

OKLAHOMA MONTHLY CLIMATE SUMMARY

OCTOBER 2007



Oklahoma's rainy 2007 seemingly came to an end following the second month in a row of below normal precipitation. Even though October was the 49th wettest on record statewide since 1895, a deficit of almost a half of an inch remained at month's end. October's warmth was undeniable, however, ranking as the 21st warmest on record. There were some heavy rains during the month associated with a couple of bouts of severe weather. There were no tornadoes reported in October – the main severe threats being high winds and large hail. In one instance, a tent at the Tulsa Oktoberfest celebration was destroyed by winds gusting to 85 mph in the area, injuring 50. A 90 mph wind gust was recorded at the Oklahoma Mesonet site outside of Eufaula associated with that same storm system.

Precipitation

While the statewide average precipitation total was just under three inches, a few areas had more substantial totals. Northeast Oklahoma had a surplus of more than an inch to rank as the 29th wettest on record for that area. Parts of central and east central Oklahoma were also above normal for the month, with some stations receiving 6-7 inches of rainfall. The Panhandle and far western Oklahoma, on the other hand, struggled to collect any moisture in their rain gauges. Of the six Mesonet sites in the Panhandle, four received no rainfall. The Panhandle region averaged about a quarter of an inch, more than an inch below normal, ranking as the 11th driest November on record for that area. That continues an extended dry period for the Panhandle region, which is now more than four inches below normal for the year, the 24th driest such period on record for that area. The statewide average precipitation has slipped a bit and is now the 9th wettest on record for the January-October period. Central Oklahoma, on the other hand, is still experiencing their wettest year on record thus far with a surplus of more than 16 inches through October.

Temperature

The entire state was above normal for the month, but the Panhandle was especially so with its 9th warmest October on record. The statewide average temperature came in at just under 64 degrees, more than two degrees above normal. The year is still on pace to finish with above normal temperatures at just over 63 degrees for the January-October period, the 39th warmest on record.

October 2007 Statewide Extremes

Description	Extreme	Station	Date
High Temperature	96°F	Beaver	Oct. 1
		Buffalo	Oct. 20
		Waurika	Oct. 4
Low Temperature	25°F	Buffalo	Oct. 26
High Precipitation	7.31 in.	Newkirk	
Low Precipitation	0.00 in.	Boise City Goodwell Hooker Kenton	

October Daily Highlights

October 1-3: The month began with a cold front in the early morning hours sweeping through northwestern Oklahoma before stalling in central portions of the state. The front generated showers and thunderstorms in the southeast later that day. High temperatures ahead of the front were in the 90s with 80s behind the front. The boundary retreated overnight on the second as a warm front. Low temperatures were 10-15 degrees above normal in the 60s and 70s. The front swept to the south once again that afternoon and once again showers and thunderstorms formed ahead of it. Some of the storms exceeded severe limits with winds measured at 75 mph by the Medicine Park Mesonet site. The front managed to push across the rest of the state overnight on the third bringing more rain and cooler weather. Low temperatures that morning dropped to 38 degrees at Buffalo. High temperatures that afternoon rebounded into the 80s. Most of the heavy rainfall during this period was confined to east central Oklahoma where more than three inches fell in localized areas.

October 4-5: The next two days were dominated by surface high pressure. Highs were mainly in the 80s and 90s with winds gusting to 35-40 mph from the south. Low temperature held in the 60s and 70s with the aid of the strong winds.

October 6-8: Moisture streamed north into Oklahoma on strong southerly winds as the remnants of a weak tropical disturbance moved northward into Oklahoma. Light rain and a few storms popped up across the state that morning in central Oklahoma with amounts generally less than an inch. More storms on a muggy and moist day on the seventh. A cold front moved into western Oklahoma on the eighth and generated another round of showers and storms. Well over two inches of rain fell in eastern Oklahoma as the front progressed through the southeast. Rainfall totals of more than two inches during this three-day period were recorded in the far northeastern and east central sections of the state.

October 9-13: This five day period was devoid of precipitation as drier and cooler air moved in following the cold front's passage. Low temperatures ranging from the 40s in the northwest to the 60s in southern sections gave way to highs in the 70s and 80s during the afternoon. Winds kicked up in response to an approaching storm system on the 13th.

October 14-17: A powerful upper-level low pressure system to the west of Oklahoma helped push a cold front into the state, generating showers and storms. The 14th was a violent day weather-wise as storms went severe in the moist environment. A squall line of strong to severe storms marched across the state that day and into the next morning. Numerous reports of high winds and hail were the result, to go along with heavy rainfall. A couple of days of respite as the upper-level low spun to the west gave way to more severe weather on the 17th as the storm system finally moved over the state. A classic springtime dryline set up in western Oklahoma to act as a trigger for storms. Many reports of hail and strong winds were the result. Winds gusted to 90 mph at the Eufaula Meosnet site in McIntosh County, and wind speeds of 86 mph and 85 mph were recorded at Kingfisher and Tulsa, respectively. The winds destroyed a large tent at the Oktoberfest celebration in Tulsa, injuring 50. The winds also destroyed 15-20 mobile homes near Oologah in Rogers County, injuring five. The rainfall during this period was generally 3-5 inches across central and north central Oklahoma, as well as more than two inches in the southeast.

October 18-20: The weather was much more pleasant on the 18th and 19th as the upper-level storm moved to the northeast. Sunny skies with highs in the 70s eventually came to an end as another upper-level low approached from the west on the 20th. Winds increased to 30-35 mph that day with increasing cloudiness.

October 2007 Statewide Statistics			
Temperature			
	Average	Depart.	Rank (1895-2007)
Month (Oct)	63.8°F	2.5°F	21st Warmest
Season-to-Date (Sep-Oct)	68.9°F	2.1°F	21st Warmest
Year-to-Date (Jan-Oct)	63.2°F	0.4°F	39th Warmest
Precipitation			
	Total	Depart.	Rank (1895-2007)
Month (Oct)	2.95 in.	-0.43 in.	49th Wettest
Season-to-Date (Sep-Oct)	5.87 in.	-1.32 in.	52nd Driest
Year-to-Date (Jan-Oct)	38.44 in.	6.59 in.	9th Wettest

Depart. = Departure from 30-year normal

October 21-22: A strong cold front moved through the northwest on the 21st which cooled down the unseasonably warm weather already being experienced that day. Highs soared into the 80s and 90s ahead of the front and dropped into the 50s and 60s behind the front. Storms fired later that night along the front. The 22nd saw the storm system move over the state and supply Oklahoma with widespread precipitation and unseasonably cool air. Highs were 10-20 degrees below normal across the state, barely reaching the 40s and 50s.

