

OKLAHOMA MONTHLY CLIMATE SUMMARY

OCTOBER 2006



Continued drought relief for southern Oklahoma was the big story during October, the 37th coolest and 53rd wettest on record for the state. While parts of south central and southeastern Oklahoma received over seven inches of rain for the month, most of the northern half saw deteriorating moisture conditions once again. Less than an inch of rain fell across the majority of the northern one-third of the state. Historical rankings ranged from the 20th wettest in the southwest to the 14th driest in the northeast. The Oklahoma Mesonet site at Grandfield recorded a state-high 7.61 inches for the month, with Alva bringing up the rear at 0.35 inches. Statewide average temperatures were cooler than normal for the second month in a row, the first time that has occurred since July and August of 2005. The state is still alarmingly dry for the year with a deficit of greater than nine inches. Statewide-averaged temperatures remain the 2nd warmest on record for the same time period. Despite the excessive precipitation in southern Oklahoma, very little severe weather was reported.

Precipitation

Northeastern Oklahoma fell between 3-5 inches below normal for October, but virtually the entire northern half of the state had a deficit of at least one inch. Central sections of the Panhandle actually had a surplus between 1-2 inches, nearly 200 percent of normal. The extreme southwestern corner of the state was also between 180-200 percent of normal, helping that area finish as the 20th wettest October on record. South central and southeastern sections also experienced a surplus, the 29th- and 22nd-wettest on the record books, respectively. Averaged together, the state was less than an inch below normal. January-October was the 12th driest on record.

Temperature

While the state as a whole was cool, a significant portion of western Oklahoma was between 1-3 degrees warmer than the established normals. Still, on average, every section of the state, save west central, was cooler than normal. West central Oklahoma barely rose above normal, yet still finished as the 52nd coolest October on record for that area. Statewide, January-October was 2.5 degrees above normal for that time period.

October 2006 Statewide Extremes			
Description	Extreme	Station	Date
High Temperature	100°F	Buffalo	Oct 2
Low Temperature	22°F	Kenton	Oct 31
High Precipitation	7.61 in.	Grandfield	
Low Precipitation	0.35 in.	Alva	

October Daily Highlights

October 1-7: The month's first eight days were hot and devoid of rainfall. Buffalo reached 100 degrees on the 2nd to set the mark as the month's highest temperature. A cold front passed through the state on the 4th, but lack of moisture prohibited any precipitation. The front did usher in a cooler air mass, but merely dropped maximum temperatures down to seasonable levels in the 70s and 80s.

October 8-10: An approaching upper-level storm system on the 8th finally brought precipitation to the state through the next three days. The precipitation fell mainly in the Panhandle on the 8th, with the Oklahoma Mesonet site at Goodwell recording over an inch. The rainfall spread eastward over the next two days with similar amounts in scattered locations. High temperatures on the 9th were dependent upon position relative to the front, ranging from the mid-50s in the northwest to the mid-80s in the southeast. Temperatures following the rain's exit from the state on the 10th varied between the 50s and 70s – a bit below seasonal norms.

October 11-14: M After a pleasant, albeit cool, day on the 11th, a strong cold front jerked the state back to below normal on the 12th. Little precipitation fell with the front's passage, but winds gusting to over 30 mph from the north managed to make it feel much cooler than the 50-60 degree highs that were recorded for the day. The cold weather extended into the next day as low temperatures dropped into the 30s and 40s. A nice warm up allowed temperatures to rebound into the 70s later that afternoon. Clouds in the 14th did little to prevent the state from another warm up. High temperatures reached into the 70s once again, approaching 80 degrees in the south.

October 15-19: A large upper-level storm system brought a surge of moisture from the Gulf of Mexico over the state, triggering a soaking rainfall over the southeastern half on the 15th and 16th. A band of very heavy rainfall totals extended from southwestern Oklahoma through the east central region. Generally, much of south central and southeastern Oklahoma had between 3-5 inches of rainfall. High temperatures moderated with all the cloud cover and precipitation to remain mostly in the 60s, although a few 70s were reported. The 17th was rather sedate and dry. Low temperatures in the 40s and 50s, along with foggy conditions, made for a gray morning on the 17th. Highs bounced back into the 80s for the most part. Another strong cold front cooled the state down and brought a bit more rainfall for the southeast on the 18th. Northerly winds gusted to over 35 mph near the front, and high temperatures were 20 degrees cooler than the previous day. Cold temperatures settled in for the 19th. Lows dropped to the 30s and 40s, but northerly winds made it feel 10 degrees colder. Just a bit of light rain in the morning gave way to sunny skies and highs 10-15 degrees below normal in the 50s and 60s.

October 20-24: Surface high pressure built in after the previous cold front on the 20th, bringing a cool, clear day. Yet another cold front made its way into the state on the 21st. Gusty north winds and highs in the mid-40s behind the front made for a very blustery day in the northwest. High temperatures ahead of the front still managed to reach into the 70s, but winds near the front reached 45 mph. Clear skies and light northerly winds helped drop temperatures below freezing over most of the state on the 22nd. Lows ranged from 18 degrees at Freedom to 38 degrees at Durant. Highs reached the 50s and 60s. The next two days saw a slow warm up as another upper-level storm approached from the west. High temperatures were in the 70s, with lows generally in the 30s.

October 25-31: Cloudy skies and rain enveloped the state overnight. The heaviest precipitation was reserved for the southeast where amounts over an inch were common. Some sun broke through the clouds, which allowed for temperatures in the 70s and 80s later that afternoon. Those places that remained cloudy only rose into the 60s. An upper-level storm was still approaching the state on the 26th, although there was little moisture this time around. Rainfall amounts were limited to less than an inch, with most areas receiving less than one-half of an inch. A dryline failed to produce severe weather, but did kick winds up from the south at over 30 mph. A cold front cooled the weather down again on the 27th and kicked up winds to over severe levels. Gusts up to 58 mph occurred in the far western sections of the state. The 27th through the 30th saw a quick warm up as the surface high pressure system moved off to the east. Highs reached into the 70s and 80s before a final strong cold front Halloween morning snapped temperatures back into the 40s and 50s for highs. The strong northerly winds brought wind chills into the 30s, but lighter winds rescued trick or treaters from the arctic chill later that evening.

