OKLAHOMA MONTHLY CLIMATE SUMMARY
JULY 2003

Oklahoma Climatological Survey

Overview

Following the cool and wet beginning during June, summer struck back with a vengeance in July. Triple-digit temperatures were the norm, with barely a trickle of rainfall to appease the parched Earth. The month, normally the warmest of the year, lived up to its billing with a statewide-averaged temperature that ended as the 25th-warmest since record-keeping began in 1892. The rainfall deficit was more extreme, and being the 4th driest July on record, did little to alleviate an already desperately dry year. The most fortunate aspect of Oklahoma's weather during July was the dearth of severe weather. For the second month in a row, no tornadoes were reported in Oklahoma, and very little severe weather in general occurred within the confines of the state. The tedium of an unpleasant arid month was interrupted briefly at its end as a large thunderstorm complex formed over central Oklahoma. Accompanied by damaging winds, hail, and torrential rainfall, the microburst left over 20,000 residences and businesses without power.

Precipitation

The statewide-averaged precipitation finished the month at a paltry 0.76 inches, nearly two inches below normal, negating the surplus of the previous month. This increased the year-to-date deficit to 6.2 inches, which ranks as the 15th driest such period on record. The seasonal rainfall picture is not quite as bleak, however. Combined with the first climatological summer month of June, the statewide-averaged season-to-date precipitation total fell just under an inch below normal, ranking in the middle of the pack historically for summer season rainfall. Most of the western two-thirds of the state received an inch of rainfall or less. One exception was a corridor just south of Interstate 40 in central Oklahoma, associated with the bout of severe weather at the end of the month. The central panhandle area also experienced beneficial rainfall from several isolated convective systems. The eastern third of the state received the most rainfall during July, but those areas were still well below normal for the month, season, and year.

Temperature

The statewide-averaged temperature for July was nearly two degrees above normal. The statewide-averaged temperature for the season-to-date and year-to-date periods finished above normal as well, although the seasonal period's excess of 0.5 degrees was not significant. The most striking aspect of the state's temperatures during July was the appearance of what has become known as the "Oklahoma Hotbox." This is an area in north-central Oklahoma, associated with the state's winter wheat belt, that experiences excessive heat after the crop's late-June harvest leaves bare fields in its wake. This area in north-central Oklahoma had the highest average temperature for the month at 85.1 degrees, nearly three degrees above normal.

July 2003 Statewide Extremes

Description	Extreme	Station	Date
High Temperature	110ºF	Medford	July 14th
Low Temperature	54ºF	Nowata	July 24th
High Precipitation	2.91 in.	Mt. Herman	
Low Precipitation	0.01 in.	Blackwell	

July 2003 Daily Highlights

July 1: A weak surface front stretched across Oklahoma on the month's first day, generating a few showers and thunderstorms. Amounts were generally light, but Hinton and Broken Bow received nearly an inch of rainfall apiece. Despite the frontal boundary, temperatures across the state reached into the upper 90s.

July 2-8: Oklahoma's weather for the next seven days was dominated by an upper-level ridge of high pressure, which effectively suppressed any precipitation chances through that period. Temperatures soared into the upper 90s and low 100s, and combined with moisture flowing northward from the Gulf of Mexico to push heat indices well over 105 degrees.

July 9-13: The high pressure dome moved westward as a frontal boundary slipped into northern Oklahoma, where it stalled. Upper-level disturbances which moved over the state produced occasional thunderstorms. Pryor and Mt. Herman received nearly 1.5 inches of rain on the 9th and 10th, respectively. The strong southerly winds ahead of the frontal boundary pushed temperatures even higher, as heat indices reached 110 degrees in some areas. Thunderstorms produced a nocturnal heat burst early on the 13th, with temperatures rising 15 degrees within 30 minutes in central Oklahoma. Lahoma reached 109 degrees on the 13th.

July 14-18: Lahoma reached 109 degrees again on the 14th. Not to be outdone, Cherokee and Medford topped the month's high temperature charts with a sweltering 110 degrees on the same day. The extreme heat and humidity continued, and along with the lack of rainfall made for miserable weather in Oklahoma. Cloud cover provided some relief on the 15th and 16th when the spiral arms of the remnants of Hurricane Claudette moved over southern Oklahoma. The relief was miniscule, however, as temperatures merely dropped from the upper 100s to nearer the 100 degree mark.

July 19-22: A weak frontal boundary approached from the north, and the large dome of high pressure shifted farther to the west, allowing a few upper-level disturbances to pass over the state. The showers and thunderstorms generated by these disturbances did little to alleviate the sweltering conditions. The Mesonet site at Cloudy recorded nearly an inch of rain on the 22nd from thunderstorms that formed along a cold front, but most of the rainfall amounts were significantly less.

July 23: The passage of the cold front from the previous day gave the state a brief respite from the heat, with highs across the state reaching only into the mid-90s.

July 24-27: The heat returned almost immediately as a dome of high pressure once again became the dominant force controlling Oklahoma's weather. Temperatures were nearly ten degrees above normal through this period, with very little relief in the way of clouds.

July 28-30: A cold front lumbered into northwestern portions of the state, triggering a few showers and thunderstorms. Winds swung around from the north behind the front, but strong southerly winds ahead of the front once again brought temperatures into the mid- to upper-100s. Strong to severe storms struck on the 29th in the panhandle, bringing Goodwell over an inch of rain. Those storms were topped by those that formed over central Oklahoma early on the 30th. Norman was hit particularly hard by a microburst that produced a wind gust of 79 mph. The winds flipped planes moored at the Norman airport, and flipped tractor-trailer rigs on the interstate in that area. Over 20,000 residences and business lost power due to downed power lines, and a swath of large hail accompanied the storms. Rainfall amounts of nearly three inches were reported in localized areas, and temperatures dropped into the 80s and 90s in the storm's aftermath.

July 31: Temperatures returned to the triple-digits on the month's last day, revisiting the uncomfortable heat and humidity that dominated the state during July.

July 2003 Statewide Statistics

Temperature

	Average	Depart.	Rank (1892-2003)
Month (July)	83.3ºF	1.7ºF	25th Warmest
Season-to-Date (Jun-Jul)	79.6ºF	-0.5ºF	44th Coolest
Year-to-Date (Jan-Jul)	60.9ºF	1.7∞F	38th Warmest

Precipitation

	Total	Depart.	Rank (1892-2003)
Month (July)	0.76 in.	-1.98 in.	4th Driest
Season-to-Date (Jan-Jul)	6.03 in.	-0.97 in.	45th Driest
Year-to-Date (Jan-Jul)	15.69 in.	-6.2 in.	16th Driest

Depart. = Departure from 30-year normal

July 2003 Severe Weather

Significant Tornadoes (F2 or greater)

No significant tornadoes reported in the state

Hail (2 inches in diameter or greater)

