

# The Climate of Oklahoma County

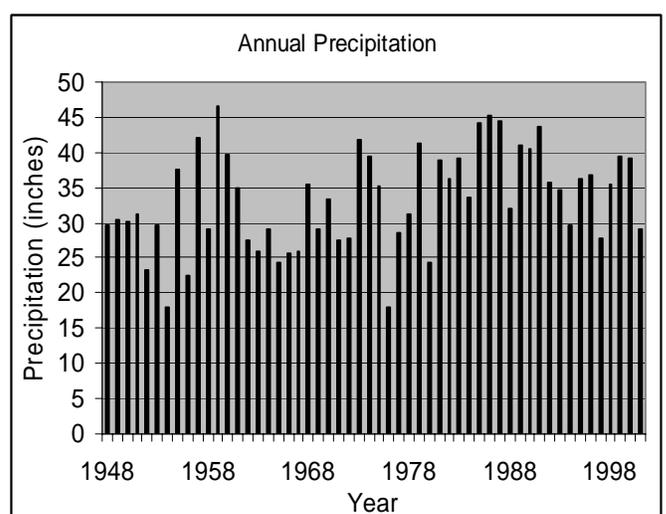
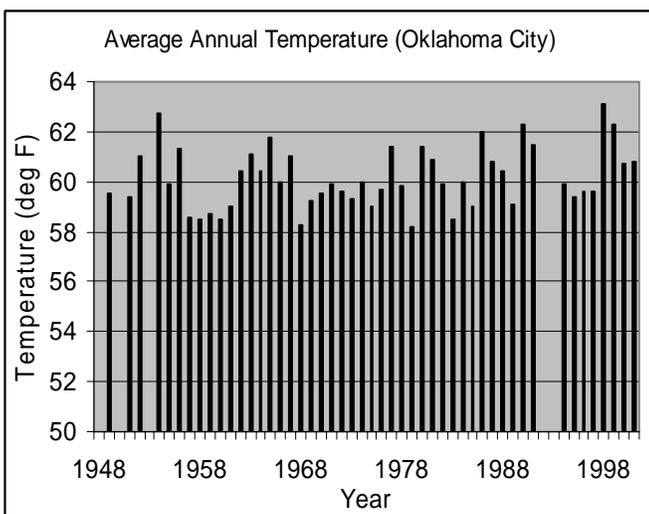


Oklahoma County is part of the Central Great Plains in the western parts of the county and transitions to Crosstimbers regions in the eastern parts of the county. Average annual precipitation ranges from about 33 inches over much of Oklahoma County to 36 inches in the far east. October and June are the wettest months, on average, but much of the spring through fall receives sufficient rainfall. About every one year in three has at least one inch of snow, with one year in ten having ten or more inches.

Temperatures average near 60 degrees, with a slight increase from north to south. Temperatures range from an average daytime high of 93 degrees in July to an average low of 26 degrees in January. Oklahoma County averages a growing season of 219 days, but plants that can withstand short periods of colder temperatures may have an additional three to six weeks.

Winds from the south to southeast are quite dominant, averaging just over seven miles-per-hour. Relative humidity, on average, ranges from 41% to 92% during the day. During the year, humidity is highest in May and lowest in February through April. Winter months tend to be cloudier than summer months. The percentage of possible sunshine ranges from an average of about 55% in winter to nearly 80% in summer.

Thunderstorms occur on about 49 days each year, predominantly in the spring and summer. During the period 1950 - 2003, Oklahoma County recorded 86 tornadoes. On May 3, 1999 an F5 tornado passed through the Oklahoma City metro area. This tornado was one of the costliest and deadliest natural disasters in United States history. 36 people were killed and 583 injured. May 8, 2003 also brought a significant F4 tornado which followed almost the same path as the May 3, 1999 tornado. There were no deaths but there were 134 injuries. Typically, there are about 4 events each year of hail exceeding one inch in diameter. As information collection improves, both the number of reported tornadoes and the number of severe hail events have increased.



