

OKLAHOMA MONTHLY CLIMATE SUMMARY

JUNE 2006



As a transition month between spring and summer, one could expect a slow but steady warm-up from June's beginning to end. The 2006 version was somewhat the opposite with the cool weather coming during the latter half of the month. The month finished as the 34th warmest June on record, and not surprisingly, the 25th driest. There was something that could be considered relief for the eastern third of the state, where temperatures were near or just-below normal for the month. The rest of the state was well above normal, however, with the Panhandle leading the way with the 14th warmest June on record. Statistically, the drought of 2005-06 continued unabated, although some localized areas received beneficial rainfall. At best that precipitation forestalled any intensification of droughty conditions in those areas. South central sections suffered the worst at nearly four inches below normal, their 5th driest June on record. The year-to-date conditions become grimmer with each passing month. Through June, the year is still on track to finish as the warmest in state history. Tornadoes were once again scarce, with preliminary reports indicating a couple of possible touchdowns in the Panhandle.

Precipitation

While south central Oklahoma fared the worst during June, west central sections of the state nearly managed a normal month for a change. That was fortuitous, since that section has been ravaged by drought particularly hard the last few months. At less than an inch below normal, that region limped in with the 54th driest on record, still much better than the rest of the state, which in totality was nearly two inches below normal. The southeast was close at hand at just more than an inch below normal, the 46th driest June on record. The luckiest areas ran from west central, central, and southeastern Oklahoma, where several Mesonet sites reported more than five inches of rainfall. South central locations struggled to break an inch of precipitation total. There was no disguising the effect of the drought on the year-to-date statistics. The January-June statewide-averaged rainfall total is still more than six inches below normal, the 16th driest such period on record. The southeast comes in with their 40th driest January-June, while the rest of the state languishes within the top one-quarter driest on record.

Temperature

The true heat came within the first half of the month as the jet stream retreated northward along with the rain. Basically, the eastern half of the state was somewhat cool, while the western

half of the state was hot...the Panhandle exceedingly so. It is a disconnect not normally seen in temperature, but the contrast is between the southeast, which experienced its 36th coolest June, while the Panhandle suffered through its 14th warmest. The year-to-date temperatures were well above normal everywhere in the state. The southeast is the only section that did not experience their warmest January-June on record, coming in with a 4th-warmest ranking.

June 2006 Statewide Extremes

Description	Extreme	Station	Date
High Temperature	106°F	Altus	June 5th
Low Temperature	50°F	Beaver, Nowata, Antlers	June 17th, 27th, 27th
High Precipitation	6.67 in.	Wilburton	
Low Precipitation	0.10 in.	Apache	

June Daily Highlights

June 1-6: The month began with typical early-June weather – warm with a few showers and thunderstorms. The heaviest rainfall on the 1st was in northeastern portions of the state, along a slow-moving cold front. Skies cleared overnight on the 2nd, allowing temperatures to drop into the 50s. The high pressure that filled in behind the front meant sunny skies, and with the sun came the heat. High temperatures quickly built into the 90s over a large portion of the state. A weather oddity occurred on the 4th in the form of a heat burst. This overnight phenomenon struck Beckham, Ellis, and Roger Mills counties. Temperatures in that area quickly warmed from the 60s to the mid 80s just after midnight. Spotty showers during the 4th and 5th were a prelude to some stronger storms on the 6th, with a few reports of high winds and large hail in the northeast.

June 7-15 : This eight-day period was an early glimpse of the lazy day of summer normally found in July. For the most part, the days were sunny and hot, 10-15 degrees above normal, and the nights were clear and warm. Several records were set for warm weather at Oklahoma NWS observing sites. A few showers along a stalled cold front cooled things down briefly

across the north on the 12th. The period ended with hot and windy weather. Triple-digit temperatures combined with wind gusts of over 40 mph in the northwest to greatly increase fire danger on the 15th.

June 16-20: An approaching upper-level storm kicked winds up from the south, ushering in moist air from the Gulf of Mexico. Strong to severe storms struck the state on the 16th and 17th. Hail to the size of golf balls and wind gusts of over 60 mph were common across the state during this two-day period. Over three inches of rain was reported in Wilburton, and other amounts of 2-3 inches were common. The weather dried and warmed considerably following that storminess. Triple-digit temperatures were the norm, with several Mesonet sites in the Panhandle reaching 105 on the 20th.

June 21-23: Light rain visited the northwestern corner of the state early on the 21st due to an approaching cold front. Heavier storms formed later in the Oklahoma Panhandle, bringing severe weather to that area. Large hail and gusty winds were the main threat, although preliminary reports indicate a couple of possible tornados touchdowns in Beaver County. Regardless, winds above 70 mph and hail up to two inches in diameter provided an adequate severe punch. The storms continued into the 22nd. The Freedom Mesonet site recorded over three inches of rainfall on the 22nd, prompting a flood warning early on the 23rd for the Cimarron River in Woods County. The weather cooled considerably following the frontal passage, with highs in central Oklahoma only reaching the 70s. Low temperatures dropped into the 50s.

June 24-27: A remarkably pleasant few days for late June, high temperatures basically remained in the 80s, with even some 70s thrown in each day. Northerly winds following the cold front allowed low temperatures to drop into the 50s. A few showers popped up intermittently on the 24th and 25th, but amounts were generally light.

June 28-30: Summer returned just in time for July as the winds switched back to southerly and the temperatures returned to the 90s. The 28th and 29th saw mostly clear skies, while the 30th saw plenty of fair weather cumulus clouds dotting the sky.

June 2006 Statewide Statistics			
Temperature			
	Average	Depart.	Rank (1892-2006)
Month (June)	77.8°F	1.3°F	34th Warmest
Year -to-Date (Jan-June)	59.2°F	3.9°F	1st Warmest
Precipitation			
	Total	Depart.	Rank (1892-2006)
Month (June)	2.36 in.	-1.90 in.	25th Driest
Year-to-Date (Jan-June)	12.77 in.	-6.38 in.	16th Driest
Depart. = Departure from 30-year normal			

June 2006 Severe Weather

Significant Tornadoes (F2 or greater)

No significant tornadoes reported in the state.