October 23-31: The final nine days of the month were filled with pleasant fall weather. Sunny skies and highs in the 60s and 70s were the norm to go along with low temperatures in the 40s. A few ups and downs during this period culminated on Halloween with a cold front cooling things down in time for trick-or-treating later that night.

October 2007 Severe Weather

Significant Tornadoes (EF2 or greater)

No significant tornadoes were reported in the state.

Hail (2 inches in diameter or greater)

No significant hail were reported in the state.

Wind Gusts (70 mph or greater)

Speed (m.p.h.)	Location	County	Day
75	3 W Medicine Park	Comanche	2
90	4 WNW Eufaula	McIntosh	17
86	2 NE Kingfisher	Kingfisher	17
85	5 NNE Tulsa	Tulsa	17
76	5 SSE Haskell	Muskogee	17
74	7 E Centrailia	Craig	17
73	Weatherford	Custer	17
70	Stidham	McIntosh	17
70	Eufaula	McIntosh	17
70	Peggs	Cherokee	17

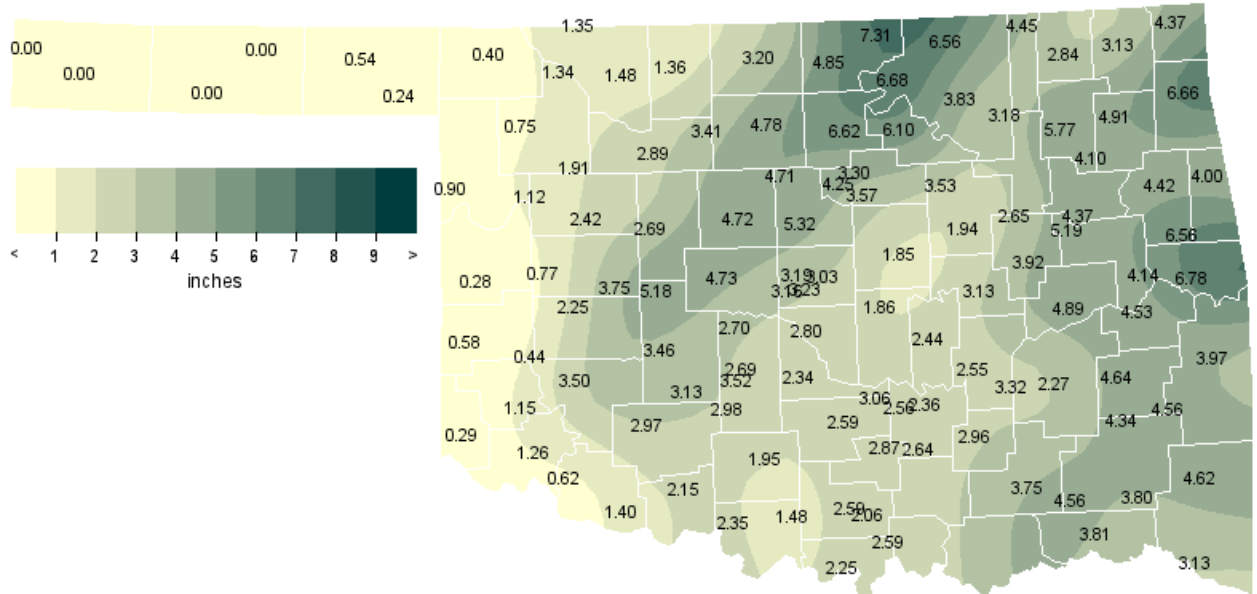
Flooding

No significant floods were reported in the state.

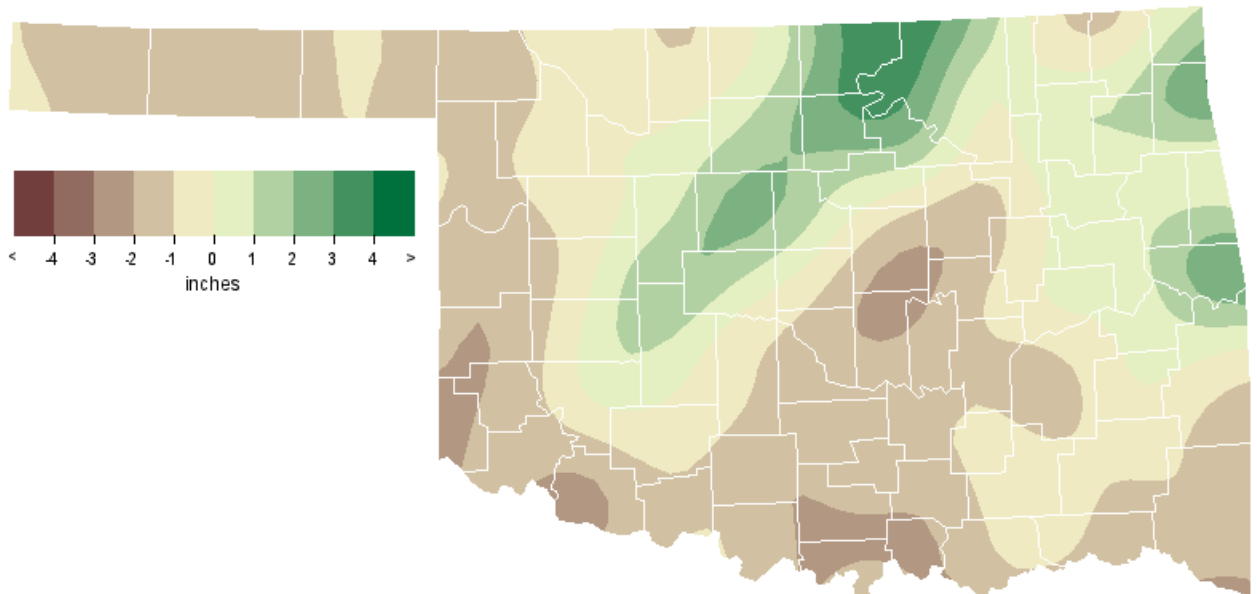
Record Event Reports

No significant record events were reported in the state.

