the 5th to a range of 63-82 degrees by the 9th. Likewise, the minimum temperature range decreased from 61-76 degrees to 48-67 degrees during this five day stretch. The highest temperature of 102 degrees was observed in Grady and the coolest temperature of 48 degrees was observed at Kenton. Thunderstorms moved in from the central plains and were cause for the numerous severe storm reports in northern and central Oklahoma. As the days passed, more reports started coming in from the south. Three severe hail reports came in from Nowata County (2.5 and 2.75 inches) and Mayes County (2.75 inches) on the 5th. On the 6th, there were two more severe hail reports over two inches (Mayes and Beaver County), a wind gust of 72mph in Apache, and two flood reports in Beaver County. Flooding in Pauls Valley and a wind gust of 87mph and 70mph occurred in Oklahoma City and Whitebread, respectively on the 7th. The 8th experienced a lot of flooding with flash floods in Altus, Haileyville, and Haywood, as well as a gust of 73mph in Altus, and 2.00 inch hail in Norman. Flooding came as no surprise with the prolonged wet period and maximum Mesonet daily rainfall measurements of 1.5 inches on the 5th (Nowata), 3.85 inches on the 6th (Freedom), 2.24 inches on the 7th (Pauls Valley), 3.77 inches on the 8th (Bowlegs), and 2.37 inches on the 9th (Broken Bow). McAlester broke its daily rainfall record on the 8th with 2.16 inches. Average wind speeds were generally between 5-15mph from the 5th-8th and 5-25mph on the 9th.

JUNE 10-12: Rainfall and thunderstorms continued during this three-day period mainly in the north and east. Albeit more isolated, quite a few areas received over an inch. Westville measured 1.23 inches on the 10th, Camargo measured 1.22 inches on the 11th, and Breckinridge measured 1.49 inches on the 12th. The highest maximum temperatures in the state increased from 84 degrees in Kenton on the 10th and 97 degrees in Grady on the 11th before dropping back to 86 degrees in the south on the 12th. The lowest maximum temperatures ranged from 70 degrees to 81 degrees. Lows initially ranged from the 40s to 60s, but increased to a range from 56 degrees to 68 degrees. Although average wind speeds were between 5mph and 14mph on the 10th and 12th, the Cheyenne Mesonet site managed to average 18mph on the 11th. It was also on the 11th that a thunderstorm wind gust hit 70mph in Elmwood.

JUNE 13-14: There was a brief break in the rainy weather on the 13th and 14th after the storms moved south of the Red River. Maximum temperatures ranged from 79 degrees in Miami, Copan, and Skiatook to 99 degrees in Beaver. Minimum temperatures fell between 52 degrees in Beaver and Hooker, and 73 degrees in Burneyville and Ringling. The area of warmest temperatures shifted from the north to the south from Friday to Saturday. Average wind speeds were blustery with the highest daily averages measuring 19mph in Kenton and Boise City on the 13th and 25mph in Beaver on the 14th. Peak wind gusts as high as 56mph in Beaver and 54mph in Freedom were reported on Saturday.

JUNE 15: Another cold front moved through the region that caused a short-lived decline in temperatures, showers, and thunderstorms. Highs ranged from 80 degrees in Copan, Jay, and Miami to 96 degrees in Grady; lows ranged from 46 degrees in Kenton to 76 degrees in Oklahoma City. Although rainfall was generally less than one-quarter of an inch, eastern and north-central OK received between 1 and 3 inches. Nowata reported the most rain, measuring a total of 3.34 inches. Wind speeds averaged between 5 and 17mph and gusted to 47mph in Freedom and Woodward.

JUNE 16-17: Skies were rain-free and, on both days, the highest maximum temperature was 102 degrees in Beaver and the lowest maximum temperature was 86 degrees in Jay. The

highest minimum temperature was 76 degrees on the 16th (Grady and Tulsa) and 78 degrees on the 17th (Buffalo). Kenton measured the coolest temperature each day with 61 degrees on Monday, followed by 58 degrees on Tuesday. Breezy southerly winds averaged 10-24mph on the 16th and 10-26mph on the 17th. Wind gusts peaked at 54mph and 51mph in the panhandle.

JUNE 18-21: Temperatures started out fairly warm on the 18th which induced surface heating, showers, and thunderstorms. Storms initiated in south-central and central Oklahoma on Thursday, but eventually spread throughout the rest of the state along with a weak cold front. Although most areas received less than one-tenth of an inch of rain on the 18th, Fittstown and Tishomingo got an isolated 1.02inches and .96 inches, respectively. The 19th saw heavy rain and flooding in Custer and Caddo County with Hinton receiving the most precipitation at 4.45 inches. Maximum rainfall amounts only reached .46 inches on the 20th (Burneyville) and .44 inches on the 21st (Bowlegs). With the passing front and rain cooled air, the highest maximum temperatures decreased from 99 degrees in Hooker on the 18th to 94 degrees in Altus and Hooker on the 21st. Some Mesonet sites only recorded maximum temperatures as high as 80 and 86 degrees during this period. Minimum temperatures ranged from 58 degrees in Kenton on the 19th to 77 degrees in various portions of the state. Average daily wind speeds were less than 22mph on the 18th, less than 16mph on the 19th, and less than 19mph on the 20th and 21st. The highest wind gust during this time was 56mph in Boise City on Saturday.

JUNE 22-23: More showers and thunderstorms moved into southern Oklahoma overnight. Storm and rainfall intensity increased as they moved north into central Oklahoma on the 23rd. According to the Oklahoma Mesonet readings, the top three towns that received the heaviest amount of rainfall were Buffalo (2.41in.), Slapout (1.99 in.), and Beaver (1.23 in.) on the 22nd, and Westville (2.36 in.), Kingfisher (2.28 in.), and Oklahoma City West (2.28 in.) on the 23rd. Flooding was reported in Beaver County (22nd) and Oklahoma County (23rd). The National Weather Service had a measurement of 3.03 inches of rain in Oklahoma City that broke the previous daily rainfall record of 2.79 inches over 100 years ago in 1908. While maximum temperatures reached 98 degrees in Hooker on the 22nd, a cold front triggered a drastic drop in highs by the 23rd and the warmest temperature in the state only reached 88 degrees (Idabel). The lowest maximum temperatures plummeted as well with a drop from 83 degrees in Fittstown, Washington, and Durant to 74 degrees in Jay the following day. Minimum temperatures ranged between 60-75 degrees on the 22nd and 53-70 degrees on the 23rd. Although a severe wind gust of 83mph was measured in Minco on the 23rd, average wind speeds were less than 15mph.

JUNE 24-27: A warming trend became evident as the daily highest maximum temperatures increased from 90 degrees in Goodwell on the 24th to 96 degrees in Grady on the 27th. The lowest maximum temperatures fluctuated in the low 80s and minimum temperatures were in the 60s throughout the majority of the state. Patchy to dense fog blanketed areas in the western two-thirds of Oklahoma on the morning of the 24th and by evening, rain and storms moved into south OK. Later that night, additional storms moved into northern Oklahoma. The weak warm front helped produce heavy showers and thunderstorms in northern and central portions of the state which eventually moved into southern Oklahoma on the 25th. By the 26th and 27th, the heaviest rainfall was confined to the southern half of the state. Less than one inch of rain was common on the 24th and 25th, less than .30 inches (Broken Bow) on the 26th, and less than .52 inches (Hollis) on the 27th. The highest accumulation of precipitation was measured at 2.02 inches in Wister on Wednesday. The highest daily average wind speeds increased from 15mph, to 18mph, 20mph, and 25mph each consecutive day. The highest wind gust was 58mph in Putnam on the 27th.

JUNE 28: Thunderstorm activity moved into northern Oklahoma and produced severe wind gusts of 71mph in Cherokee and locally heavy rainfall. Buffalo measured a hefty 3.37 inches of rain and Seiling and Alva measured 2.49 inches and 2.06 inches, respectively. Maximum temperatures ranged from 77 degrees in Newkirk to 95 degrees in Grady, Altus, and Tipton; minimum temperatures ranged from 68 degrees in Kenton and Boise City to 76 degrees in southern portions of the state. Average wind speeds were 5-19mph with additional non-severe wind gusts reaching 63mph in Putnam and 61mph in Alva.