October 2006 Statewide Statistics			
Temperature			
	Average	Depart.	Rank (1892-2006)
Month (Oct)	60.7°F	-0.6°F	37th Coolest
Season-to-Date (Sep-Oct)	65.0°F	-1.8°F	16th Coolest
Year-to-Date (Jan-Oct)	65.4°F	2.5°F	2nd Warmest

Precipitation			
	Total	Depart.	Rank (1892-2006)
Month (Oct)	2.75 in.	-0.63 in.	53rd Wettest
Season-to-Date (Sep-Oct)	5.04 in.	-2.15 in.	42nd Driest
Year-to-Date (Jan-Oct)	22.74 in.	-9.11 in.	12th Driest

Depart. = Departure from 30-year normal

October 2006 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.

Flooding

No flooding events reported in state.

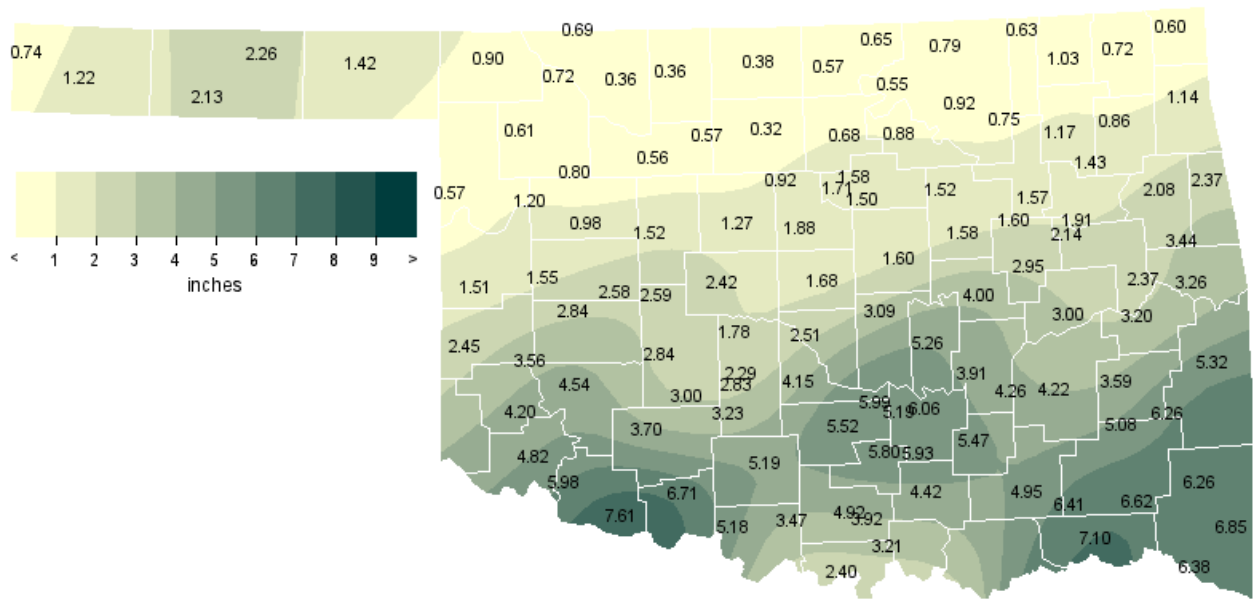
Wind Gusts (70 mph or greater)

No significant wind gusts reported in the state.

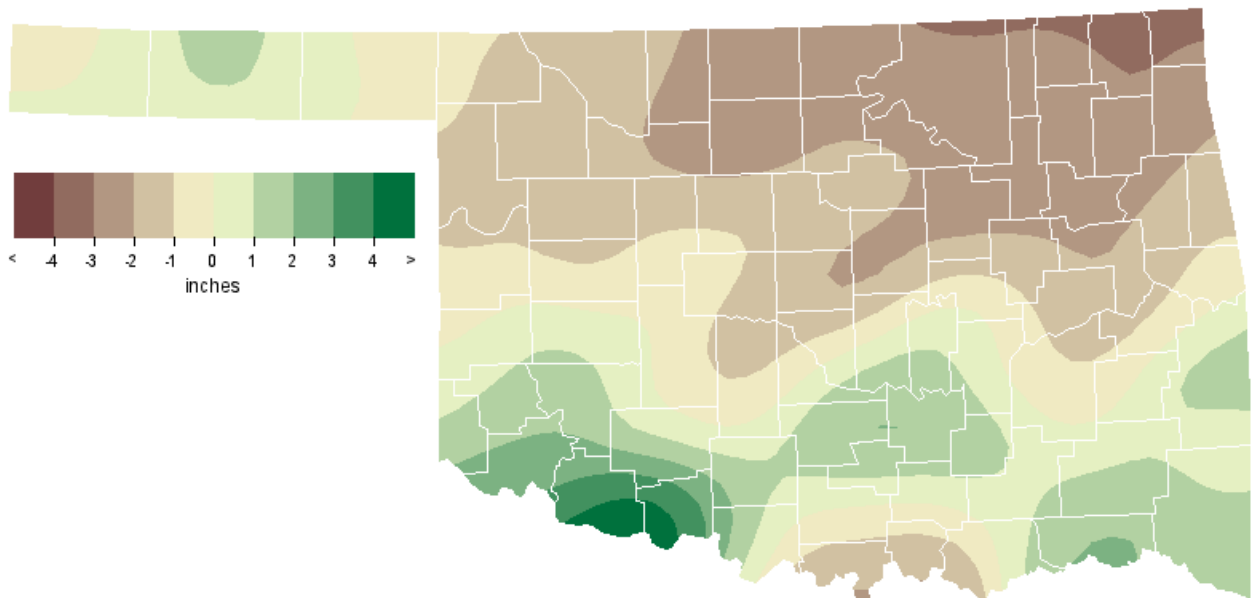
Record Event Report

Description	Day	Location	Record	Previous Record	Year
Daily Maximum Rainfall	15	McAlester	3.19 inches	2.25 inches	1967

