

OKLAHOMA MONTHLY CLIMATE SUMMARY FEBRUARY 2007



After being spoiled with abundant moisture falling from the skies during the previous few months, Oklahoma's good fortunes hit the skids with the 30th driest February on record. The state had two distinct periods of precipitation during February on the 12th-13th and the 23rd-24th. Other than that, rain gauges were basically left high and dry save for a few light showers and snow flurries. The month was also on the cold side at nearly two degrees below normal, which ranked as the 45th coolest on record. The most notable feature of the month was a wind storm which followed in the wake of an upper-level storm system on the 24th. Winds gusted to over 50 mph over much of the state, with a 64 mph reading near Ardmore. Blowing dust reduced visibilities to less than a mile, and a couple of thousand utility customers lost power due to downed power lines and poles. Areas in the far western Panhandle remained with snow cover throughout much of February from snow storms during the previous winter months. The 2006-07 winter season finished as the 21st wettest and 47th coolest since records began in 1892.

Precipitation

Virtually the entire state had below normal precipitation during February. The statewide average precipitation was less than an inch, about half of what falls on average. West central Oklahoma had isolated areas finish with a surplus for the month, while most of the southern one-third of the state was 1-2 inches below normal. The far western Panhandle also finished above normal, undoubtedly due to snow melt from precipitation that fell the previous two months. Despite the dry February, however, the winter season had a surplus of more than an inch. The Panhandle region was nearly three inches above normal for December-February, marking that area's 2nd wettest winter on record. East central Oklahoma was similarly moist with a surplus of more than two inches.

Temperature

The statewide average temperature for February was nearly two degrees below normal, aided in part by the snow pack in the Panhandle. Most of the northern one-fifth of the state was 3-4 degrees below normal. A large swath of central Oklahoma managed to finish up to a degree above normal, but was offset by an area to the west between three and four degrees below normal. The statewide average temperature was normal for

the winter season, with only the Panhandle and southwestern section finishing below normal.

Description	Extreme	Station	Date
High Temperature	84°F	Altus, Grandfield	Feb 28
Low Temperature	-6°F	Kenton	Feb 2
High Precipitation	2.46 in.	Cookson	
Low Precipitation	0.00 in.	Grandfield	

February Daily Highlights

February 1-6: A frigid start to the month came complete with snow showers and plenty of gray skies. Highs were in the 30s across the state after plunging to the teens and 20s that morning. The light snow continued into the 2nd with northerly winds gusting to over 25 mph, making the day seem much colder. The state's low temperature of minus-six degrees was recorded by the Kenton Mesonet site on the 2nd (and also at Hooker on the 15th). Another front on the 3rd split the state from west to east. Areas north of the front languished in the 20s and 30s, while areas south enjoyed the 40s and 50s. The state warmed up over the next couple of days with high temperatures eventually reaching the 60s and 70s on the 6th.

February 7-11: A "back door" cold front entered the state from the northeast overnight on the 7th. The front slowed as it approached the southeast, splitting the state with 70s for highs in the south and 30s and 40s behind. Winds behind the front gusted to 30 mph from the northeast. Patchy drizzle and freezing drizzle fell the next morning although amounts were very light. Temperatures in the 20s and 30s were aided by strong northerly winds to produce wind chills down to 20 degrees. More freezing drizzle for the south on the 9th as a cold dome of high pressure at the surface continued to dominate the state's weather. Two more cold days followed through the 11th as southerly winds increased ahead of an approaching upper-level storm system. Highs were in the 30s and 40s on both days with lows in the 20s.

February 12-16: Showers and thunderstorms fired ahead of an approaching upper-level storm system. More than an inch of rain fell in east central areas of the state. A warm front moved north and allowed high temperatures to reach near-seasonal levels in the 40s and 50s. A cold front overnight on the 13th brought very cold temperatures and high winds which combined to drop wind chill values close to zero degrees. Temperatures continued to fall throughout the day, bottoming out in the 20s. Light snow fell throughout the next several days. Low temperatures dropped below zero in the Panhandle and northwest with minus-six degrees in Hooker on the 15th. Southwesterly winds gusting to over 40 mph allowed temperatures to rise into the 50s and 60s on the 16th after a frigid start in the single digits and teens that morning, including below-zero temperatures in the northwest.

February 17-22: Another cold front moved into the state on the 17th. This offender was of pacific origin, however, which meant much less of a cool-off. Low temperatures were in the 20s and 30s, but highs still rebounded into the 40s and 50s. Northerly winds gusting to over 40 mph made the day seem much cooler. The next several days were warm and windy with highs predominantly in the 70s. A cool front passed through the state on the 20th but had little effect on high temperatures. The boundary acted more as a wind shift, and the surface high pressure system that followed produced clear skies and pleasant temperatures.

February 23-24: A decidedly unpleasant two-day span, the 23rd saw the approach of a vigorous upper-level storm system from the west. Strong southerly winds ushered in low level moisture from the Gulf of Mexico in the form of low clouds and increased humidities. Thunderstorms developed in the Texas Panhandle during the late afternoon and quickly moved into far western Oklahoma. The thunderstorms were moving at nearly 50 mph, so rainfall amounts were truncated somewhat. The storms raced to the east overnight and into the next morning. Several Oklahoma Mesonet sites were fortunate enough to record more than an inch of rainfall, but the bulk of the state received less than a half of an inch. As the dryline and cold front passed through the state, severe non-thunderstorm winds gusted to over 50 mph, with some locations experiencing wind gusts of over 60 mph. Blowing dust and power outages resulted. Light rain and snow fell in the far northwest as the center of the upper-level low pressure system passed over, but amounts were extremely light.

February 25-28: Another slow warm up during this four-day period. The 25th was sunny and cool with the arrival of surface high pressure. High temperatures rose into the 50s and 60s after 30s for morning lows. By the 28th, high temperatures were once again into the 70s and 80s with southerly winds gusting to over 40 mph. The state's high temperature of 84 degrees occurred at Altus and Grandfield on the month's final day.

February 2007 Statewide Statistics

Temperature

	Average	Depart.	Rank (1892-2007)
Month (Feb)	39.8°F	-1.9°F	45th Coolest
Season-to-Date (Dec-Feb)	38.8°F	0°F	47th Coolest
Year-to-Date (Jan-Feb)	37.2°F	-1.6°F	33rd Coolest

Precipitation

	Total	Depart.	Rank (1892-2007)
Month (Feb)	0.91 in.	-0.85 in.	30th Driest
Season-to-Date (Dec-Feb)	6.62 in.	1.39 in.	21st Wettest
Year-to-Date (Jan-Feb)	2.95 in.	-0.26 in.	53rd Wettest

Depart. = Departure from 30-year normal

February 2007 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.