JUNE 29-30: The very end of the month was hot and muggy. The warmest temperatures each day were 102 degrees in Grady and 104 degrees in Kenton. The lowest maximum temperatures were in the upper 80s. The lowest minimum temperatures increased from 57 degrees in Kenton to 64 degrees in Boise City, and the highest minimum was 78 degrees on both the 29th and 30th. While a negligible amount of rain fell in eastern Oklahoma on the 29th, strong to severe storms developed in the panhandle on the 30th. A total of seven severe wind gusts were reported in Cimarron, Texas, and Beaver County with the highest being 85mph in Beaver. Beaver also received the most precipitation, measuring 1.68 inches, followed by Goodwell with .89 inches on the 30th. The highest daily average wind speed of roughly 20mph occurred in Cheyenne both days.

JUNE 2014 SEVERE WEATHER

Hail (2 inches in diameter or greater)

Size (in.)	Location	County	Day
2.75	11 W Arnett	Ellis	1
2.25	Newkirk	Kay	5
2.5	7 NE Nowata	Nowata	5
2.75	Delaware	Nowata	5
2.75	4 N Chouteau	Mayes	6
2.5	5 E Slapout	Beaver	6
2.00	2 SE Norman	Cleveland	8

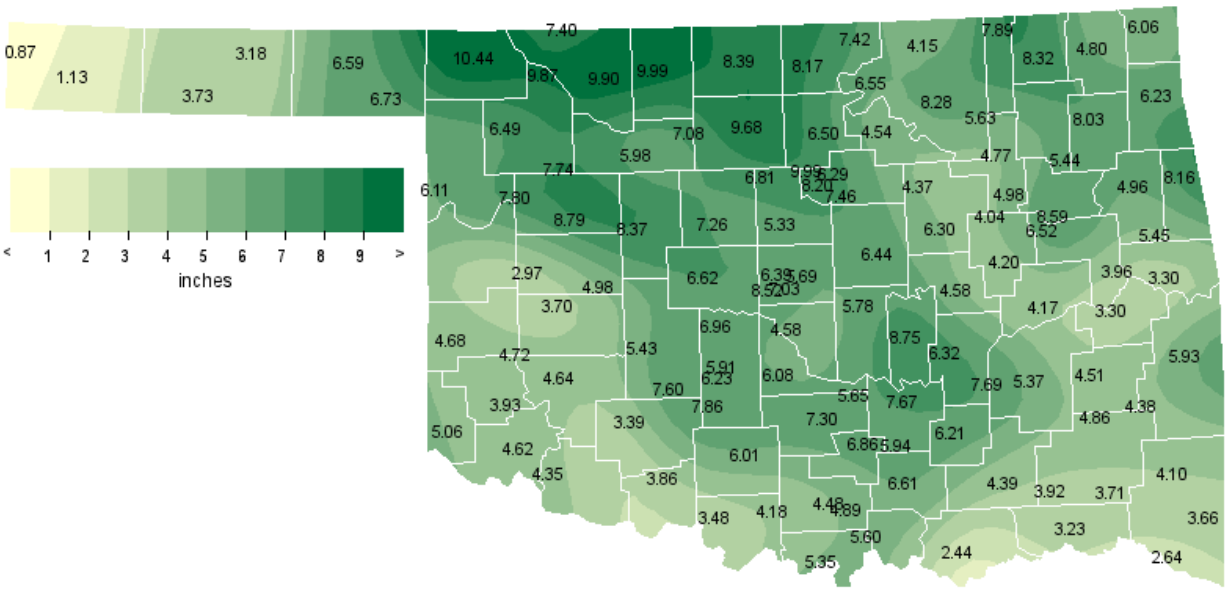
Wind Gusts (70 mph or greater)

Speed (m.p.h)	Location	County	Day
74	16 NNE Freedom	Woods	1
70	16 NNE Freedom	Woods	1
72	4 ENE Apache	Caddo	6
87	Oklahoma City	Oklahoma	7
70	2 ESE Whitebread	Garvin	7
73	Altus	Jackson	8
70	Elmwood	Beaver	11
71	1 SSW Cherokee	Alfalfa	28
70	Keyes	Cimarron	30
73	3 SSE Boise City	Cimarron	30
77	2 W Guymon	Texas	30
85	1 SSW Beaver	Beaver	30
74	8 W Slapout	Beaver	30
73	1 SSW Beaver	Beaver	30
72	1 SSW Beaver	Beaver	30

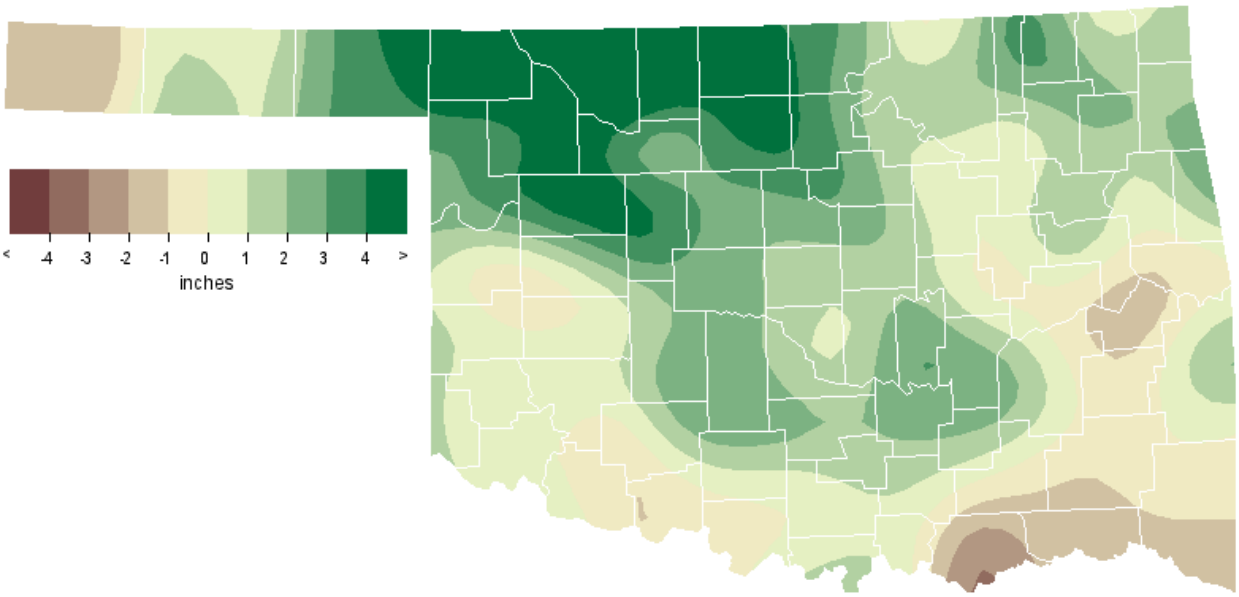
Flooding

Location	County	Day
Wynona	Osage	2
7 S Turpin	Beaver	6
8 ESE Beaver	Beaver	6
ESE Pauls Valley	Garvin	7
Altus	Jackson	8
4 SW Haileyville	Pittsburg	8
3 SW Haywood	Pittsburg	8
Weatherford	Custer	19
Hinton	Caddo	19
7 S Hydro	Caddo	19
2 S Knowles	Beaver	22
Oklahoma City	Oklahoma	23