Hail (2 inches in diameter or greater)

Size (in.)	Location	County	Day
3.00	12 NNW Shattuck	Ellis	18

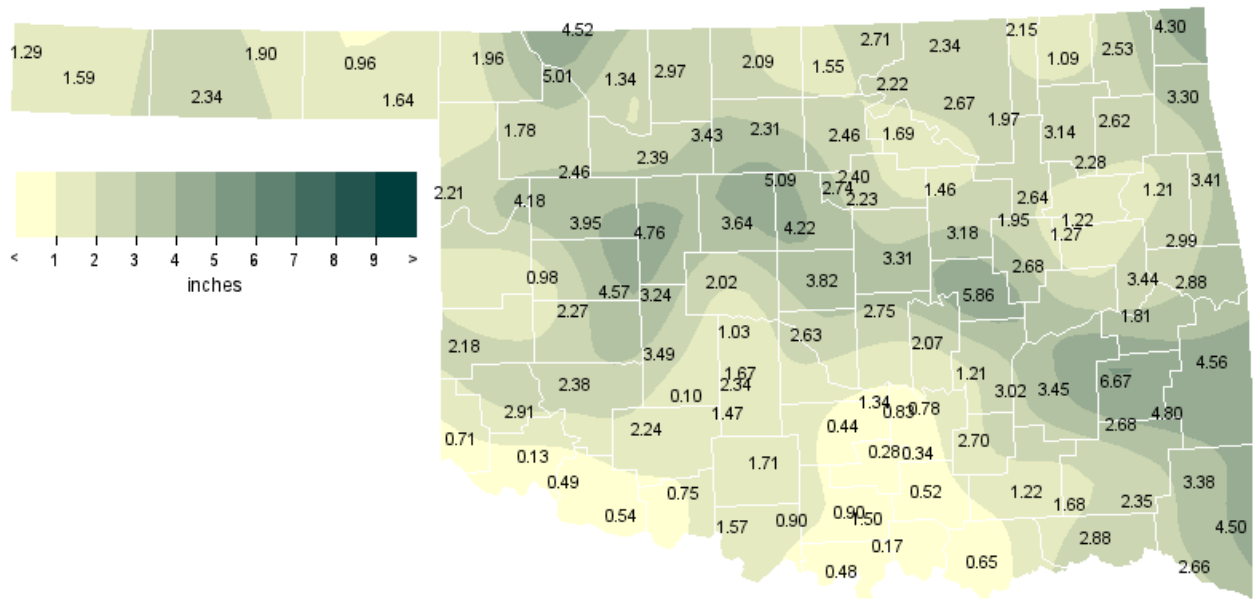
Wind Gusts (70 mph or greater)

Speed (m.p.h.)	Location	County	Day
75	6 SW Mangum	Greer	16
74	1 W Hooker	Texas	22
71	2 E Goodwell	Texas	22
70	2 E Goodwell	Texas	22

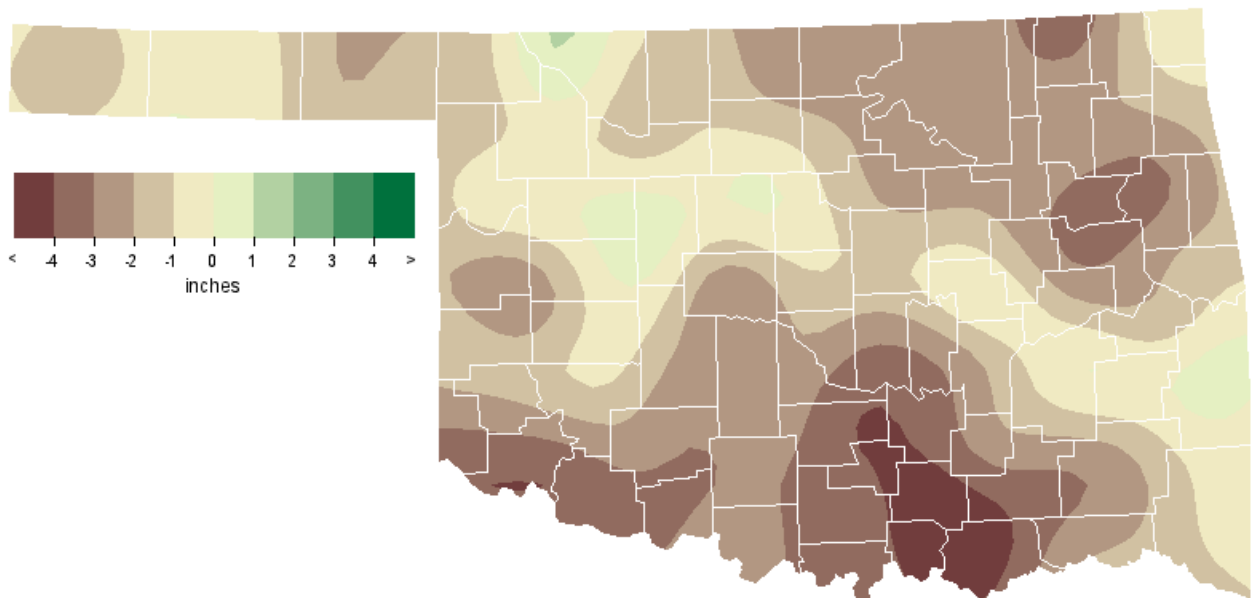
Record Event Report

Description	Day	Location	Record	Previous Record	Year
High Minimum Temperature	6	Oklahoma City	76	75	1990
High Minimum Temperature (tied)	7	Oklahoma City	75	75	1990
High Temperature	10	Oklahoma City	102	99	1934
High Temperature (tied)	11	Oklahoma City	100	100	1953
Low Temperature (tied)	14	McAlester	58	58	1983
Low Temperature	30	McAlester	61	62	1985

