OKLAHOMA MONTHLY CLIMATE SUMMARY
JULY 2004

Oklahoma Climatological Survey

Overview

Oklahoma's mild and wet summer continued as the southerly dip in the jet stream, so prevalent in June, continued into July. At times, the weather resembled that of mid-spring, a welcome respite for those accustomed to the normal heat and humidity of an Oklahoma July. That does not mean summer failed to rear its ugly head, however. Triple-digit temperatures made an appearance on several occasions. Despite those brief glimpses of summer, Oklahoma still experienced its 6th coolest and 22nd wettest July since 1895.

Severe weather was abundant, an expected result of the increase in storm systems during the month. The weather threats were confined to severe wind gusts, large hail, and flooding. The state went without a reported tornado for the second consecutive month. Severe winds associated with a squall line resulted in one fatality as an oil derrick was toppled west of Kingfisher early on the 6th.

Precipitation

The statewide-averaged precipitation total finished at just over four inches, more than an inch above normal. That statewide total was bolstered by a prodigious surplus from the northeastern one-third of the state, where normal precipitation amounts were exceeded by three to four inches, the 9th wettest July on record for that section of the state. The south central region joined in with a surplus of nearly two inches. An area centered on Adair, Cherokee, and Sequoyah counties recorded from 11-13 inches of rain, which is as much as 10 inches above normal for that section of the state. Not all areas of the state were so blessed, however. Portions of northwestern, west central , and extreme southeastern Oklahoma barely exceeded an inch of rainfall. Hollis, in the extreme southwest corner, recorded a meager one-quarter of an inch. The July surplus, coupled with a similar surplus in June, combined for the 6th wettest June-July period on record, well over four inches above normal. The south central region exceeded its normal June-July precipitation by more than seven inches, the 2nd wettest such period on record for that area. East central Oklahoma had a similar total, and its 5th wettest June-July since 1895. The year-to-date precipitation total rose above the established normal for the first time in two months with more than a 2.5-inch surplus.

Temperature

July was pleasantly mild, with a statewide-averaged temperature of nearly 4 degrees below normal, the 6th coolest such period on record. South central Oklahoma matched their 2nd wettest July on record with their 5th coolest as well. The June-July period saw similar results for the state, over two degrees below normal, for the 11th coolest such period on record. Despite July's cool weather, however, the year-to-date statewide-averaged temperature still remains more than one-half of a degree above normal, the 34th warmest January-July on record.

July 2004 Statewide Extremes

Description	Extreme	Station	Date
High Temperature	103ºF	Altus	July 16th
Low Temperature	50ºF	Camargo	July 26th
High Precipitation	13.35 in.	Cookson	
Low Precipitation	0.26 in.	Hollis	

July Daily Highlights

July 1-10: The first ten days of July were uncharacteristically wet and stormy, with showers and thunderstorms occurring within the state each day. A flash flood watch covered much of central Oklahoma on the month's first day, as the ground remained saturated from rainfall during the previous month's final days. Amounts of well over one inch were reported across the southwest that day. Hail and high winds were the main severe weather threat in central and western Oklahoma through this period, with widespread flooding occurring in eastern portions of the state on the 2nd and 3rd. Bixby and Glenpool both reported numerous road closures due to flash flooding following heavy rain. Ten other locations in eastern Oklahoma reported flooding during those two days. Several reports of hail to the size of tennis balls were reported on the 5th in Garfield, Grant, and McClain Counties. The worst instance of severe weather occurred early in the morning in Kingfisher County. A squall line generated winds estimated up to 100 mph, overturning an oil derrick 13 miles west of Kingfisher. The collapse of the 120-foot derrick killed a 22-year old Ringwood man. Winds of over 80 mph were recorded by the Buffalo and May Ranch Mesonet sites in northwestern from that same complex of storms earlier in the night. The outflow boundaries generated by the storm complexes during this period, coupled with the occasional cool front passage, kept temperatures below normal in northern sections of the state, whereas the south remained seasonably warm.

July 11-15: Conditions more typical of July returned on the 11th. Hot and muggy afternoons were accompanied by warm nights as a dome of high pressure moved over the state. Heat indices soared above 105 degrees as temperatures hovered near the triple-digit mark. Skies remained mostly clear through this five-day period. The month's high temperature, 105 degrees, was recorded by the Oklahoma Mesonet site at Grandfield on the 15th.

July 16-18: A cool front approached from the north on the 16th, triggering a few light showers near the Kansas-Oklahoma border. The front pushed through the state during the day. Temperatures ahead of the front soared past the century mark, whereas behind the front temperatures were much more pleasant, remaining in the 80s. Thunderstorms formed each night in the southeastern Colorado and moved southeast into the Oklahoma Panhandle. Temperatures were generally in the 80s and low 90s across the state during this period. Bartlesville, McAlester, Muskogee, and Tulsa either tied or set records for low temperatures on the morning of the 18th.

July 19-21: Another tranquil interlude from the storminess, clear skies dominated this three-day interval. Highs in the upper-90s and low-100s were common, as another dome of high pressure settled over the state. A few storms formed near Kenton on the 21st, but rainfall amounts were light.

July 22-24: A cool front generated storms in the extreme northwest on the 22nd, before finally pushing through the state over the next two days. Severe storms were widespread in the north on the 23rd, with numerous reports of hail and high winds. Wind gusts of up to 75 mph were reported near Blackwell and Enid. High temperatures remained in the mid-70s behind the front, but rose above 100 degrees ahead of its passage. The storms reached central and southern Oklahoma early on the 24th as the front traveled slowly southward. The heaviest precipitation was reported in Payne County, where the Perkins Mesonet site recorded over an inch of rain. The storms later produced wind gusts above 60 mph near Lake Texoma. High temperatures on the 24th were well below normal due to the frontal passage, with most readings in the 70s and 80s.

July 25-31: The month finished as it began, with an extended period of cool weather. Fifteen records were set at National Weather Service observing stations for cooler-than-normal weather from the 25th-30th. Lows routinely dropped into the 50s in the north, and daytime highs at times failed to reach 70 degrees. The state remained relatively dry from the 25th-27th as a cool dome of surface high pressure dominated the region, but another upper-level disturbance on the 28th produced a large area of showers and thunderstorms. The heaviest rainfall occurred in the south. Amounts in central Oklahoma were generally around an inch, whereas parts of Carter and Murray counties had totals that approached three inches. Very pleasant conditions were in store for the state on the 30th. Lows were in the 50s and 60s, and highs were generally in the 80s under clear skies. A return to summer-like conditions ended the month as highs returned to the 90s, with heat indices again exceeding 100 degrees.

July 2004 Statewide Statistics

Temperature

	Average	Depart.	Rank (1892-2004)
Month (July)	77.9ºF	-3.7ºF	6th Coolest
Season-to-Date (Jun-Jul)	76.7ºF	-2.4ºF	11th Coolest
Year-to-Date (Jan-Jul)	59.8ºF	0.7ºF	34th Warmest

Precipitation

	Total	Depart.	Rank (1892-2004)
Month (July)	4.10 in.	1.36 in.	22nd Wettest
Season-to-Date (Jun-Jul)	11.33 in.	4.33 in.	6th Wettest
Year-to-Date (Jan-Jul)	24.50 in.	2.61 in.	22nd Wettest

Depart. = Departure from 30-year normal

July 2004 Severe Weather

Significant Tornadoes (F2 or greater)

No significant tornadoes were reported in the state.