No significant hail reported in the state

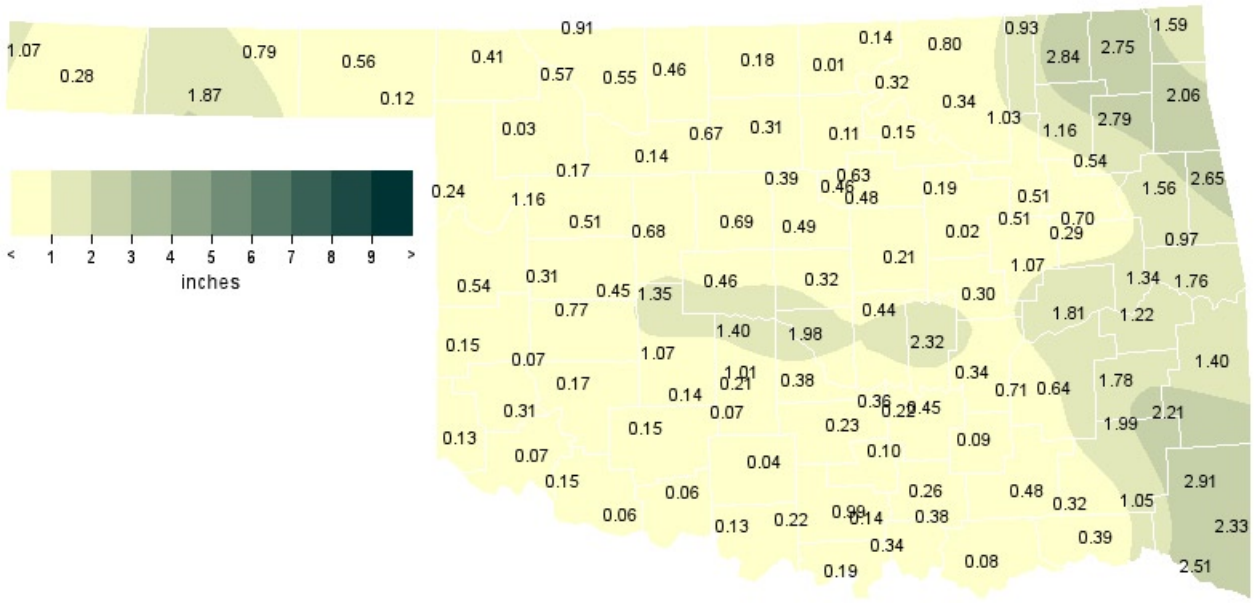
Wind Gusts (70 mph or greater)

Speed (mph)	Location	County	Date
70	Sharon	Woodward	July 9
77	4 WNW Camargo	Dewey	July 9
75	7 S Reydon	Roger Mills	July 9
70	Billings	Noble	July 21
79	Norman	Cleveland	July 30
83	S Pryor	Mayes	July 10