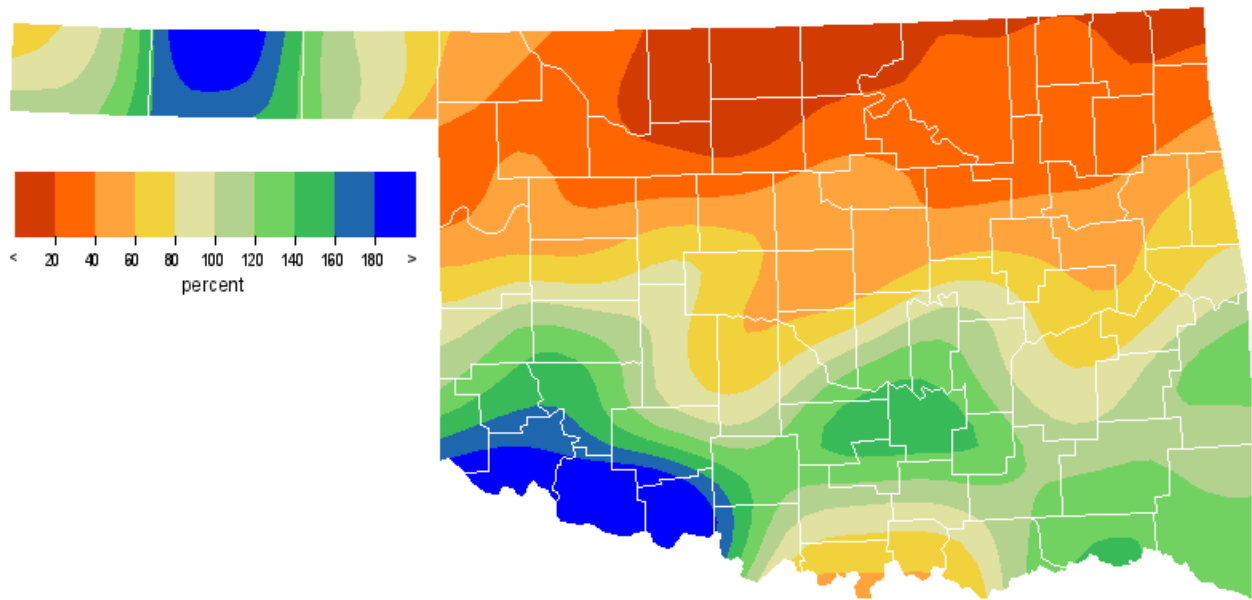
October 2006 Observed Precipitation



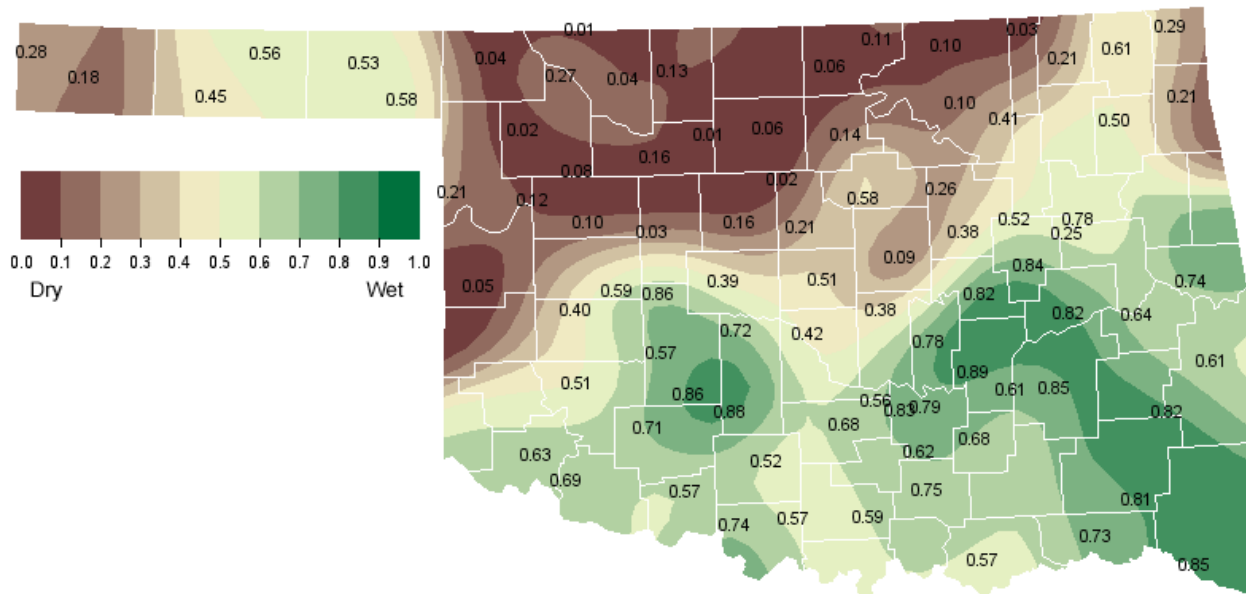
October 2006 Departure from Normal Precipitation