Hail (2 inches in diameter or greater)

Size (in.)	Location	County	Date
2.50	2 miles N Asher	Pottawatomie	07/02/04
2.50	3 miles E Hilsdale	Garfield	07/05/04
2.50	4 miles WSW Covington	Garfield	07/05/04
2.50	Byars	McClain	07/02/04
2.00	4 miles ENE Hillsdale	Garfield	07/05/04
2.00	8 miles WSW Pond Creek	Grant	07/05/04
2.00	Kremlin	Garfield	07/05/04

Wind Gusts (70 mph or greater)

Speed (mph)	Location	County	Date
80-100	13 miles WSW Kingfisher	Kingfisher	07/06/04
86	Buffalo Mesonet	Harper	07/06/04
83	May Ranch Mesonet (16 NNE Freedom)	Woods	07/06/04
77	May Ranch Mesonet (16 NNE Freedom)	Woods	07/06/04
75	2 miles SW Blackwell	Kay	07/23/04
75	3 miles SW Alva	Woods	07/06/04
74	Tipton Mesonet	Tillman	07/03/04
70	7 ENE Anadarko	Caddo	07/07/04
70	Bessie Mesonet	Washita	07/23/04
70	May Ranch Mesonet (16 NNE Freedom)	Woods	07/06/04

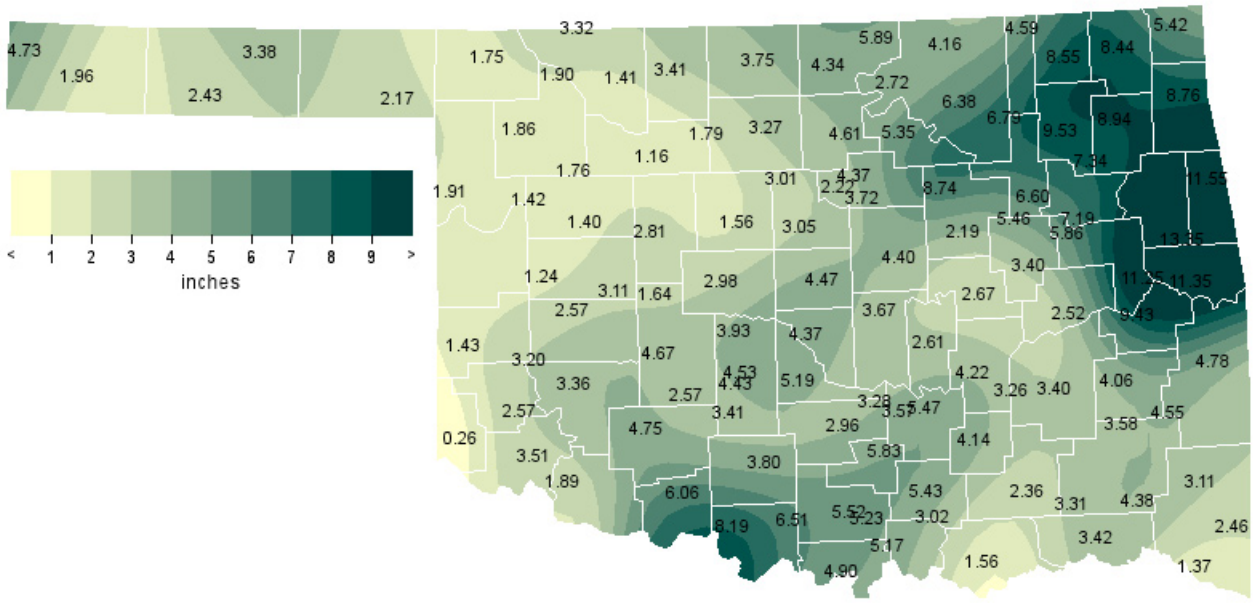
Flooding

Location	County	Date
Bixby	Tulsa	07/02/04
Glenpool	Tulsa	07/02/04
Spiro	LeFlore	07/02/04
Vian	Sequoyah	07/02/04
1 mile NW of Box	Sequoyah	07/03/04
Box	Sequoyah	07/03/04
Bunch	Adair	07/03/04
Keefeton	Muskogee	07/03/04
Muskogee	Muskogee	07/03/04
Panama	LeFlore	07/03/04
Poteau	LeFlore	07/03/04
Stigler	Haskell	07/03/04

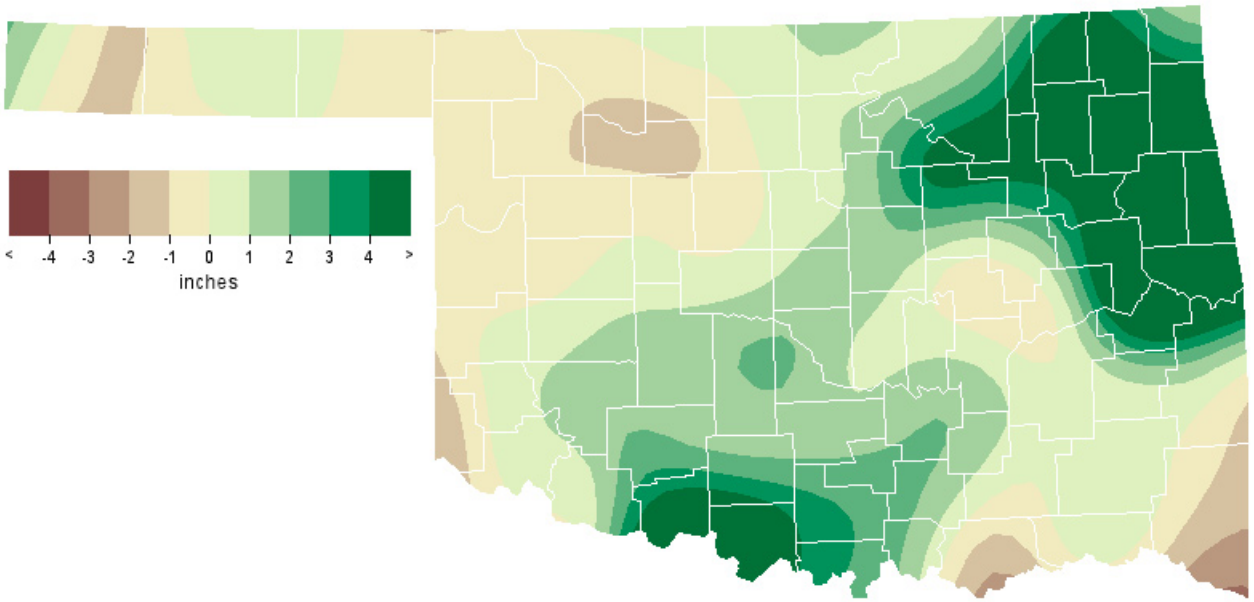
Record Events Reports

Description	Day	Location	Record	Previous Record	Year
Coolest Minimum Temperature	18	Tulsa	63	64	1984
Coolest Minimum Temperature	18	McAlester	62	63	1984
Coolest Minimum Temperature	18	Bartlesville	60	64	1984
Coolest Minimum Temperature (tied)	18	Muskogee	64	64	1984
Coolest Minimum Temperature (tied)	19	Muskogee	61	61	1947
Coolest Maximum Temperature	25	Oklahoma City	75	76	1906
Coolest Minimum Temperature (tied)	25	McAlester	64	64	2000
Coolest Maximum Temperature	25	McAlester	73	76	1991
Coolest Minimum Temperature (tied)	26	Oklahoma City	63	63	1911
Coolest Minimum Temperature (tied)	26	Tulsa	60	60	1905
Coolest Minimum Temperature	26	McAlester	61	65	2000
Coolest Minimum Temperature (tied)	27	Oklahoma City	59	59	1994
Coolest Maximum Temperature	27	Tulsa	73	80	1950
Coolest Minimum Temperature	27	McAlester	56	61	1994
Coolest Maximum Temperature	28	Oklahoma City	73	75	1981
Coolest Maximum Temperature	28	Tulsa	74	79	1911
Coolest Maximum Temperature	28	McAlester	73	80	1981
Coolest Maximum Temperature	29	Oklahoma City	73	76	1892
Daily Maximum Rainfall	29	McAlester	2.15 inches	1.38 inches	1981
Coolest Maximum Temperature	29	Tulsa	72	79	1981
Coolest Maximum Temperature (tied)	30	McAlester	78	78	1969