Temperature (deg Fahrenheit)												
	AVERAGES (1971-2000)			EXTREMES (1948-2003)				AVG # DAYS PER MONTH (1971-2000)				
	Daily Max	Daily Min	Daily Avg	Record High		Record Low		Max>100	Max>90	Max<32	Min<32	Min<0
Jan	47.1	26.2	36.6	80	(24th, 1950)	-4	(4th, 1959)			5	22	*
Feb	53.5	31.1	42.3	92	(22nd, 1996)	-3	(9th, 1979)		*	2	15	*
Mar	62.5	39.4	50.9	93	(11th, 1967)	1	(11th, 1948)		*	*	7	
Apr	71.2	48.1	59.7	100	(12th, 1972)	20	(13th, 1957)	*	*		1	
May	78.8	57.9	68.4	104	(30th, 1985)	32	(3rd, 1954)	*	2			
Jun	87.3	66.4	76.8	105	(14th, 1953)	47	(4th, 1954)	1	11			
Jul	93.1	70.8	81.9	110	(6th, 1996)	53	(31st, 1971)	4	22			
Aug	92.5	69.8	81.2	110	(2nd, 1980)	51	(21st, 1956)	4	23			
Sep	84.0	62.2	73.1	108	(2nd, 2000)	36	(24th, 1989)	1	9			
Oct	73.4	50.6	62.0	96	(2nd, 1951)	16	(31st, 1993)		1		1	
Nov	59.6	38.2	48.9	87	(8th, 1980)	11	(17th, 1959)			*	8	
Dec	49.8	29.1	39.5	86	(24th, 1955)	-8	(23rd, 1989)			3	19	*
Annual	71.2	49.2	60.2	110	(Aug 2, 1980)	-8	(Dec 23, 1989)	10	69	10	74	1

Precipitation (inches)											
	AVERAGE	EXTREMES (1948-2003)			AVG # DAYS PER MONTH (1971-2000)						
	1971-2000	Monthly Max	Daily Max		any	meas	0.10"+	0.25"+	0.50"+	1.00"+	
Jan	1.29"	5.69" (1949)	2.13"	(30th, 2002)	10	6	2	1	1	*	
Feb	1.55"	4.63" (1990)	2.21"	(12th, 1978)	9	6	3	2	1	*	
Mar	2.91"	7.85" (1988)	2.84"	(28th, 1988)	12	7	5	3	2	1	
Apr	3.00"	7.33" (1957)	3.79"	(25th, 1999)	11	8	5	3	2	1	
May	5.45"	12.07" (1982)	6.64"	(8th, 1993)	14	10	7	5	3	2	
Jun	4.68"	14.66" (1989)	4.56"	(13th, 1989)	12	9	6	4	3	2	
Jul	2.94"	11.90" (1996)	5.60"	(27th, 1981)	8	6	4	3	2	1	
Aug	2.48"	6.77" (1966)	2.87"	(18th, 1966)	9	6	4	3	2	1	
Sep	3.99"	11.85" (1991)	7.53"	(22nd, 1970)	11	8	5	4	3	1	
Oct	3.73"	13.18" (1983)	5.45"	(20th, 1983)	10	8	5	3	3	1	
Nov	2.11"	5.72" (1994)	2.17"	(4th, 1986)	9	6	3	2	2	1	
Dec	1.84"	8.14" (1984)	2.55"	(31st, 1984)	10	6	3	2	1	1	
Annual	35.97"	14.66" (Jun 1989)	7.53"	(Sep 22, 1970)	125	84	54	36	24	11	