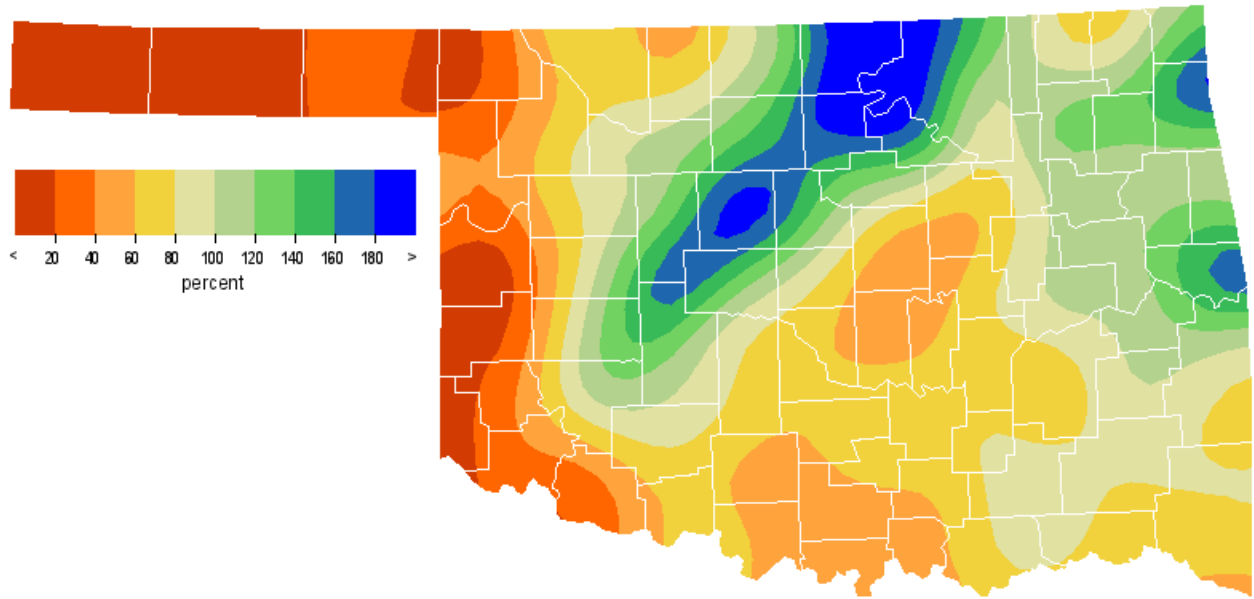
October 2007 Observed Precipitation



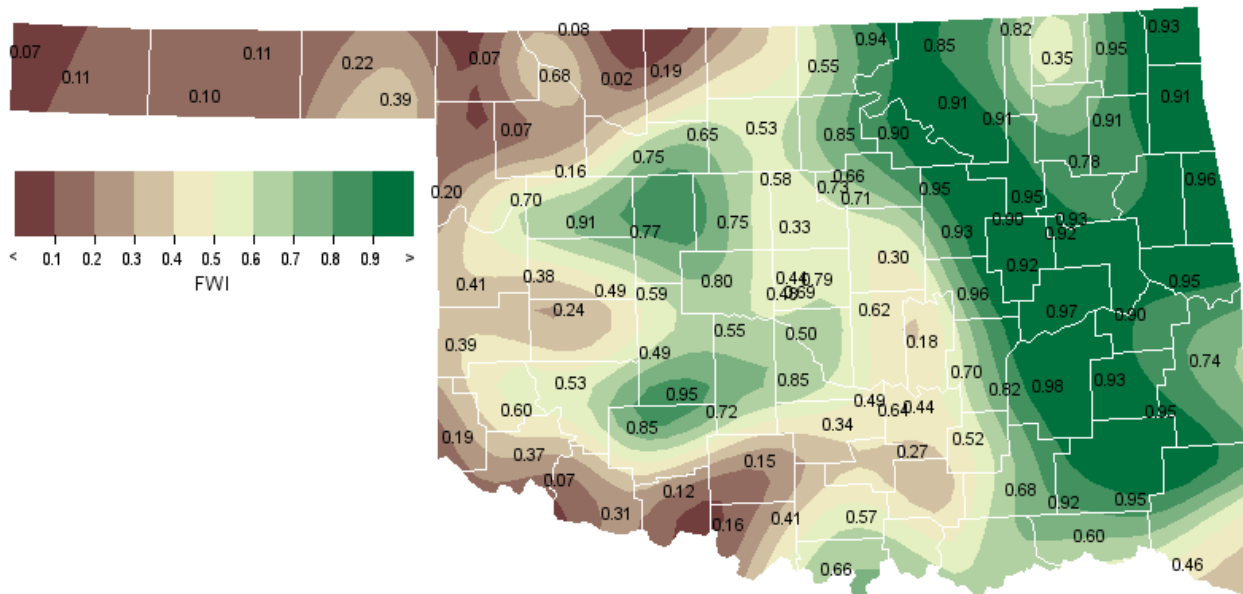
October 2007 Departure from Normal Precipitation



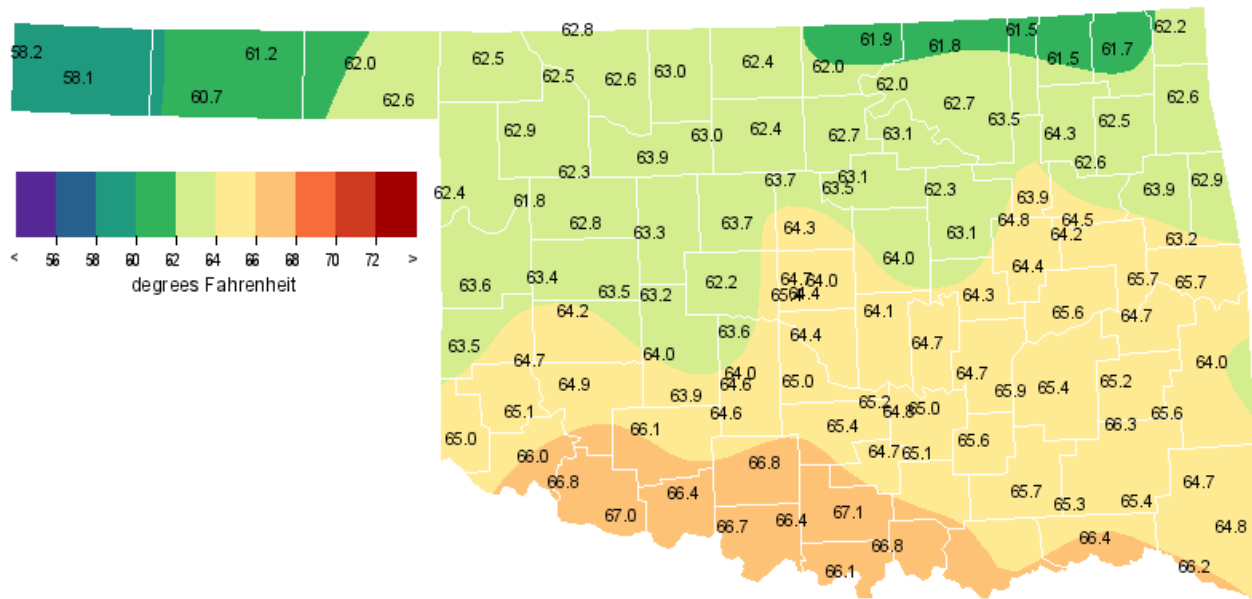
October 2007 Percent of Normal Precipitation