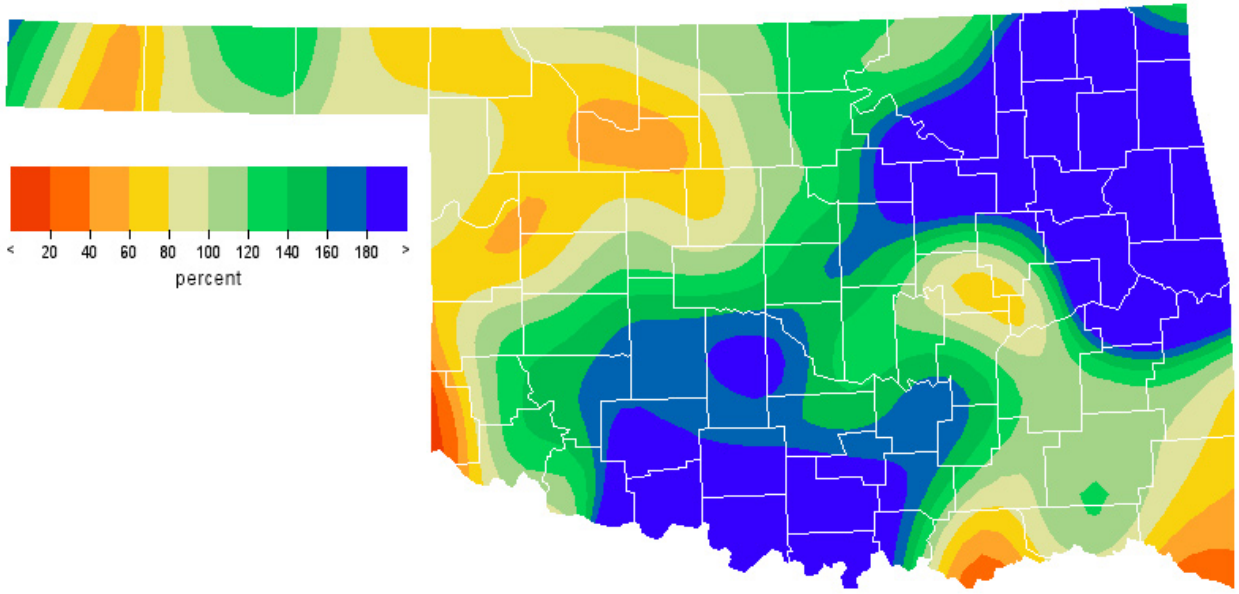
July 2004 Observed Precipitation



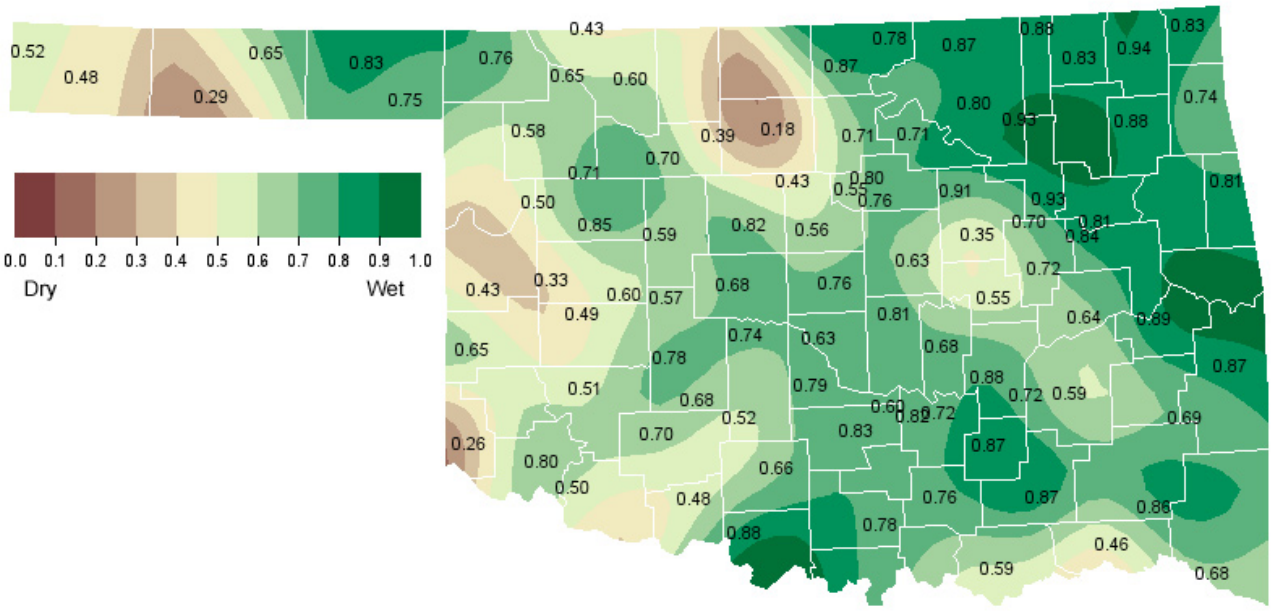
July 2004 Departure from Normal Precipitation



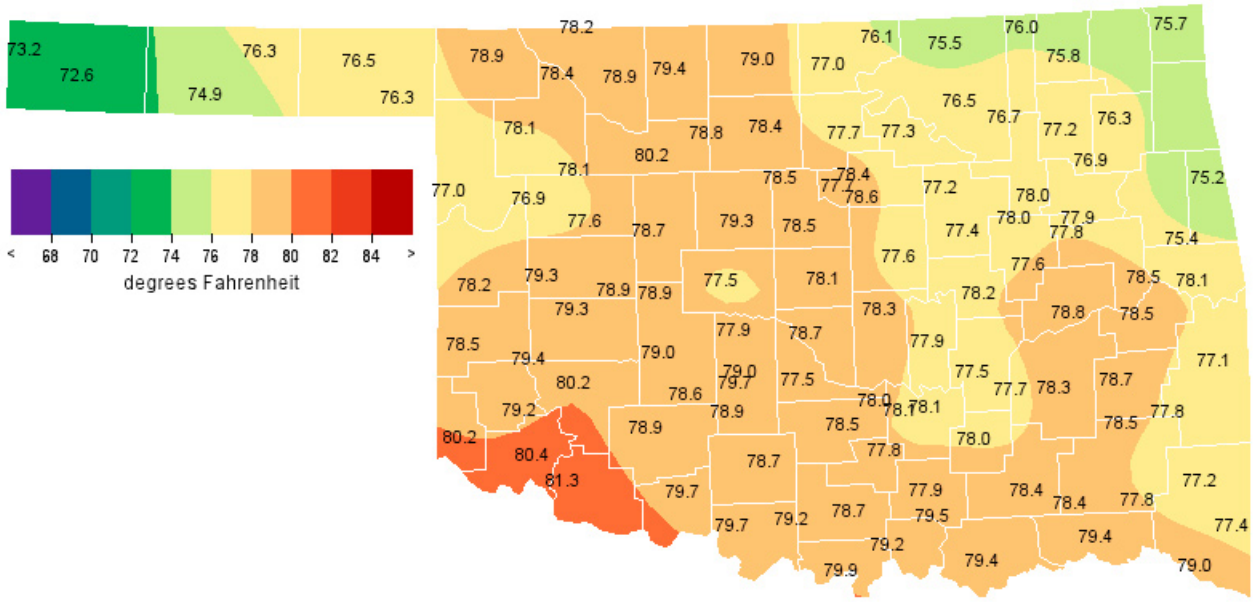
July 2004 Percent of Normal Precipitation