Snow and Sleet (inches)											
	AVERAGE	EXTREMES (1948-2003)				AVG # DAYS PER MONTH (1971-2000)					
	1971-2000	Monthly Max	Daily Max		Greatest Depth		any	meas	0.50"+	1.00"+	Pot. Glazing
Jan	3.1"	16.9" (1949)	8.3"	(18th, 1987)	12.0"	(7th, 1988)	6	2	1	1	4
Feb	2.1"	12.0" (1978)	6.5"	(7th, 1986)	8.0"	(15th, 1951)	4	2	1	1	3
Mar	0.7"	13.9" (1968)	8.4"	(10th, 1948)	8.0"	(10th, 1948)	2	*	*	*	1
Apr	0.0"	0.8" (1953)	0.8"	(14th, 1953)	0.1"	(2nd, 1949)	*	*	*		
May	0.0"	0.0" (1949)	0.0"	(17th, 1949)	0.1"	(14th, 1999)	*				
Jun	0.0"	0.1" (1955)	0.1"	(16th, 1955)			*				
Jul	0.0"	0.0" (1953)	0.0"	(7th, 1953)			*				
Aug	0.0"	0.0" (1955)	0.0"	(29th, 1955)			*				
Sep	0.0"	0.0" (1950)	0.0"	(12th, 1950)			*				
Oct	0.0"	0.1" (1993)	0.1"	(30th, 1993)	0.1"	(30th, 1993)	*	*			*
Nov	0.7"	7.5" (1972)	5.5"	(18th, 1972)	3.0"	(17th, 1980)	2	1	*	*	*
Dec	2.1"	8.3" (1987)	8.3"	(14th, 1987)	7.0"	(15th, 1987)	4	2	1	1	3
Annual	8.7"	16.9" (Jan 1949)	8.4"	(Mar 10, 1948)	12.0"	(Jan 7, 1988)	18	6	4	3	11

## **TEMPERATURE AND PRECIPITATION**

From Oklahoma City Cooperative Observer Station (346661); January 1948 – December 2003  
 Latitude: 3523N      Longitude: 09736W      Elevation: 1303 ft

Exceedence values (2 in 10 years)				
Month:	Maximum Temperature Higher Than:	Minimum Temperature Lower Than:	Precipitation Less Than:	Precipitation More Than:
January	73	2	0.27	1.90
February	79	7	0.64	2.20
March	87	15	1.19	3.40
April	91	30	1.92	4.42
May	95	41	2.49	8.21
June	100	52	2.06	6.68
July	106	59	1.24	4.94
August	105	58	1.40	3.75
September	101	42	1.53	6.05
October	93	31	1.02	5.57
November	81	17	0.39	2.81
December	75	7	0.47	2.49
<b>Annual</b>	<b>106</b>	<b>-1</b>	<b>27.47</b>	<b>39.56</b>

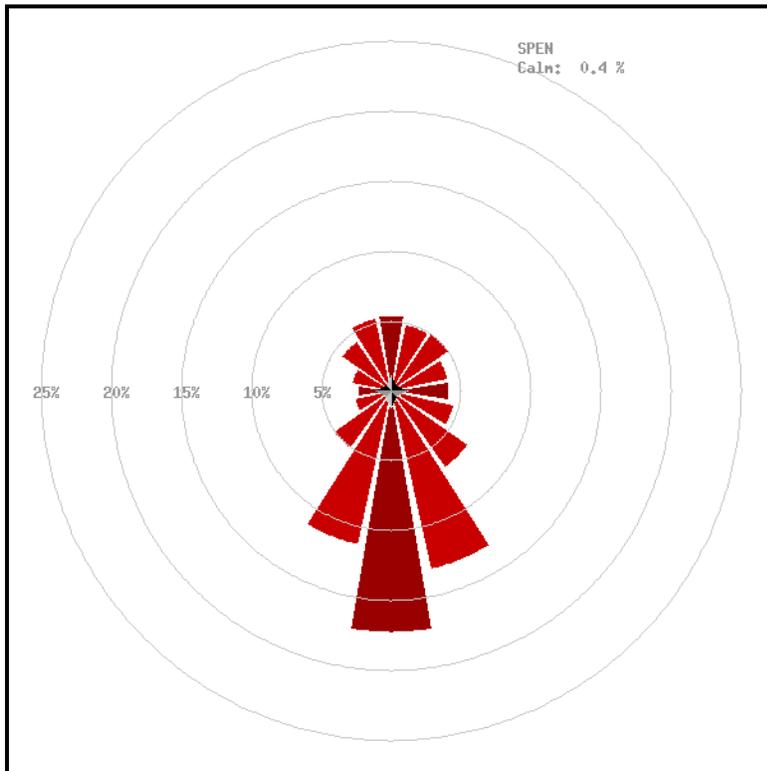
First Freezing Temperature in Fall			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Earlier Than –	November 3	November 2	October 29
2 Years in 10 Earlier Than –	November 11	November 4	October 28
5 Years in 10 Earlier Than –	November 26	November 14	November 4
Last Freezing Temperature in Spring			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Later Than –	March 30	April 10	April 14
2 Years in 10 Later Than –	March 23	March 30	April 10
5 Years in 10 Later Than –	March 9	March 22	April 4