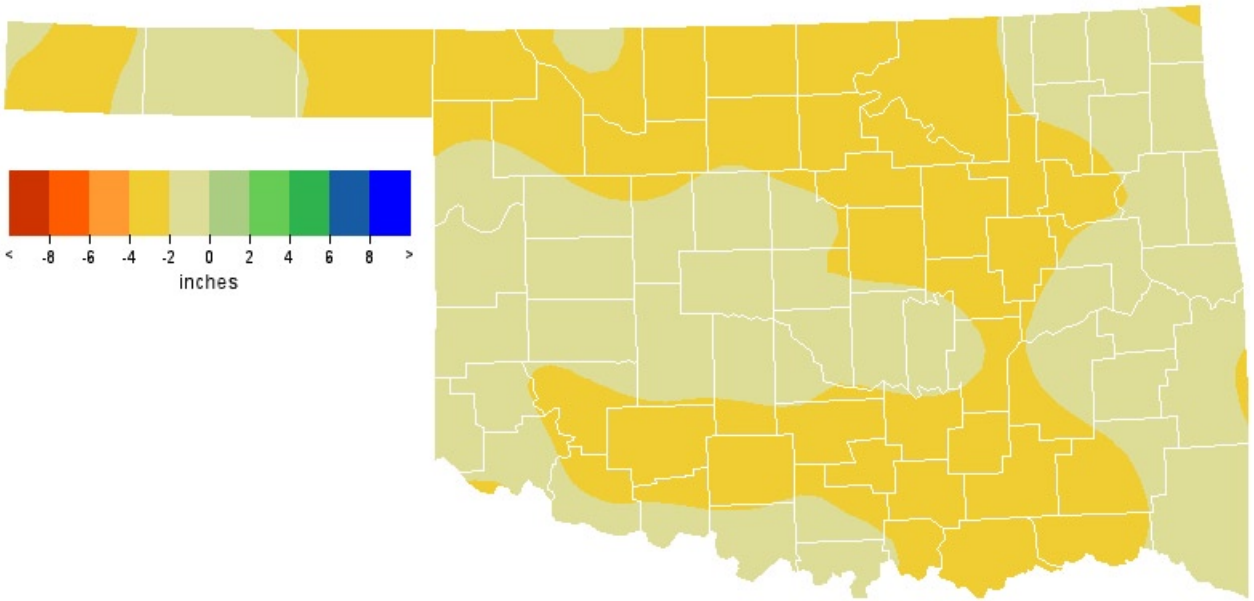
Flooding

No significant flooding reported in the state

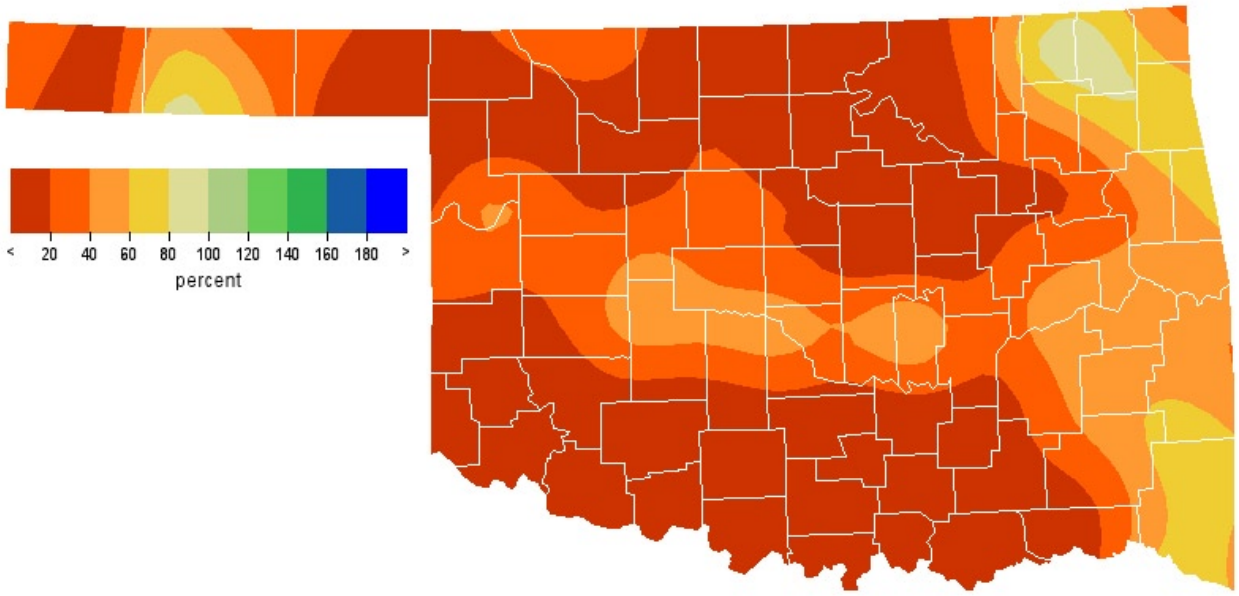
July 2003 Observed Precipitation



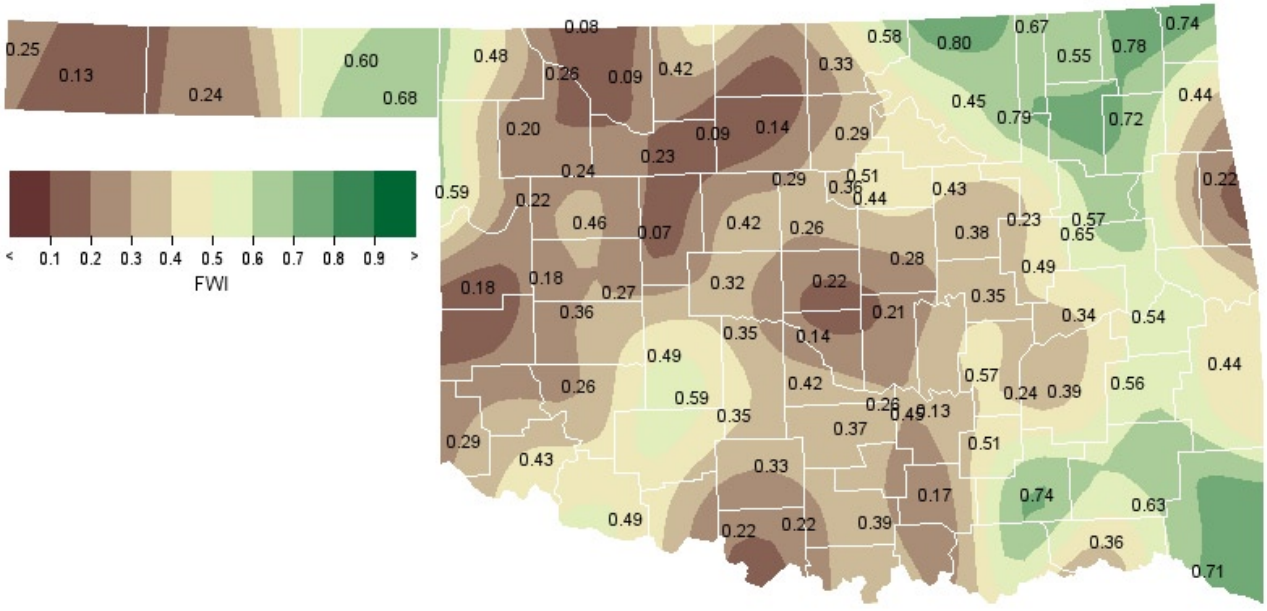
July 2003 Departure from Normal Precipitation



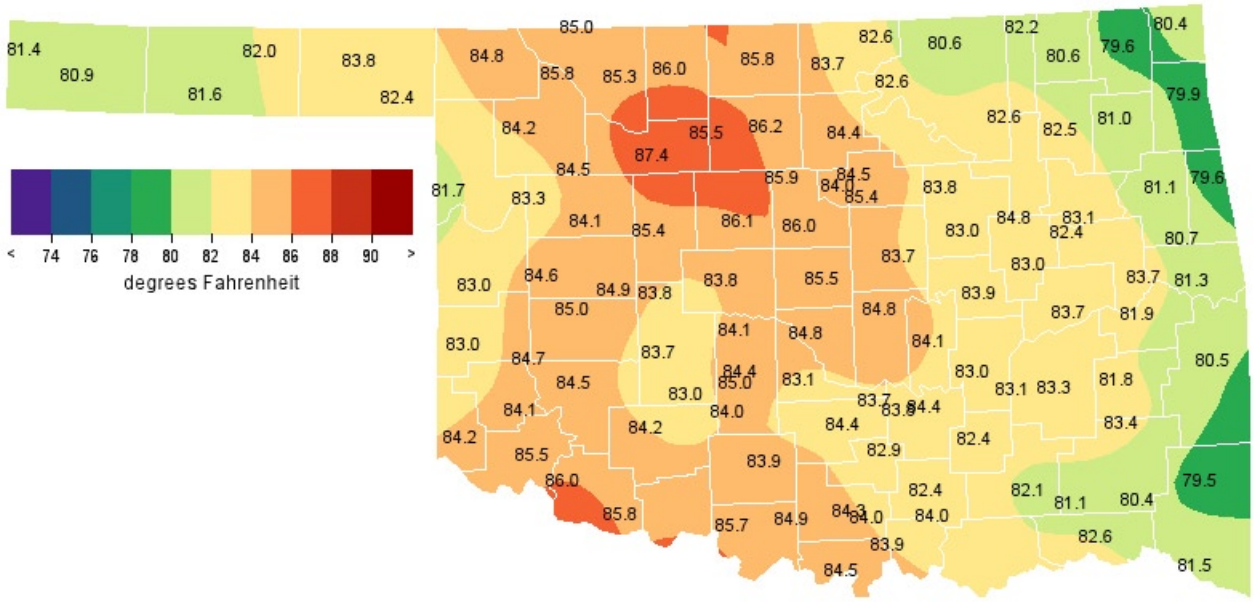
July 2003 Percent of Normal Precipitation