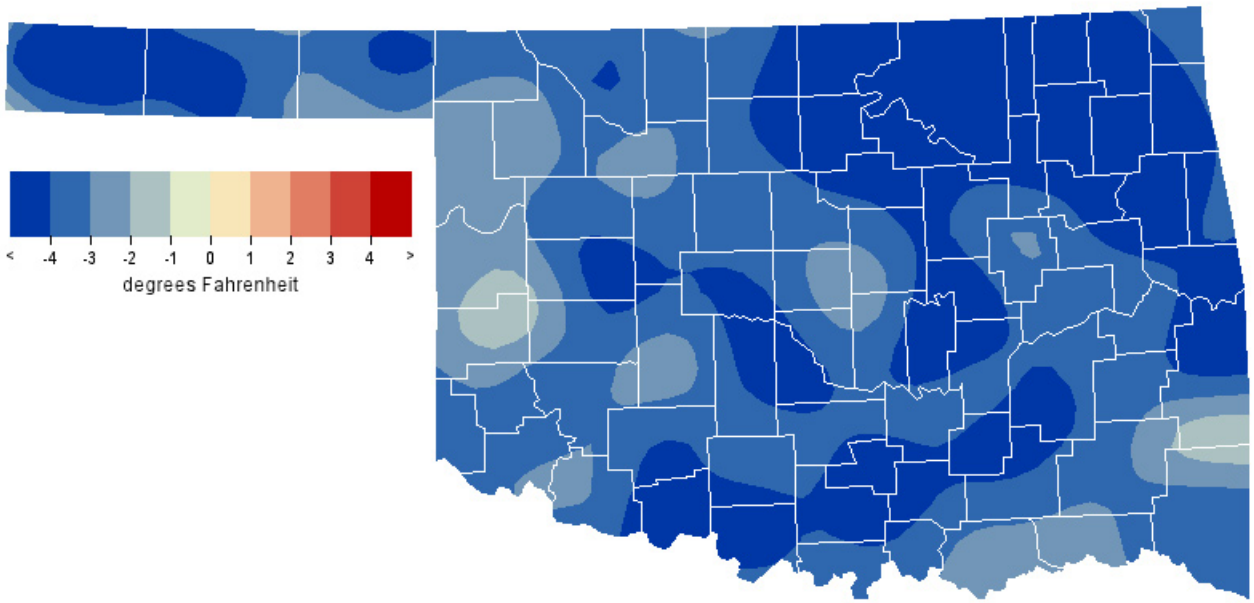
July 2004 Average Soil Moisture at 25cm



July 2004 Average Temperature



July 2004 Departure from Normal Temperature



Mesonet Monthly Summary for July 2004

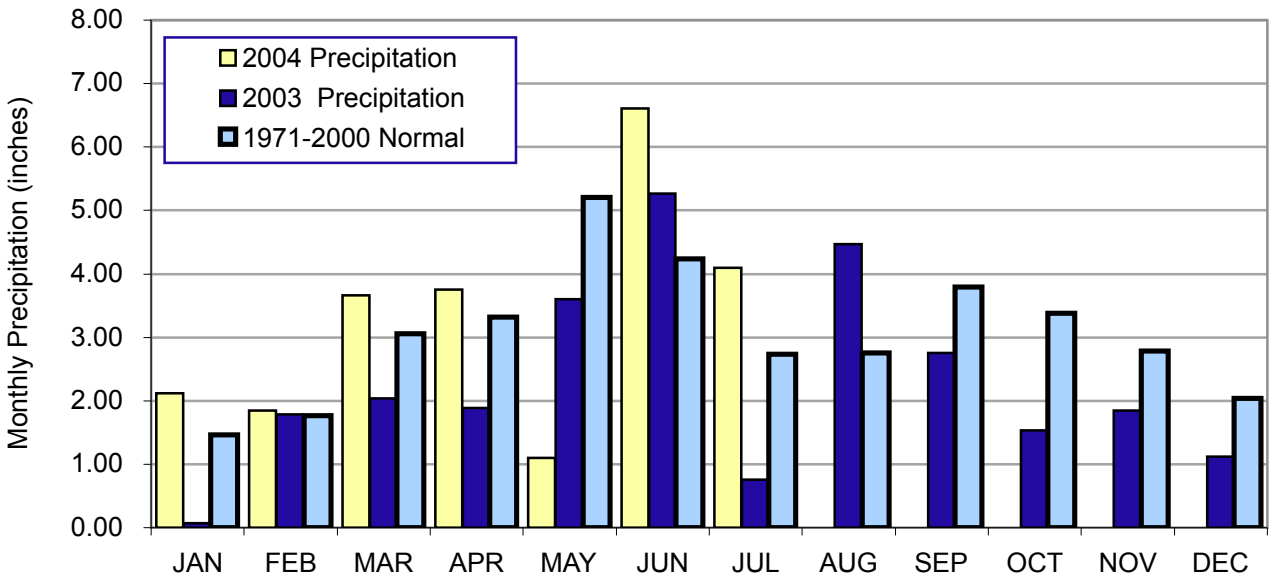
NAME	MEAN TEMP	HIGH TEMP	HIGH DAY	LOW TEMP	LOW DAY	HDD	CDD	TOT PPT	HIGH 24-HR	HIGH DAY
PANHANDLE										
Arnett	76.9	99	15	53	26	1	372	1.91	.94	6
Beaver	76.5	100	15	56	26	0	357	*****	*****	***
Boise City	72.5	97	8	51	5	12	245	1.96	.57	17
Buffalo	78.9	102	15	53	26	0	431	1.75	.77	6
NORTH CENTRAL										
Blackwell	77.0	100	20	55	27	0	373	4.34	1.44	23
Breckenridge	78.3	102	20	55	26	0	413	3.27	1.28	23
Cherokee	78.9	102	20	54	26	****	****	3.41	1.62	5
Fairview	80.3	101	15	54	26	0	473	1.16	.60	6
Freedom	78.3	100	20	53	26	0	412	1.90	1.64	6
Lahoma	78.8	103	20	55	26	0	427	1.79	.77	28
May Ranch	78.1	100	20	55	26	1	407	3.32	1.80	6
NORTHEAST										
Bixby	78.0	96	13	58	27	0	403	6.60	3.83	2
Burbank	*****	***	***	***	***	****	****	1.94	.99	9
Copan	76.0	95	15	54	27	0	342	4.59	2.06	2
Foraker	75.5	95	13	55	27	0	324	4.16	.91	2
Jay	*****	***	***	***	***	****	****	8.76	3.53	2
Miami	75.8	94	15	53	27	0	334	5.42	2.09	2
Nowata	75.7	96	15	52	27	0	333	8.55	2.21	2
Pawnee	77.2	97	20	55	27	0	379	5.35	2.63	2
WEST CENTRAL										
Bessie	79.3	100	15	56	26	0	442	2.57	1.02	1
Butler	79.2	101	15	54	26	0	441	1.24	.45	23
Camargo	76.9	98	15	50	26	0	368	1.42	.63	1
Cheyenne	78.2	99	15	55	26	1	411	*****	*****	***
Erick	78.5	100	15	54	26	0	420	1.43	.65	23
CENTRAL										
Bowlegs	77.8	96	15	54	27	0	398	2.61	.84	9
Bristow	77.5	97	13	51	27	0	387	2.19	.74	28
Chandler	77.6	95	14	55	27	0	391	4.40	1.24	28
Chickasha	79.0	102	15	57	27	0	435	4.53	1.41	28
El Reno	77.5	98	15	54	26	0	386	2.98	.86	23
Guthrie	78.5	97	20	59	26	0	417	3.05	.91	6
Kingfisher	79.3	100	20	58	26	0	443	1.56	.60	28
Marena	77.8	97	15	58	27	0	395	2.22	.78	28
Minco	77.8	97	15	59	26	0	398	3.93	.93	1
Oilton	77.1	96	15	54	27	0	376	8.74	2.11	2
EAST CENTRAL										
Calvin	77.5	97	16	52	27	0	388	4.22	1.84	29
Cookson	75.4	94	14	55	27	0	323	13.35	4.43	24
Eufaula	78.8	97	16	56	27	0	427	2.52	.83	7
Haskell	77.7	96	14	56	27	****	****	5.76	3.17	2
McAlester	78.2	97	15	56	27	0	411	3.40	2.47	29
Okmulgee	77.6	97	15	53	27	0	392	3.40	1.06	3
Sallisaw	78.1	96	14	61	27	0	406	11.35	5.67	2
SOUTHWEST										
Altus	80.4	103	16	59	26	0	477	3.51	2.31	7
Fort Cobb	78.9	99	20	59	26	****	****	4.67	1.17	1
Hinton	78.9	100	15	56	26	0	431	1.64	.54	1
Hobart	80.1	101	20	58	26	0	469	3.36	2.48	1
Hollis	80.2	102	15	59	26	0	471	.26	.15	28
Mangum	79.2	102	15	55	26	0	441	2.57	1.14	7
SOUTH CENTRAL										
Ada	78.1	96	16	55	27	0	405	5.47	1.85	29
Burneyville	79.9	100	15	60	27	0	461	4.90	2.15	29
Byars	78.0	95	15	60	27	0	403	3.28	1.27	2
Centrahoma	78.0	95	16	55	27	0	405	4.14	1.81	29
Durant	79.5	97	24	59	27	****	****	1.56	.80	29
Ketchum Ranch	78.7	96	16	60	27	0	426	3.80	2.16	28
Lane	78.4	96	14	56	27	0	417	2.36	1.34	29
Madill	79.1	96	15	60	27	0	438	5.17	2.50	29
Pauls Valley	78.5	96	15	57	27	0	420	2.96	.86	28
SOUTHEAST										
Antlers	78.2	97	14	55	27	****	****	3.31	1.95	29
Clayton	78.7	97	14	59	19	****	****	3.58	1.91	29
Cloudy	77.9	94	15	58	27	0	399	4.38	2.72	29
Hugo	79.3	96	15	60	27	0	444	3.42	2.04	29
Idabel	79.0	96	24	58	27	0	434	1.37	.51	29