October 2006 Percent of Normal Precipitation



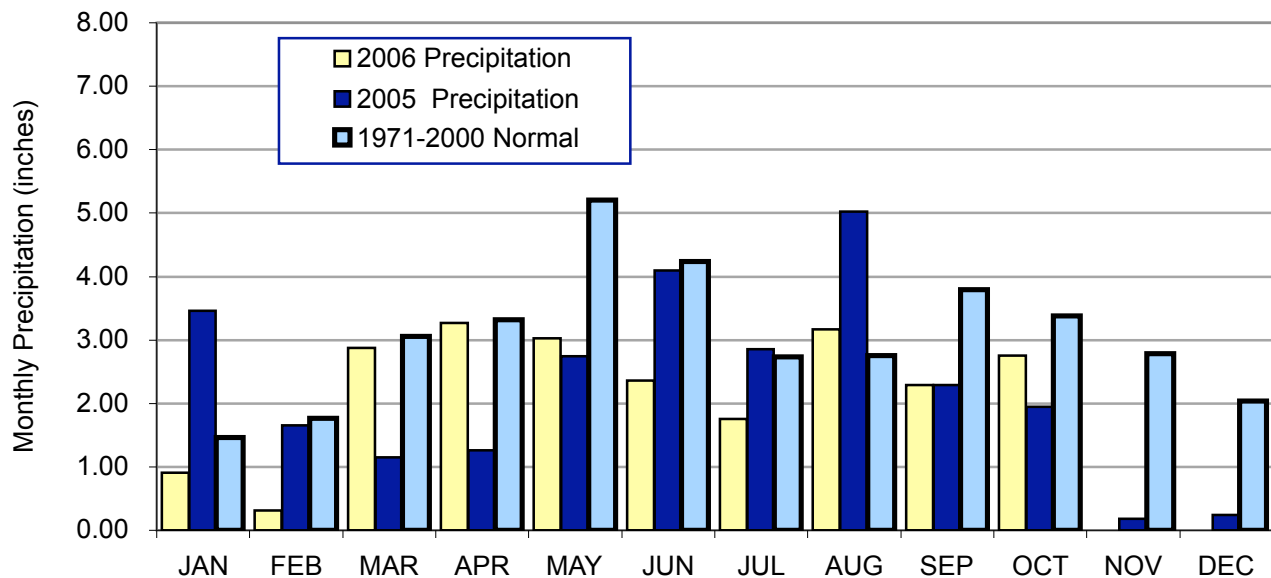
October 2006 Average Soil Moisture at 25cm



October 2006 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Oct-05
Panhandle	1.32	-0.19	54th Wettest	6.41 (2000)	0.03 (1952)	1.72
North Central	0.56	-2.10	15th Driest	9.65 (1998)	0.00 (1952)	3.18
Northeast	1.00	-2.63	14th Driest	17.33 (1941)	0.05 (1917)	2.08
West Central	2.02	-0.54	51st Wettest	9.41 (1986)	0.00 (1910)	2.77
Central	2.34	-1.32	55th Driest	13.51 (1941)	0.00 (1917)	2.11
East Central	2.98	-1.29	47th Driest	14.75 (1941)	0.19 (1904)	0.93
Southwest	4.60	1.62	20th Wettest	11.44 (1983)	0.00 (1952)	2.50
South Central	4.85	0.60	29th Wettest	14.61 (1981)	0.00 (1917)	2.04
Southeast	5.99	1.03	22nd Wettest	12.62 (1984)	0.10 (1921)	0.33
Statewide	2.75	-0.63	53rd Wettest	11.32 (1941)	0.14 (1952)	1.99

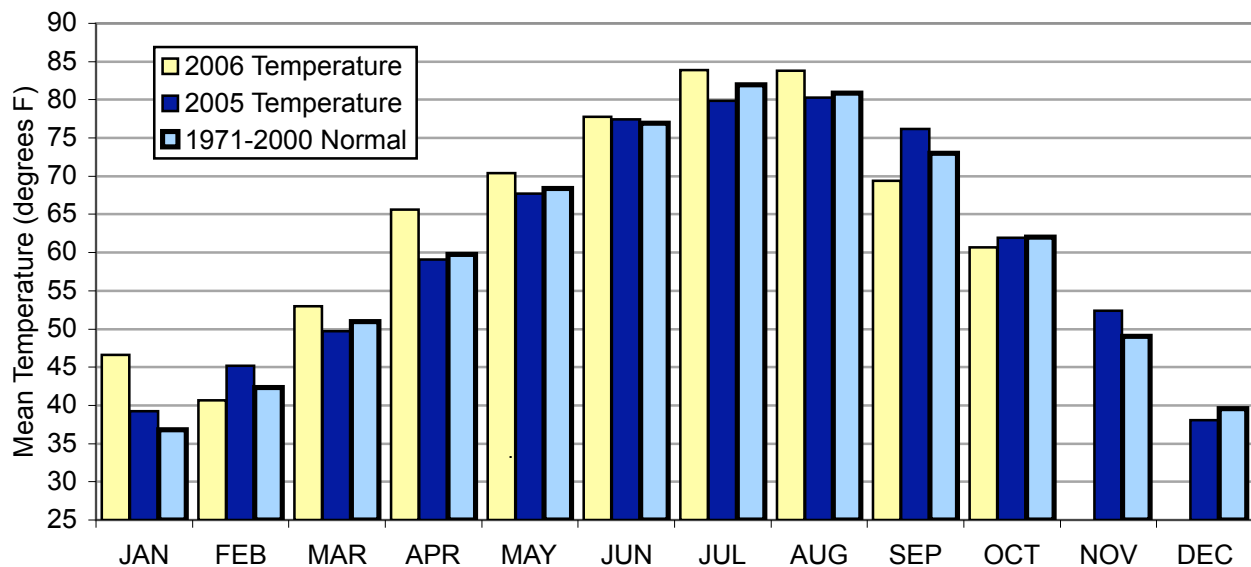
2005 and 2006 Statewide Precipitation Monthly Totals vs. Normal



October 2006 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Oct-05 (F)
Panhandle	56.8	-1.0	30th Coolest	66.4 (1963)	50.9 (1925)	59.2
North Central	60.2	-0.2	48th Coolest	69.6 (1963)	52.1 (1925)	62.5
Northeast	59.6	-1.1	29th Coolest	70.0 (1963)	52.9 (1925)	62.0
West Central	60.8	0.3	52nd Coolest	69.0 (1963)	53.8 (1925)	62.3
Central	61.4	-0.5	42nd Coolest	70.3 (1963)	54.5 (1925)	63.7
East Central	60.9	-1.2	31st Coolest	71.2 (1963)	55.5 (1925)	63.9
Southwest	62.1	-0.4	45th Coolest	70.5 (1963)	55.4 (1925)	64.3
South Central	63.3	-0.2	47th Coolest	71.5 (1963)	56.4 (1976)	65.4
Southeast	61.4	-1.0	33rd Coolest	70.6 (1963)	55.7 (1976)	64.7
Statewide	60.7	-0.6	37th Coolest	69.9 (1963)	54.4 (1925)	63.1