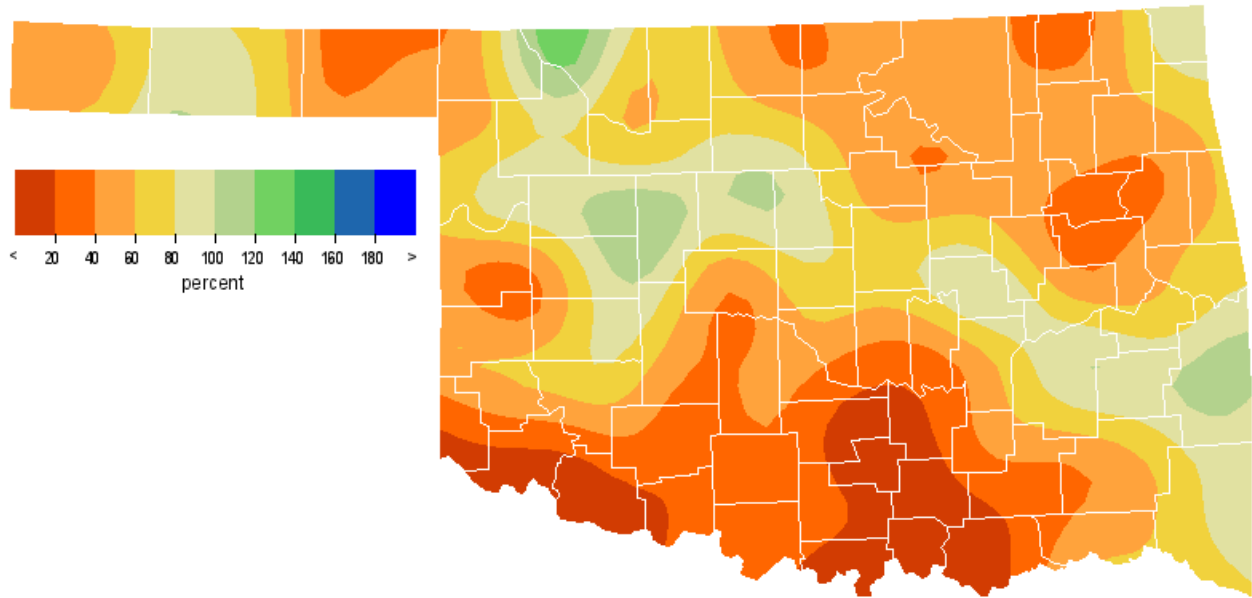
June 2006 Observed Precipitation



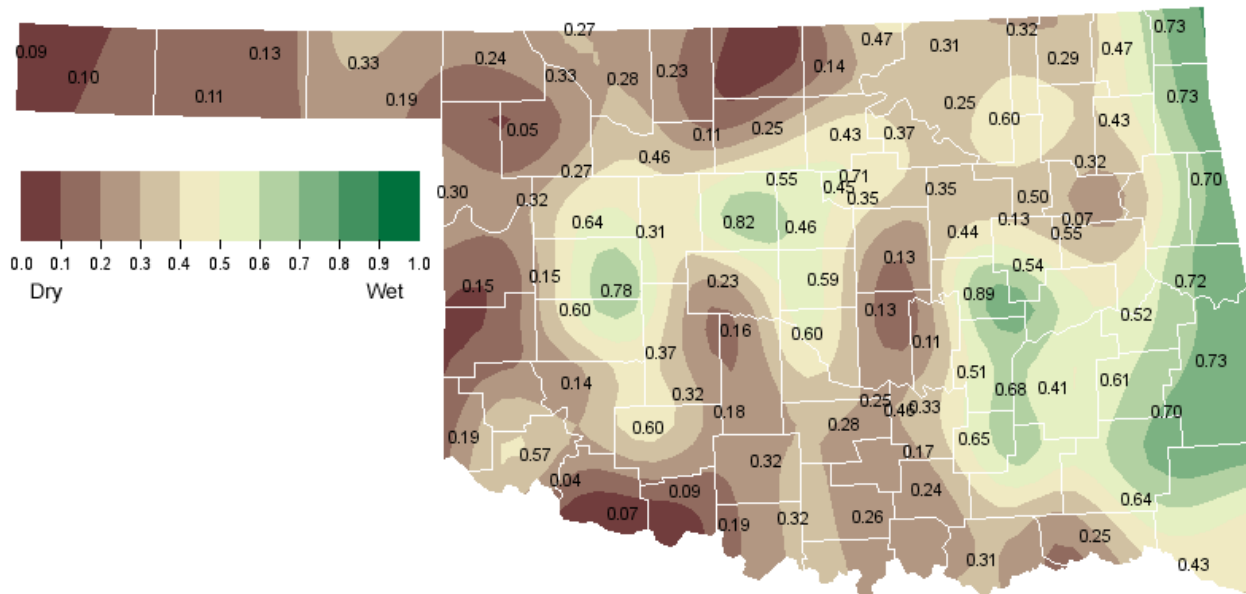
June 2006 Departure from Normal Precipitation



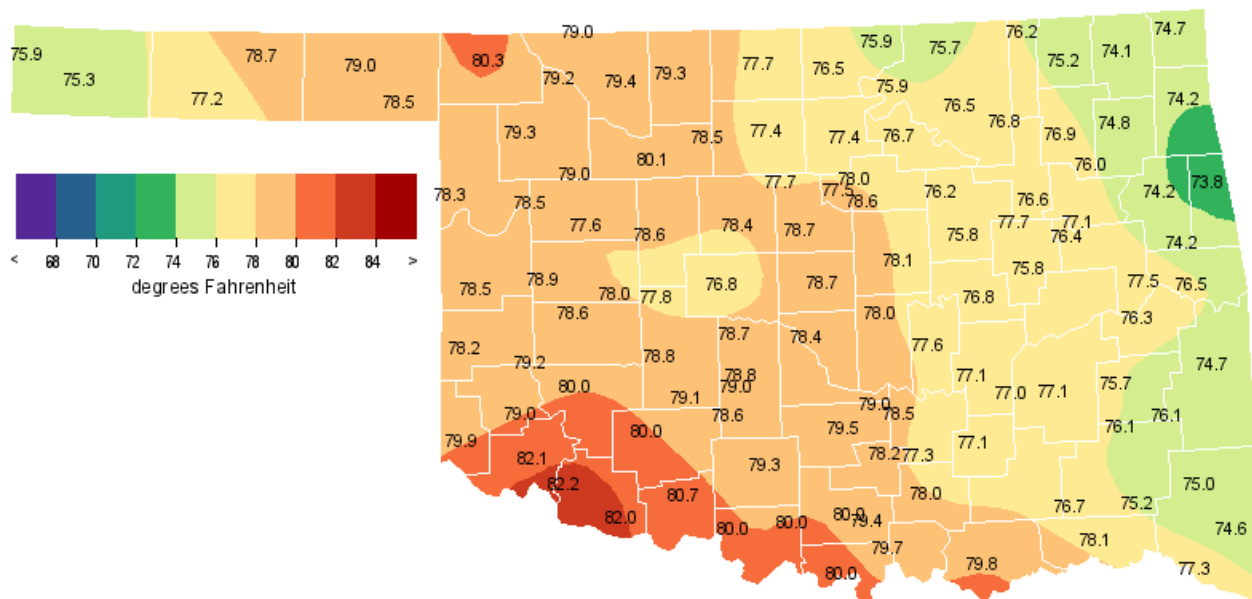
June 2006 Percent of Normal Precipitation