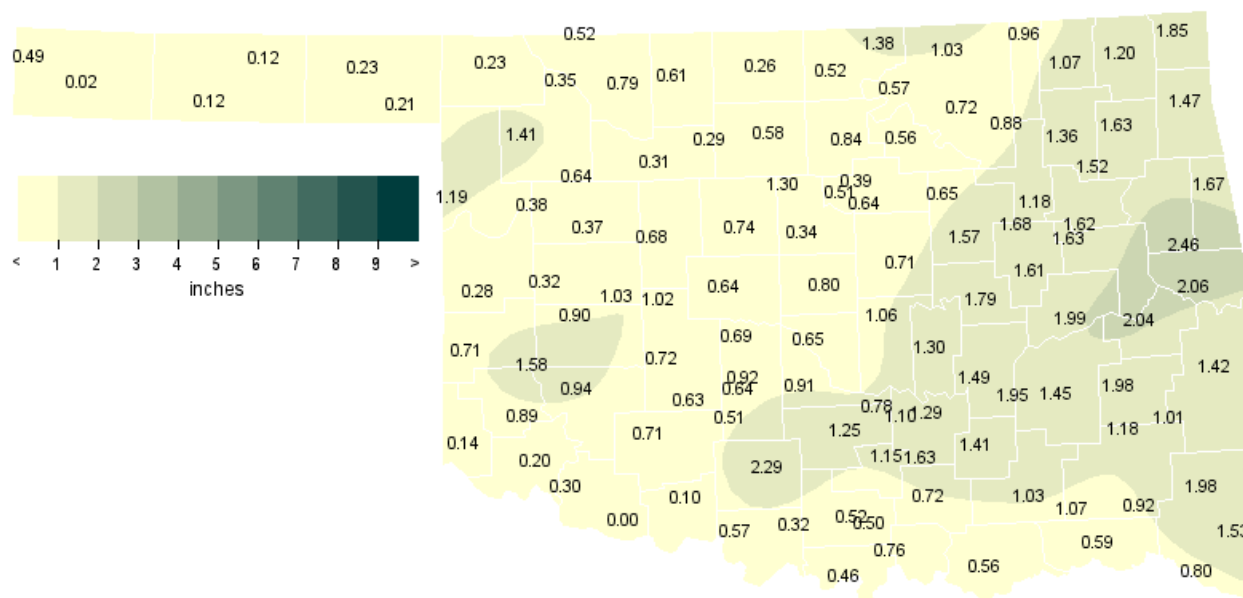
Wind Gusts

No flooding events reported in state.

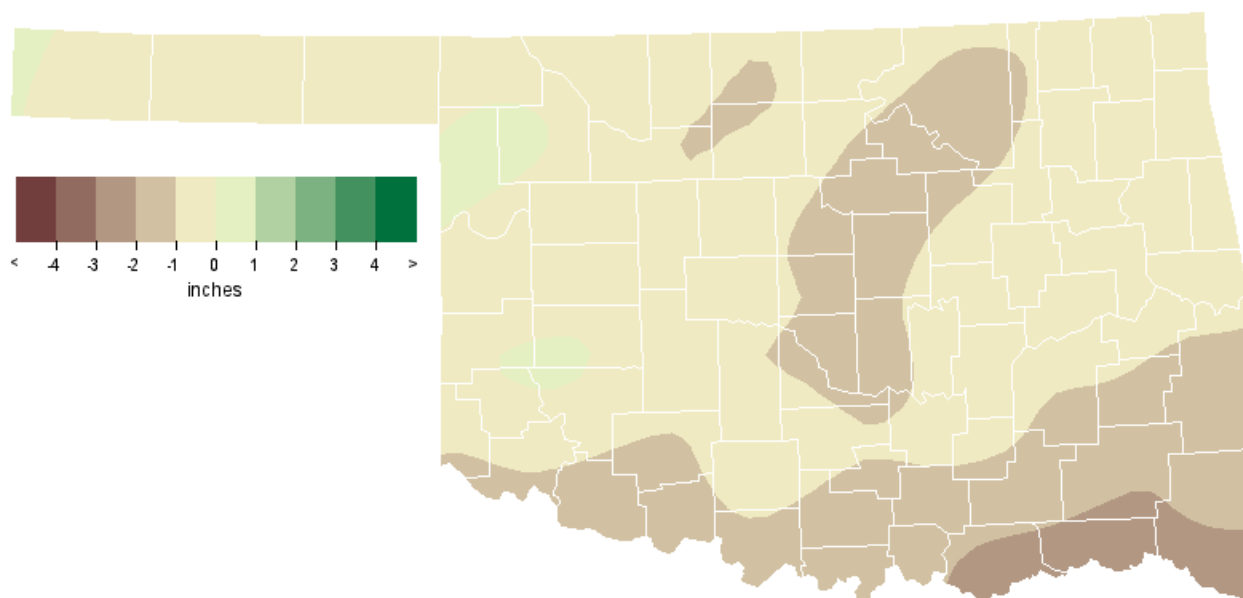
Record Event Report

Description	Day	Location	Record	Previous Record	Year
Daily Maximum Temperature (tie)	6	Tulsa	73	73	1999
Daily Minimum Temperature (tie)	15	McAlester	19	19	1963
Daily Minimum Temperature	16	McAlester	8	10	1958