2005 and 2006 Statewide Temperature Monthly Averages vs. Normal



Mesonet Extremes for October 2006

Climate Division	High Temp (F)			Low Temp (F)			High Monthly Rainfall (inches)		High Daily Rainfall (inches)		
	Day	Station	Day	Station	Day	Station	Station	Day	Station		
Panhandle	100	2nd	Buffalo	22	31st	Kenton	2.26	Hooker	1.18	8th	Goodwell
North Central	97	2nd	Cherokee	23	22nd	Alva	0.80	Seiling	0.49	10th	Seiling
Northeast	96	1st	Foraker	26	22nd	Vinita	1.91	Porter	1.10	15th	Porter
West Central	93	2nd	Butler	28	22nd	Camargo	3.56	Retrop	2.16	15th	Retrop
Central	94	2nd	Stillwater	26	22nd	El Reno	5.26	Bowlegs	3.98	15th	Bowlegs
East Central	94	4th	Webbers Falls	29	22nd	Tahlequah	4.26	Stuart	3.53	15th	Calvin
Southwest	93	2nd	Tipton	29	22nd	Hinton	7.61	Grandfield	5.41	15th	Walters
South Central	95	1st	Newport	30	23rd	Burneyville	6.06	Ada	5.37	15th	Byars
Southeast	93	1st	Wister	28	23rd	Antlers	7.10	Hugo	3.24	15th	Antlers
Statewide	100	2nd	Buffalo	22	31st	Kenton	7.61	Grandfield	5.41	15th	Walters

November Climatological Outlook

Oklahoma's weather descends rather rapidly during November from the pleasantries of autumn into the chill of early winter. The state's normal temperature (averaged statewide) during the month, 49.0 degrees Fahrenheit, is the 4th lowest of any of the year's 12 months. Based on monthly averages across the state, November is 13 degrees cooler than October, easily Oklahoma's largest temperature difference between consecutive months. The increasingly frequent intrusions of cooler (and sometimes frigid) air, frequently accompanied by some dreary, dismal weather, are usually separated by interludes of gorgeous autumn days. The pleasant interludes provide farmers with an opportunity to complete the harvest of peanuts, cotton, and sorghum, or to finish drilling the new wheat crop. The statewide-averaged November normal precipitation is 2.78 inches, making November the 6th wettest of the months in Oklahoma. Snow, sleet, and ice are frequent late-November visitors to the state, too often creating travel hazards during the long Thanksgiving weekend.

Temperature

Mean: 49.0 degrees
Warmest November: 1989, 56.2 degrees
Coolest November: 1929, 42.6 degrees
Warmest location: Waurika, 53.4 degrees
Coolest Location: Turpin, 42.8 degrees
Hottest recorded: 95 degrees, Waukomis, November 1, 1914
Coalgate, November 1, 1937
Coldest recorded: -15 degrees, Kenton, November 28, 1976

Statewide-averaged monthly temperature extremes for the Novembers since 1892 have varied between 56.0 degrees in 1999 and 41.3 degrees in 1929. The range of normal daily average temperatures across the state, as published by the National Climatic Data Center, is from 53.4 degrees at Waurika to 42.8 degrees at Turpin. Normal daily maximum temperatures fall between Waurika's 65.3 degrees and Newkirk's 56.6 degrees. Normal daily minimum temperatures range from 42.9 degrees at Okemah to 28.4 degrees at three panhandle reporting stations (Turpin, Boise City, and Beaver). Hot weather is rare, but not absent, during the month. Coalgate set a state record for November's highest temperature when the thermometer registered 95 degrees on November 1, 1937. November's coldest day, according to the Oklahoma record book, occurred on November 28, 1976 when a temperature of 15 degrees below zero (-15) was reported at Kenton.

Precipitation

Mean: 2.78 inches
Wettest Year: 1909, 5.72 inches
Driest Year: 1910, 0.12 inches
Wettest location: Carnasaw Fire Tower, 5.64 inches
Driest location: Goodwell and Regnier, 0.61 inches
Most recorded: 17.01 inches, Idabel, 2000

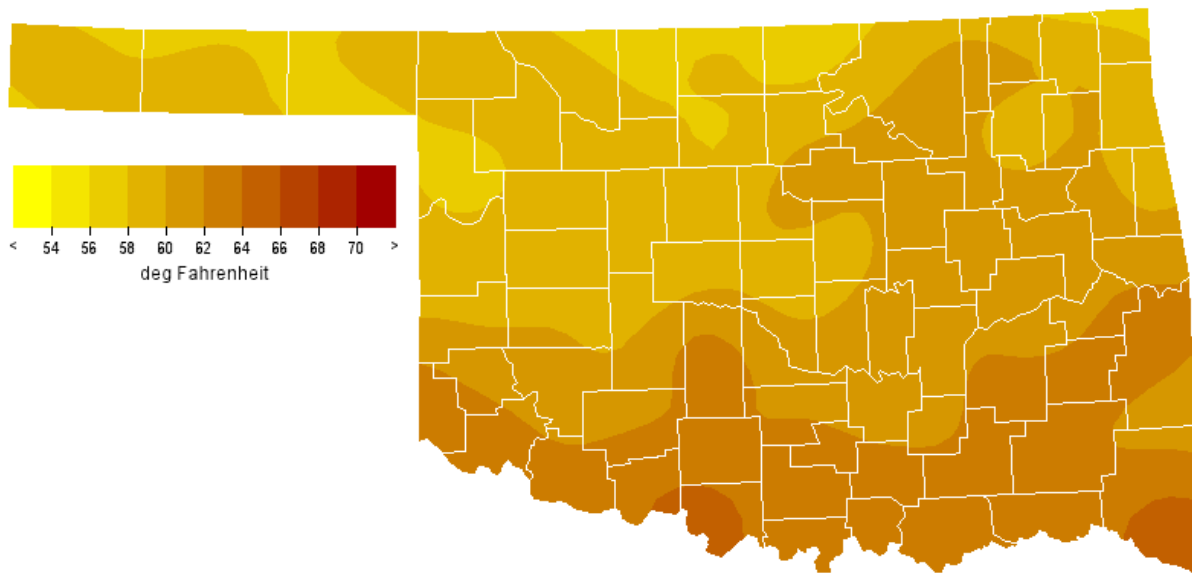
November precipitation is highly variable from year-to-year. The state's driest recorded November, a statewide averaged precipitation of 0.12 inches was attained three times in 1910, 1949, and 1989. The record high precipitation for November is 5.72 inches in 1909. During much of the state's history, November was thought of as a much drier month than it is today. During the period from 1931 through 1960, the statewide-averaged precipitation during November across Oklahoma was only 1.87 inches, nearly a full inch less than the currently established monthly normal (compiled from 1971 through 2000). Annual precipitation across Oklahoma compiled from the earlier was a full 3.25 inches less than the value currently in use. Increased precipitation during November has contributed more to the recent increases in annual precipitation than any other month. At individual locations within Oklahoma, November normal precipitation ranges 5.64 inches at the Carnasaw Fire Tower in McCurtain County to 0.61 inch at the panhandle's Goodwell and Regnier. Stilwell averages 9.6 days with measurable precipitation (at least 0.01 inch), whereas Leedey averages a mere 2.4 such days. Ponca City holds the record for most precipitation in one day at a recognized reporting site during November: 11.11 inches on November 20, 1979. Idabel recorded 17.01 inches of precipitation during November 2000 to establish the record for total precipitation during the month at a regular reporting station.