NAME	MEAN TEMP	HIGH TEMP	HIGH DAY	LOW TEMP	LOW DAY	HDD	CDD	TOT PPT	HIGH 24-HR	HIGH DAY
Goodwell	74.9	100	15	53	26	8	315	2.43	1.26	22
Hooker	76.3	103	15	55	26	2	353	3.38	1.80	23
Kenton	73.2	99	8	50	5	11	266	4.73	1.40	17
Slapout	76.2	99	15	55	26	2	350	2.17	1.08	23
Medford	78.9	103	20	57	26	0	432	3.75	1.59	23
Newkirk	76.2	96	20	56	26	0	346	5.89	1.88	1
Red Rock	77.6	98	20	55	27	0	391	4.61	1.60	2
Seiling	78.1	100	15	51	26	0	405	1.76	.84	6
Woodward	78.1	99	15	52	26	0	406	1.86	1.48	6
Alva	78.9	101	15	54	26	0	430	1.41	.89	6
Pryor	76.3	95	14	56	27	0	349	8.94	3.06	2
Skiatook	76.7	95	15	58	27	0	364	6.79	1.92	2
Vinita	*****	***	***	***	***	****	****	8.44	2.45	2
Wynona	76.5	95	14	55	27	0	357	6.38	1.51	9
Porter	77.9	95	13	59	27	0	400	7.19	3.79	2
Inola	76.8	95	15	58	27	0	367	7.34	2.02	2
Claremore	77.2	96	13	58	27	0	380	9.53	3.19	2
Putnam	77.5	98	15	53	26	0	388	1.40	.54	6
Retrop	79.5	101	15	56	26	0	448	3.20	1.21	1
Watonga	78.7	100	20	56	26	0	425	2.81	1.47	23
Weatherford	78.9	102	15	57	26	0	431	3.11	1.49	23
Okemah	78.4	97	15	55	27	****	****	2.67	.70	28
Perkins	78.6	100	20	58	27	0	421	3.72	.97	23
Shawnee	78.2	96	15	58	27	0	410	3.67	1.02	28
Spencer	78.1	95	14	58	26	0	405	4.47	1.10	28
Stillwater	78.4	98	15	55	27	0	416	4.37	1.04	6
Washington	77.5	96	16	58	27	0	388	5.19	1.94	28
Ninnekah	79.7	101	15	60	27	0	454	4.43	1.60	28
Acme	78.8	100	16	59	26	0	429	3.41	1.32	28
Norman	78.6	97	15	61	26	****	****	4.37	1.92	28
Marshall	78.5	99	20	56	26	0	420	3.01	1.00	23
Stigler	78.4	98	15	57	27	0	416	9.43	2.97	29
Stuart	77.7	97	16	54	27	0	395	3.26	2.37	29
Tahlequah	*****	***	***	***	***	****	****	*****	*****	***
Webbers Falls	78.5	98	15	60	27	0	420	11.25	6.03	2
Westville	75.1	93	15	57	27	0	314	11.55	3.84	24
Hectorville	78.0	96	13	58	27	0	403	5.46	2.45	2
Medicine Park	78.9	99	16	60	1	0	430	4.75	1.85	1
Tipton	81.3	103	20	60	26	0	506	1.89	.77	7
Walters	79.7	102	16	61	26	0	454	6.06	2.35	1
Apache	78.6	99	16	58	26	0	420	2.57	1.21	1
Grandfield	*****	***	***	***	***	****	****	*****	*****	***
Ringling	79.2	97	16	61	27	0	440	6.51	2.10	28
Sulphur	77.8	95	14	57	27	0	398	5.83	2.53	29
Tishomingo	77.9	96	14	57	27	****	****	5.43	1.92	7
Waurika	79.7	100	16	63	27	0	455	8.19	2.37	28
Vanoss	78.1	96	15	55	27	0	406	3.57	1.12	29
Bee	79.6	96	15	59	27	****	****	3.02	1.16	24
Newport	78.7	95	14	61	27	0	424	5.52	2.23	29
Ardmore	*****	***	***	***	***	****	****	5.23	2.24	29
Mt Herman	77.1	96	15	55	27	0	377	3.11	.92	7
Talihina	77.8	96	15	58	27	0	397	4.55	2.09	7
Wilburton	78.5	98	14	57	27	****	****	4.06	2.31	29
Wister	77.1	97	14	58	27	0	375	4.78	1.06	2
Broken Bow	77.4	97	15	55	27	0	385	2.46	1.01	3

July 2004 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Jul-03
Panhandle	2.62	0.10	54th Driest	9.79 (1950)	0.37 (1935)	0.75
North Central	2.96	-0.02	55th Wettest	9.06 (1950)	0.13 (1983)	0.62
Northeast	6.72	3.56	9th Wettest	9.31 (1959)	0.00 (1914)	1.61
West Central	2.15	0.02	53rd Wettest	7.21 (1950)	0.05 (1936)	0.83
Central	3.78	1.21	28th Wettest	10.17 (1950)	0.16 (1980)	0.77
East Central	7.09	4.11	9th Wettest	10.15 (1950)	0.17 (1930)	1.27
Southwest	3.13	0.95	26th Wettest	6.30 (1975)	0.03 (1980)	0.42
South Central	4.53	1.99	14th Wettest	8.45 (1950)	0.08 (1998)	0.35
Southeast	3.50	-0.08	54th Wettest	13.02 (1950)	0.00 (1930)	2.00
Statewide	4.10	1.36	22nd Wettest	9.26 (1950)	0.41 (1980)	0.94

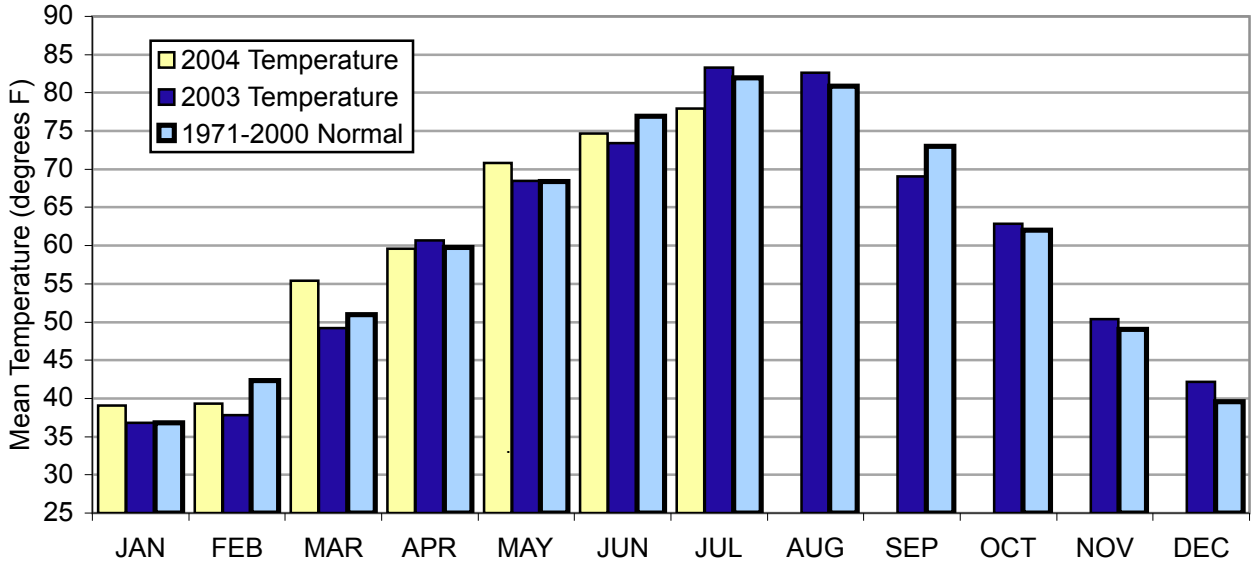
2003 and 2004 Statewide Precipitation Monthly Totals vs. Normal