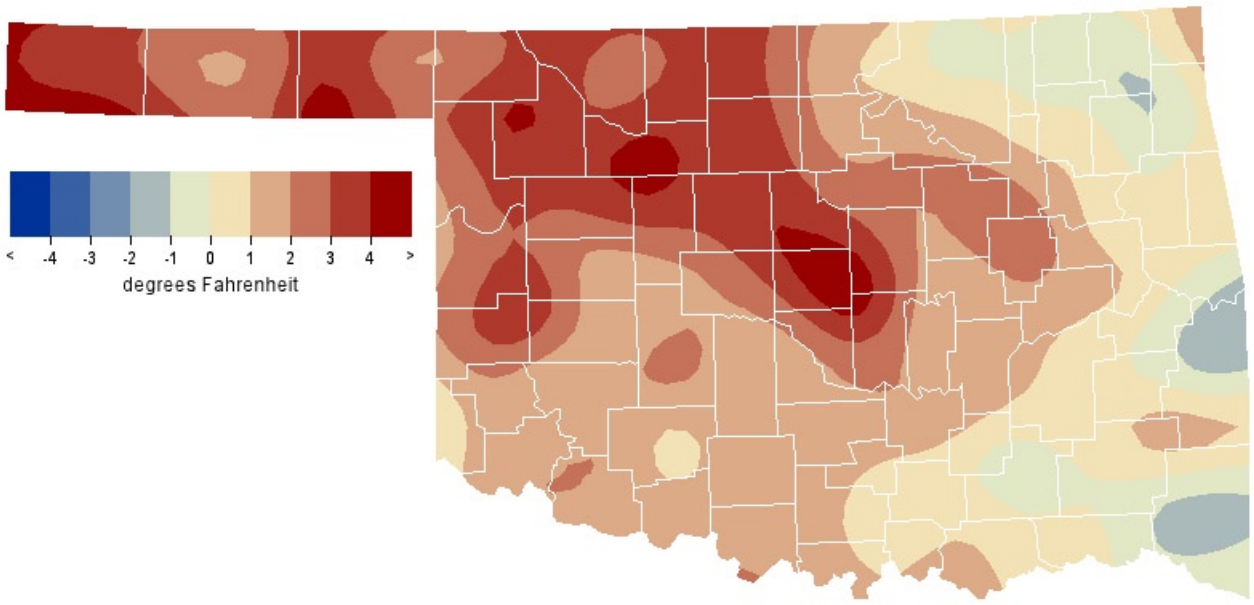
July 2003 Average Soil Moisture at 25cm



July 2003 Average Temperature



July 2003 Departure from Normal Temperature



Mesonet Monthly Summary for July 2003

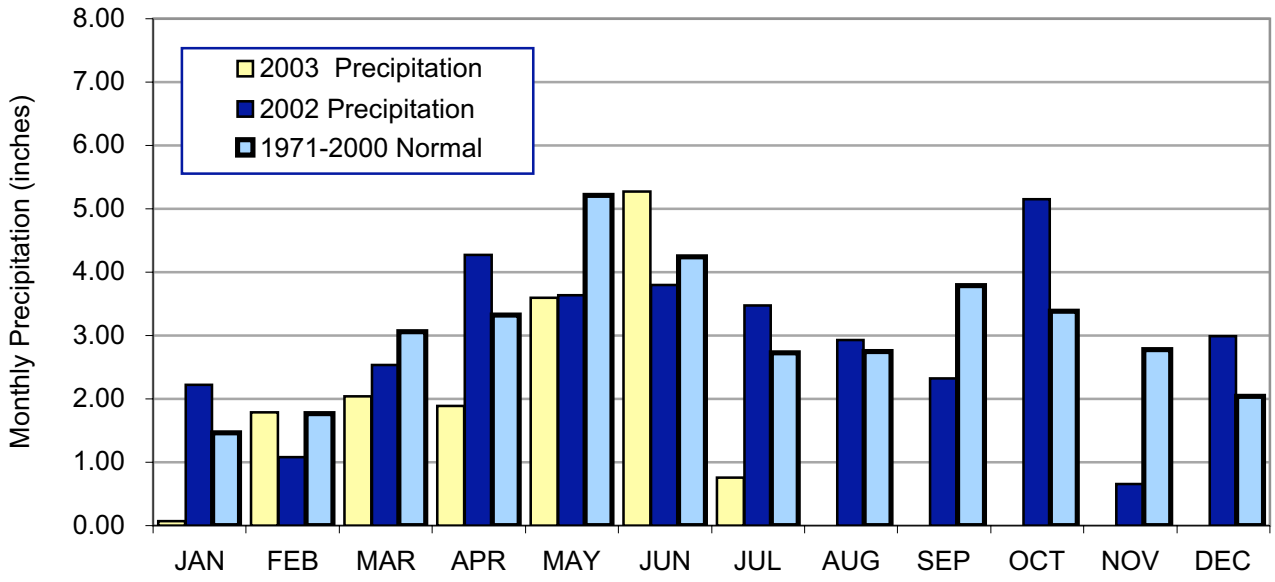
NAME	MEAN TEMP	HIGH TEMP	HIGH DAY	LOW TEMP	LOW DAY	HDD	CDD	TOT PPT	HIGH 24-HR	HIGH DAY
PANHANDLE										
Arnett	81.8	103	20	62	23	0	520	.24	.13	29
Beaver	83.8	108	14	59	10	0	583	.56	.35	29
Boise City	80.8	105	14	59	10	0	491	.28	.20	29
Buffalo	84.8	108	14	60	10	0	612	.41	.18	30
NORTH CENTRAL										
Blackwell	83.6	105	18	59	23	0	578	.01	.01	1
Breckenridge	86.2	109	20	62	1	0	657	.31	.21	30
Cherokee	86.0	110	14	61	23	0	652	.46	.45	30
Fairview	87.4	109	14	61	23	0	695	.14	.12	30
Freedom	85.7	109	14	63	10	0	642	.57	.38	30
Lahoma	85.5	109	14	62	23	0	636	.67	.65	30
May Ranch	85.0	107	14	64	23	0	618	.91	.79	30
NORTHEAST										
Bixby	82.9	102	21	58	24	****	****	.51	.44	10
Burbank	82.6	104	28	59	24	0	547	.32	.22	9
Copan	82.2	103	28	58	24	0	534	.93	.49	22
Foraker	80.5	102	28	57	24	0	481	.80	.64	9
Jay	79.9	97	28	56	24	0	461	2.06	1.05	9
Miami	80.4	98	21	56	24	0	478	1.59	.84	22
Nowata	80.6	99	28	54	24	0	483	2.84	1.24	10
Pawnee	*****	***	***	***	***	****	****	*****	*****	***
WEST CENTRAL										
Bessie	85.0	107	20	65	23	0	619	.77	.68	29
Butler	84.6	107	20	63	11	0	609	.31	.22	30
Camargo	83.3	106	19	63	23	0	566	1.16	.90	9
Cheyenne	83.1	103	19	64	23	0	562	.54	.45	9
Erick	83.0	105	15	62	23	0	557	*****	*****	***
CENTRAL										
Bowlegs	84.0	106	19	58	24	****	****	2.32	2.32	30
Bristow	83.0	105	20	55	24	0	559	.02	.02	22
Chandler	83.6	105	19	63	24	****	****	.21	.16	30
Chickasha	84.4	105	20	61	23	0	601	1.01	.65	1
El Reno	84.0	106	19	63	23	****	****	.46	.46	30
Guthrie	85.9	109	20	65	24	0	648	.49	.49	30
Kingfisher	86.1	108	19	62	23	****	****	.69	.69	30
Marena	84.0	106	19	62	23	0	589	.46	.26	9
Marshall	85.9	109	20	61	23	0	648	.39	.30	30
Minco	84.1	105	20	64	23	0	591	1.40	1.40	30
EAST CENTRAL										
Calvin	83.0	104	19	57	24	0	557	.34	.32	30
Cookson	80.6	100	28	57	24	0	485	.97	.53	10
Eufaula	83.8	103	28	61	24	0	582	1.81	1.04	29
Haskell	82.4	102	18	58	24	0	539	.29	.16	10
McAlester	83.3	103	29	63	24	0	567	.64	.44	10
Okmulgee	83.0	104	28	57	24	0	559	1.07	.87	10
Sallisaw	81.6	100	29	62	24	****	****	1.76	1.27	13
SOUTHWEST										
Altus	85.6	106	13	66	23	0	638	.07	.07	30
Fort Cobb	83.6	104	19	65	24	0	577	1.07	.52	1
Hinton	83.6	105	19	64	23	****	****	1.35	.90	1
Hobart	84.5	104	13	65	23	0	604	.07	.07	29
Hollis	84.2	105	13	65	23	0	596	.13	.12	30
Mangum	84.1	106	13	62	29	0	591	.31	.20	29
SOUTH CENTRAL										
Ada	84.4	105	19	61	24	0	601	.45	.26	2
Ardmore	84.1	104	29	62	24	****	****	.14	.09	30
Burneyville	84.4	105	19	62	24	0	602	.19	.18	6
Byars	83.8	103	20	64	23	0	582	.36	.36	30
Centrahoma	82.4	102	29	58	24	0	539	.09	.07	30
Durant	*****	***	***	***	***	****	****	*****	*****	***
Ketchum Ranch	83.9	104	20	64	24	****	****	.04	.03	30
Lane	82.2	102	29	59	24	0	532	.48	.33	10
Madill	83.8	104	29	64	24	0	584	.34	.24	6
SOUTHEAST										
Antlers	81.1	102	29	59	24	0	500	.32	.29	22
Clayton	83.4	104	18	60	24	0	571	1.99	.88	22
Cloudy	80.3	99	29	64	24	0	475	1.05	.92	22
Hugo	82.6	100	29	65	24	0	546	.39	.13	22
Idabel	81.5	101	29	65	25	0	510	2.51	.93	30