Number of Days in Growing Season			
Probability	Higher than 24 F	Higher than 28 F	Higher than 32 F
9 Years in 10	234	217	193
8 Years in 10	243	223	201
5 Years in 10	259	238	219
2 Years in 10	281	250	232
1 Year in 10	300	261	239

## WINDS

From Spencer Mesonet Site (SPEN); Jan 1994 – Dec 2001

Latitude: 3554N Longitude: 09734W Elevation: 1224 ft



Wind Roses show the prevailing direction from which the wind is blowing. North is up in the image. The circles show the percentage of time from which the wind is blowing in that direction. For example, Spencer records a south wind about 17 percent of the time, with northerly winds just over 5 percent of the time.

The table below shows the percentage of time the wind is blowing from each of the 16-point compass headings, and the percent of time the prevailing wind is recorded in each speed bin.

*Maximum Gust: 59.8mph*

*Maximum Sustained: 35.3 mph*

*Overall Average Speed: 7.5 mph*

SPEN	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Totals
Calm																	0.4%
1- 5 mph	1.1	1.5	1.7	1.9	2.2	2.3	2.3	1.8	1.0	1.0	1.2	1.1	1.1	1.0	1.0	1.0	23.3%
6-10 mph	2.7	2.5	2.7	2.1	1.8	2.1	4.0	8.7	7.9	4.8	2.4	1.1	0.9	1.2	1.7	2.3	49.0%
11-15 mph	1.3	0.9	0.5	0.2	0.1	0.1	0.5	2.4	6.1	3.9	1.1	0.4	0.2	0.5	1.2	1.5	21.1%
16-20 mph	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.3	2.0	1.3	0.3	0.1	0.1	0.2	0.4	0.4	5.4%
21-25 mph	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.7%
26-30 mph	0.0	0.0	0.0					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
31-35 mph										0.0				0.0	0.0		0.0%
35+ mph												0.0	0.0				0.0%
<b>Totals</b>	<b>5.4</b>	<b>4.9</b>	<b>5.0</b>	<b>4.2</b>	<b>4.2</b>	<b>4.6</b>	<b>6.7</b>	<b>13.1</b>	<b>17.3</b>	<b>11.2</b>	<b>5.1</b>	<b>2.7</b>	<b>2.4</b>	<b>2.9</b>	<b>4.4</b>	<b>5.3</b>	<b>100.0%</b>
SPEN	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
Max Gust	40	45	45	35	33	38	33	43	51	51	47	58	56	48	49	60	
Max 5 Min	25	28	26	21	21	20	20	28	28	33	30	35	35	31	32	29	
<b>Avg Speed</b>	<b>7.7</b>	<b>6.6</b>	<b>6.0</b>	<b>5.1</b>	<b>4.8</b>	<b>4.9</b>	<b>5.7</b>	<b>7.3</b>	<b>9.7</b>	<b>9.8</b>	<b>7.6</b>	<b>6.3</b>	<b>5.8</b>	<b>6.9</b>	<b>8.4</b>	<b>8.5</b>	

Due to rounding, column and row totals may not sum to exactly 100.0%.