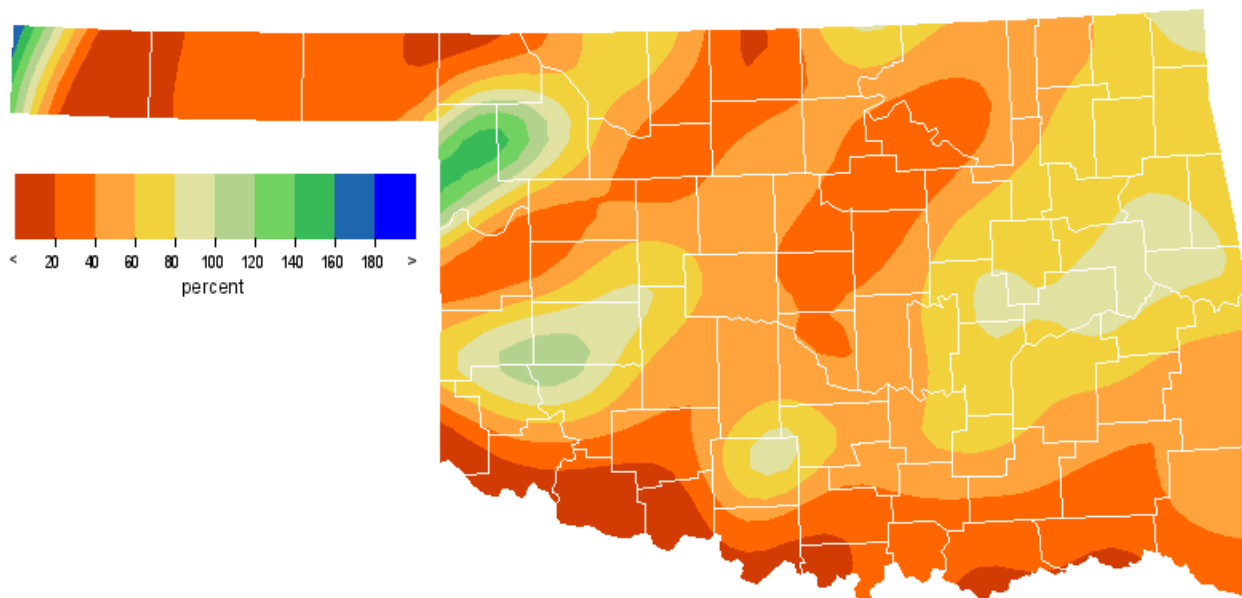
February 2007 Observed Precipitation



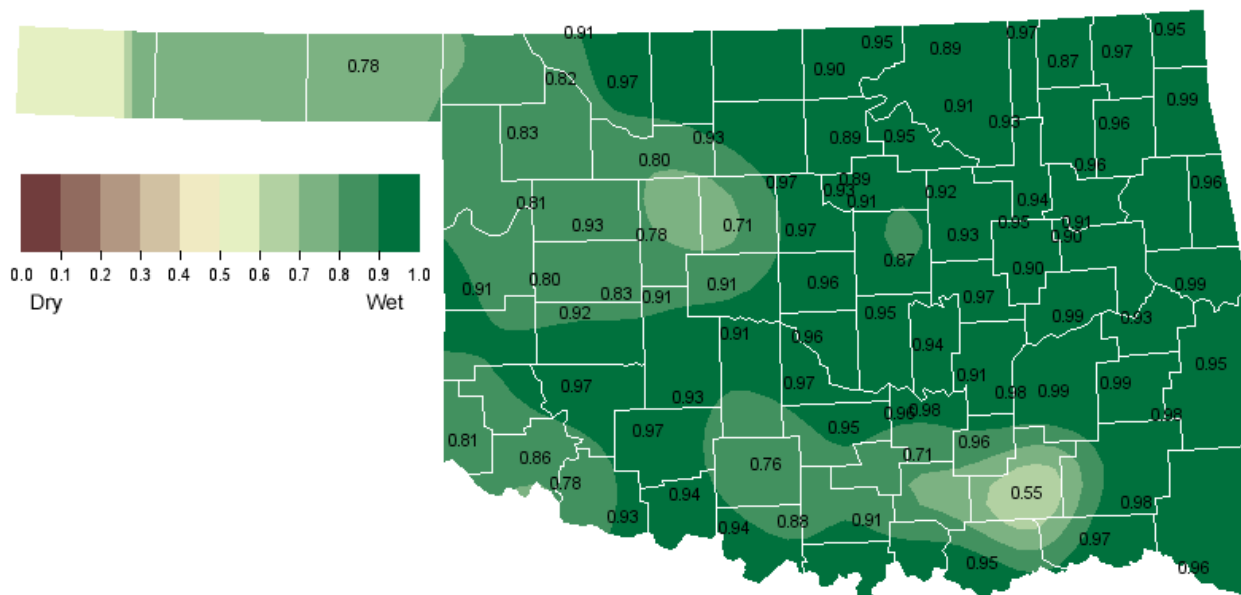
February 2007 Departure from Normal Precipitation



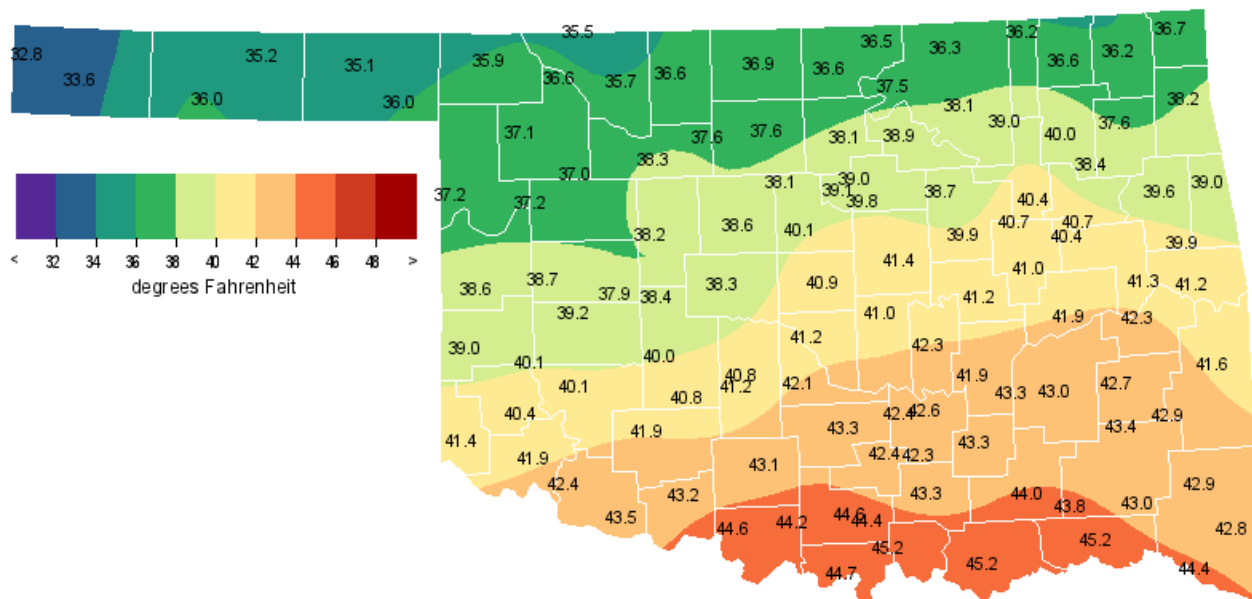
February 2007 Percent of Normal Precipitation