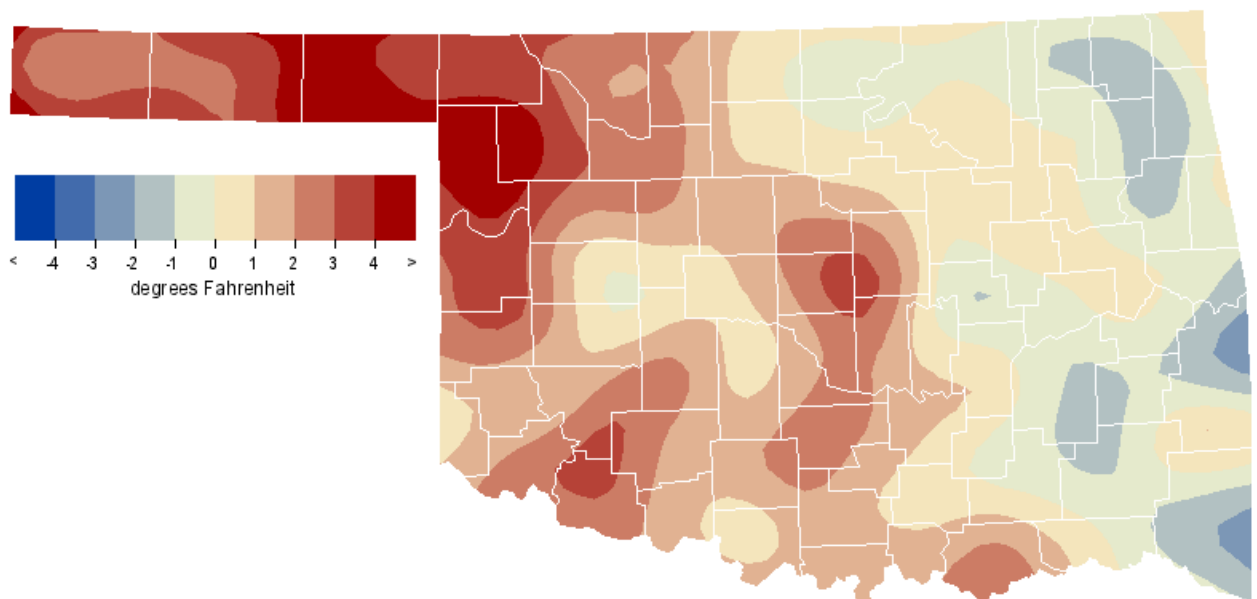
June 2006 Average Soil Moisture at 25cm



June 2006 Average Temperature



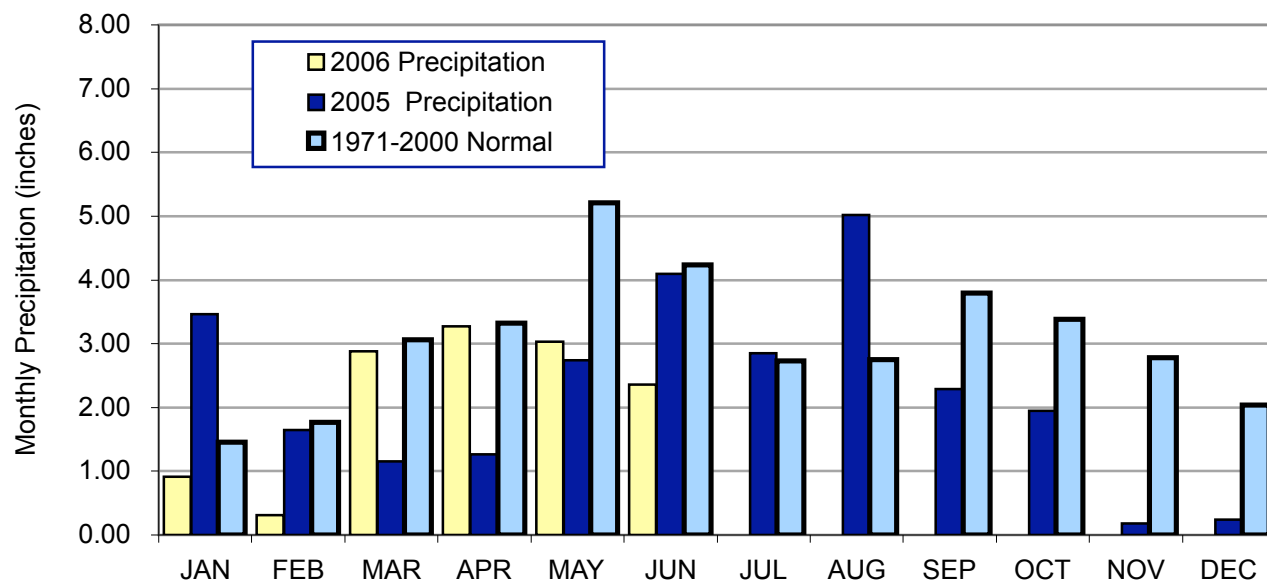
June 2006 Departure from Normal Temperature



June 2006 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Jun-05
Panhandle	1.74	-1.19	29th Driest	7.70 (1962)	0.01 (1924)	4.69
North Central	2.69	-1.25	38th Driest	9.91 (1908)	0.43 (1933)	7.46
Northeast	2.41	-2.21	20th Driest	11.34 (1948)	0.08 (1933)	4.88
West Central	3.27	-0.59	54th Driest	9.25 (1989)	0.32 (1910)	5.26
Central	2.84	-1.73	34th Driest	11.34 (1908)	0.00 (1914)	6.02
East Central	2.44	-2.42	23rd Driest	12.69 (1935)	0.00 (1914)	2.95
Southwest	1.54	-2.62	17th Driest	8.79 (1962)	0.56 (1933)	2.67
South Central	0.96	-3.68	5th Driest	9.35 (1945)	0.00 (1914)	2.94
Southeast	3.62	-1.08	46th Driest	11.00 (1945)	0.00 (1914)	2.01
Statewide	2.36	-1.90	25th Driest	8.73 (1908)	0.46 (1933)	4.45