## HUMIDITY

From Spencer Mesonet Site (SPEN); Jan 1994 – Dec 2003

Latitude: 3554N Longitude: 09734W Elevation: 1224 ft

Mean Monthly Humidity and Moisture					
	Daily Maximum Relative Humidity	Daily Minimum Relative Humidity	Daily Average Relative Humidity	Daily Average Dewpoint (°F)	Daily Average Vapor Deficit
January	86	45	66	27	3.4
February	84	41	63	30	4.9
March	85	41	63	36	5.8
April	85	41	63	45	7.9
May	92	50	72	58	8.0
June	91	52	73	66	9.6
July	86	44	66	68	15.4
August	85	42	64	67	15.6
September	88	46	68	60	10.8
October	87	46	67	49	7.3
November	87	46	67	38	4.8
December	87	47	68	29	3.4
<b>Annual</b>	<b>87</b>	<b>45</b>	<b>67</b>	<b>48</b>	<b>8.1</b>

Vapor pressure is given in millibars.

## SOIL TEMPERATURES

From Spencer Mesonet Site (SPEN); Jan 1994 – Dec 2003

Latitude: 3554N Longitude: 09734W Elevation: 1224 ft

Soil Temperatures at 10 cm (4-inch) depth				
	Average Temperature beneath sod	Average Temperature beneath bare soil	Average Daily Max Temperature	Average Daily Min Temperature
January	41	41	45	38
February	45	45	50	41
March	50	51	57	45
April	60	62	70	55
May	69	72	80	65
June	77	81	89	73
July	83	88	96	80
August	83	87	95	80
September	75	76	83	70
October	64	65	72	59
November	53	52	57	47
December	44	42	46	39
<b>Annual</b>	<b>62</b>	<b>63</b>	<b>70</b>	<b>58</b>

Average daily maximum and minimum temperatures based on bare soil.

## **TORNADOES**

Significant Tornadoes (F2 intensity or greater) affecting Oklahoma County, 1880 – 2003.  
Source: *Significant Tornadoes, 1880-1989: Volume I* and National Weather Service, Norman office.

Date	Path	Deaths	Injuries	Rating	Counties Affected
March 22, 1895	1 mile	0	4	F2	Oklahoma
May 5, 1893	unknown	unknown	unknown	F2	Oklahoma, Logan
May 12, 1896	5 miles	0	0	F2	Oklahoma
May 18, 1903	45 miles	0	10	F3	Canadian, Oklahoma, Logan
May 23, 1903	unknown	0	0	F2	Oklahoma
June 2, 1904	unknown	unknown	unknown	F2	Oklahoma
April 20, 1912	20 miles	1	1	F4	Canadian, Oklahoma
April 20, 1912	15 miles	0	0	F3	Oklahoma, Logan, Lincoln
November 19, 1930	7 miles	23	125	F4	Oklahoma
June 22, 1936	unknown	0	0	F2	Oklahoma
June 12, 1942	2.3 miles	35	100	F4	Oklahoma
April 12, 1945	20 miles	8	200	F4	Oklahoma
March 20, 1948	16 miles	0	8	F3	Oklahoma
March 20, 1948	3 miles	0	0	F2	Oklahoma
March 25, 1948	1.5 miles	0	1	F3	Oklahoma
April 30, 1951	9 miles	0	1	F2	Oklahoma
September 29, 1954	0.2 miles	0	0	F2	Oklahoma
May 22, 1957	2 miles	0	0	F2	Oklahoma
April 28, 1960	10 miles	0	57	F3	Oklahoma
May 4, 1960	5 miles	0	4	F3	Oklahoma
February 17, 1961	15 miles	0	7	F3	Oklahoma
May 21, 1961	unknown	0	0	F2	Oklahoma
May 26, 1963	30 miles	1	4	F3	Logan, Oklahoma., Lincoln
May 26, 1963	unknown	0	5	F3	Oklahoma
April 22, 1968	0.3 miles	0	1	F2	Oklahoma
April 30, 1970	47 miles	0	46	F2	Grady, Canadian., Oklahoma
April 30, 1970	3 miles	0	2	F2	Oklahoma
June 11, 1970	7 miles	0	1	F3	Canadian, Oklahoma
November 19, 1973	24 miles	5	53	F3	McClain, Cleveland, Oklahoma
April 20, 1974	60 miles	0	3	F2	Grady, Canadian, Oklahoma, Lincoln
June 8, 1974	9 miles	0	14	F3	Oklahoma
June 8, 1974	5 miles	0	0	F2	Oklahoma
June 8, 1974	9 miles	0	0	F2	Oklahoma
June 8, 1974	6 miles	0	0	F2	Oklahoma
May 13, 1975	0.5 miles	0	0	F2	Oklahoma