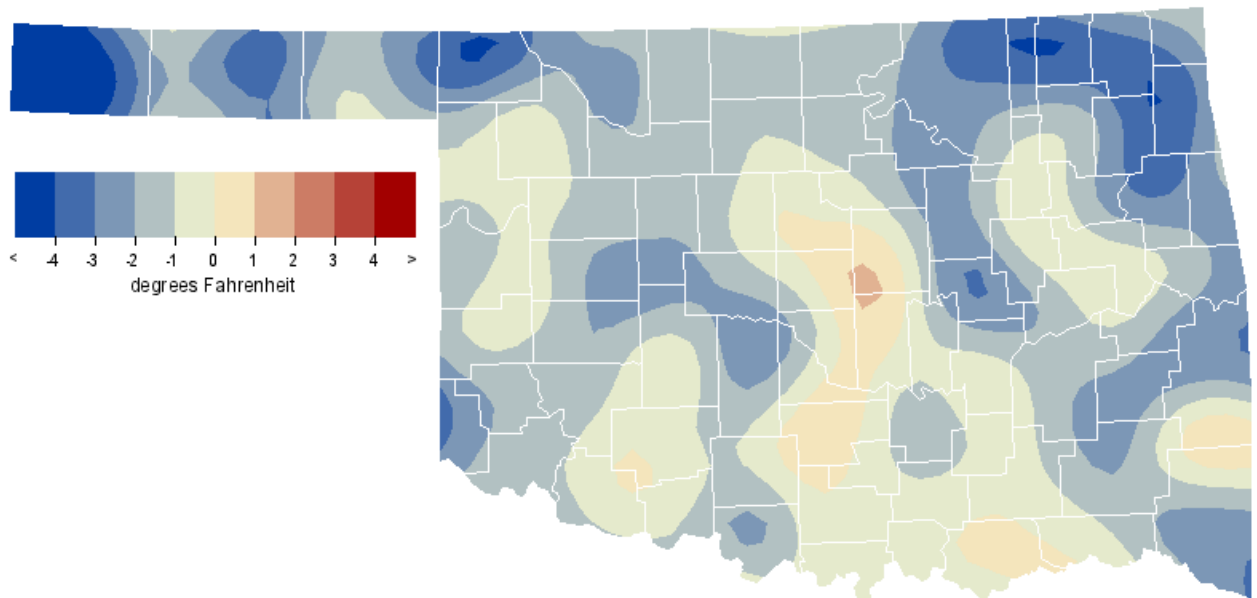
February 2007 Average Soil Moisture at 25cm



February 2007 Average Temperature



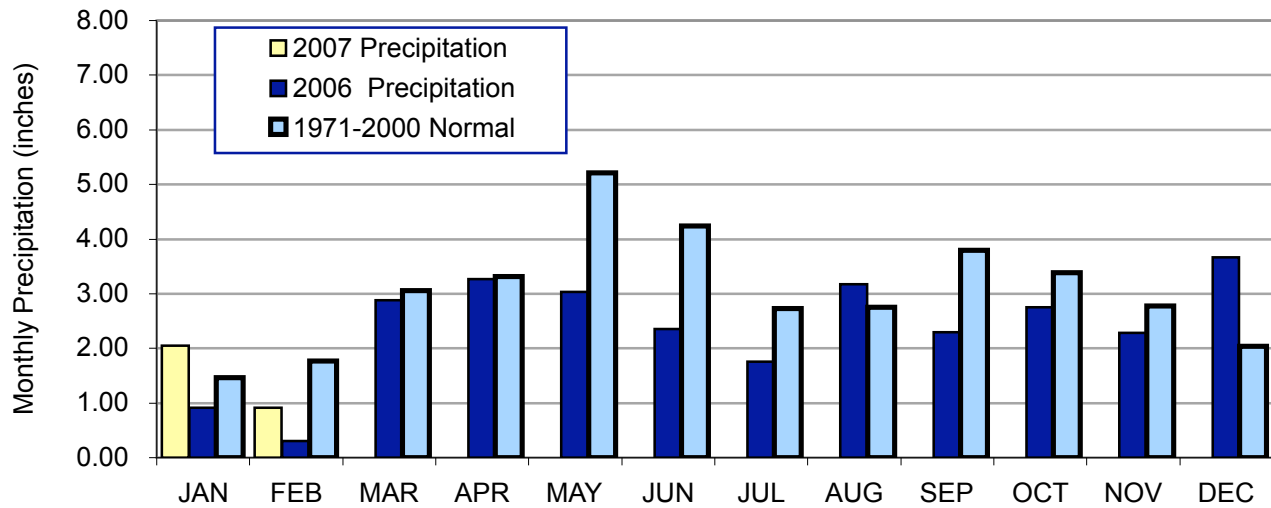
February 2007 Departure from Normal Temperature



February 2007 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Feb-06
Panhandle	0.33	-0.31	39th Driest	2.94 (1911)	0.00 (1896)	0.00
North Central	0.65	-0.57	42nd Driest	4.10 (1911)	0.00 (1904)	0.01
Northeast	1.17	-0.81	35th Driest	5.80 (1985)	0.10 (1963)	0.26
West Central	0.69	-0.45	51st Driest	3.64 (1997)	0.00 (1904)	0.01
Central	0.84	-1.02	37th Driest	5.08 (1938)	0.00 (1904)	0.25
East Central	1.82	-0.61	53rd Driest	9.15 (1938)	0.00 (1895)	0.51
Southwest	0.51	-0.82	37th Driest	3.89 (1997)	0.00 (1902)	0.07
South Central	0.96	-1.25	37th Driest	7.66 (1938)	0.02 (1902)	0.48
Southeast	1.25	-1.89	20th Driest	10.12 (1945)	0.36 (1895)	1.35
Statewide	0.91	-0.85	30th Driest	4.66 (1938)	0.18 (1996)	0.31