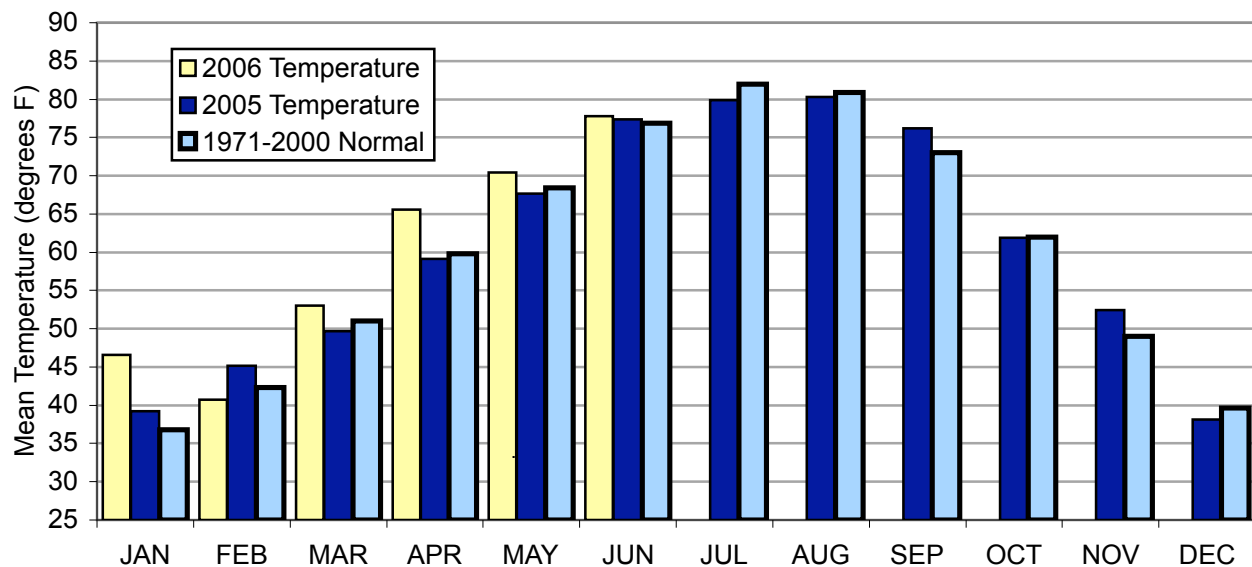
2005 and 2006 Statewide Precipitation Monthly Totals vs. Normal



June 2006 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Jun-05 (F)
Panhandle	77.9	3.5	14th Warmest	82.0 (1953)	67.7 (1903)	74.1
North Central	78.4	1.6	29th Warmest	85.7 (1953)	69.7 (1903)	77.0
Northeast	75.8	0.1	51st Warmest	83.7 (1953)	68.9 (1903)	77.1
West Central	78.5	2.1	27th Warmest	85.6 (1953)	69.1 (1903)	76.3
Central	77.9	1.1	32nd Warmest	84.4 (1953)	69.9 (1903)	77.3
East Central	76.1	-0.1	51st Coolest	84.4 (1953)	69.8 (1903)	78.0
Southwest	80.1	1.7	24th Warmest	86.7 (1953)	71.5 (1903)	78.8
South Central	79.1	1.4	32nd Warmest	85.2 (1953)	71.1 (1903)	78.7
Southeast	76.0	-0.4	36th Coolest	83.9 (1953)	70.3 (1903)	76.1
Statewide	77.8	1.3	34th Warmest	84.6 (1953)	69.8 (1903)	77.1

2005 and 2006 Statewide Temperature Monthly Averages vs. Normal



Mesonet Extremes for June 2006

Climate Division	High Temp (F)	Day	Station	Low Temp (F)	Day	Station	High Monthly Rainfall (inches)	Station	High Daily Rainfall (inches)	Day	Station
Panhandle	105	5th	Hooker	50	17th	Beaver	2.34	Goodwell	1.23	22nd	Hooker
North Central	105	10th	Lahoma	55	26th	Newkirk	5.01	Freedom	3.35	22nd	Freedom
Northeast	100	10th	Wynona	50	27th	Nowata	4.30	Miami	1.88	17th	Bixby
West Central	102	10th	Camargo	54	27th	Butler	4.76	Watonga	2.67	16th	Weatherford
Central	103	10th	Perkins	51	27th	Oilton	5.86	Okemah	2.83	23rd	Marshall
East Central	100	10th	Webbers Falls	51	27th	Tahlequah	3.45	McAlester	2.04	23rd	McAlester
Southwest	106	5th	Altus	53	27th	Mangum	3.49	Fort Cobb	1.62	22nd	Hinton
South Central	100	10th	Burneyville	52	27th	Burneyville	2.70	Centrahoma	1.26	23rd	Waurika
Southeast	97	10th	Idabel	50	27th	Antlers	6.67	Wilburton	3.53	17th	Wilburton
Statewide	106	5th	Altus	50	17th	Beaver	6.67	Wilburton	3.53	17th	Wilburton

July Climatological 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.

Temperature

Mean: 82.0 degrees
Warmest July: 1954, 88.6 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

Oklahoma's hottest July, at least since record keeping began in 1892, occurred in 1954. That month produced the highest statewide-averaged temperature (88.6 degrees) of any month during the 110-year 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.