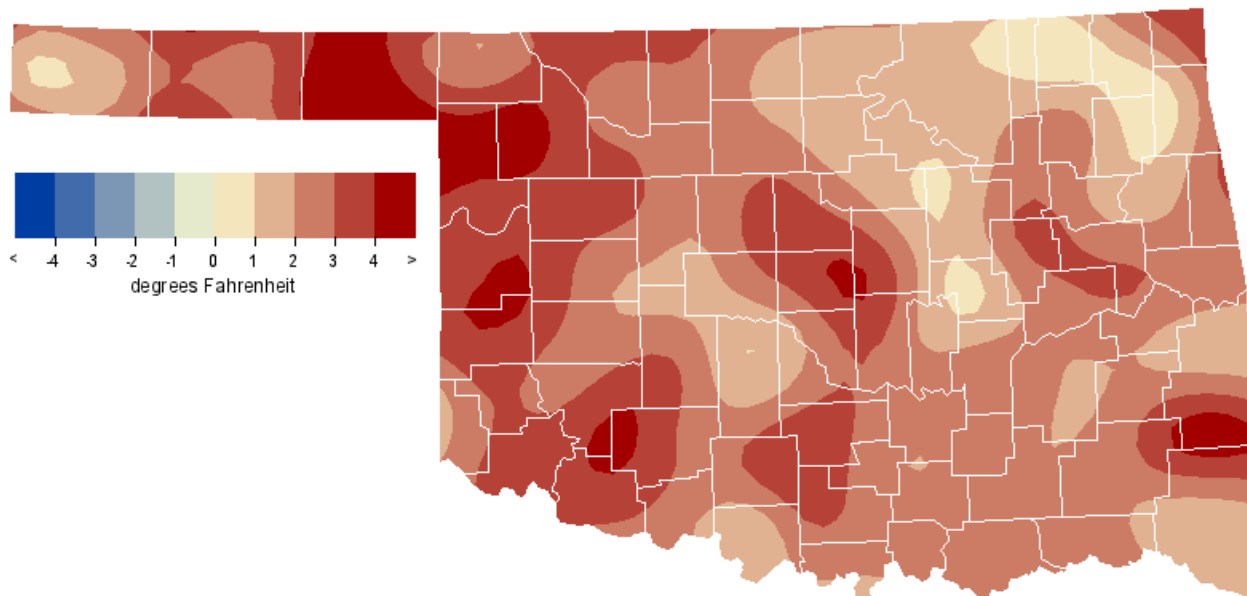
October 2007 Average Soil Moisture at 25cm



October 2007 Average Temperature



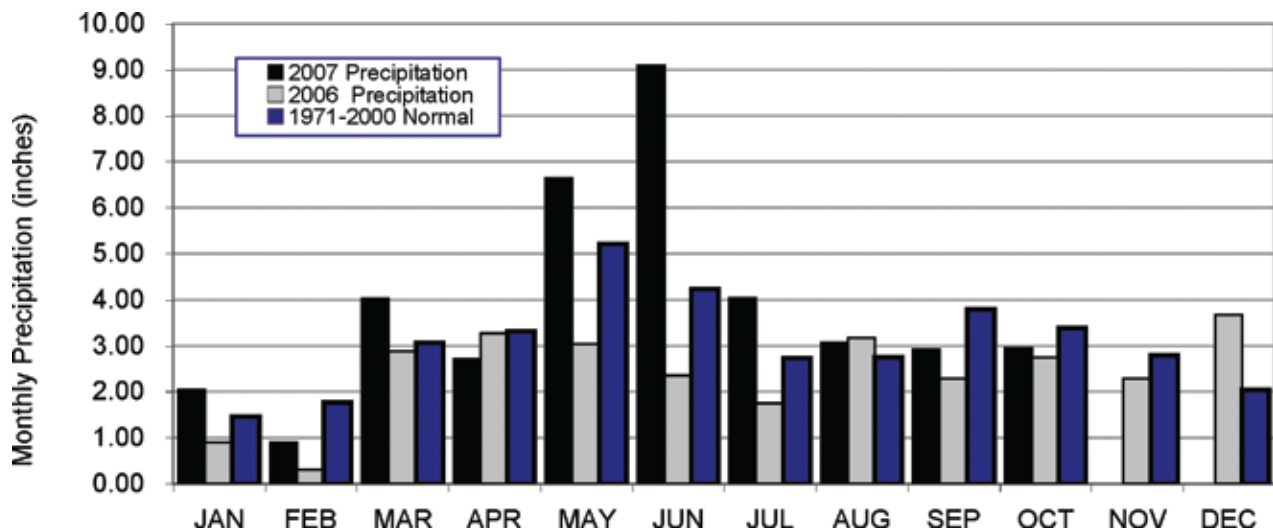
October 2007 Departure from Normal Temperature



October 2007 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Oct-06
Panhandle	0.26	-1.25	11th Driest	6.41 (2000)	0.03 (1952)	1.32
North Central	3.17	0.51	32nd Wettest	9.65 (1998)	0.00 (1952)	0.56
Northeast	4.78	1.15	29th Wettest	17.33 (1941)	0.05 (1917)	1.00
West Central	1.59	-0.97	44th Driest	9.41 (1986)	0.00 (1910)	2.02
Central	3.26	-0.40	42nd Wettest	13.51 (1941)	0.00 (1917)	2.34
East Central	4.25	-0.02	46th Wettest	14.75 (1941)	0.19 (1904)	2.98
Southwest	2.28	-0.70	55th Driest	11.44 (1983)	0.00 (1952)	4.60
South Central	2.54	-1.71	44th Driest	14.61 (1981)	0.00 (1917)	4.85
Southeast	4.16	-0.80	50th Wettest	12.62 (1984)	0.10 (1921)	5.99
Statewide	2.95	-0.43	49th Wettest	11.32 (1941)	0.14 (1952)	2.75

