

The Climate of Muskogee County

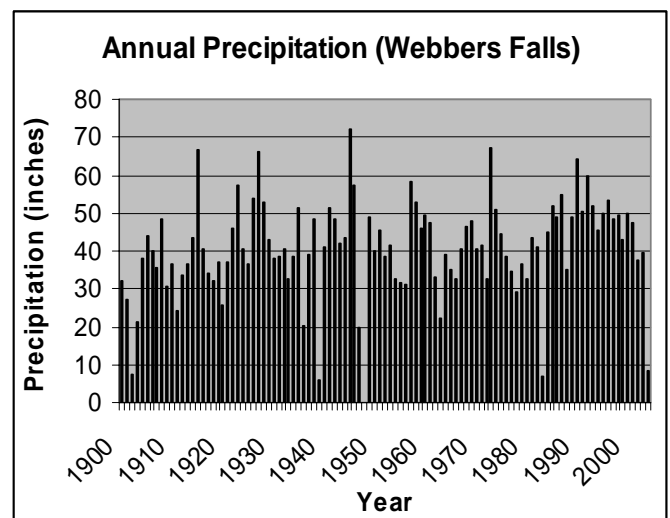
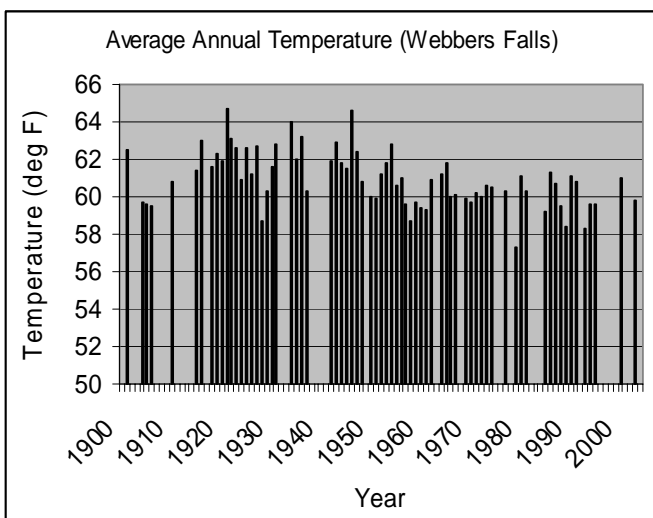


Muskogee County is part of the Hardwood Forest in the south and the Caves and Prairies in the north. The Hardwood Forest is a region of ridges and valley while the Caves and Prairies region is a mixture of grasslands and forest. Average annual precipitation ranges from about 42 inches in north Muskogee County to 48 inches in the south. May and June are the wettest months, on average, but much of the spring through fall receives sufficient rainfall. Nearly every winter has at least one inch of snow, with one year in six 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 and August to an average low of 25 degrees in January. Muskogee County averages a growing season of 211 days, but plants that can withstand short periods of colder temperatures may have an additional three to six weeks.

Winds from the east to southeast are quite dominant, averaging just over seven miles-per-hour. Relative humidity, on average, ranges from 45% to 96% during the day. During the year, humidity is highest in September and lowest in 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 75% in summer.

Thunderstorms occur on about 53 days each year, predominantly in the spring and summer. During the period 1950 - 2003, Muskogee County recorded 41 tornadoes. The most recent significant tornado (F2 intensity or greater) occurred on May 17, 1982. This F2 tornado passed through Muskogee County near Greenleaf State Park creating little damage and no injuries. Typically, there are about 3 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 (1900-2003)				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	25.1	36.1	82	(1st, 1952)	-16	(22nd, 1930)			4	24	*
Feb	53.7	29.6	41.7	92	(23rd, 1996)	-12	(10th, 1929)		*	2	17	*
Mar	62.8	38.4	50.6	98	(19th, 1907)	2	(12th, 1948)		*	*	9	
Apr	72.2	46.9	59.5	95	(3rd, 1918)	23	(5th, 1920)		*		2	
May	79.2	56.8	68.0	100	(31st, 1913)	32	(1st, 1909)		2			
Jun	87.4	65.5	76.5	110	(20th, 1936)	45	(2nd, 1907)	*	12			
Jul	93.3	69.6	81.5	113	(18th, 1936)	50	(16th, 1930)	4	24			
Aug	92.7	68.0	80.4	115	(10th, 1936)	40	(22nd, 1937)	5	22			
Sep	84.8	60.8	72.8	112	(5th, 1998)	33	(27th, 1942)	1	10			
Oct	74.6	48.6	61.6	99	(1st, 1901)	16	(30th, 1917)		1		1	
Nov	61.1	37.9	49.5	92	(3rd, 1900)	9	(24th, 1950)			*	10	
Dec	51.4	29.0	40.2	82	(25th, 1955)	-12	(15th, 1916)			2	20	*
Annual	71.8	48.1	60.0	115	(Aug 10, 1936)	-16	(Jan 22, 1930)	11	70	9	83	1