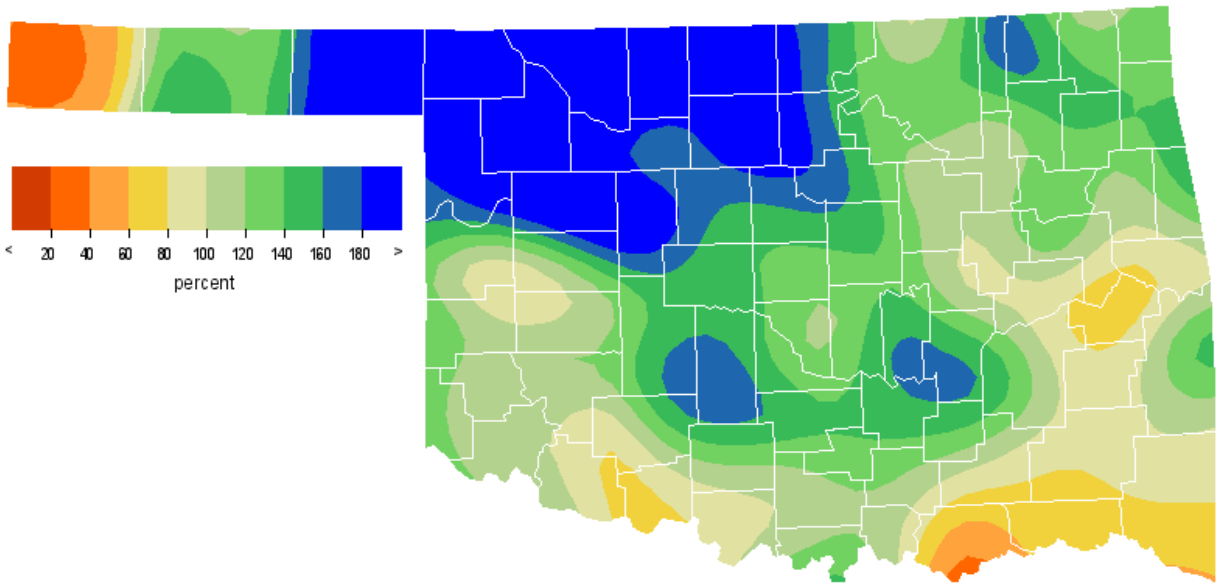
JUNE 2014 OBSERVED PRECIPITATION



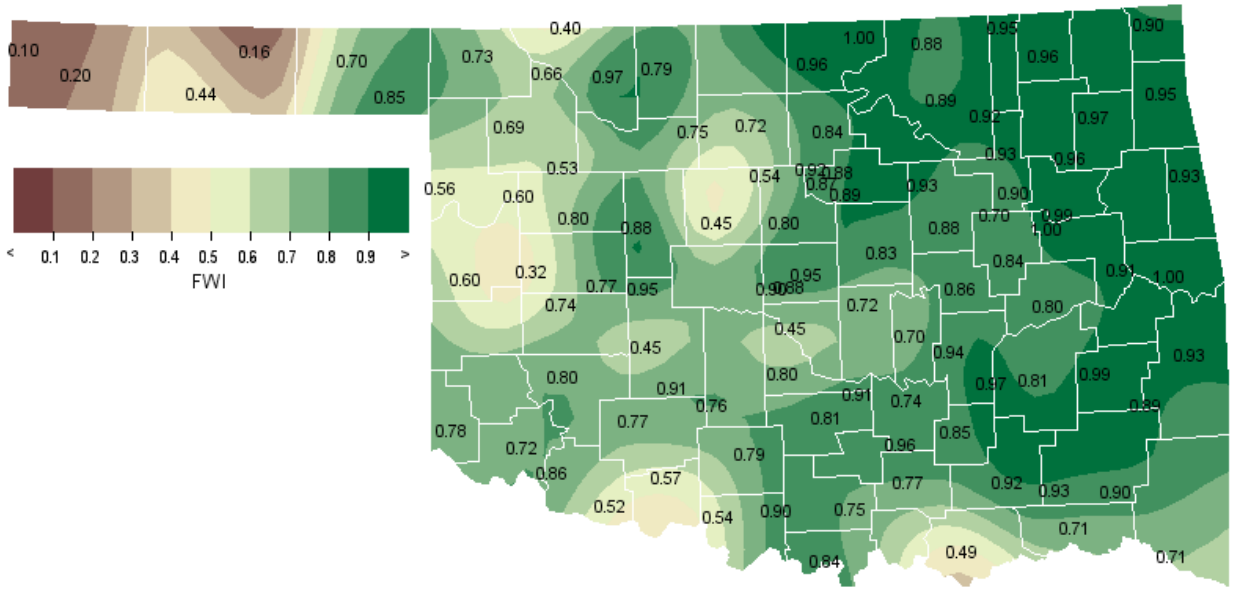
JUNE 2014 DEPARTURE FROM NORMAL PRECIPITATION



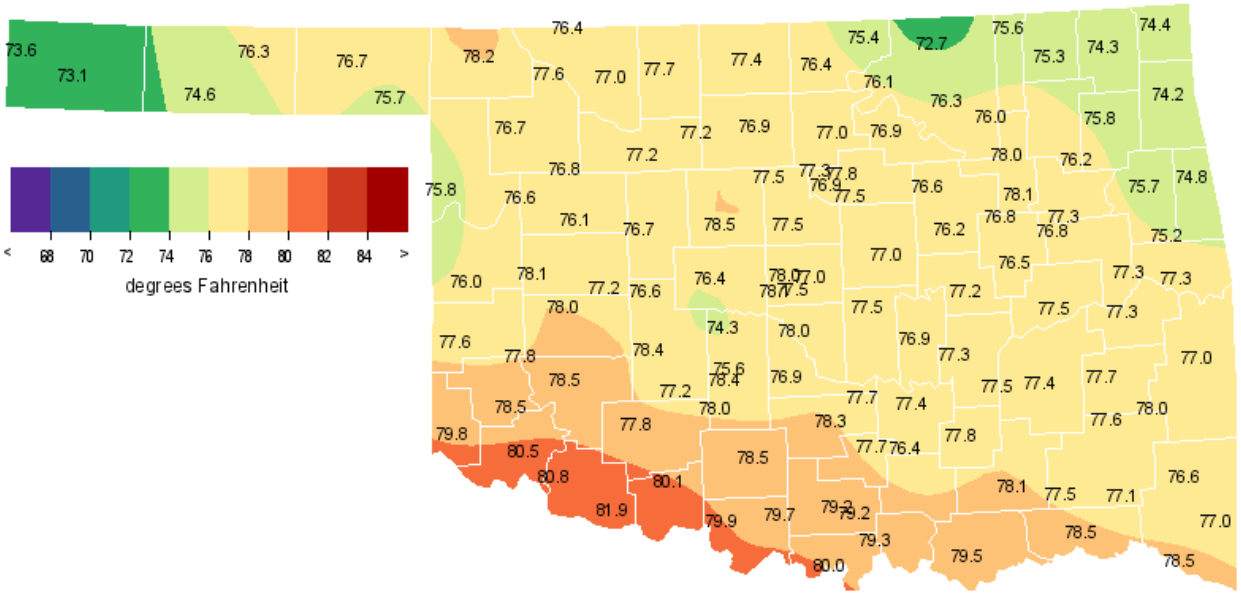
JUNE 2014 PERCENT OF NORMAL PRECIPITATION



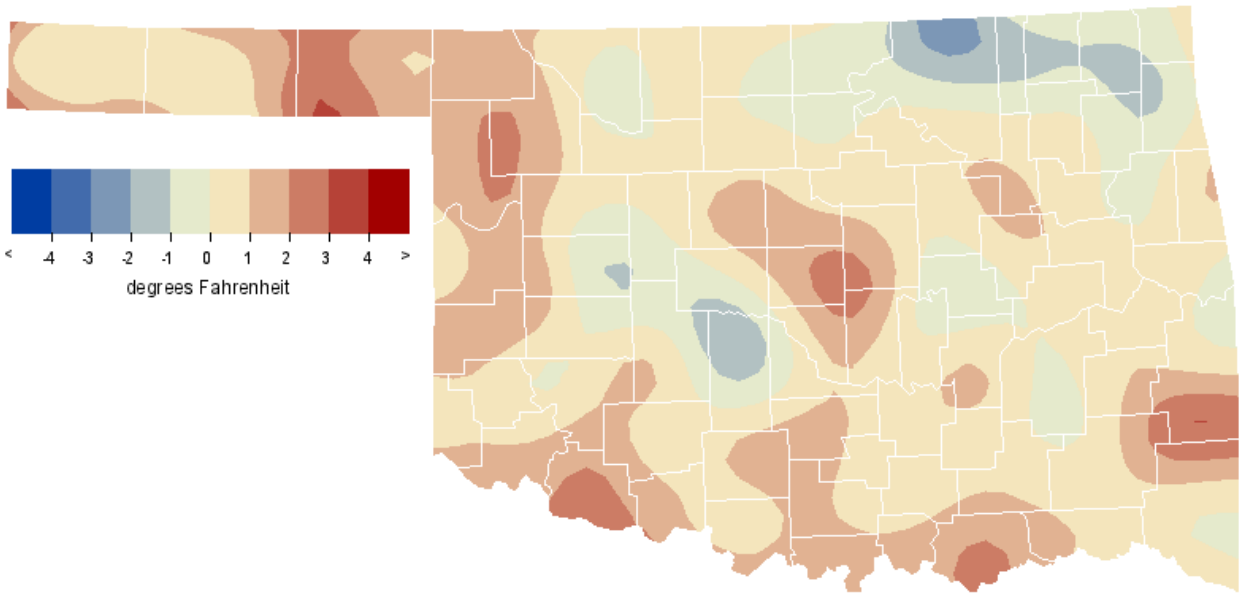
JUNE 2014 AVERAGE SOIL MOISTURE AT 25CM



JUNE 2014 AVERAGE TEMPERATURE



JUNE 2014 DEPARTURE FROM NORMAL TEMPERATURE

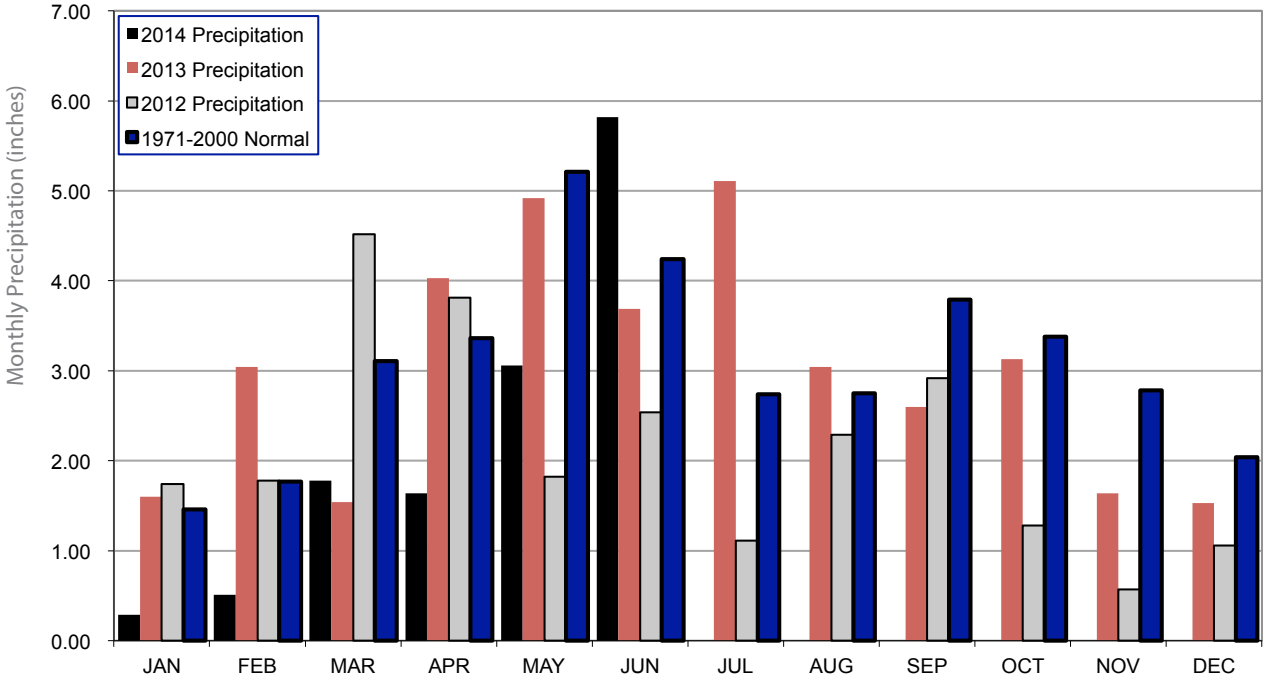


MESONET MONTHLY SUMMARY FOR JUNE 2014

NAME	MEAN TEMP	HIGH TEMP	HIGH DAY	LOW TEMP	LOW DAY	HDD	CDD	TOT PPT	HIGH 24-HR	HIGH DAY
PANHANDLE										
Arnett	75.7	97	4	56	13	3	324	6.11	1.13	11
Beaver	76.6	102	17	52	13	6	354	6.59	1.68	30
Boise City	73.1	102	30	44	10	15	258	1.13	.63	8
Buffalo	78.2	99	4	54	13	3	400	10.44	3.37	28
NORTH CENTRAL										
Alva	77.0	96	4	54	13	0	359	9.90	2.74	6
Blackwell	76.3	93	4	55	13	0	339	8.17	1.22	1
Breckinridge	76.9	94	4	55	13	0	356	9.68	2.59	2
Cherokee	77.7	95	4	56	13	0	382	9.99	2.02	6
Fairview	77.2	95	4	55	13	0	367	5.98	1.17	28
Freedom	77.6	98	4	55	13	0	379	9.87	3.85	6
Lahoma	77.2	95	4	57	13	0	366	7.08	1.57	23
NORTHEAST										
Bixby	78.1	95	30	58	11	0	392	4.98	1.90	2
Burbank	76.0	92	4	55	11	0	331	6.55	1.76	2
Copan	75.6	91	30	54	11	0	318	7.89	1.81	28
Foraker	75.2	91	4	54	13	****	****	4.06	1.27	2
Inola	76.2	90	30	54	11	0	337	5.44	1.49	2
Jay	74.2	89	30	53	13	0	276	6.23	2.33	15
Miami	74.3	90	21	54	13	2	282	6.06	1.47	2
Nowata	75.4	90	30	51	11	0	311	8.32	3.34	15
WEST CENTRAL										
Bessie	78.0	98	4	58	13	0	390	3.70	1.36	8
Butler	78.0	98	30	57	13	0	391	2.97	1.05	23
Camargo	76.6	96	4	56	13	0	347	7.80	1.86	19
Cheyenne	76.0	97	4	56	8	2	332	*****	*****	***
Erick	77.5	101	4	58	10	0	375	4.68	1.83	8
CENTRAL										