NAME	MEAN TEMP	HIGH TEMP	HIGH DAY	LOW TEMP	LOW DAY	HDD	CDD	TOT PPT	HIGH 24-HR	HIGH DAY
Goodwell	81.6	108	14	58	10	0	515	1.87	1.41	29
Hooker	82.0	106	14	60	10	0	528	.79	.50	29
Kenton	81.4	105	14	60	10	0	507	1.07	.96	28
Slapout	82.4	107	14	62	4	0	540	.12	.07	29
Medford	85.8	110	14	60	23	0	646	.18	.10	9
Newkirk	82.7	103	18	61	24	0	547	.14	.07	9
Red Rock	84.5	108	21	61	24	0	603	.11	.07	9
Seiling	84.5	107	14	60	23	0	603	.17	.09	9
Woodward	84.2	105	13	63	23	0	597	.03	.03	30
Alva	85.3	108	14	62	1	0	629	.55	.30	9
Pryor	81.0	100	18	56	24	****	****	2.79	1.48	9
Skiatook	82.5	102	28	62	24	0	544	1.03	.72	10
Vinita	79.6	100	21	55	24	0	452	2.75	.95	9
Wynona	*****	***	***	***	***	****	****	.34	.23	22
Porter	83.2	102	28	60	24	0	563	.70	.47	10
Inola	*****	***	***	***	***	****	****	*****	*****	***
Claremore	82.4	102	28	58	24	0	541	1.16	.68	9
Putnam	84.1	105	19	63	23	0	592	.51	.51	30
Retrop	84.7	105	20	66	23	0	609	.07	.05	30
Watonga	85.4	106	19	64	23	0	632	.68	.57	1
Weatherford	84.8	106	20	66	10	0	615	.45	.36	25
Oilton	83.8	107	19	57	23	0	584	.19	.10	10
Okemah	83.9	106	20	60	24	0	586	.30	.17	10
Perkins	85.4	108	19	64	24	0	631	.48	.34	9
Shawnee	84.9	106	19	62	23	0	617	.44	.44	30
Spencer	85.4	107	20	63	24	0	632	.32	.32	30
Stillwater	84.6	106	21	63	24	0	606	.63	.48	9
Washington	83.1	104	19	62	24	****	****	.38	.38	30
Ninnekah	85.1	105	19	64	24	0	622	.21	.16	30
Acme	84.0	104	20	63	23	0	589	.07	.07	30
Norman	84.8	105	19	64	24	0	614	1.98	1.98	30
Stigler	81.9	103	29	60	24	0	522	1.22	.47	13
Stuart	83.1	103	29	61	24	0	560	.71	.63	30
Tahlequah	81.1	101	18	60	24	0	500	1.56	.83	10
Webbers Falls	83.6	105	29	62	24	0	578	1.34	.40	22
Westville	79.5	98	28	58	24	0	451	2.65	.84	10
Hectorville	84.7	105	28	62	24	0	612	.51	.39	10
Medicine Park	84.2	102	20	68	24	0	596	.15	.07	25
Tipton	86.0	106	14	65	31	****	****	.15	.15	30
Walters	*****	***	***	***	***	****	****	*****	*****	***
Apache	83.1	102	20	63	23	0	561	.14	.14	30
Grandfield	85.7	107	12	65	24	0	643	.06	.06	30
Pauls Valley	84.5	104	20	62	24	0	603	.23	.20	30
Ringling	84.8	106	19	63	24	0	615	.22	.11	6
Sulphur	83.0	103	19	64	31	0	557	.10	.10	30
Tishomingo	82.4	103	29	61	24	0	541	.26	.14	30
Waurika	85.6	106	20	65	24	0	638	.13	.07	30
Vanoss	83.8	104	19	59	24	0	583	.22	.22	30
Bee	*****	***	***	***	***	****	****	*****	*****	***
Newport	84.3	105	29	63	24	0	600	.99	.57	30
Mt Herman	79.5	97	18	63	24	0	450	2.91	1.47	10
Talihina	*****	***	***	***	***	****	****	*****	*****	***
Wilburton	81.8	104	29	60	24	0	519	1.78	.84	13
Wister	80.5	103	29	58	24	0	481	1.40	.75	10
Broken Bow	*****	***	***	***	***	****	****	2.33	.84	1

July 2003 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Jul-02 (inches)
Panhandle	0.67	-1.85	6th Driest	9.79 (1950)	0.37 (1935)	2.9
North Central	0.33	-2.65	3rd Driest	9.06 (1950)	0.13 (1983)	4.07
Northeast	1.43	-1.73	29th Driest	9.31 (1959)	0.00 (1914)	3.32
West Central	0.56	-1.57	13th Driest	7.21 (1950)	0.05 (1936)	3.06
Central	0.62	-1.95	7th Driest	10.17 (1950)	0.16 (1980)	3.42
East Central	1.14	-1.84	20th Driest	10.15 (1950)	0.17 (1930)	3.09
Southwest	0.36	-1.82	10th Driest	6.30 (1975)	0.03 (1980)	3.44
South Central	0.28	-2.26	6th Driest	8.45 (1950)	0.08 (1998)	4.47
Southeast	1.63	-1.95	27th Driest	13.02 (1950)	0.00 (1930)	3.72
Statewide	0.76	-1.98	4th Driest	9.26 (1950)	0.41 (1980)	3.52

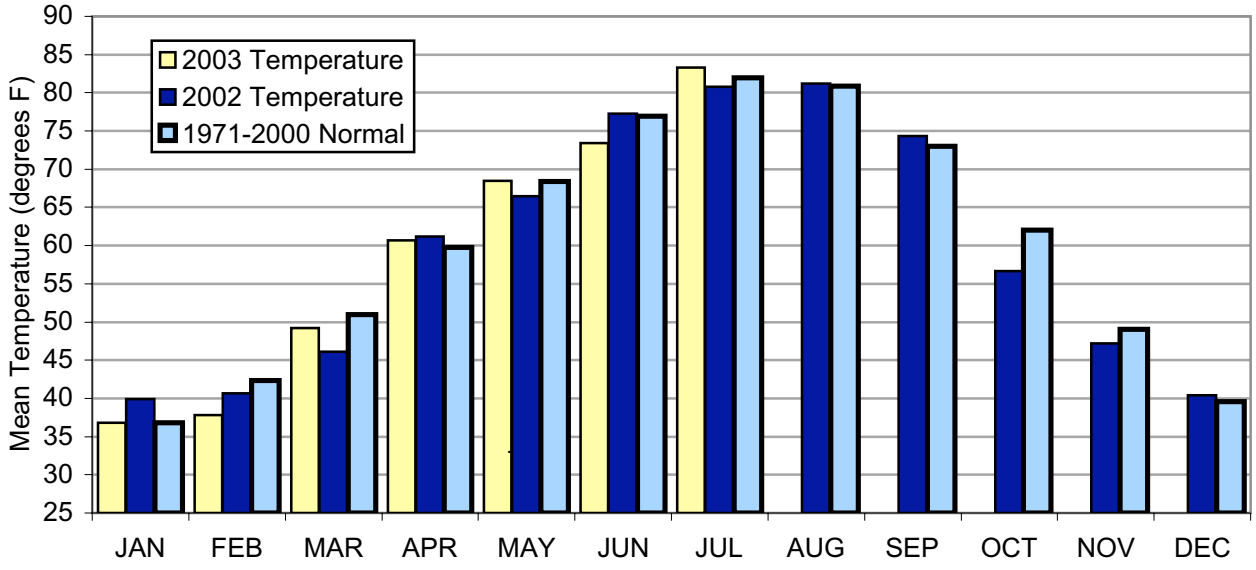
2002 and 2003 Statewide Precipitation Monthly Totals vs. Normal