Precipitation (inches)											
	AVERAGE	EXTREMES (1900-2003)				AVG # DAYS PER MONTH (1971-2000)					
	1971-2000	Monthly Max	Daily Max		any	meas	0.10"+	0.25"+	0.50"+	1.00"+	
Jan	2.30"	12.42" (1916)	3.53"	(1st, 1941)	8	7	4	3	1	1	
Feb	2.53"	10.90" (1938)	3.62"	(17th, 1938)	7	6	4	3	2	1	
Mar	4.26"	10.65" (1945)	3.13"	(27th, 1977)	9	9	6	5	3	1	
Apr	4.27"	13.01" (1957)	6.15"	(15th, 1945)	10	8	6	5	3	1	
May	5.63"	17.59" (1943)	5.92"	(9th, 1943)	12	11	8	6	4	2	
Jun	4.76"	15.40" (1935)	10.47"	(10th, 1945)	9	8	6	5	3	2	
Jul	2.74"	12.30" (1960)	8.10"	(16th, 1928)	6	5	4	3	2	1	
Aug	2.97"	10.61" (1915)	3.94"	(10th, 1986)	7	6	4	3	2	1	
Sep	5.30"	11.08" (1970)	5.60"	(13th, 1989)	9	8	6	5	3	2	
Oct	4.55"	15.15" (1969)	9.46"	(14th, 1981)	8	7	5	4	2	1	
Nov	4.42"	12.34" (1996)	3.85"	(7th, 1996)	9	8	5	4	3	2	
Dec	3.21"	9.82" (1987)	4.57"	(23rd, 1932)	8	7	5	3	2	1	
Annual	46.93"	17.59" (May 1943)	10.47"	(Jun 10, 1945)	102	89	64	48	31	15	

Snow and Sleet (inches)											
	AVERAGE	EXTREMES (1900-2003)					AVG # DAYS PER MONTH (1971-2000)				
	1971-2000	Monthly Max	Daily Max		Greatest Depth	any	meas	0.50"+	1.00"+	Pot. Glazing	
Jan	3.3"	17.5" (1977)	10.0"	(22nd, 1906)	9.0"	(7th, 1988)	2	1	1	1	2
Feb	1.4"	12.5" (1921)	12.5"	(19th, 1921)	10.0"	(19th, 1921)	1	1	1	1	1
Mar	1.1"	16.5" (1989)	12.0"	(6th, 1989)	7.0"	(5th, 1989)	*	*	*	*	*
Apr	0.0"	0.0" (1997)	0.0"	(23rd, 1997)	1.0"	(16th, 1998)	*				
May											
Jun		0.0" (1954)	0.0"	(8th, 1954)							
Jul											
Aug											
Sep											
Oct	0.0"	0.1" (1993)	0.1"	(30th, 1993)			*	*			
Nov	0.3"	3.5" (1995)	3.5"	(11th, 1995)	4.0"	(11th, 1995)	*	*	*	*	*
Dec	0.5"	5.5" (1916)	5.5"	(13th, 1958)	6.0"	(13th, 1958)	1	*	*	*	1
Annual	6.7"	17.5" (Jan 1977)	12.5"	(Feb 19, 1921)	10.0"	(Feb 19, 1921)	5	3	3	2	4

TEMPERATURE AND PRECIPITATION

From Webbers Falls Cooperative Observer Station (349445); February 1900 – December 2003
 Latitude: 3529N Longitude: 09512W Elevation: 549 ft