Acme	78.0	100	4	60	11	0	390	7.86	3.66	8
Bowlegs	76.9	92	30	56	11	0	357	8.75	3.77	8
Bristow	76.2	91	30	54	11	0	336	6.30	2.20	6
Lake Carl Blac	77.3	94	4	55	13	0	368	9.99	4.12	2
Chandler	77.0	93	4	58	11	0	360	6.44	1.45	6
Chickasha	78.2	100	4	58	11	****	****	5.91	1.72	8
El Reno	76.4	96	4	55	13	0	343	6.62	1.41	23
Guthrie	77.6	95	4	59	13	0	377	5.33	1.32	2
Kingfisher	78.4	99	4	57	13	0	403	7.26	2.28	23
Marena	76.9	94	4	58	13	0	357	8.20	3.40	2
Minco	76.9	97	4	58	13	****	****	6.96	1.73	19
Marshall	77.5	95	4	56	13	0	374	6.81	1.52	2
EAST CENTRAL										
Cookson	75.2	90	30	52	11	0	306	5.45	1.34	19
Eufaula	77.5	92	30	60	11	0	374	4.17	1.09	25
Haskell	76.8	92	30	57	11	0	355	6.52	2.03	2
Hectorville	76.9	92	30	58	11	0	356	4.04	1.20	2
Holdenville	77.3	92	30	59	11	0	369	6.32	1.45	8
McAlester	77.4	91	30	56	11	0	372	5.37	2.43	8
Okmulgee	76.5	91	30	55	11	0	345	4.20	1.14	23
SOUTHWEST										
Altus	80.6	104	4	60	9	0	467	4.62	2.09	7
Apache	77.2	98	4	59	9	0	367	7.60	2.26	8
Fort Cobb	78.4	99	4	59	11	0	402	5.43	1.59	8
Grandfield	81.9	107	4	61	9	0	508	*****	*****	***
Hinton	76.7	98	4	58	13	0	351	8.52	4.45	19
Hobart	78.5	101	4	59	9	0	406	4.64	1.48	6
SOUTH CENTRAL										
Ada	77.4	92	4	58	11	0	373	7.67	2.09	8
Ardmore	79.2	95	7	60	11	0	426	4.89	1.73	8
Burneyville	80.1	98	7	58	11	0	453	5.35	2.08	9
Byars	77.7	95	4	59	11	0	380	5.65	2.59	8
Centrahoma	77.9	93	30	56	11	0	386	6.21	2.27	8
Durant	79.4	95	7	60	11	0	432	2.44	.89	8
Fittstown	76.5	91	30	58	11	0	344	5.94	1.55	8
Ketchum Ranch	78.5	98	4	59	11	0	404	6.01	1.66	8
SOUTHEAST										
Antlers	77.6	92	30	55	11	0	377	3.92	1.52	9
Broken Bow	77.0	92	7	56	11	0	359	3.66	2.37	9
Clayton	77.6	92	30	56	11	0	378	4.86	1.96	8
Cloudy	77.1	91	30	57	11	0	362	3.71	2.04	8
Hugo	78.5	93	7	59	11	0	404	3.23	1.05	23