Date	Path	Deaths	Injuries	Rating	Counties Affected
May 20, 1977	16 miles	0	0	F2	Oklahoma
May 20, 1977	10 miles	0	0	F3	Oklahoma, Logan
April 30, 1978	8 miles	0	0	F4	Canadian, Oklahoma
May 17, 1981	3 miles	0	0	F2	Oklahoma
May 8, 1986	4 miles	0	15	F3	Oklahoma
May 16, 1986	2 miles	0	0	F2	Oklahoma
September 29, 1986	5 miles	0	0	F2	Oklahoma
September 29, 1986	0.1 miles	0	0	F2	Oklahoma
June 13, 1998	1.5 miles	0	4	F2	Oklahoma
June 13, 1998	5.5 miles	0	17	F2	Oklahoma
May 3, 1999	38 miles	36	583	F5	Grady, McClain, Cleveland, Oklahoma
May 3, 1999	7 miles	0	4	F2	Oklahoma
May 8, 2003	17 miles	0	134	F4	Cleveland, Oklahoma
May 9, 2003	18 miles	0	2	F3	Oklahoma

### ***About the Data:***

The temperature and precipitation data from Oklahoma City are from the National Weather Service Cooperative Observer station, which records daily maximum and minimum temperatures, precipitation, and snowfall. The station has been in operation since 1948, yielding a 56-year series of data. Extremes, frost and freeze data, and growing season lengths were determined using the entire 56-year series. The means for temperature, precipitation, and snowfall were determined using a subset of the series, from 1971-2000, corresponding with official national standards set by the National Climatic Data Center.

Wind and humidity data are compiled from the Oklahoma Mesonet station at Spencer, which has been operational since 1994. The Spencer Mesonet site was chosen because it is the only mesonet station in Oklahoma County. The Oklahoma Mesonet is a cooperative project between Oklahoma State University and The University of Oklahoma. Data are collected and archived at the Oklahoma Climatological Survey. The Mesonet records a variety of weather information at 5-minute intervals throughout the day, with at least one reporting station in every county in Oklahoma. For more information on the Mesonet, see <http://www.mesonet.org/>.

Solar radiation (sunshine) data were obtained from the *Climatic Atlas of the United States*, U.S. Department of Commerce, 1968. Severe storm information is available from the National Climatic Data Center, <http://www.ncdc.noaa.gov/>, under Weather/Climate Events: Climatology & Extreme Events, U.S. Storm Events Database. The best site for online county tornado information for Oklahoma is through the National Weather Service, Norman Office, <http://www.srh.noaa.gov/oun/tornadodata/>.

The tables and summary were prepared by the Oklahoma Climatological Survey. For more information, please contact OCS at 405-325-2541. Many climate summary products are available on the worldwide web at <http://www.ocs.ou.edu/>.

### ***Need Additional Information?***

If you cannot find what you need here, or want some help interpreting what this means for your particular needs, please contact:

The Oklahoma Climatological Survey  
100 E. Boyd Street, Suite 1210  
Norman, OK 73019-1012  
Phone: 405-325-2541  
E-mail: [ocs@ou.edu](mailto:ocs@ou.edu)

In addition to maintaining records of all weather and climate information for Oklahoma, OCS has a staff of climatologists who specialize in tailoring information for particular needs. Whether you want to know how dry it has been or are planning a construction project, OCS can help.