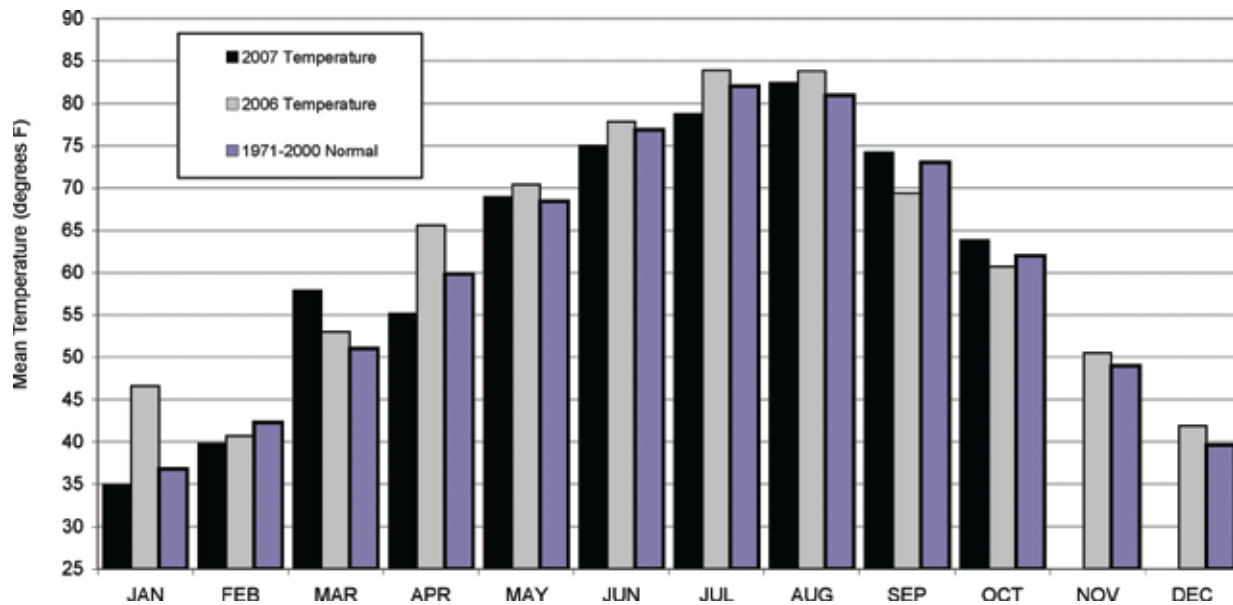
2006 and 2007 Statewide Precipitation Monthly Totals vs. Normal



October 2007 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Oct-06 (F)
Panhandle	61.0	3.2	9th Warmest	66.4 (1963)	50.9 (1925)	56.8
North Central	62.6	2.2	25th Warmest	69.6 (1963)	52.1 (1925)	60.2
Northeast	62.7	2.0	32nd Warmest	70.0 (1963)	52.9 (1925)	59.6
West Central	63.4	2.9	15th Warmest	69.0 (1963)	53.8 (1925)	60.8
Central	64.0	2.1	27th Warmest	70.3 (1963)	54.5 (1925)	61.4
East Central	64.7	2.6	28th Warmest	71.2 (1963)	55.5 (1925)	60.9
Southwest	65.3	2.8	16th Warmest	70.5 (1963)	55.4 (1925)	62.1
South Central	65.8	2.3	25th Warmest	71.5 (1963)	56.4 (1976)	63.3
Southeast	65.4	3.0	26th Warmest	70.6 (1963)	55.7 (1976)	61.4
Statewide	63.8	2.5	21st Warmest	69.9 (1963)	54.4 (1925)	60.7

2006 and 2007 Statewide Temperature Monthly Averages vs. Normal



Mesonet Extremes for October 2007

Climate Division	High Temp			Low Temp			High Monthly Rainfall			High Daily Rainfall		
	(F)	Day	Station	(F)	Day	Station	(inches)	Station	(inches)	Day	Station	
Panhandle	96	4th	Beaver	25	26th	Buffalo	0.90	Arnett	0.76	17th	Arnett	
North Central	94	4th	Alva	29	26th	Seiling	7.31	Newkirk	3.88	17th	Newkirk	
Northeast	89	2nd	Bixby	35	25th	Vinita	6.68	Burbank	2.99	17th	Foraker	
West Central	92	20th	Erick	29	26th	Butler	3.75	Weatherford	1.56	17th	Weatherford	
Central	92	2nd	Marshall	26	26th	El Reno	5.32	Guthrie	2.26	17th	Kingfisher	
East Central	91	2nd	Calvin	34	25th	Cookson	6.78	Sallisaw	3.56	2nd	Cookson	
Southwest	95	20th	Tipton	31	26th	Mangum	5.18	Hinton	2.78	17th	Hinton	
South Central	96	1st	Waurika	30	26th	Sulphur	3.75	Lane	1.46	22nd	Centrahoma	
Southeast	90	1st	Idabel	32	30th	Wister	4.64	Wilburton	2.43	15th	Mt Herman	
Statewide	96	4th	Beaver	25	26th	Buffalo	7.31	Newkirk	3.88	17th	Newkirk	

November Climatological Outlook

NORMAN - 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.

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

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.