NAME	MEAN TEMP	HIGH TEMP	HIGH DAY	LOW TEMP	LOW DAY	HDD	CDD	TOT PPT	HIGH 24-HR	HIGH DAY
Goodwell	74.6	102	30	48	10	11	299	3.73	1.02	24
Hooker	76.3	103	30	49	10	7	345	3.18	.99	30
Kenton	73.6	104	30	43	10	11	268	.87	.41	8
Slapout	75.7	99	16	54	10	4	325	6.73	1.99	22
May Ranch	76.4	96	17	55	13	1	344	7.40	1.70	28
Medford	77.3	95	4	59	9	0	370	8.39	1.49	15
Newkirk	75.4	91	30	55	13	0	311	7.42	1.33	15
Red Rock	77.1	93	4	56	13	0	363	6.50	1.31	2
Seiling	76.8	96	4	54	13	1	355	7.74	2.49	28
Woodward	76.6	98	4	56	13	2	351	6.49	2.60	6
Pawnee	76.9	93	4	55	13	0	356	4.54	1.22	5
Porter	77.3	93	30	57	11	0	369	8.59	2.81	8
Pryor	75.8	91	21	53	11	0	323	8.03	3.13	15
Skiatook	76.0	89	30	57	11	0	331	5.63	1.76	2
Tulsa	77.9	92	30	60	11	0	387	4.77	1.53	2
Vinita	74.3	89	21	51	11	2	282	4.80	1.99	15
Wynona	76.3	91	30	56	11	0	339	8.28	5.14	2
Putnam	76.1	95	4	56	13	0	334	8.79	1.57	28
Retrop	77.8	98	4	59	8	0	385	4.72	1.57	6
Watonga	76.6	96	4	56	13	0	348	8.37	1.69	23
Weatherford	77.1	98	4	59	9	0	364	4.98	1.77	19
Ninnekah	78.4	101	4	58	11	0	403	6.23	2.01	8
Norman	78.0	97	4	58	11	0	390	4.58	1.47	12
Oilton	76.6	92	4	53	11	0	348	4.37	1.00	8
OKC East	77.5	94	4	58	13	0	375	7.03	2.22	23
OKC North	77.9	95	4	61	13	0	387	6.39	1.97	23
OKC West	78.1	95	4	62	9	0	393	8.52	2.28	23
Okemah	77.2	92	4	55	11	0	366	4.58	2.11	23
Perkins	77.5	94	4	58	13	0	375	7.46	3.66	2
Shawnee	77.5	94	4	59	13	0	374	5.78	1.61	8
Spencer	77.0	93	4	58	13	0	359	5.69	1.20	23
Stillwater	77.7	94	4	57	11	0	382	6.29	2.88	2
Washington	76.9	96	4	58	11	0	357	5.29	2.40	8
Sallisaw	77.3	93	30	57	11	0	368	3.30	1.03	9
Stigler	77.2	94	30	55	11	0	367	3.30	1.21	9
Stuart	77.5	92	30	57	11	0	374	7.69	2.33	8
Tahlequah	75.7	91	30	54	11	0	321	4.96	2.26	15
Webbers Falls	77.3	92	30	56	11	0	369	3.96	1.01	19
Westville	74.9	89	30	54	11	0	296	8.16	2.36	23
Hollis	79.8	104	4	59	10	0	445	5.06	1.39	8
Mangum	78.5	101	4	57	11	0	406	3.93	1.21	23
Medicine Park	77.9	100	4	59	9	0	387	3.39	1.36	8
Tipton	80.8	104	4	61	9	0	475	4.35	1.20	8
Walters	80.2	103	4	61	9	0	455	3.86	1.67	8
Lane	78.1	93	30	58	11	0	394	4.39	1.42	8
Madill	79.3	96	7	58	11	0	429	5.60	2.32	8
Newport	79.2	95	30	59	11	0	426	4.48	1.17	8
Pauls Valley	78.3	96	4	59	11	0	400	7.30	2.24	7
Ringling	79.7	98	4	61	11	0	440	4.18	1.28	8
Sulphur	77.8	94	4	56	11	0	383	6.86	1.86	8
Tishomingo	*****	***	***	***	***	****	****	6.61	1.74	8
Waurika	79.9	99	4	61	11	0	448	3.48	1.44	8
Idabel	78.6	93	30	58	11	0	407	2.64	1.87	9
Mt Herman	76.5	90	30	55	11	0	346	4.10	2.40	8
Talihina	78.0	93	30	54	11	0	390	4.38	2.47	8
Wilburton	77.7	92	30	55	11	0	380	4.51	1.65	8
Wister	77.0	92	30	56	11	0	359	5.93	2.17	8

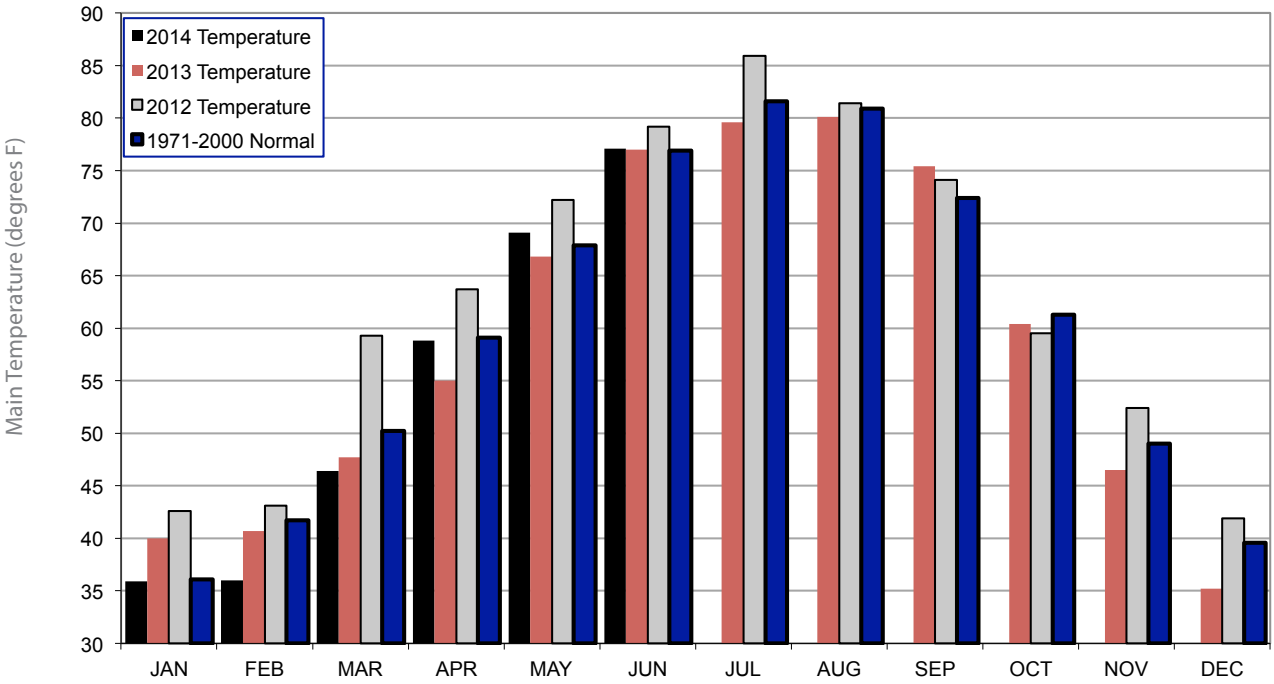
2012, 2013 AND 2014 STATEWIDE PRECIPITATION MONTHLY TOTALS VS. NORMAL



June 2014 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Jun-13
Panhandle	5.09	2.16	8th Wettest	7.09 (1962)	0.29 (1911)	3.08
North Central	8.18	4.24	5th Wettest	10.87 (2007)	0.40 (1933)	3.07
Northeast	6.39	1.77	26th Wettest	12.64 (2007)	0.28 (1933)	2.72
West Central	5.75	1.89	17th Wettest	8.90 (1962)	0.30 (1933)	2.62
Central	6.64	2.07	24th Wettest	12.63 (2007)	0.41 (1933)	5.81
East Central	5.19	0.33	42nd Wettest	12.47 (1935)	0.69 (2011)	4.65
Southwest	4.76	0.60	27th Wettest	9.96 (2007)	0.43 (1911)	2.85
South Central	5.44	0.80	28th Wettest	11.30 (1908)	0.25 (1933)	4.63
Southeast	4.09	-0.61	56th Wettest	11.51 (1935)	0.77 (1933)	4.68
Statewide	5.82	1.56	23rd Wettest	9.52 (2007)	0.44 (1933)	3.87