July 2004 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Jul-03 (F)
Panhandle	75.7	-3.9	7th Coolest	85.4 (1980)	73.2 (1906)	82.6
North Central	78.3	-3.9	7th Coolest	89.6 (1954)	75.8 (1950)	84.6
Northeast	76.7	-4.2	7th Coolest	89.2 (1954)	75.0 (1906)	82.5
West Central	78.5	-3.2	12th Coolest	88.1 (1954)	75.8 (1906)	84.2
Central	78.2	-3.8	8th Coolest	88.6 (1954)	75.8 (1906)	84.2
East Central	77.6	-3.7	7th Coolest	88.7 (1954)	75.9 (1906)	83.1
Southwest	79.6	-3.6	8th Coolest	89.1 (1980)	77.9 (1906)	84.6
South Central	78.7	-4.0	5th Coolest	89.1 (1998)	77.2 (1906)	83.5
Southeast	78.1	-2.8	7th Coolest	87.5 (1954)	76.6 (1906)	80.7
Statewide	77.9	-3.7	6th Coolest	88.1 (1954)	75.9 (1906)	83.4

2003 and 2004 Statewide Temperature Monthly Averages vs. Normal



Mesonet Extremes for July 2004

Climate Division	High Temp (F)	Day	Station	Low Temp (F)	Day	Station	High Monthly Rainfall (inches)	Station	High Daily Rainfall (inches)	Day	Station
Panhandle	103	15th	Hooker	50	5th	Kenton	4.73	Kenton	1.80	23rd	Hooker
North Central	103	20th	Lahoma	51	26th	Seiling	5.89	Newkirk	1.88	1st	Newkirk
Northeast	97	20th	Pawnee	52	27th	Nowata	9.53	Claremore	3.83	2nd	Bixby
West Central	102	15th	Weatherford	50	26th	Camargo	3.20	Retrop	1.49	23rd	Weatherford
Central	102	15th	Chickasha	51	27th	Bristow	8.74	Oilton	2.11	2nd	Oilton
East Central	98	15th	Webbers Falls	52	27th	Calvin	13.35	Cookson	6.03	2nd	Webbers Falls
Southwest	103	16th	Altus	55	26th	Mangum	6.06	Walters	2.48	1st	Hobart
South Central	100	16th	Waurika	55	27th	Ada	8.19	Waurika	2.53	29th	Sulphur
Southeast	98	14th	Wilburton	55	27th	Antlers	4.78	Wister	2.72	29th	Cloudy
Statewide	103	16th	Altus	50	26th	Camargo	13.35	Cookson	6.03	2nd	Webbers Falls

August Climatological Outlook

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.

Precipitation
Mean: 2.84 inches
Wettest year: 1906, 6.54 inches
Driest year: 2000, 0.18 inches
Wettest location: Pawnee, 3.76 inches
Driest location: Meeker, 1.93 inches
Most recorded: 15.15 inches, Holdenville, 1906

The normal statewide monthly temperature is 80.9 degrees Fahrenheit. Oklahoma's hottest August, according to National Weather Service records that date from 1892, occurred in 1936 when the state's average monthly temperature was a scorching 87.9 degrees. This is the second highest statewide-averaged monthly temperature (all months) recorded in Oklahoma during the 110 years with comprehensive records. The state's record daily maximum temperature of 120 degrees was equaled at Poteau and Altus on August 10 and 12, 1936, respectively. Relatively cool weather prevailed during August 1915, when the state recorded its lowest August statewide-average monthly temperature, 73.9 degrees, and lowest daily minimum temperature, 38 degrees at Bartlesville on the 31st.

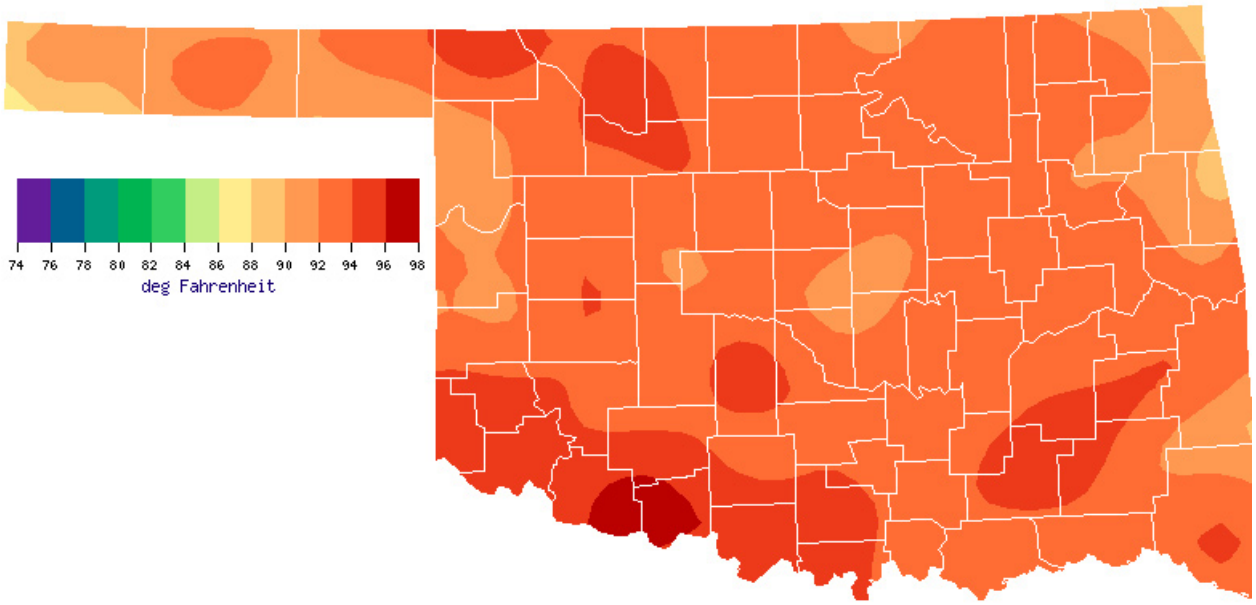
Temperature
Mean: 80.9 degrees
Hottest August: 1936, 87.9 degrees
Coolest August: 1915, 73.9 degrees
Hottest location: Waurika, 84.1 degrees
Coolest location: Boise City, 75.3 degrees
Hottest recorded: 120 degrees, Poteau, August 10, 1936
Altus, August 12, 1936
Coldest recorded: 41 degrees, Goodwell, 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 0.18 inch during the droughty summer of 2000. The greatest August precipitation recorded by any reporting station was 15.15 inches at Holdenville in 1906. An 8.68-inch deluge at Garber on August 10, 1974 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.

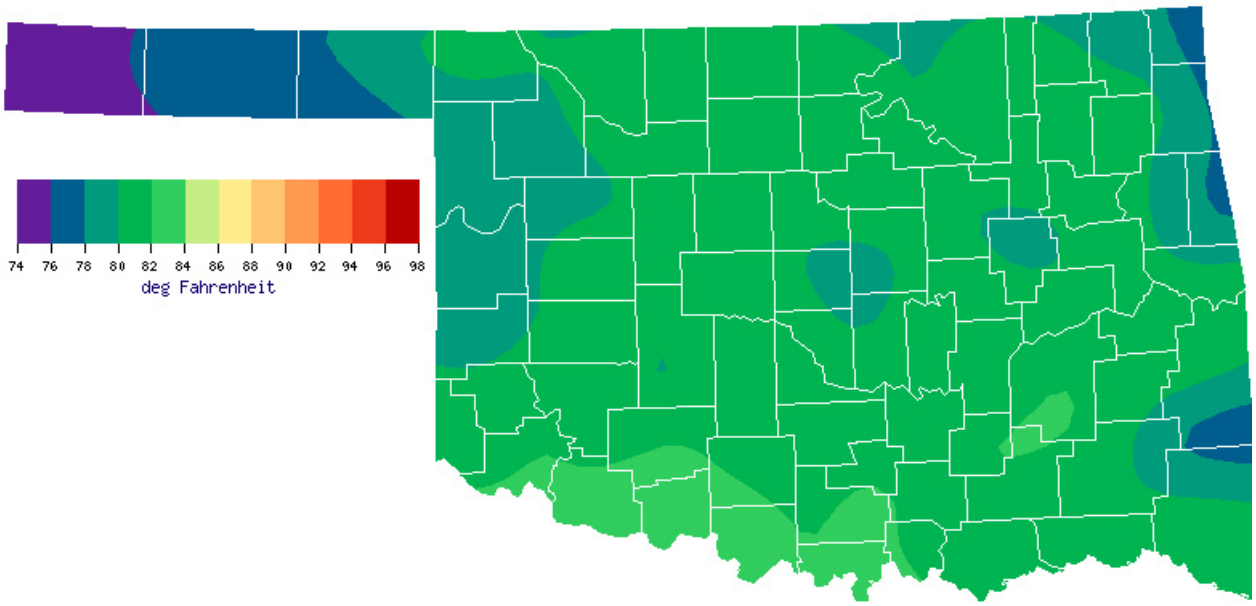
Severe weather appears in the state during August, but its effects are more notable anecdotally than they are apparent in statistics. The exception is that August has presented the state with more lightning deaths (21) than any other month since such record-keeping began in 1959. Only July among the months accounts for more total casualties (deaths and injuries) from lightning strikes. Of the 79 August tornadoes reported in the state between 1950 and 2002, 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 21 of the 52 years with comprehensive statistics.