Temperature

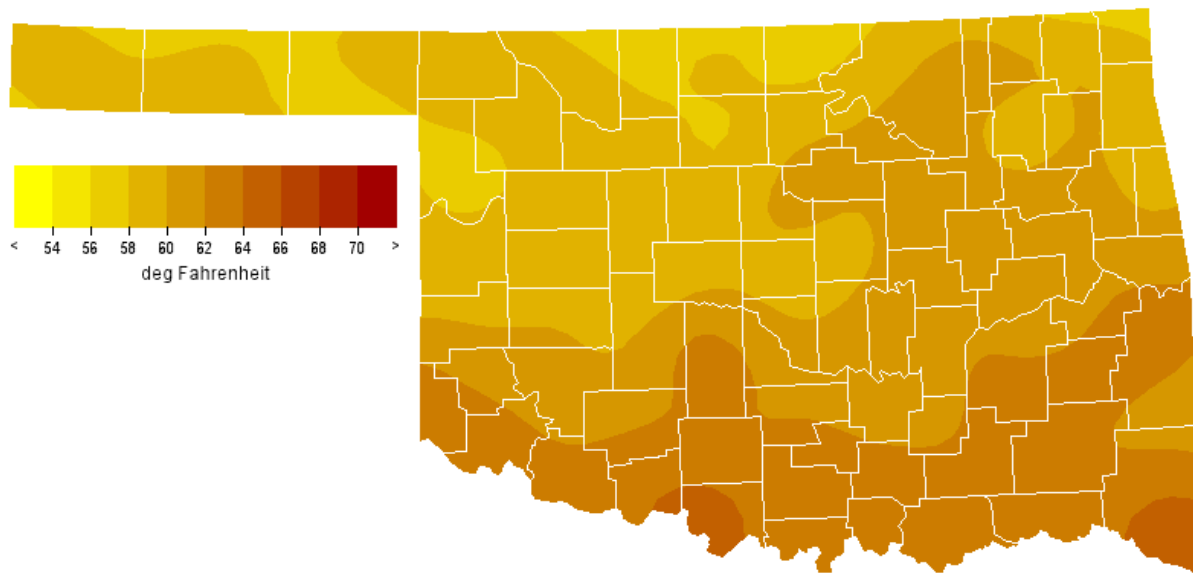
Mean: 49.0 degrees
Warmest November: 1989, 56.2 degrees
Coolest November: 1929, 42.6 degrees
Warmest location: Waurika, 53.4 degrees
Coolest location: Turpin, 42.8 degrees
Hottest recorded: 95 degrees, Waukomis, November 1, 1914; Coalgate, November 1, 1937
Coldest recorded: -15 degrees, Kenton, November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

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.

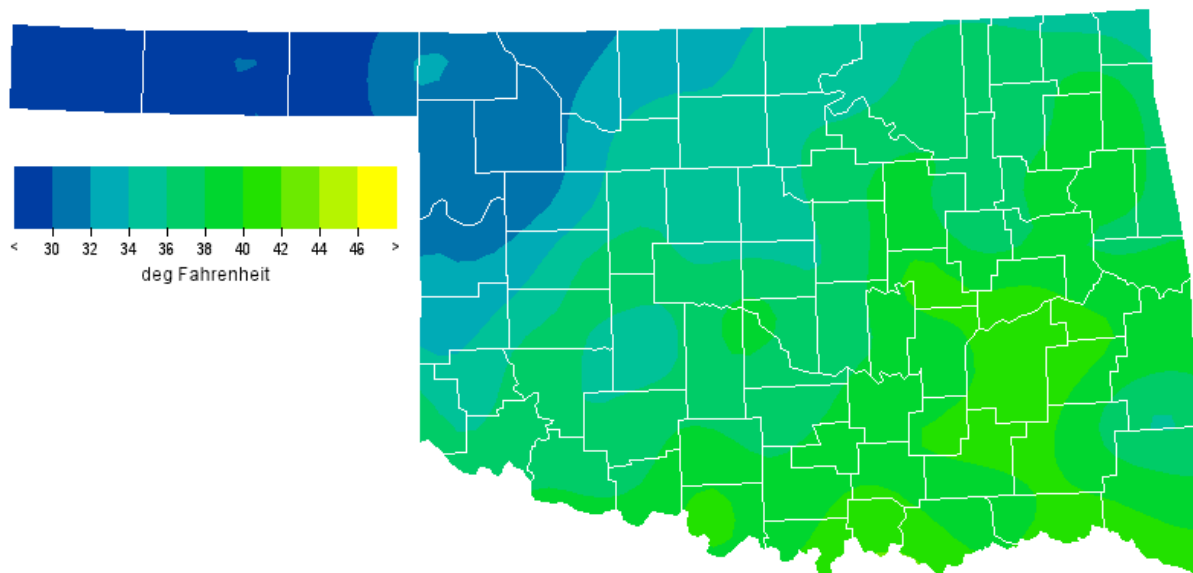
Tornadoes

Average November Tornadoes: 1
Most: 12 (1958)

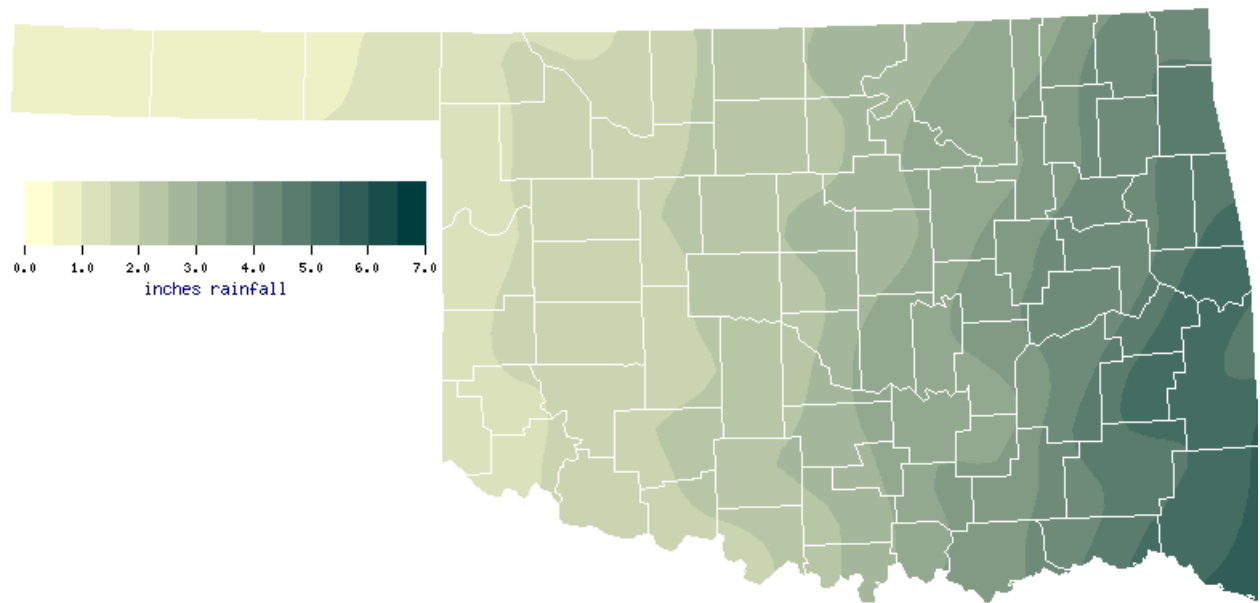
November Normal Daily Maximum Temperature (1971-2000)