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



June 2014 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Jun-13 (F)
Panhandle	75.4	1.0	50th Warmest	82.9 (1953)	67.0 (1903)	77.6
North Central	76.5	-0.3	58th Coolest	85.2 (1953)	69.1 (1903)	78.2
Northeast	75.7	0.0	50th Coolest	84.4 (1911)	70.3 (1903)	76.7
West Central	77.1	0.7	58th Warmest	85.7 (1953)	70.0 (1903)	79.1
Central	77.2	0.4	57th Coolest	85.2 (1911)	71.1 (1903)	77.8
East Central	76.7	0.5	60th Coolest	84.5 (1953)	70.3 (1903)	77.5
Southwest	79.1	0.7	48th Warmest	87.3 (2011)	72.4 (1903)	80.7
South Central	78.6	0.9	54th Warmest	85.7 (1911)	72.1 (1903)	78.9
Southeast	77.6	1.2	38th Warmest	83.5 (1953)	70.6 (1903)	77.2
Statewide	77.1	0.6	54th Warmest	84.8 (1953)	70.3 (1903)	78.1

RECORD EVENT REPORTS JUNE 2014

Description	Day	Location	Record	Previous Record	Year
Daily High Temperature	4	Oklahoma City	95	95	1913
Daily Rainfall	8	McAlester	2.16	1.27	1971
Daily Rainfall	23	Oklahoma City	3.03	2.79	1908

MESONET EXTREMES FOR JUNE 2014

Climate Division	High Temp (F)	Day	Station	Low Temp (F)	Day	Station	High Monthly Rainfall (inches)	Station	High Daily Rainfall (inches)	Day	Station
Panhandle	104	30th	Kenton	43	10th	Kenton	10.44	Buffalo	3.37	28th	Buffalo
North Central	98	4th	Freedom	54	13th	Seiling	9.99	Cherokee	3.85	6th	Freedom
Northeast	95	30th	Bixby	51	11th	Nowata	8.59	Porter	5.14	2nd	Wynona
West Central	101	4th	Erick	56	8th	Cheyenne	8.79	Putnam	1.86	19th	Camargo
Central	101	4th	Ninnekah	53	11th	Oilton	9.99	Lake Carl Blackwell	4.12	2nd	Lake Carl Blackwell
East Central	94	30th	Stigler	52	11th	Cookson	8.16	Westville	2.43	8th	McAlester
Southwest	107	4th	Grandfield	57	11th	Mangum	7.60	Apache	2.26	8th	Apache
South Central	99	4th	Waurika	56	11th	Sulphur	7.67	Ada	2.59	8th	Byars
Southeast	93	30th	Idabel	54	11th	Talihina	5.93	Wister	2.47	8th	Talihina
Statewide	107	4th	Grandfield	43	10th	Kenton	10.44	Buffalo	5.14	2nd	Wynona

JULY OUTLOOK

July in Oklahoma means summer. By the beginning of the month, the jet stream and its accompanying weather systems have retreated to the U.S.-Canadian border. The western arm of a broad area of high pressure at the earth's surface, centered in the central Atlantic Ocean, has migrated northward and spreads across the state. Winds are persistently from the south, but not as strong as during preceding months. As a result, the seventh month of the year is the Oklahoma's warmest with an average temperature of 82 degrees and is the 4th driest month with a statewide-averaged precipitation of 2.73 inches.

Oklahoma's hottest July, at least since record keeping began in 1895, occurred in 2011. That month produced the highest statewide-averaged temperature (89.3 degrees) of any month for any state during the period of record. The thermometer indicated 120 degrees at Alva July 18, 1936, at Altus July 19, 1936, and at Tishomingo July 26, 1943. The lowest July statewide-averaged monthly temperature on record was 76.4 degrees in 1906. The lowest temperature ever reported in Oklahoma during July is 41 degrees at Goodwell, July 15, 1915. Humidity, vegetation, and elevation contribute to the variations in temperature across the state. The higher elevation and somewhat drier air in the panhandle lead to cooler nights and a greater range in daily temperatures than in other parts of the state. The more humid air in the southeast typically warms less in the daytime, but also retains more heat through the night. Southwestern Oklahoma suffers the most from the heat.

Temperature

Mean	82.0 degrees
Hottest July	2011, 89.3 degrees
Coolest July	1906, 76.4 degrees
Hottest location	Waurika, 85.1 degrees
Coolest location	Boise City, 77.2 degrees
Hottest recorded	120 degrees, Alva, July 18, 1936 Altus, July 19, 1936 Tishomingo, July 26, 1943
Coldest recorded	41 degrees, Goodwell, July 15, 1915

July precipitation, all rainfall unless you count an occasional hailstorm, is primarily a result of localized events. While the panhandle enjoys its summer rainy season and rain certainly doesn't disappear from north central Oklahoma, the forested southeast, though drier than it is in other months, still receives more precipitation than other parts of the state. The wettest July, based on a statewide average of rainfall, was 1950 (9.26 inches). The driest July occurred in 1980 (0.41 inches).

Oklahoma averages only 2.1 tornadoes in July each year. Since 1950, the July record for tornadoes is seven in 1956. Fifteen of those 52 months have been free of confirmed tornadoes. In the absence of well-organized systems, the vast majority of recorded July tornadoes have been of the weaker variety, and multiple occurrences on the same day are extremely rare. Only one fatality has been attributable to a tornado since 1950, that occurring in Murray County in 1955. Lightning, thunderstorm-induced winds, locally heavy rain, and, of course, heat are more likely to provide Oklahoma with its "weather misery" during the month.

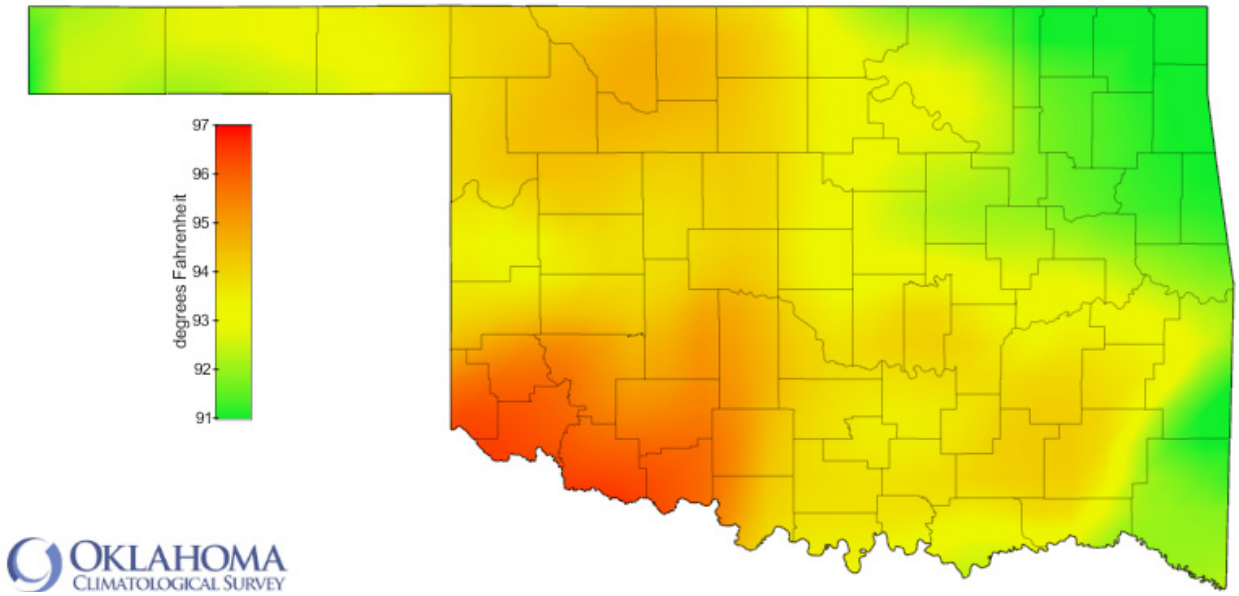
Precipitation

Mean	2.73 inches
Wettest July	1950, 9.26 inches
Driest July	1980, 0.41 inches
Wettest location	Carnasaw Fire Tower (McCurtain County), 4.50 inches
Driest location	Altus and Reydon, 1.77 inches
Most recorded	18.83 inches, Wewoka, 1950