Precipitation

Mean: 2.73 inches
Wettest Year: 1950, 9.26 inches
Driest Year: 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

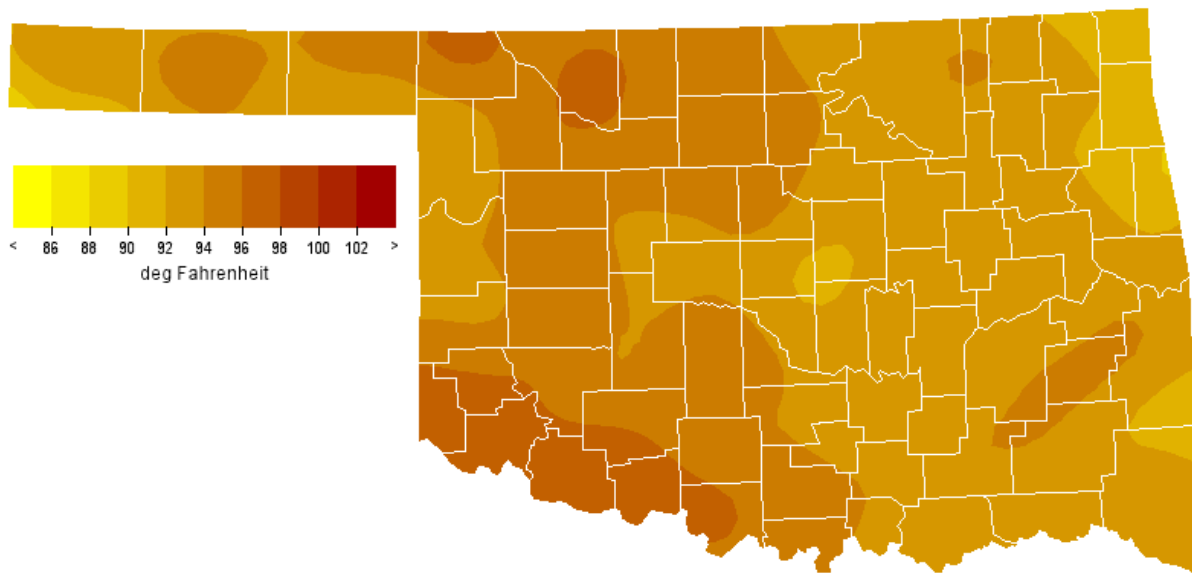
July precipitation, all rainfall unless you count an occasional hailstorm, is primarily a result of localized events. While the panhandle enjoys its summer rainy season and rain certainly doesn't disappear from north central Oklahoma, the forested southeast, though drier than it is in other months, still 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).

Tornadoes

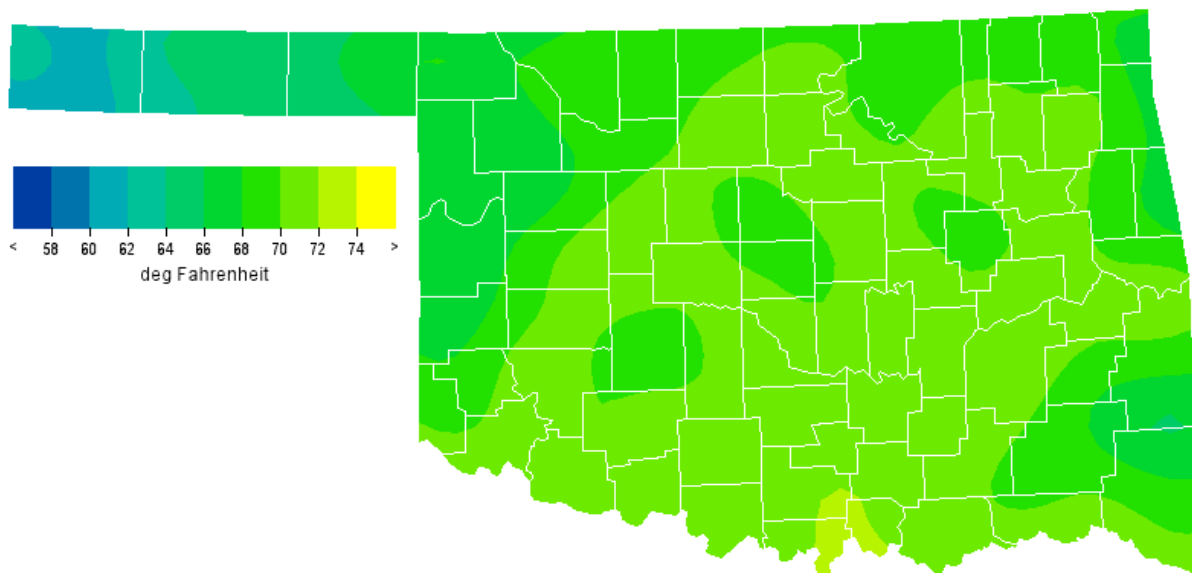
Average July Tornadoes: 2
Most: 7 (1956)

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.

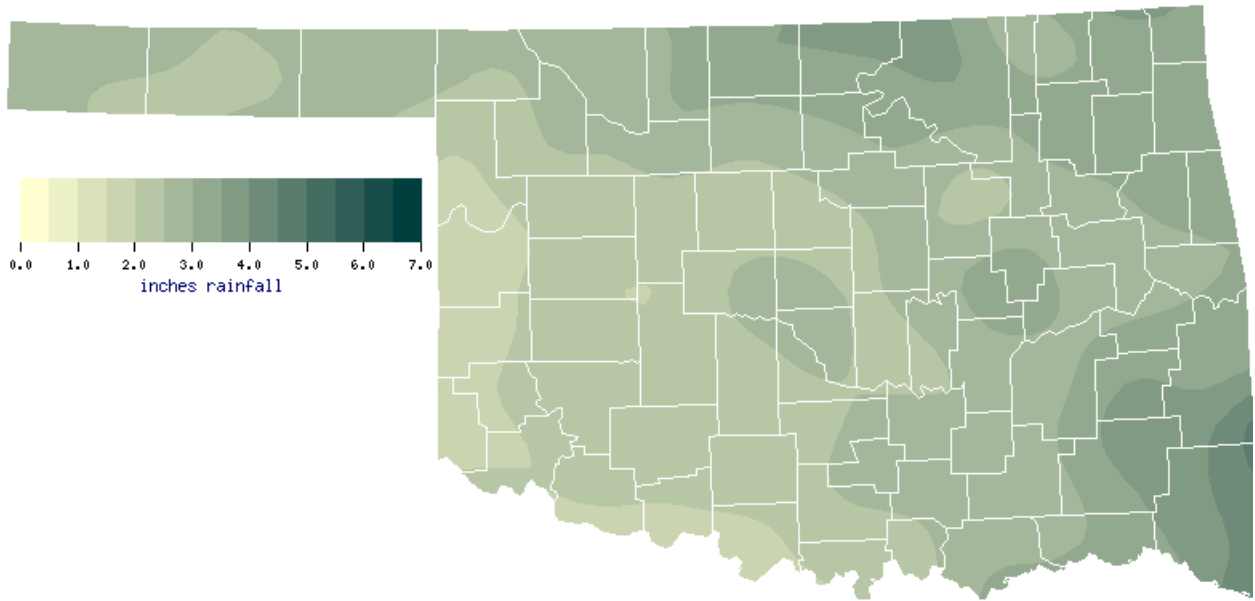
July Normal Monthly Maximum Temperature (1971-2000)