Exceedence values (2 in 10 years)				
Month:	Maximum Temperature Higher Than:	Minimum Temperature Lower Than:	Precipitation Less Than:	Precipitation More Than:
January	75	2	0.93	3.50
February	80	8	1.00	3.75
March	87	16	1.69	5.18
April	90	28	2.80	6.39
May	94	39	2.95	8.14
June	99	50	1.92	6.80
July	106	56	1.11	4.94
August	108	55	1.19	5.42
September	102	39	1.78	6.74
October	94	27	1.12	6.54
November	84	17	1.15	4.96
December	76	8	1.08	4.04
Annual	108	-3	35.11	51.6

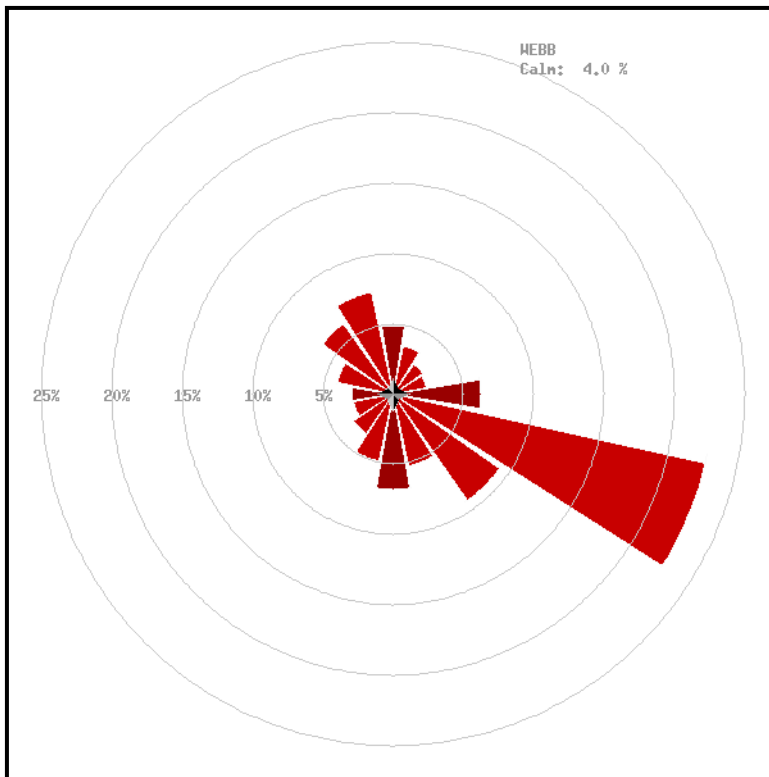
First Freezing Temperature in Fall			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Earlier Than –	November 2	October 22	October 15
2 Years in 10 Earlier Than –	November 9	October 27	October 19
5 Years in 10 Earlier Than –	November 18	November 9	October 28
Last Freezing Temperature in Spring			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Later Than –	March 28	April 11	April 21
2 Years in 10 Later Than –	March 23	April 3	April 15
5 Years in 10 Later Than –	March 9	March 22	April 5

Number of Days in Growing Season			
Probability	Higher than 24 F	Higher than 28 F	Higher than 32 F
9 Years in 10	228	208	184
8 Years in 10	236	216	193
5 Years in 10	252	231	211
2 Years in 10	273	250	228
1 Year in 10	289	259	234

WINDS

From Webbers Falls Mesonet Site (WEBB); Jan 1994 – Dec 2001

Latitude: 3547N Longitude: 09513W Elevation: 479 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, Webbers Falls records a east-southeasterly wind about 23 percent of the time, with northerly winds near 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: 71.8 mph
Maximum Sustained: 40.3 mph
Overall Average Speed: 7.1 mph