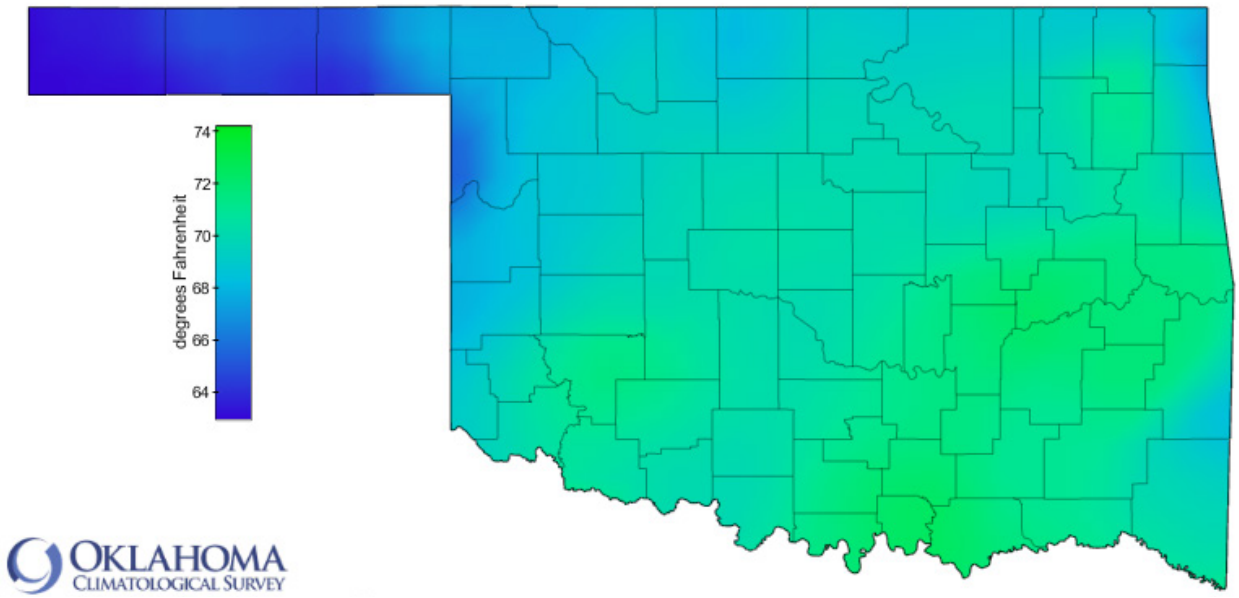
Tornadoes

Average July Tornadoes	1.8
Most	7 (1956)

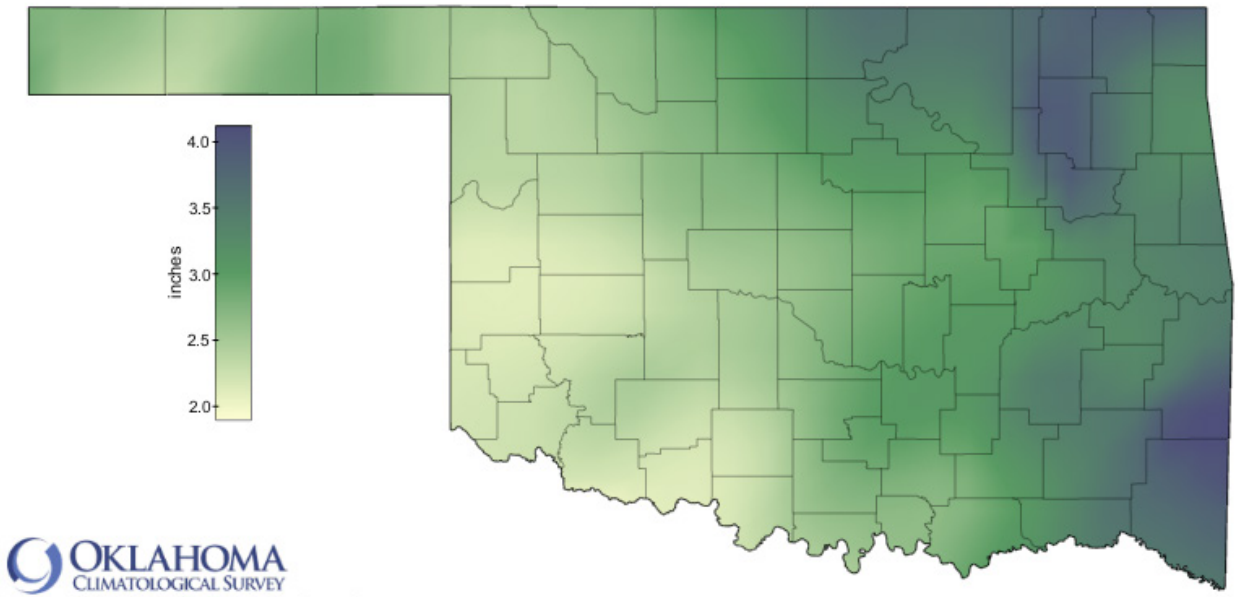
JULY NORMAL DAILY MAXIMUM TEMPERATURE (1981-2010)



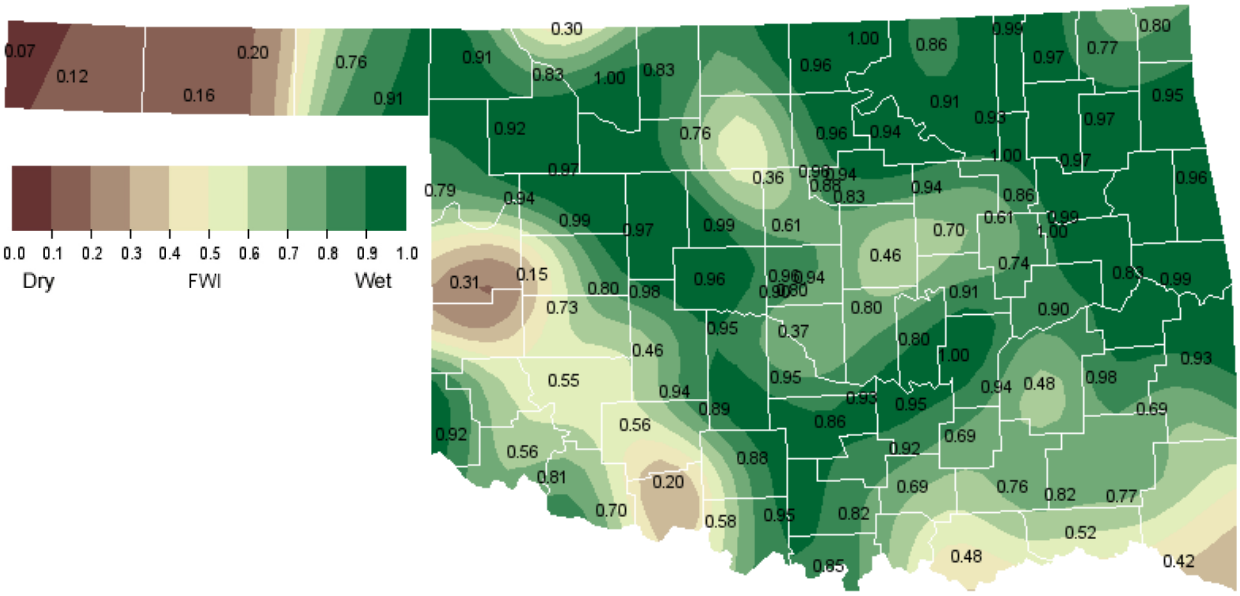
JULY NORMAL DAILY MINIMUM TEMPERATURE (1981-2010)



JULY NORMAL PRECIPITATION (1981-2010)



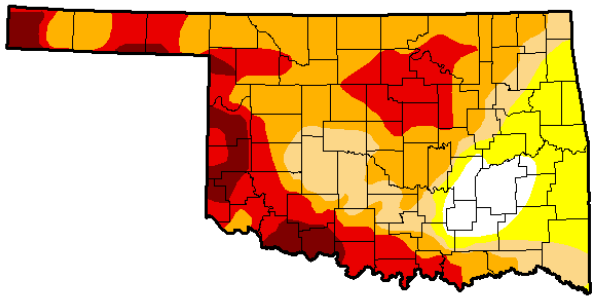
JULY 1, 2014 SOIL MOISTURE CONDITIONS AT 25CM



JULY 2014 DROUGHT INDICES

U.S. Drought Monitor

Oklahoma



July 1, 2014

(Released Thursday, Jul. 3, 2014)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	5.50	94.50	80.12	65.61	30.07	6.67
Last Week 6/24/2014	9.08	90.92	78.40	65.61	40.57	10.69
3 Months Ago 4/1/2014	4.05	95.95	77.48	50.67	24.03	8.61
Start of Calendar Year 12/31/2013	50.84	49.16	38.17	18.99	4.84	2.40
Start of Water Year 10/1/2013	21.74	78.26	43.00	17.62	4.42	1.45
One Year Ago 7/2/2013	38.46	61.54	42.17	36.89	26.45	8.69

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.