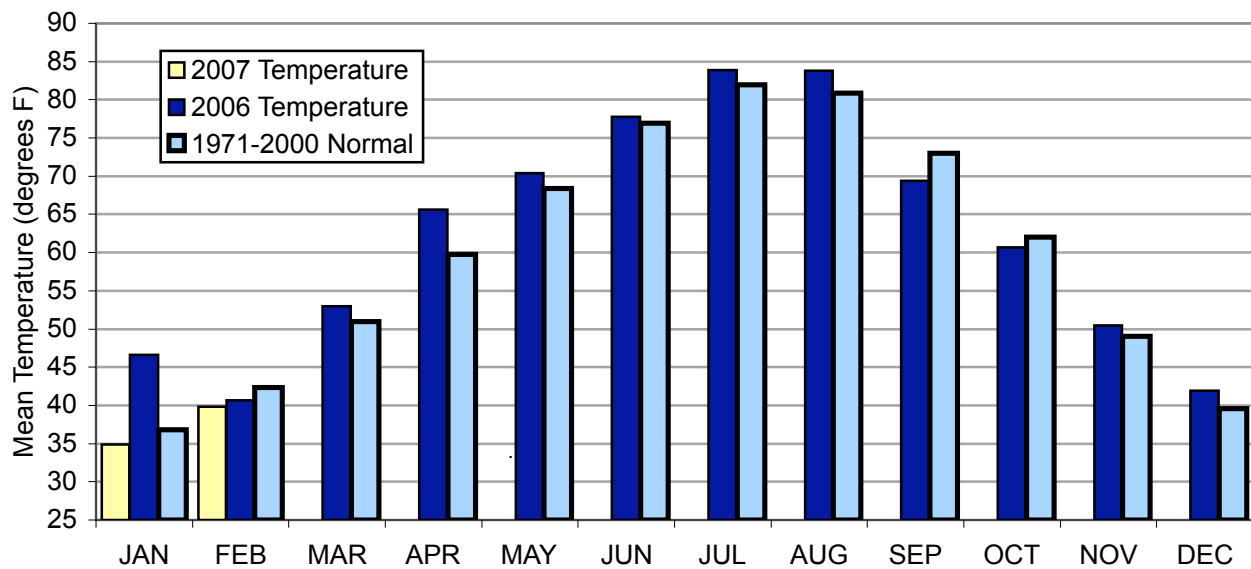
2006 and 2007 Statewide Precipitation Monthly Totals vs. Normal



February 2007 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Feb-06 (F)
Panhandle	35.2	-3.1	36th Coolest	47.5 (1954)	23.1 (1899)	37.1
North Central	36.9	-2.4	40th Coolest	49.6 (1954)	22.4 (1899)	38.3
Northeast	38.1	-2.3	40th Coolest	49.8 (1976)	25.6 (1899)	39.0
West Central	38.6	-2.0	42nd Coolest	51.0 (1954)	23.8 (1905)	40.2
Central	40.2	-1.7	48th Coolest	51.6 (1976)	26.2 (1899)	41.1
East Central	41.2	-1.6	48th Coolest	52.1 (1976)	28.7 (1899)	41.9
Southwest	41.3	-1.8	43rd Coolest	52.5 (1954)	26.8 (1905)	42.2
South Central	43.7	-1.1	54th Coolest	53.6 (1976)	30.0 (1905)	43.7
Southeast	43.3	-1.4	45th Coolest	52.6 (1976)	31.4 (1899)	43.0
Statewide	39.8	-1.9	45th Coolest	50.7 (1954)	26.6 (1899)	40.7

2006 and 2007 Statewide Temperature Monthly Averages vs. Normal



Mesonet Extremes for February 2007

Climate Division	High Temp (F)	Day	Station	Low Temp (F)	Day	Station	High Monthly Rainfall (inches)	Station	High Daily Rainfall (inches)	Day	Station
Panhandle	78	28th	Buffalo	-6	2nd	Kenton	1.19	Arnett	1.09	23rd	Arnett
North Central	79	28th	Fairview	-1	16th	Seiling	1.41	Woodward	1.07	23rd	Woodward
Northeast	79	28th	Burbank	3	16th	Burbank	1.85	Miami	0.94	24th	Inola
West Central	81	28th	Retrop	2	15th	Cheyenne	1.58	Retrop	1.26	12th	Retrop
Central	81	28th	Ninnekah	2	16th	Marena	1.79	Okemah	0.95	24th	Bristow
East Central	77	20th	McAlester	3	16th	Cookson	2.46	Cookson	1.24	12th	Sallisaw
Southwest	84	28th	Altus	7	15th	Hinton	1.02	Hinton	0.90	12th	Hobart
South Central	81	22nd	Waurika	7	16th	Vanoss	2.29	Ketchum Ranch	1.77	24th	Ketchum Ranch
Southeast	79	20th	Antlers	4	16th	Wister	1.98	Mt Herman	1.11	24th	Mt Herman
Statewide	84	28th	Altus	-6	2nd	Kenton	2.46	Cookson	1.77	24th	Ketchum Ranch

March Climatological Outlook

The retreat of winter and the onset of spring progress across Oklahoma during March, but the change of season is not smooth. Despite the generally moderating climate, winter intrudes from time-to-time, especially in the first half of the month, bringing with it some frigid weather and, occasionally, some frighteningly heavy snowstorms. By the end of the month, spring is typically in full sway, including occasional full participation in the severe thunderstorm season.

Temperature

Mean: 51.0 degrees
Warmest Location: 55.7 degrees, Ardmore
Coolest Location: 45.1 degrees, Goodwell
Warmest March: 1907, 59.6 degrees
Coolest March: 1915, 39.2 degrees
Hottest recorded: 104 degrees, Frederick, March 27, 1971
Coldest recorded: -18 degrees, Hooker, March 7, 1920
Kenton, March 1, 1922 & March 6, 1948

As befits a transitional month, March is Oklahoma's 5th coolest month. The statewide-average normal monthly temperature of 51.0 degrees is compiled from a collection of station-specific normals that range from 45.1 degrees in the panhandle at Goodwell to 55.7 degrees at Ardmore in south central Oklahoma. Monthly averages of statewide temperatures have included a maximum of 57.9 degrees both 1907 and 1910 and a minimum of 37.6 degrees in 1915. Normal daily maximum temperatures are bounded by southerly Waurika's 68.8 degrees and northerly Arnett's 59.3. Extremes of normal daily minimum temperatures are found in the panhandle at Boise City, 29.8 degrees, and in the south at Ardmore, 43.8 degrees.

Precipitation

Mean: 3.06 inches
Wettest March: 1973, 7.46 inches
Driest March: 1971, 0.38 inches
Wettest location: Smithville, 5.52 inches
Driest location: Regnier, 1.05 inches
Most recorded: 13.37 inches, Kansas, 1973

Normal statewide-averaged precipitation in March is 3.06 inches, ranking March as the state's 6th wettest month. The extreme monthly statewide averages of March precipitation are 7.46 inches in 1973 and 0.38 inches in 1971. Southeastern Oklahoma's Smithville carries the title of wettest station in March with a normal precipitation total of 5.52 inches. The least normal March precipitation in the state, 1.05 inches, belongs

to Regnier in the northwestern panhandle. The northeastern Oklahoma town of Kansas holds the apparent record for the wettest March in the state with a reported 13.37 inches of rain in 1973.