Tornadoes

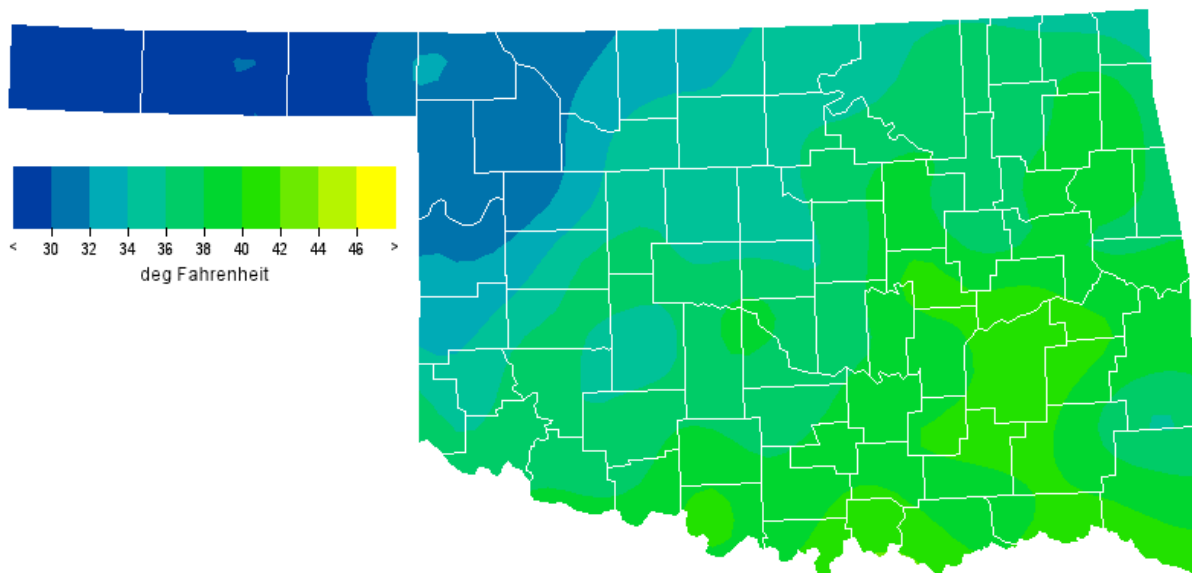
Average November Tornadoes: 1
Most: 12 (1958)

Severe and dangerous weather takes on a myriad of forms during November. There were 76 November tornadoes reported in the state from 1950 through 2003. Twelve of those were recorded on November 17, 1958 to establish the state record for most November tornadoes, both during a month and on a day. A tornado that struck Camel Creek School and the town of Bethany on November 19, 1930 killed 23 people. On November 4, 1922, a tornado between Shamrock and Drumright resulted in 11 deaths. The most recent November tornado fatalities occurred on November 19, 1973 when five people were killed in Blanchard. There were no tornadoes reported within the state during 32 of those 54 Novembers.

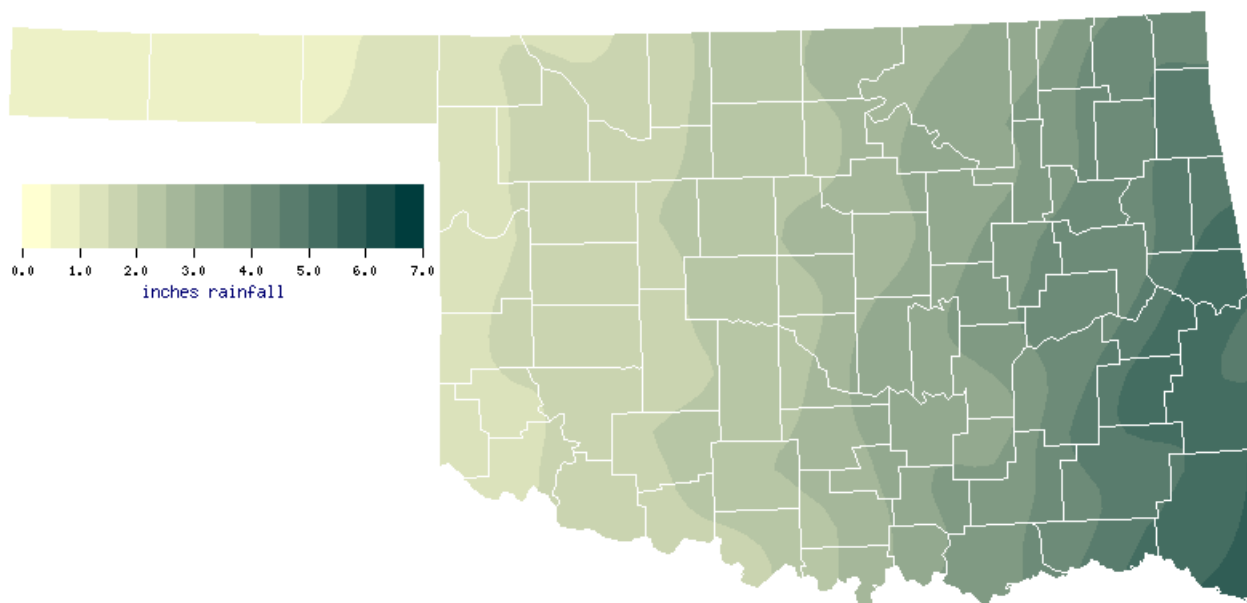
November Normal Monthly Maximum Temperature (1971-2000)