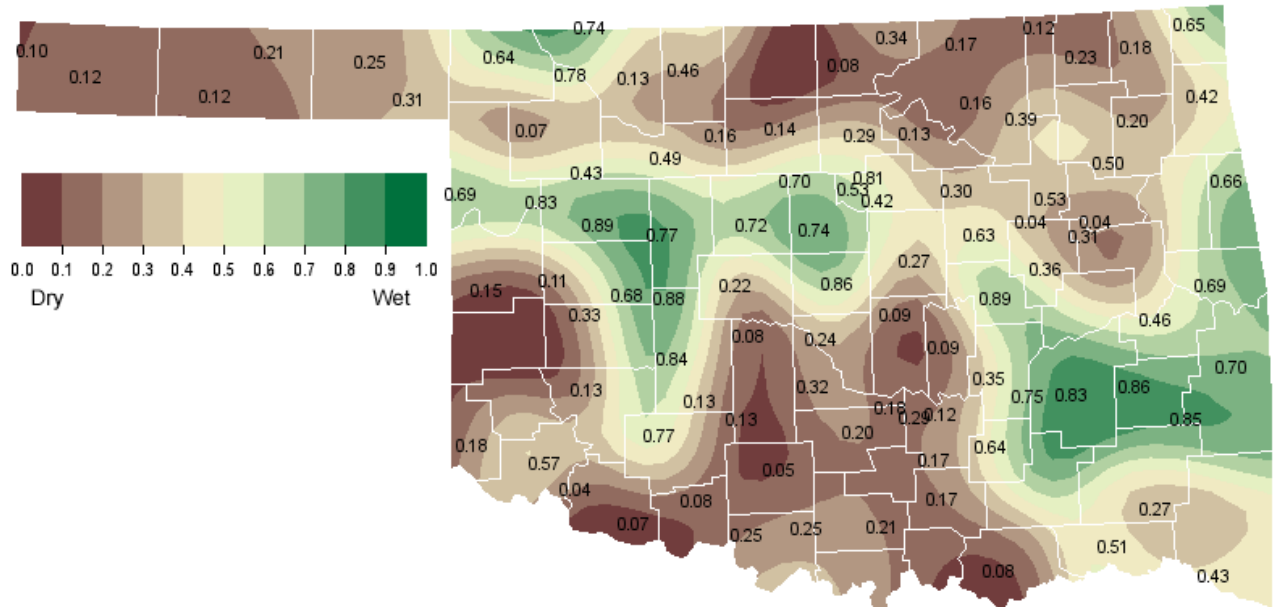
July Normal Monthly Minimum Temperature (1971-2000)



July Normal Precipitation (1971-2000)