Tornadoes
Average August Tornadoes: 2
Most: 13 (1979)

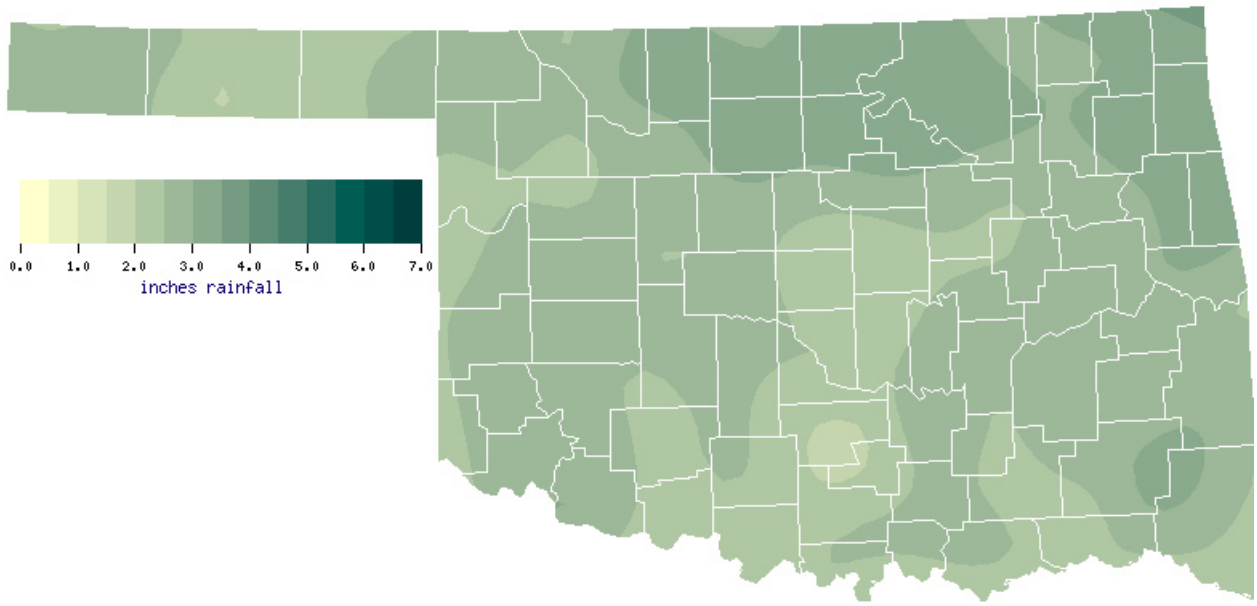
August Normal Monthly Maximum Temperature (1971-2000)



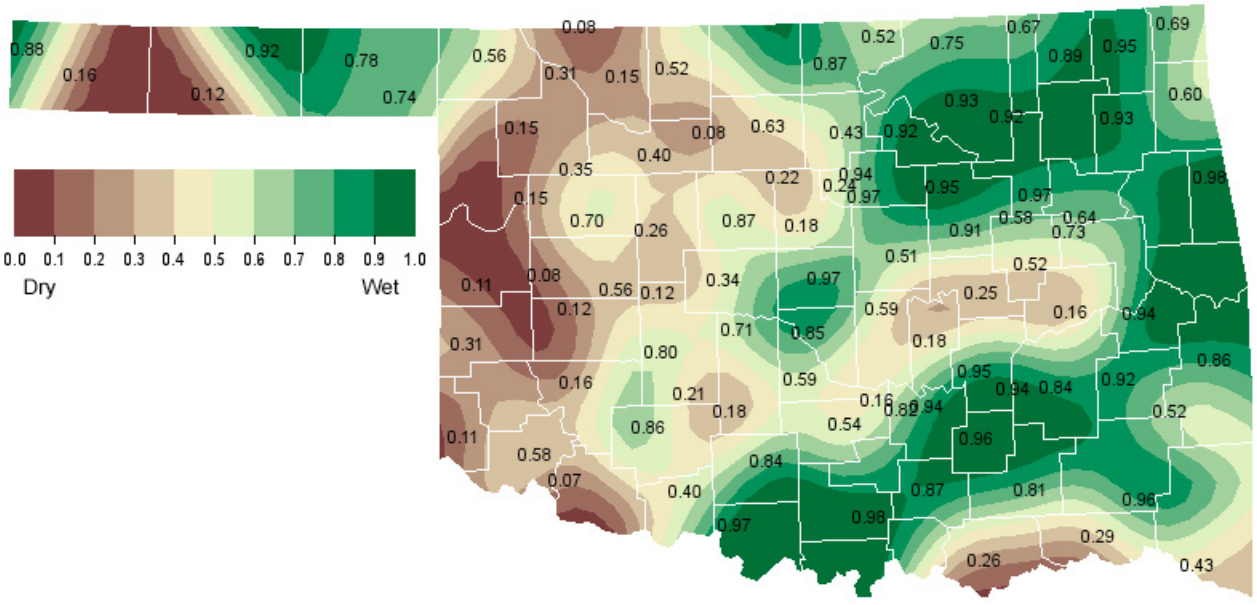
August Normal Monthly Minimum Temperature (1971-2000)



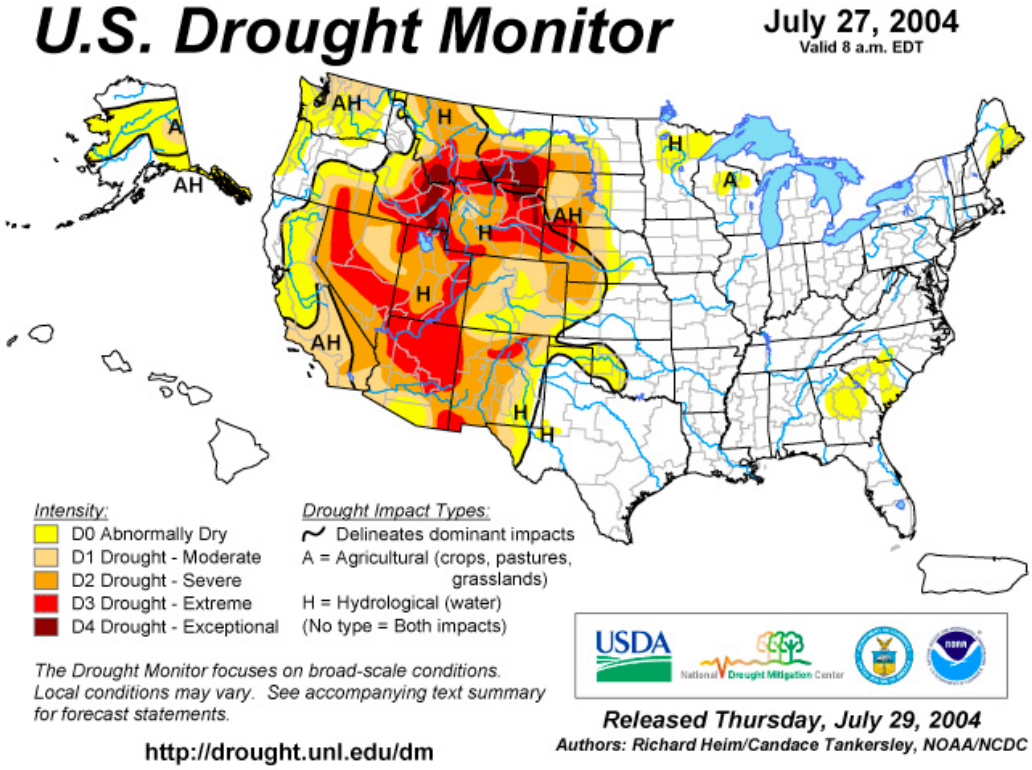
August Normal Precipitation (1971-2000)