July 2003 Mesonet Temperature Comparison

Climate Division	Average Temp (°F)	Departure from Normal (°F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Jul-02 (°F)
Panhandle	82.3	2.7	13th Warmest	85.4 (1980)	73.2 (1906)	79.6
North Central	85.1	2.9	11th Warmest	89.6 (1954)	75.8 (1950)	81.1
Northeast	81.4	0.5	46th Warmest	89.2 (1954)	75.0 (1906)	80.9
West Central	84.2	2.5	14th Warmest	88.1 (1954)	75.8 (1906)	80.3
Central	84.5	2.5	15th Warmest	88.6 (1954)	75.8 (1906)	80.3
East Central	82.4	1.1	35th Warmest	88.7 (1954)	75.9 (1906)	80.5
Southwest	84.5	1.3	33rd Warmest	89.1 (1980)	77.9 (1906)	80.7
South Central	83.8	1.1	29th Warmest	89.1 (1998)	77.2 (1906)	80.3
Southeast	81.4	0.5	50th Warmest	87.5 (1954)	76.6 (1906)	80.1
Statewide	83.3	1.7	25th Warmest	88.1 (1954)	75.9 (1906)	80.4

2002 and 2003 Statewide Temperature Monthly Averages vs. Normal



Mesonet Extremes for July 2003

Climate Division	High Temp (ºF)	Day	Station	Low Temp (ºF)	Day	Station	High Monthly Rainfall (inches)	Station	High Daily Rainfall (inches)	Day	Station
Panhandle	108	14th	Beaver	58	10th	Goodwell	1.87	Goodwell	1.41	29th	Goodwell
North Central	110	14th	Medford	59	23rd	Blackwell	0.91	May Ranch	0.79	30th	May Ranch
Northeast	104	28th	Burbank	54	24th	Nowata	2.84	Nowata	1.48	9th	Pryor
West Central	107	20th	Butler	62	23rd	Erick	1.16	Camargo	0.9	9th	Camargo
Central	109	20th	Marshall	55	24th	Bristow	2.32	Bowlegs	2.32	30th	Bowlegs
East Central	105	28th	Hectorville	57	24th	Cookson	2.65	Westville	1.27	13th	Sallisaw
Southwest	107	12th	Grandfield	62	29th	Mangum	1.35	Hinton	0.9	1st	Hinton
South Central	106	19th	Ringling	58	24th	Centrahoma	0.99	Newport	0.57	30th	Newport
Southeast	104	18th	Clayton	58	24th	Wister	2.91	Mt Herman	1.47	10th	Mt Herman
Statewide	110	14th	Medford	54	24th	Nowata	2.91	Mt Herman	2.32	30th	Bowlegs

August Climatological 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.

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

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.

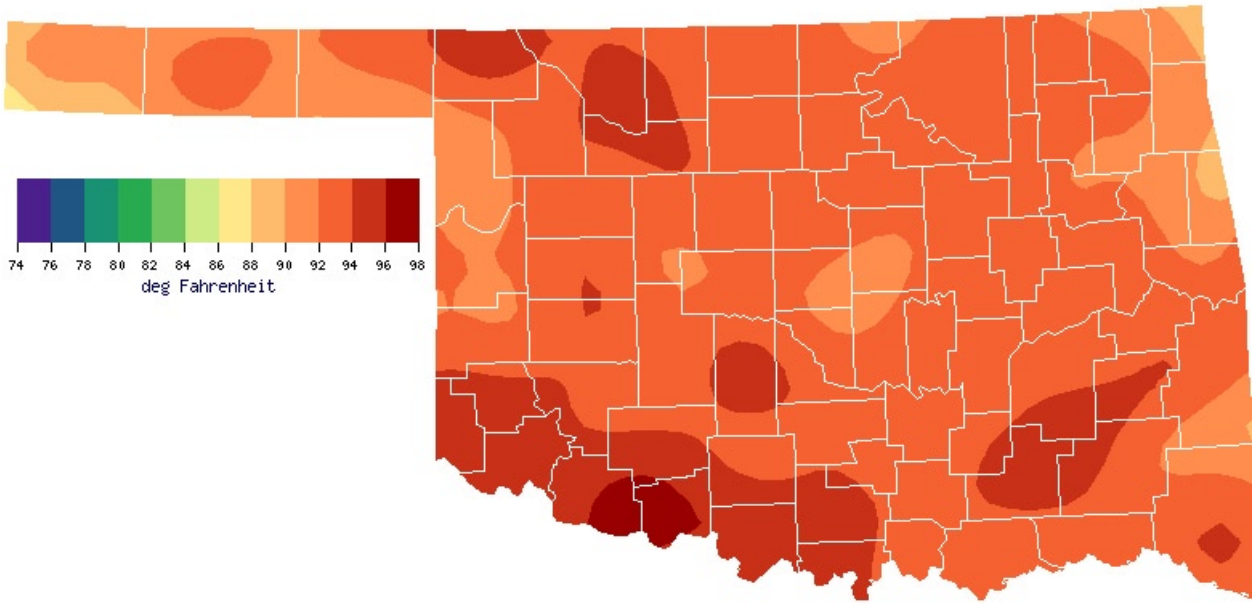
Precipitation
Mean: 2.84 inches
Wettest year: 1906, 6.54 inches
Driest year: 2000, 0.18 inches
Wettest location: Pawnee, 3.76 inches
Driest location: Meeker, 1.93 inches
Most recorded: 15.15 inches, Holdenville, 1906

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.

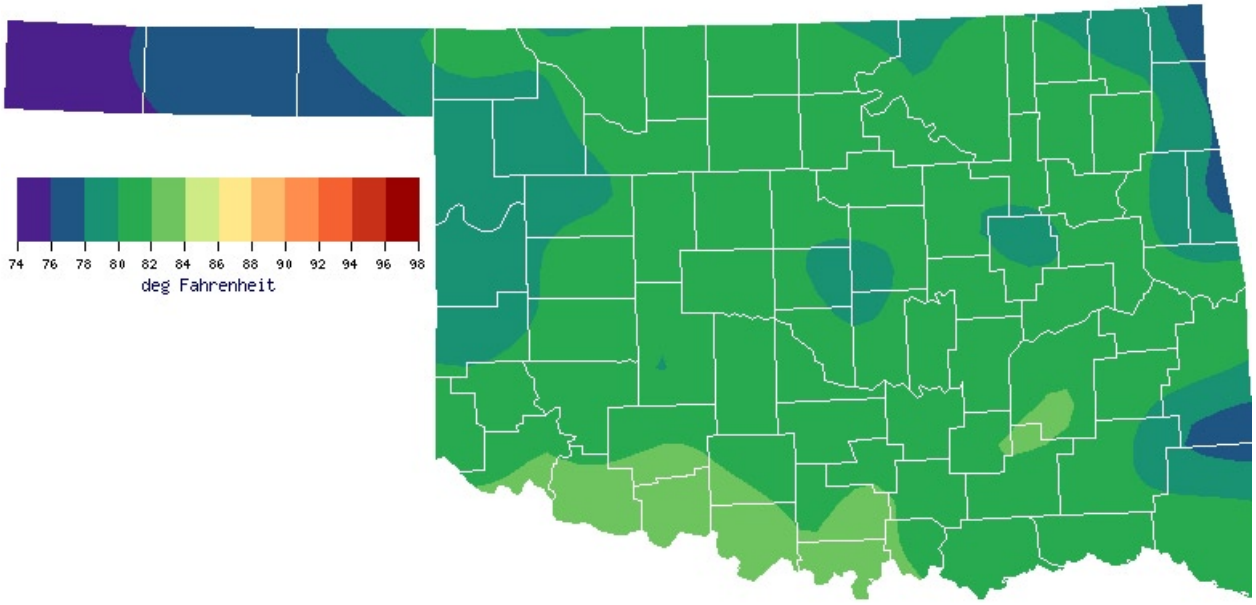
Severe weather appears in the state during August, but its effects are more notable anecdotally than they are apparent in statistics. The exception is that August has presented the state with more lightning deaths (21) than any other month since such record-keeping began in 1959. Only July among the 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)