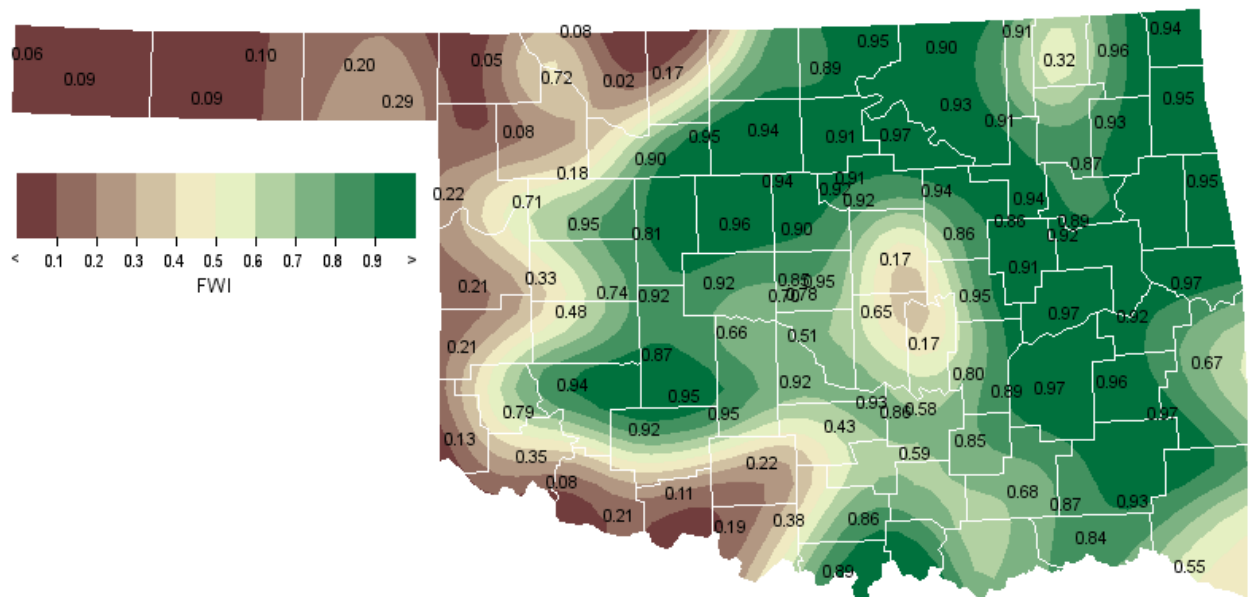
November Normal Daily Minimum Temperature (1971-2000)



November Normal Precipitation (1971-2000)



November 1, 2007 Soil Moisture Conditions at 25cm



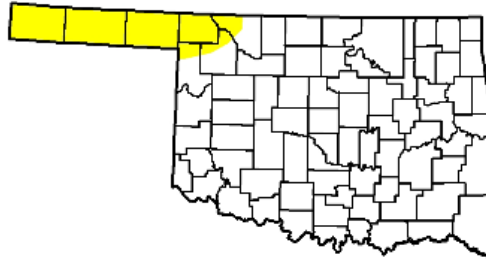
U.S. Drought Monitor

Oklahoma

October 30, 2007
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	88.8	11.2	0.0	0.0	0.0	0.0
Last Week (10/23/2007 map)	88.8	11.2	0.0	0.0	0.0	0.0
3 Months Ago (08/07/2007 map)	97.8	2.2	0.0	0.0	0.0	0.0
Start of Calendar Year (01/02/2007 map)	31.3	68.7	39.8	24.5	18.2	0.0
Start of Water Year (10/02/2007 map)	95.6	4.4	0.0	0.0	0.0	0.0
One Year Ago (10/31/2006 map)	10.4	89.6	76.2	64.1	10.0	0.0



Intensity:

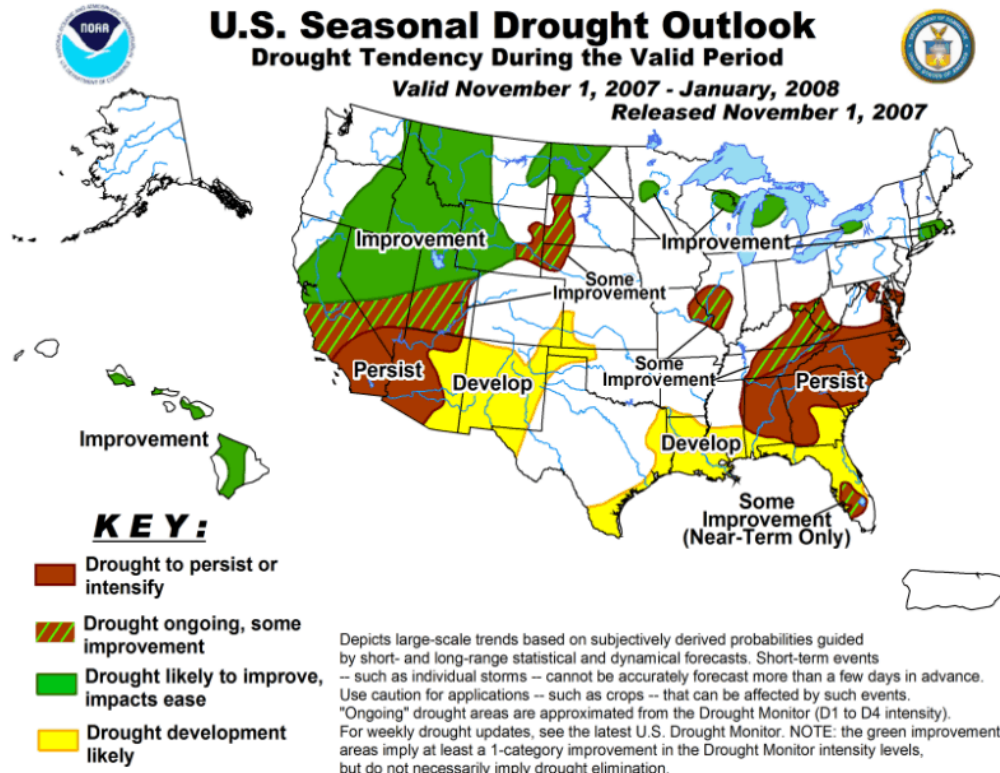
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