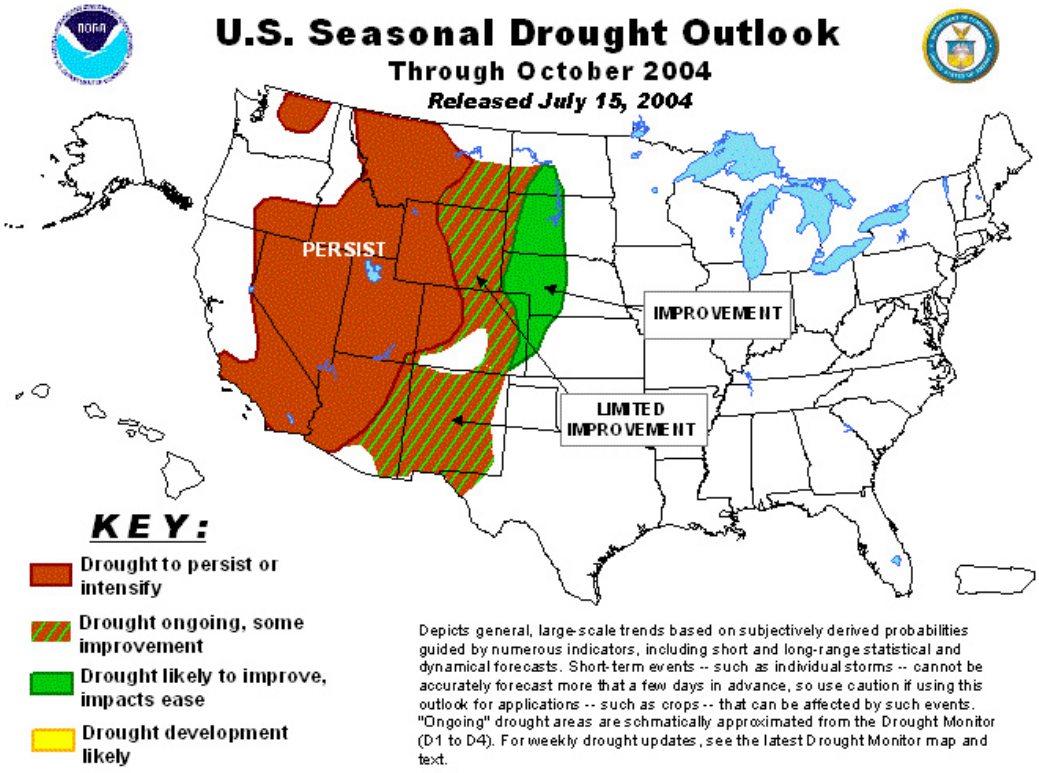


August 1, 2004 Soil Moisture Conditions at 25cm

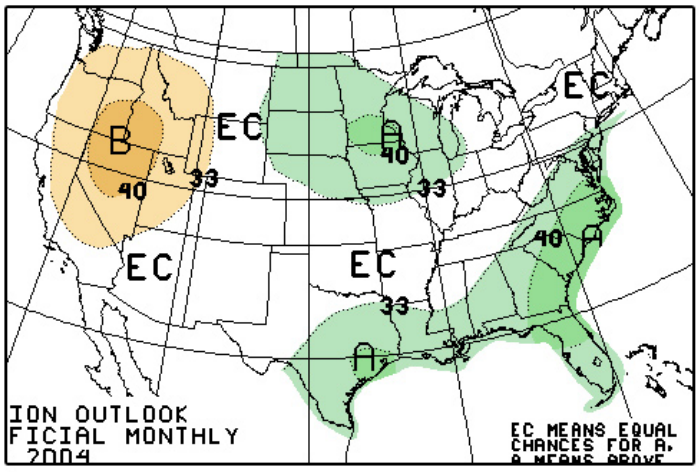


August 2004 Drought Indices





August 2004 U.S. Precipitation Forecast



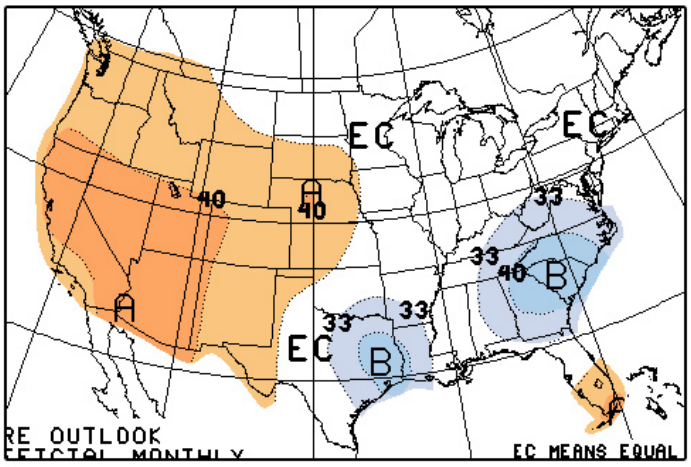
Percent Likelihood
of Above or Below
Average Precipitation*

5% - 10%
0% - 5%
A = Above

0% - 5%
5% - 10%
B = Below

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

August 2004 U.S. Temperature Forecast



Percent Likelihood
of Above and Below
Average Temperatures*

10% - 20%
5% - 10%
0% - 5%
A = Above

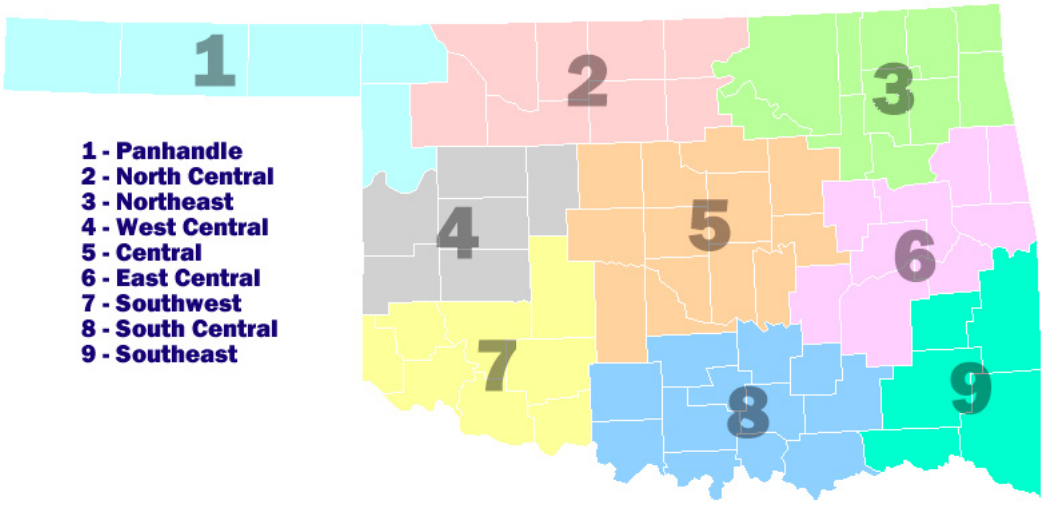
0% - 5%
5% - 10%
B = Below

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

August Climate Normals

Climate Division	Max. Temperature (°F)	Min. Temperature (°F)	Avg. Temperature (°F)	Precipitation (inches)
1	92.3	64.1	78.2	2.48
2	93.4	67.6	80.6	3.01
3	92.6	68.1	80.4	3.13
4	93.0	67.7	80.4	2.63
5	93.2	68.8	81.0	2.61
6	92.6	68.5	80.6	2.77
7	94.7	68.8	81.8	2.60
8	94.1	69.5	81.8	2.49
9	93.5	67.7	80.6	2.72
Statewide	93.3	68.0	80.7	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 may 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 may 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.ocs.ou.edu or
http://www.ocs.ou.edu/
E-mail (ocs@ou.edu) or telephone (405/325-2541)

Oklahoma Climatological Survey

Oklahoma Climatological Survey is the State Climate Office for Oklahoma

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