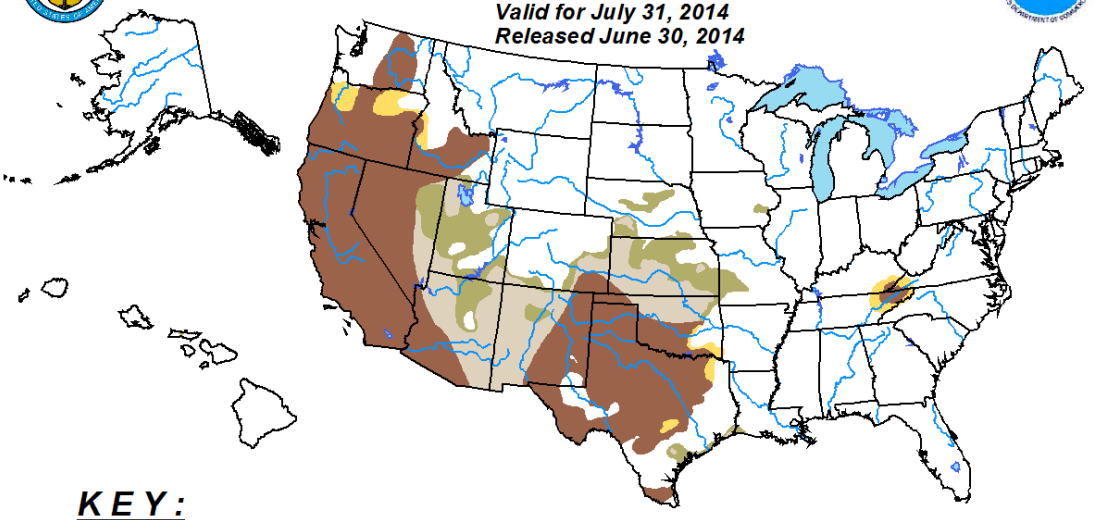
Author:
Anthony Artusa
NOAA/NWS/NCEP/CPC

http://droughtmonitor.unl.edu/

U.S. Monthly Drought Outlook

Drought Tendency During the Valid Period

Valid for July 31, 2014
Released June 30, 2014



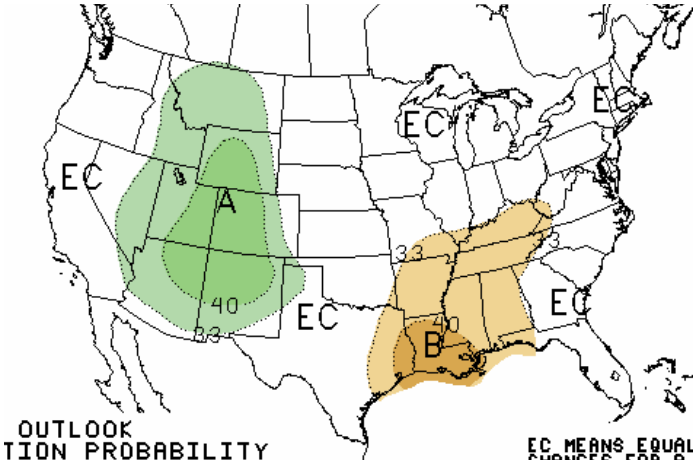
KEY:

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

Author: David Miskus, 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)

JULY 2014 U.S. PRECIPITATION FORECAST



Percent Likelihood of Above or Below Average Precipitation*

- 5% - 10%
- 0% - 5%

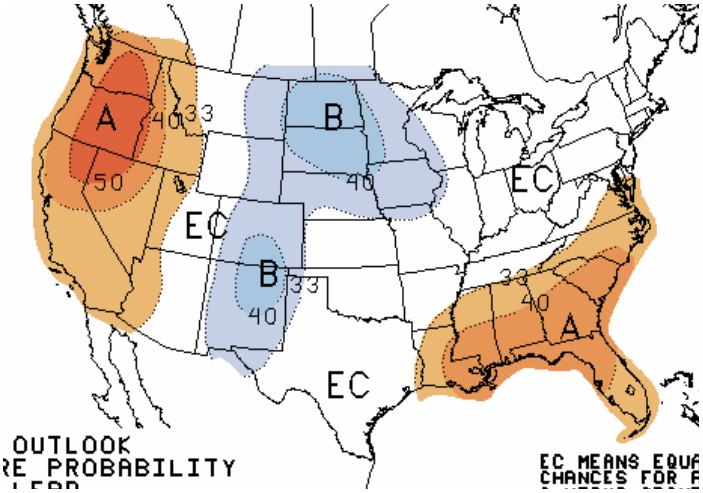
A = Above

- 0% - 5%
- 5% - 10%

B = Below

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

JULY 2014 U.S. TEMPERATURE FORECAST



Percent Likelihood of Above or Below Average Temperatures*

- 10% - 20%
- 5% - 10%
- 0% - 5%

A = Above

- 0% - 5%
- 5% - 10%

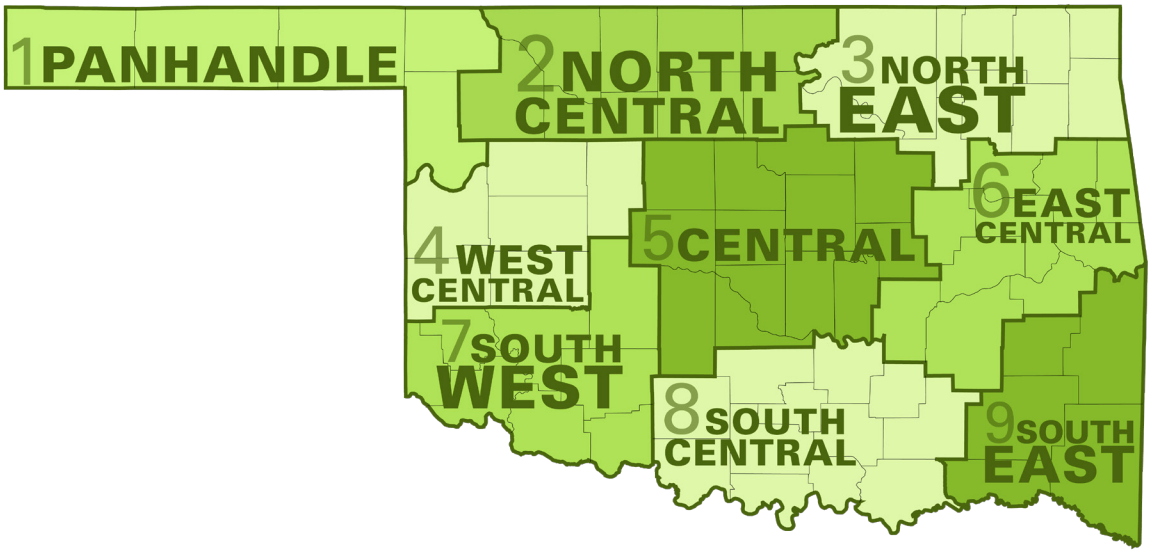
B = Below

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

JULY CLIMATE NORMALS

Climate Division	Max. Temperature (°F)	Min. Temperature (°F)	Avg. Temperature (°F)	Precipitation (inches)
1	94.2	65.6	79.9	2.50
2	94.9	69.4	82.2	2.98
3	92.8	69.9	81.4	3.14
4	94.4	69.2	81.8	2.10
5	93.7	70.5	82.1	2.53
6	92.7	70.1	81.5	2.97
7	96.0	70.1	83.1	2.12
8	94.3	71.1	82.7	2.53
9	93.4	69.0	81.2	3.59
Statewide	94.0	69.6	81.8	2.73

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 June 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 June 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

Oklahoma Climatological Survey is the State Climate Office for Oklahoma

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