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

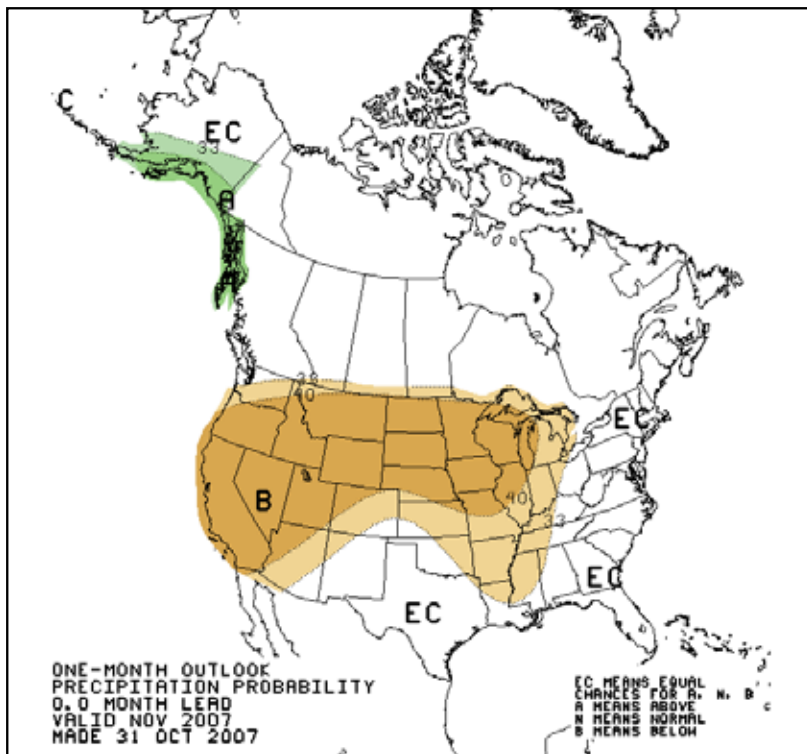
<http://drought.unl.edu/dm>



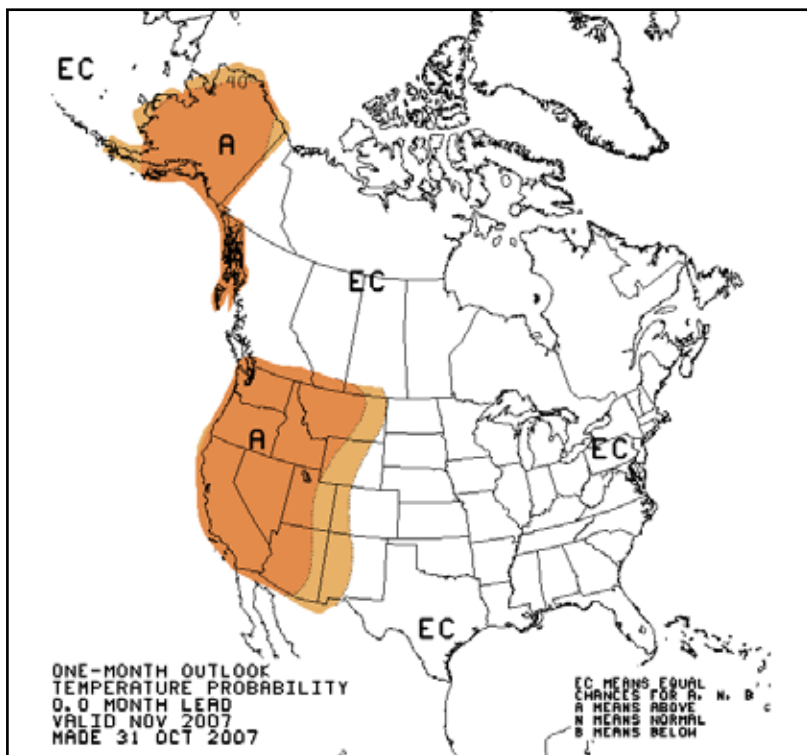
Released Thursday, November 1, 2007
Author: Douglas Le Comte, CPC/NOAA



November 2007 U.S. Precipitation Forecast



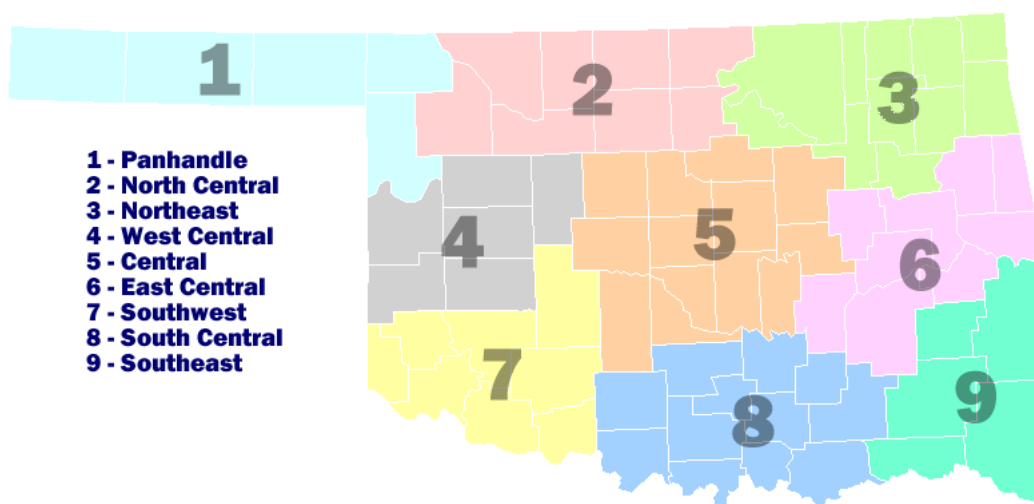
November 2007 U.S. Temperature Forecast



November Climate Normals

Climate Division	Max. Temperature (°F)	Min. Temperature (°F)	Avg. Temperature (°F)	Precipitation (inches)
1	58.8	30.2	44.6	1.0
2	58.1	33.4	45.8	2.1
3	60.0	37.5	48.8	3.6
4	59.0	34.3	46.7	1.7
5	60.3	37.2	48.8	2.7
6	60.9	39.0	50.0	4.2
7	61.7	36.3	49.0	1.7
8	62.7	39.2	51.0	3.1
9	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)



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