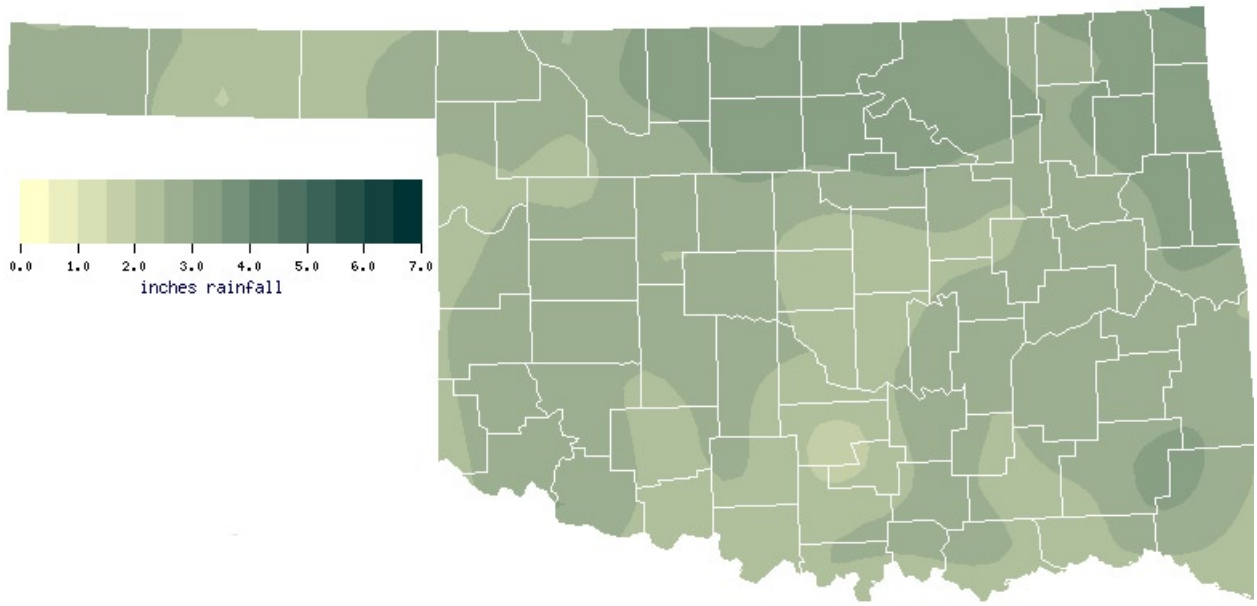
August Normal Monthly Maximum Temperature (1971-2000)



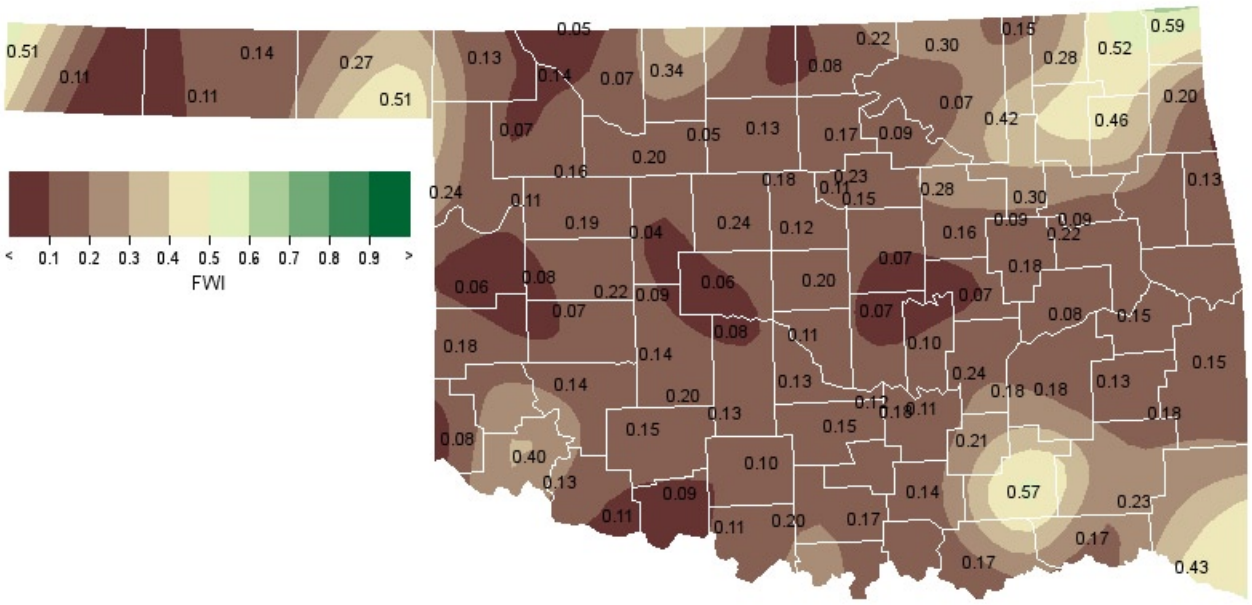
August Normal Monthly Minimum Temperature (1971-2000)



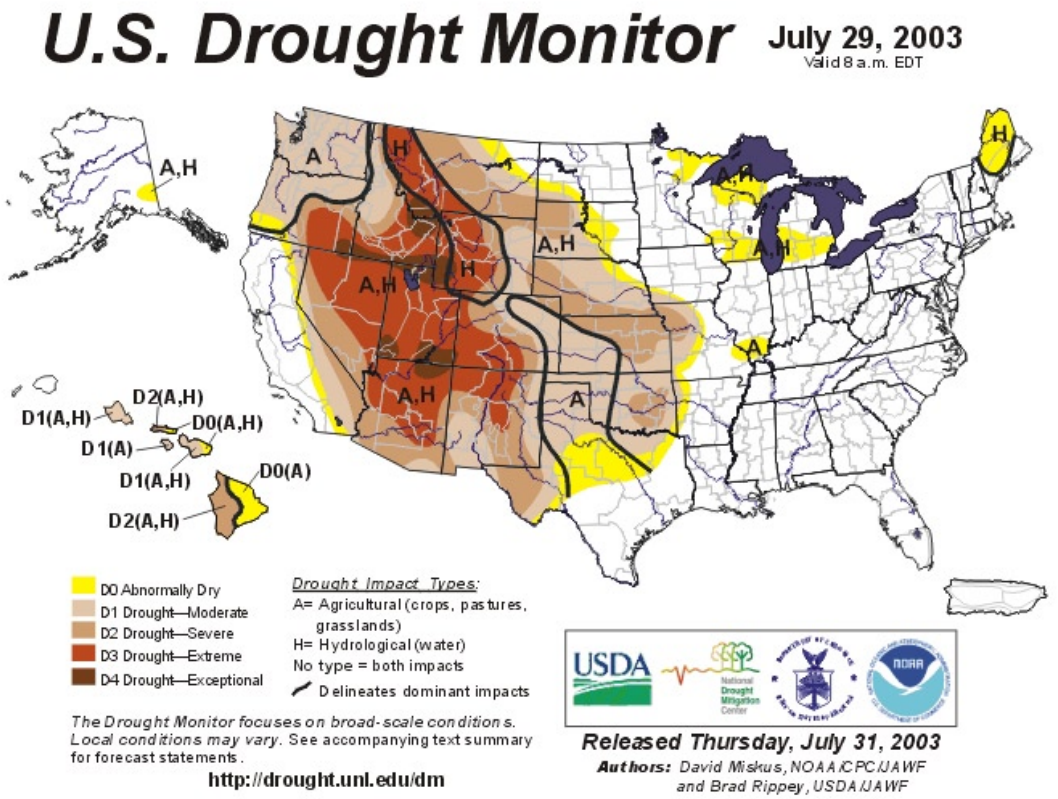
August Normal Precipitation (1971-2000)