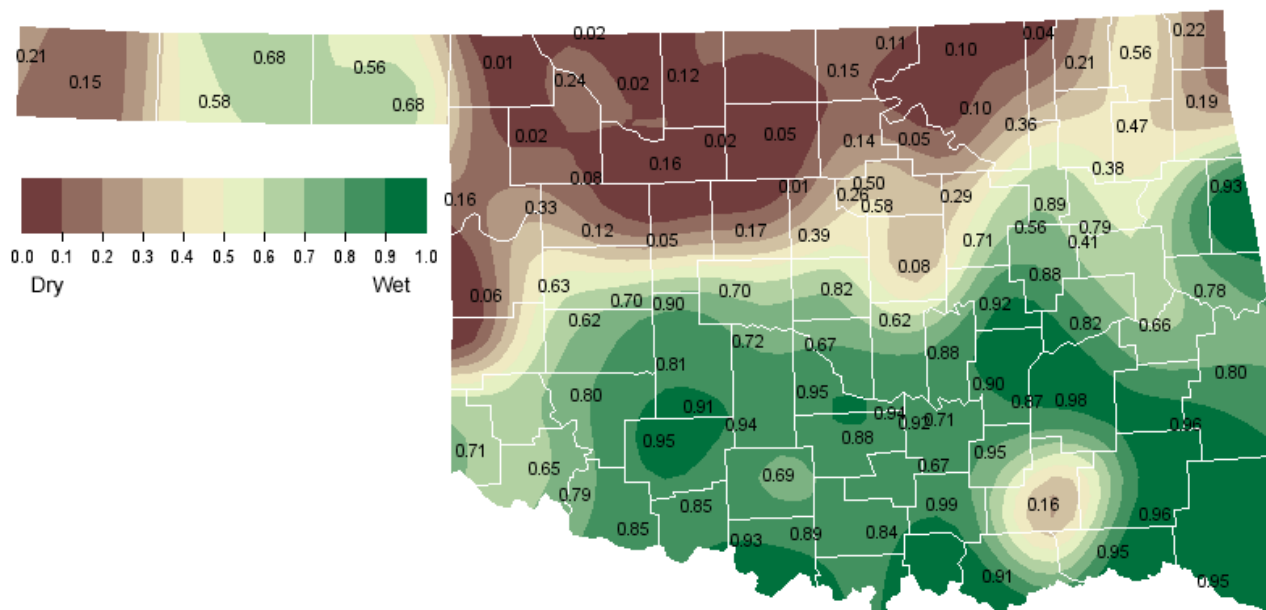
November Normal Monthly Minimum Temperature (1971-2000)



November Normal Precipitation (1971-2000)



November 1, 2006 Soil Moisture Conditions at 25cm



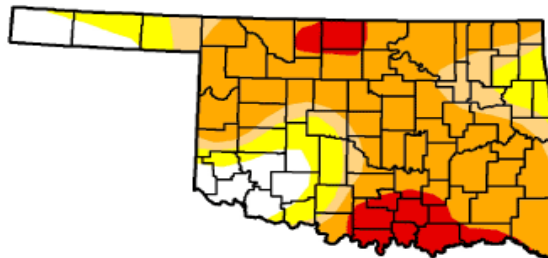
U.S. Drought Monitor

Oklahoma

October 31, 2006
Valid 8 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	10.4	89.6	76.2	64.1	10.0	0.0
Last Week (10/24/2006 map)	10.2	89.8	76.3	64.2	10.0	0.0
3 Months Ago (8/8/2006 map)	0.0	100.0	100.0	91.8	63.1	13.6
Start of Calendar Year (1/3/2006 map)	1.3	98.7	79.9	40.8	10.1	5.7
Start of Water Year (10/3/2006 map)	2.7	97.3	92.7	46.2	16.6	0.0
One Year Ago (11/1/2005 map)	41.4	58.6	23.4	10.6	0.0	0.0



Intensity:

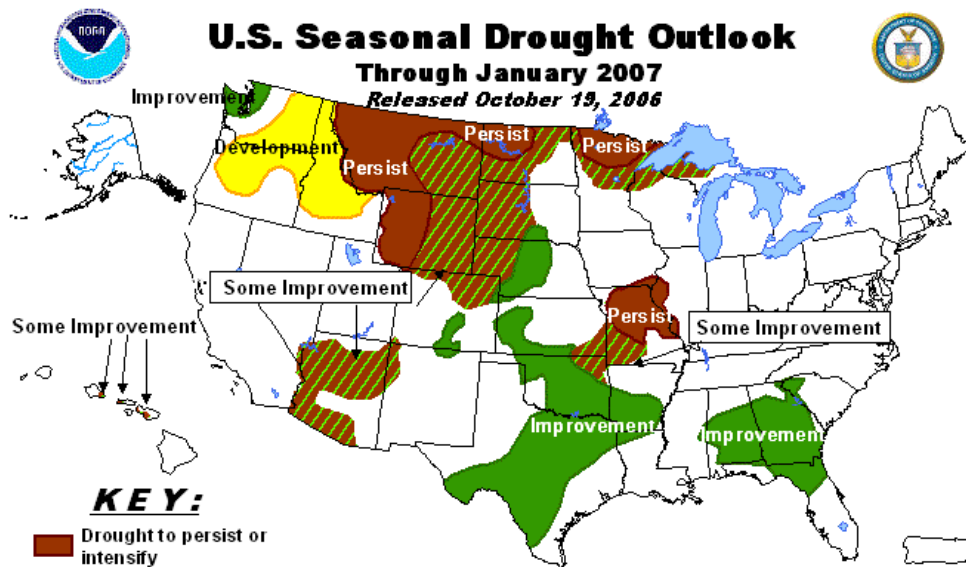
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