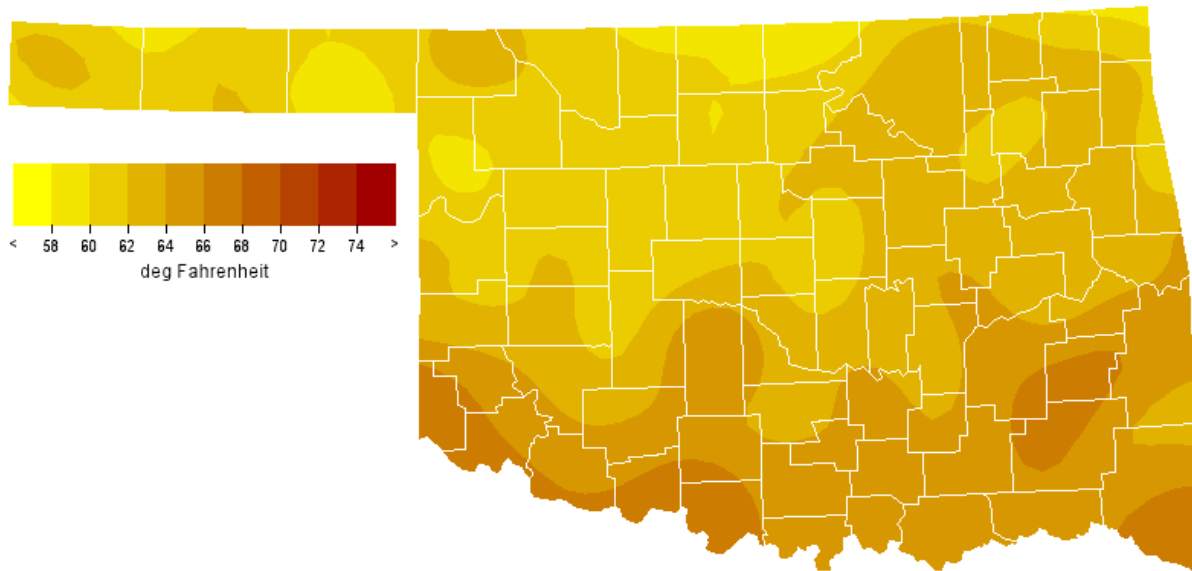
Snow doesn't come every March, but when it does it comes in bunches. Boise City averages 6.6 inches of snow during the month, the greatest average snowfall among the state's reporting locations. Stations in the state's southern half generally average less than half-an-inch of snow during March. Snowstorms have dropped as much as 20 inches of snow on northern parts of Oklahoma several times. In 1988, Cherokee (29.5 inches), Laverne (27.5 inches), and Waynoka (25 inches) all reported monthly totals of over 2 feet of snow. Gate recorded 27 inches in March 1969 and Vinita noted 24 inches in March 1970. Both the 1988 and 1970 totals are additionally notable as most of the snow was reported on St. Patrick's Day. Beaver reported substantial snow in March 1912 to complete the state's seasonal snowfall record (winter of 1911/12) of 87.3 inches. A late-season snowstorm struck the panhandle in 1926, as Boise City reported 16 inches of snow on the 30th.

Tornadoes

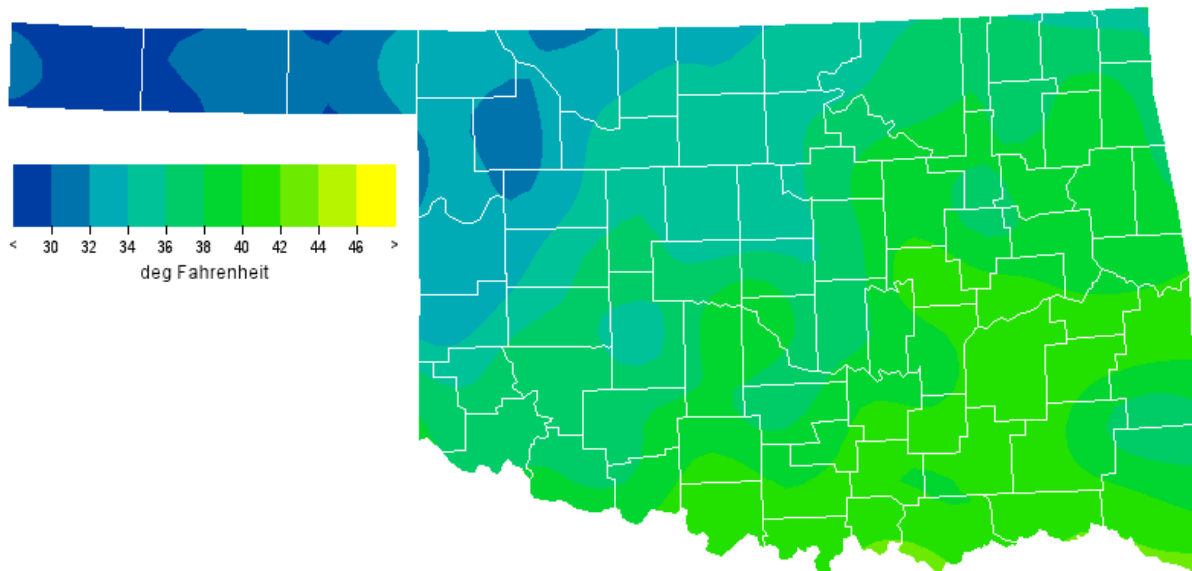
Average March Tornadoes: 4
Most: 17 (1991)

The state has averaged 3.7 tornadoes each March since 1950. The actual number has ranged from none (16 times in 55 years, including 2002) to 17 in 1991. Two deadly March tornadoes, each killing 10, were at Gowen on March 13, 1922 and Lenna on March 25, 1948. Two other notable tornadoes struck the Oklahoma City area, including Will Rogers Airport and Tinker Air Force Base, on March 20th and 25th in 1948. The first tornado caused over \$10 million in property damage, much of it to military aircraft. Damage from the second was \$6 million. On the 25th, Air Force meteorologists recognizing the similarity of conditions to those of the 20th, issued what is now accepted to be the first successful and scientific forecast of a tornado.