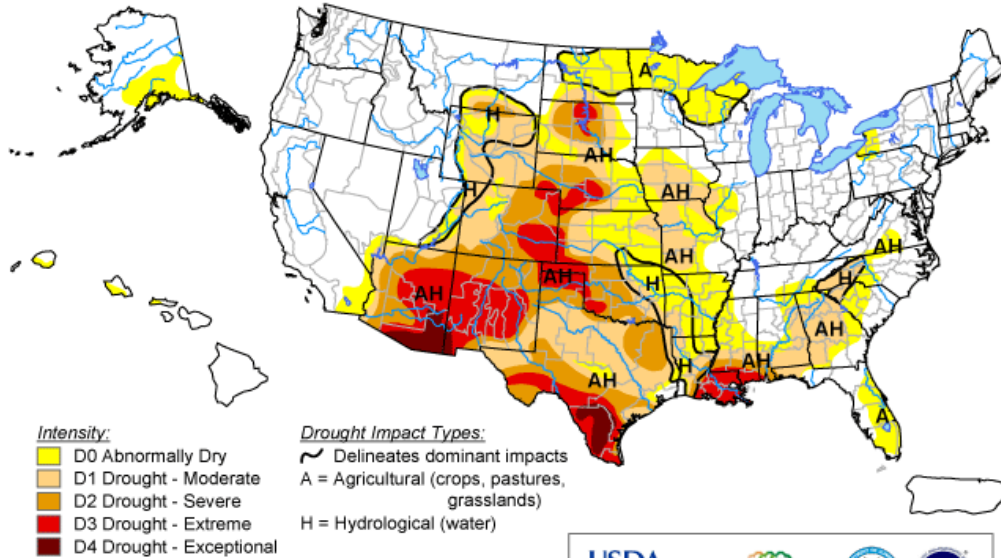


July 1, 2006 Soil Moisture Conditions at 25cm



U.S. Drought Monitor

June 27, 2006
Valid 8 a.m. EDT



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



Released Thursday, June 29, 2006

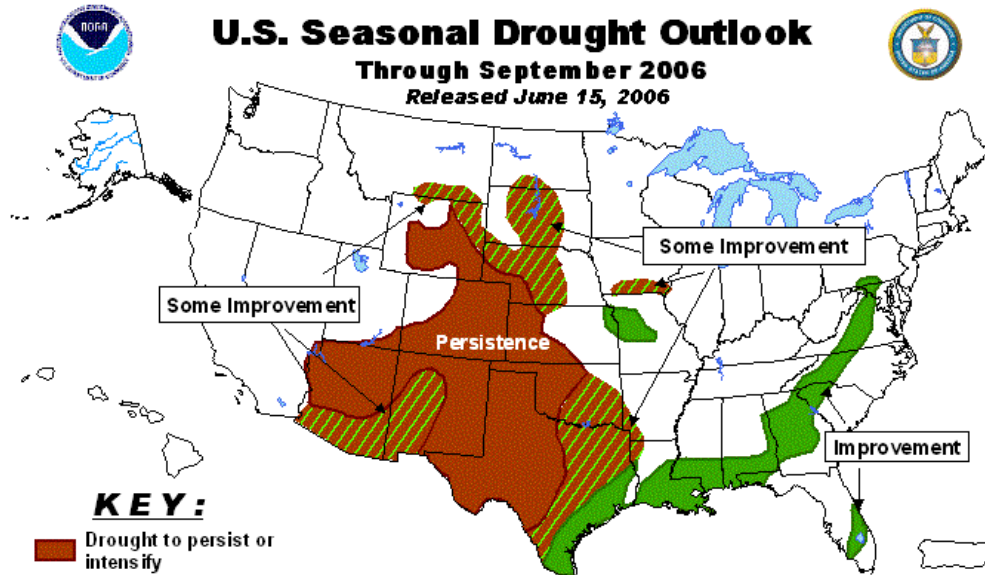
Author: Ned Guttman/Liz Love-Brotak, NOAA/NESDIS/NCDC

<http://drought.unl.edu/dm>

U.S. Seasonal Drought Outlook

Through September 2006

Released June 15, 2006

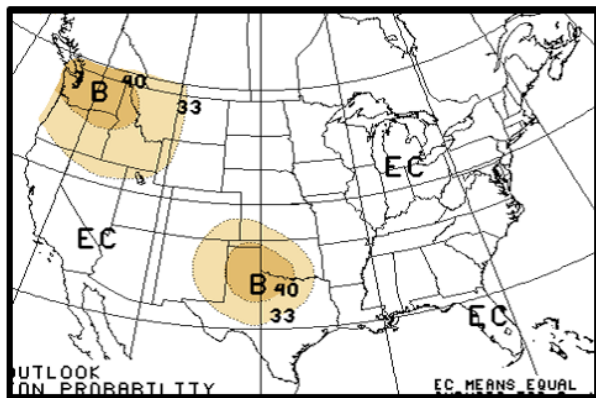


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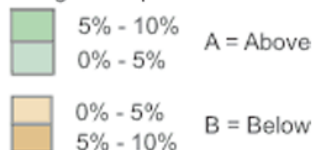
- Drought to persist or intensify
- Drought ongoing, some improvement
- Drought likely to improve, impacts ease
- Drought development likely

Depicts general, large-scale trends based on subjectively derived probabilities guided by numerous indicators, including 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, so use caution if using this outlook for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4). For weekly drought updates, see the latest Drought Monitor map and text. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

July 2006 U.S. Precipitation Forecast

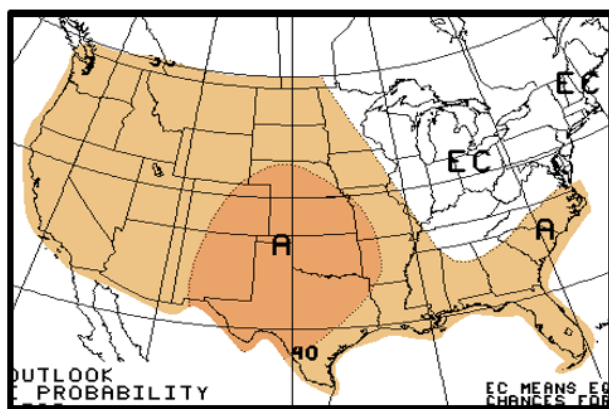


Percent Likelihood of Above or Below Average Precipitation*

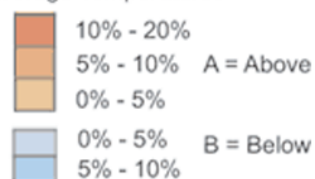


*EC indicates no forecasted anomalies due to lack of model skill.

July 2006 U.S. Temperature Forecast



Percent Likelihood of Above and Below Average Temperatures*

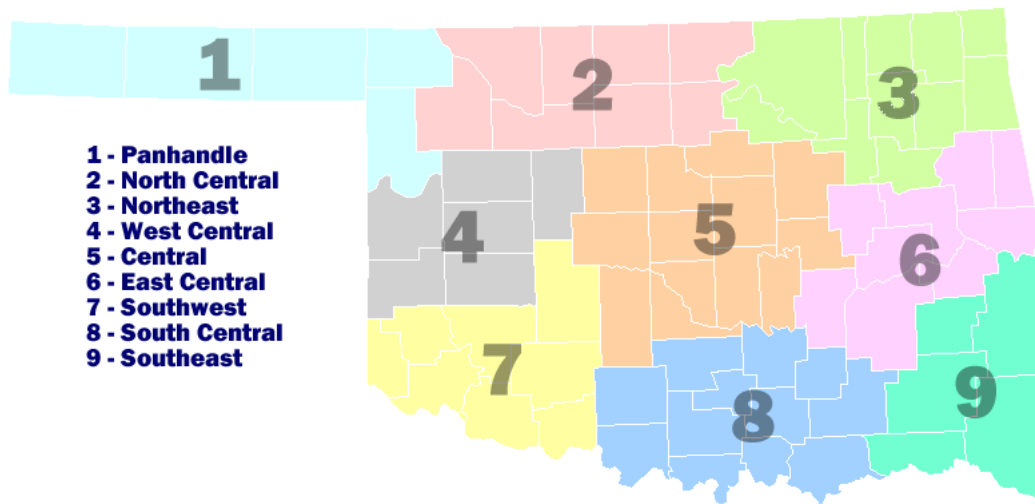


*EC indicates no forecasted anomalies due to lack of model skill.

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 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 is the State
Climate Office for Oklahoma

Dr. Renee McPherson, Acting Director

Editor

Gary D. McManus, Climatologist

Contributors

Gary D. McManus

Mark A. Shafer, Director of Climate
Information

Derek S. Arndt, Acting State Climatologist
Howard Johnson, Associate State
Climatologist (Ret.)

Design

Stdrovia Blackburn, Graphic Design Manager
Kelly Stokes, Administration/Graphics

For more information, contact:

Oklahoma Climatological Survey
The University of Oklahoma
100 East Boyd Street, Suite 1210
Norman, OK 73019-1012
tel: 405-325-2541
fax: 405-325-2550
e-mail: ocs@ou.edu
<http://www.ocs.ou.edu>