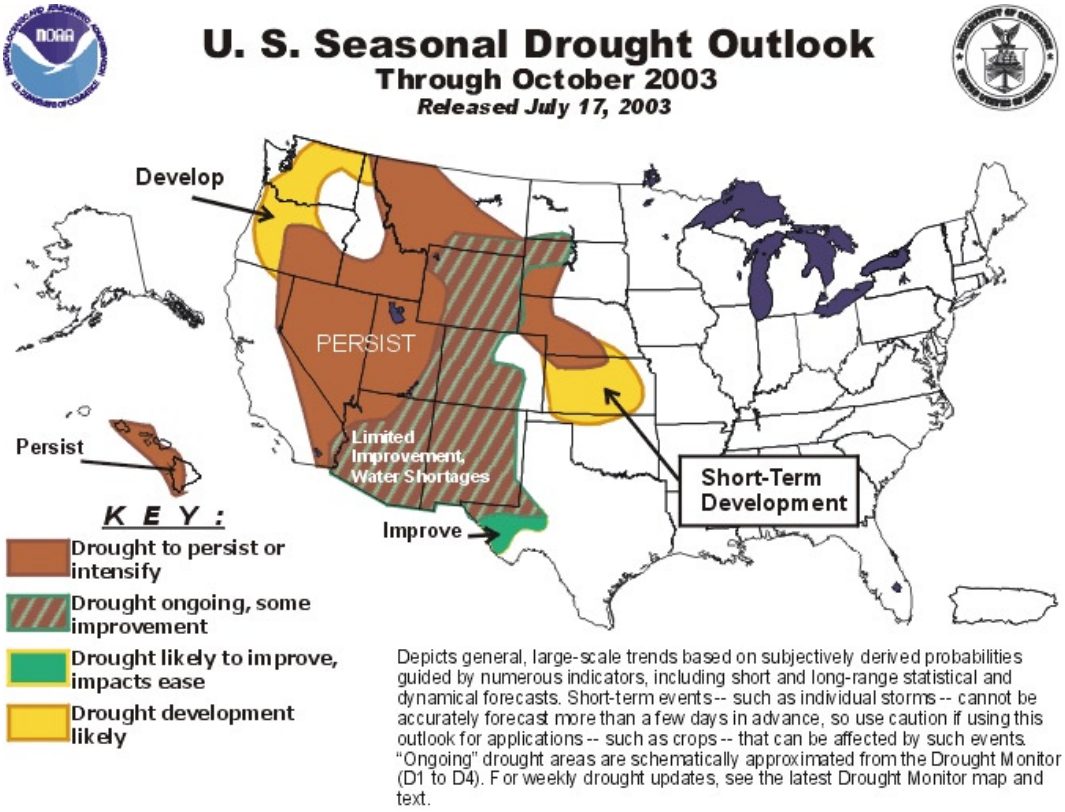


August 1, 2003 Soil Moisture Conditions at 25cm

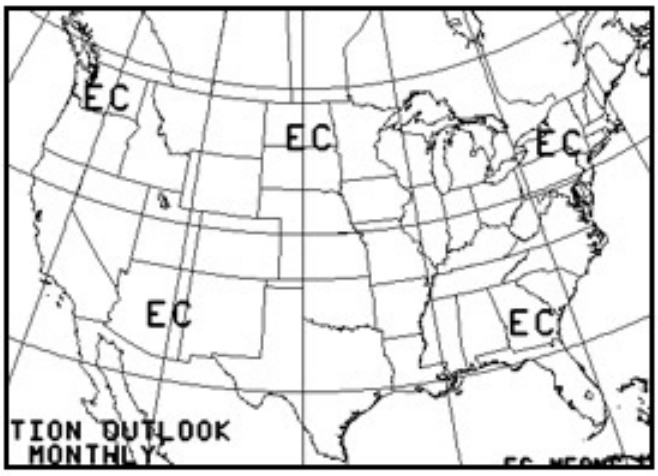


August 2003 Drought Indices





August 2003 U.S. Precipitation Forecast



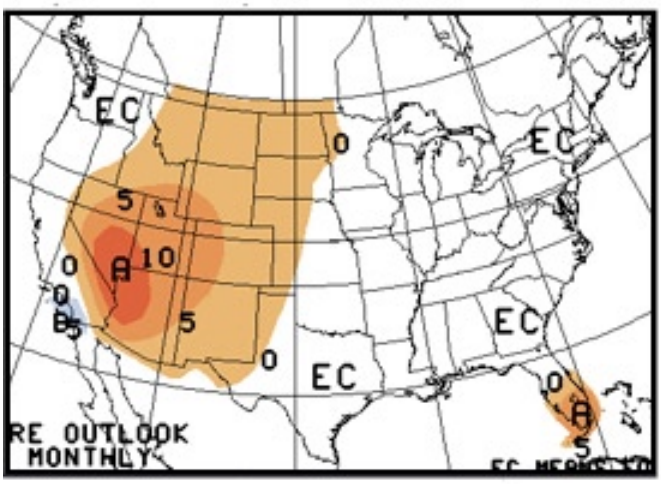
Percent Likelihood
of Above or Below
Average Precipitation*

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

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

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

August 2003 U.S. Temperature Forecast



Percent Likelihood
of Above and Below
Average Temperatures*

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

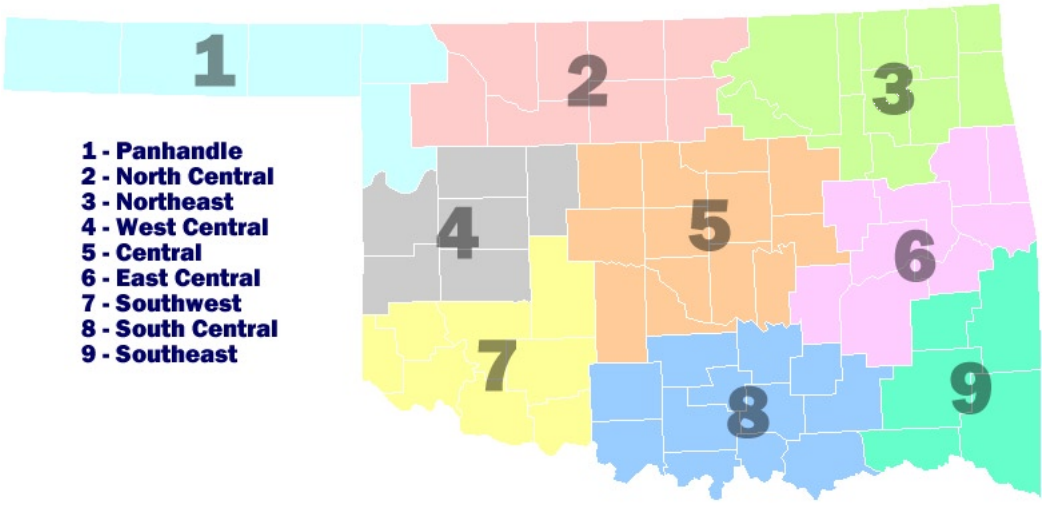
0% - 5%
5% - 10%
B = Below

*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

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