WEBB	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Totals
Calm																	4.0%
1- 5 mph	1.4	1.5	1.6	1.7	2.3	3.6	3.1	2.1	1.5	1.8	1.6	1.6	1.4	1.5	1.6	1.5	29.7%
6-10 mph	2.1	1.4	0.8	0.7	2.8	12.9	4.9	2.5	2.6	1.3	0.8	0.8	1.0	1.4	1.9	2.2	40.0%
11-15 mph	1.0	0.6	0.2	0.1	1.0	5.4	1.1	0.6	1.9	1.0	0.6	0.4	0.4	0.7	1.4	2.0	18.5%
16-20 mph	0.3	0.1	0.1	0.0	0.2	0.8	0.1	0.1	0.7	0.6	0.3	0.1	0.1	0.3	0.9	1.2	5.9%
21-25 mph	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.1	0.0	0.1	0.1	0.4	0.4	1.6%
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	0.1	0.1	0.3%
31-35 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	0.0%
35+ mph									0.0			0.0		0.0	0.0	0.0	0.0%
Totals	4.9	3.6	2.6	2.5	6.3	22.7	9.3	5.3	6.8	4.9	3.4	2.9	3.0	4.1	6.2	7.4	100.0%
WEBB	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
Max Gust	46	39	37	40	38	47	46	38	54	48	52	57	50	72	65	56	
Max 5 Min	32	28	27	34	30	34	30	25	36	34	32	35	34	38	40	40	
Avg Speed	7.4	5.9	4.7	4.0	6.3	7.8	6.1	5.8	8.5	8.2	6.7	5.8	6.1	7.5	9.5	10.0	

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

HUMIDITY

From Webbers Falls Mesonet Site (WEBB); Jan 1994 – Dec 2003

Latitude: 3547N Longitude: 09513W Elevation: 479 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	93	55	76	31	2.4
February	91	46	70	34	3.8
March	91	47	69	39	4.9
April	92	43	68	50	7.5
May	95	54	76	61	7.2
June	96	53	77	69	8.9
July	96	48	75	73	12.1
August	96	45	74	71	12.3
September	96	50	78	64	8.0
October	95	46	74	52	6.2
November	94	51	74	43	4.1
December	92	54	75	33	2.6
Annual	94	49	74	52	6.7

Vapor pressure is given in millibars.

SOIL TEMPERATURES

From Webbers Falls Mesonet Site (WEBB); Jan 1994 – Dec 2003

Latitude: 3547N Longitude: 09513W Elevation: 479 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	40	40	43	37
February	44	44	50	40
March	50	51	58	46
April	60	62	70	56
May	69	72	80	66
June	77	82	90	75
July	82	88	96	81
August	81	87	95	80
September	75	77	84	71
October	64	65	72	60
November	53	52	57	48
December	44	43	47	40
Annual	62	64	70	58

Average daily maximum and minimum temperatures based on bare soil.

TORNADOES

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

Date	Path	Deaths	Injuries	Rating	Counties Affected
April 12, 1893	unknown	2	0	F2	Muskogee
May 28, 1904	40 miles	5	25	F3	Muskogee, Haskell, Sequoyah
May 7, 1926	unknown	0	3	F2	Muskogee
June 11, 1931	8 miles	1	2	F2	Wagoner, Muskogee
June 17, 1935	1 miles	0	6	F2	Muskogee
May 8, 1936	14 miles	2	38	F4	Muskogee, Sequoyah
May 15, 1943	unknown	0	0	F2	Muskogee
April 12, 1945	3 miles	13	200	F4	Muskogee
March 25, 1948	2 miles	0	2	F3	Muskogee
June 7, 1951	unknown	0	1	F2	Muskogee
March 24, 1954	1 miles	0	0	F2	Muskogee
May 25, 1954	unknown	0	0	F2	Muskogee
February 24, 1956	20 miles	0	0	F2	Muskogee, Cherokee
May 5, 1971	35 miles	0	0	F2	Muskogee, Wagoner, Cherokee
May 26, 1973	3 miles	5	25	F4	Muskogee
December 5, 1975	26 miles	0	0	F3	Okmulgee, Muskogee, Wagoner
July 25, 1977	5 miles	0	0	F2	Muskogee
May 17, 1982	unknown	0	0	F2	Muskogee

About the Data:

The temperature and precipitation data from Webbers Falls 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 1900, yielding a 103-year series of data. Extremes, frost and freeze data, and growing season lengths were determined using the entire 103-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 Webbers Falls (3 miles south of town), which has been operational since 1994. The Webbers Falls Mesonet site was chosen to correspond to the Cooperative Observer data. There is another Mesonet site in Muskogee County at Haskell. 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:

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Norman, OK 73019-1012
Phone: 405-325-2541
E-mail: 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.