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

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



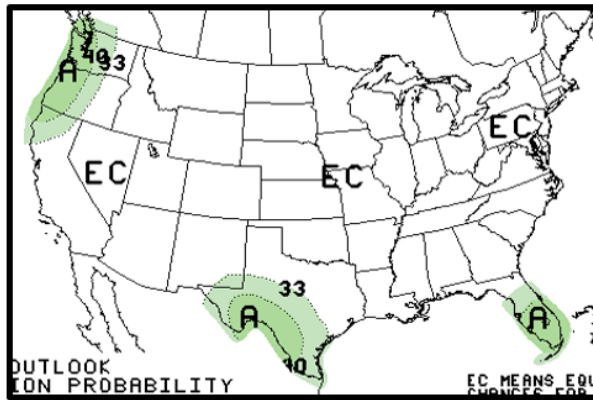
Released Thursday, November 2, 2006
Author: Brad Rippey, U.S. Department of Agriculture



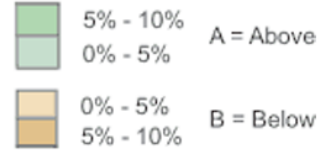
- KEY:**
- Drought to persist or intensify
 - Drought ongoing, some improvement
 - Drought likely to improve, impacts ease
 - Drought development likely

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.

November 2006 U.S. Precipitation Forecast

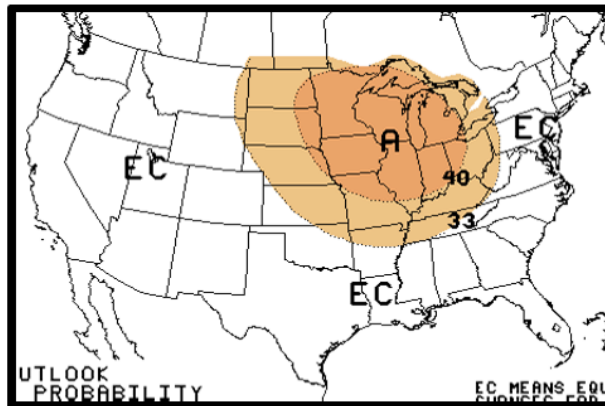


Percent Likelihood of Above or Below Average Precipitation*

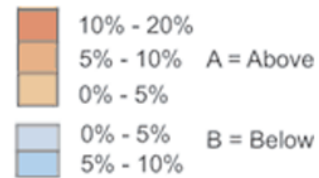


*EC indicates no forecasted anomalies due to lack of model skill.

November 2006 U.S. Temperature Forecast



Percent Likelihood of Above and Below Average Temperatures*

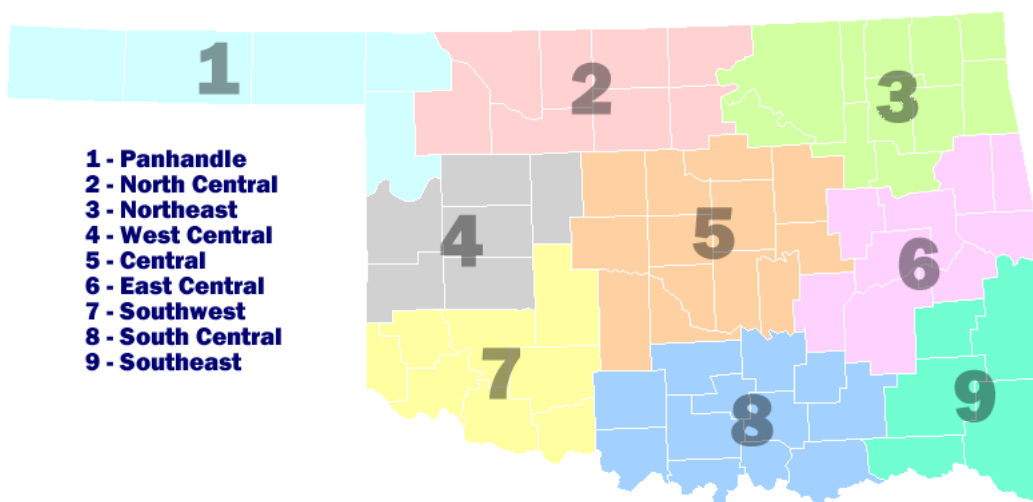


*EC indicates no forecasted anomalies due to lack of model skill.

November Climate Normals

Climate Division	Max. Temperature (°F)	Min. Temperature (°F)	Avg. Temperature (°F)	Precipitation (inches)
1.0	58.8	30.2	44.6	1.0
2.0	58.1	33.4	45.8	2.1
3.0	60.0	37.5	48.8	3.6
4.0	59.0	34.3	46.7	1.7
5.0	60.3	37.2	48.8	2.7
6.0	60.9	39.0	50.0	4.2
7.0	61.7	36.3	49.0	1.7
8.0	62.7	39.2	51.0	3.1
9.0	63.0	39.0	51.0	5.0
Statewide	60.5	36.4	48.5	2.9

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. Ken C. Crawford, Director and State
Climatologist

Editor

Gary D. McManus, Climatologist

Contributors

Gary D. McManus

Mark A. Shafer, Director of Climate
Information

Derek S. Arndt, Assistant 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
120 David L. Boren Blvd., Suite 2900
Norman, OK 73072-7305
tel: 405-325-2541
fax: 405-325-2550
e-mail: ocs@ou.edu
<http://www.ocs.ou.edu>