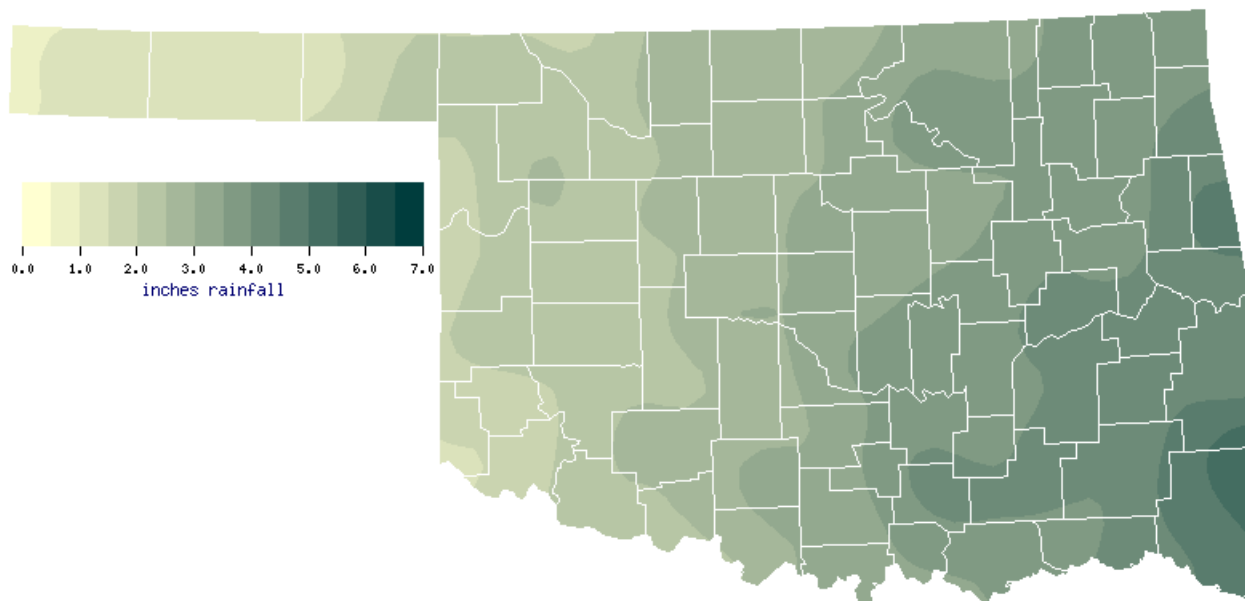
March Normal Monthly Maximum Temperature (1971-2000)



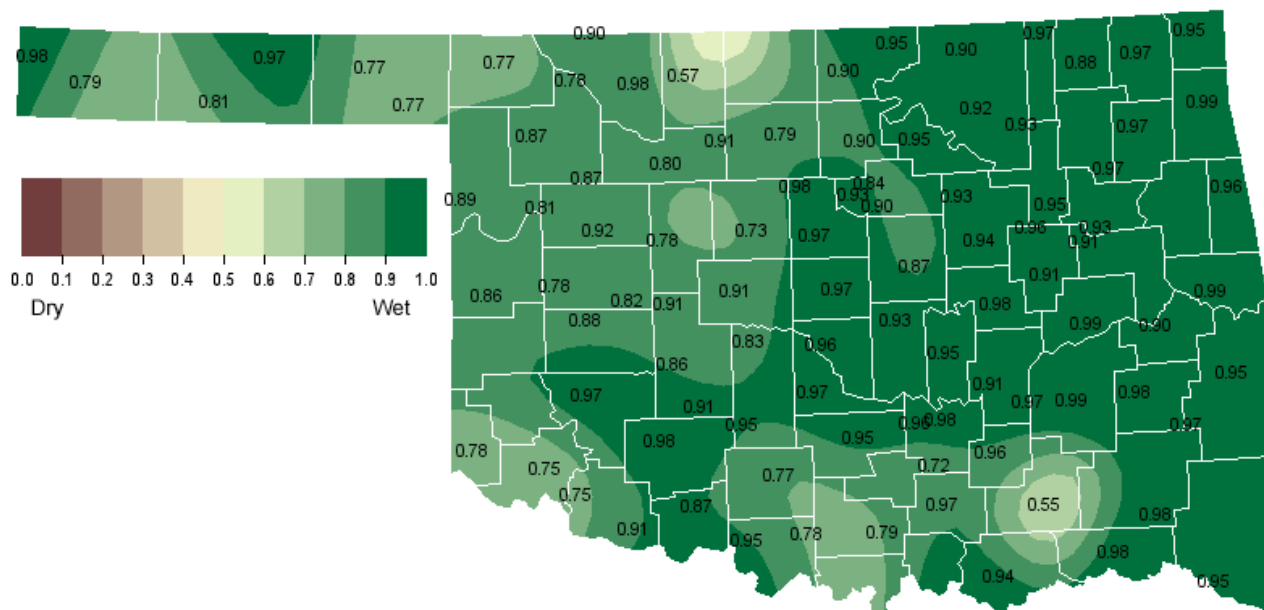
March Normal Monthly Minimum Temperature (1971-2000)



March Normal Precipitation (1971-2000)



March 1, 2007 Soil Moisture Conditions at 25cm

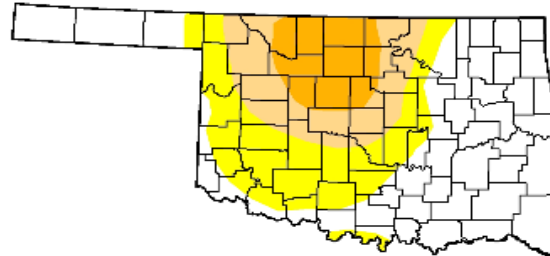


U.S. Drought Monitor Oklahoma

March 6, 2007
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	50.6	49.4	25.6	10.9	0.0	0.0
Last Week (02/27/2007 map)	51.2	48.8	25.6	10.9	0.0	0.0
3 Months Ago (12/12/2006 map)	10.9	89.1	66.3	47.5	24.6	10.2
Start of Calendar Year (01/02/2007 map)	31.3	68.7	39.8	24.5	18.2	0.0
Start of Water Year (10/03/2006 map)	2.7	97.3	92.7	46.2	16.6	0.0
One Year Ago (03/07/2006 map)	0.0	100.0	100.0	100.0	56.0	18.8



Intensity:

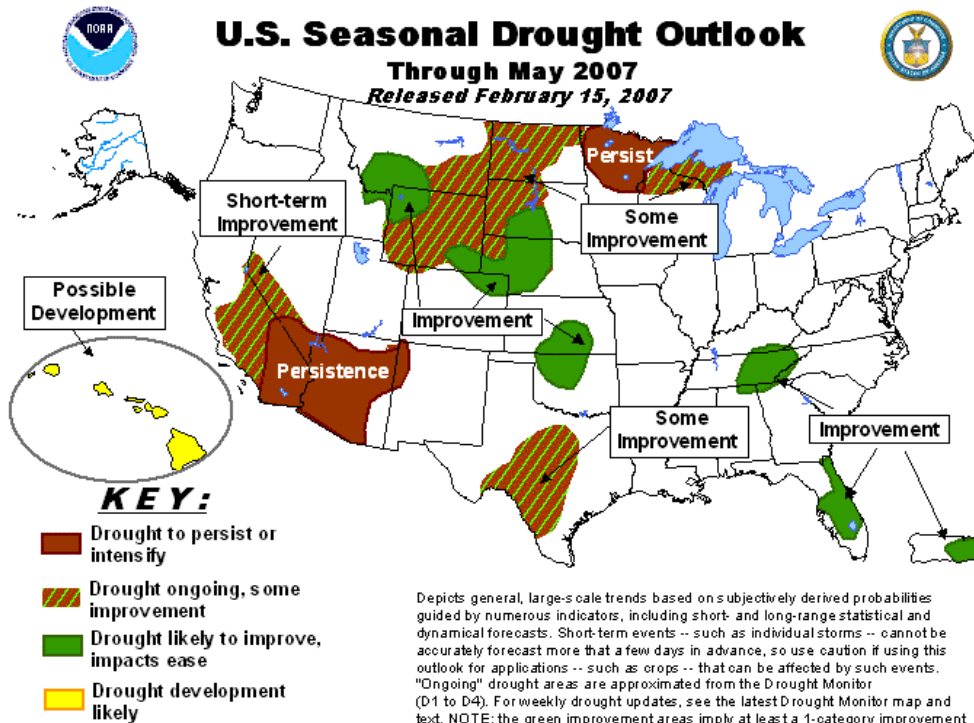
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

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

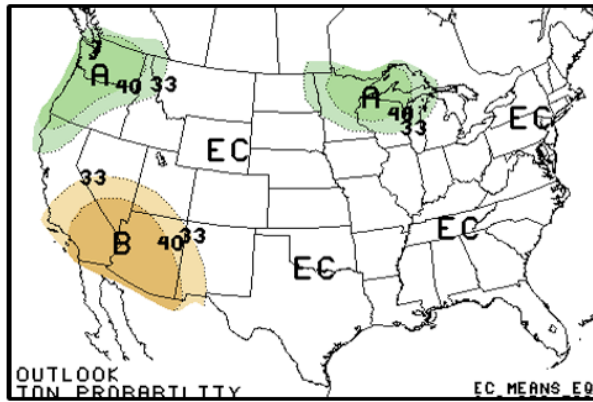
<http://drought.unl.edu/dm>



Released Thursday, March 8, 2007
Author: Douglas Le Comte, CPC/NOAA



March 2007 U.S. Precipitation Forecast

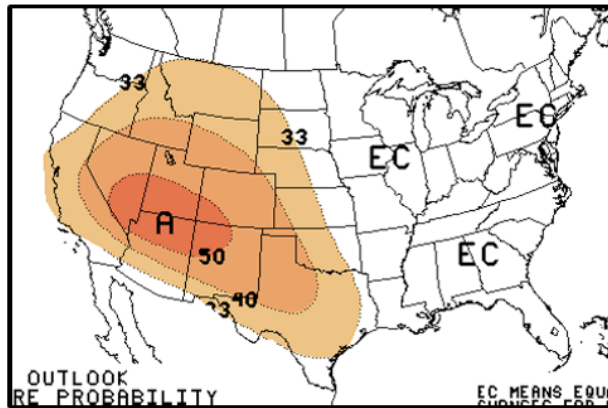


Percent Likelihood of Above or Below Average Precipitation*

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

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

March 2007 U.S. Temperature Forecast



Percent Likelihood of Above and Below Average Temperatures*

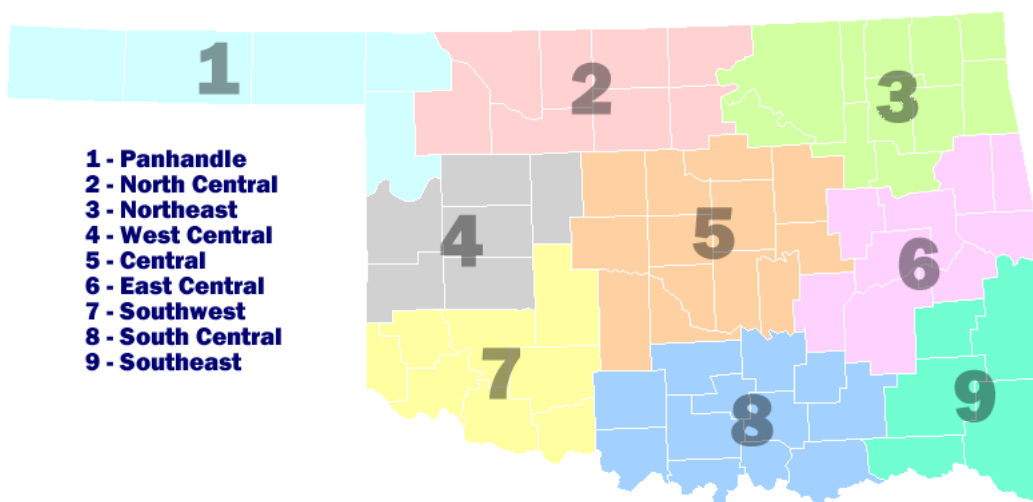
	10% - 20%	A = Above
	5% - 10%	
	0% - 5%	
	0% - 5%	B = Below
	5% - 10%	

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

March Climate Normals

Climate Division	Max. Temperature (°F)	Min. Temperature (°F)	Avg. Temperature (°F)	Precipitation (inches)
1	61.5	31.6	46.5	1.58
2	60.4	33.7	47.1	2.67
3	62.5	37.9	50.2	3.61
4	61.7	34.7	48.2	2.29
5	62.6	37.6	50.2	3.15
6	63.3	39.6	51.5	3.99
7	64.5	37.0	50.8	2.29
8	64.9	40.0	52.5	3.50
9	65.5	39.9	52.7	4.45
Statewide	62.9	37.0	50.0	3.16

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
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