

# The Climate of Cherokee County

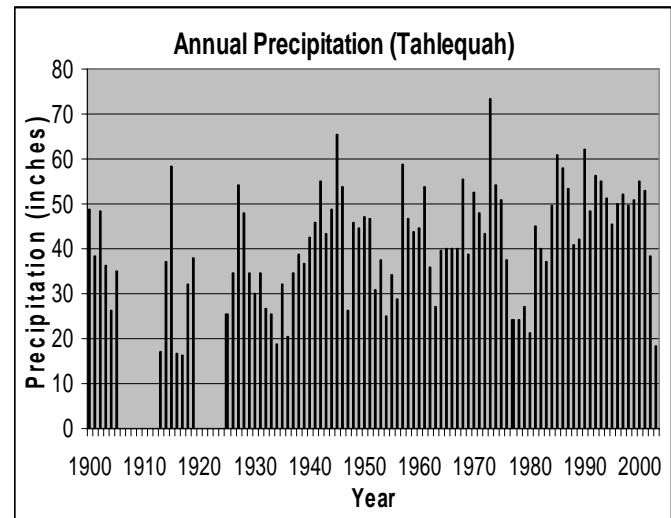
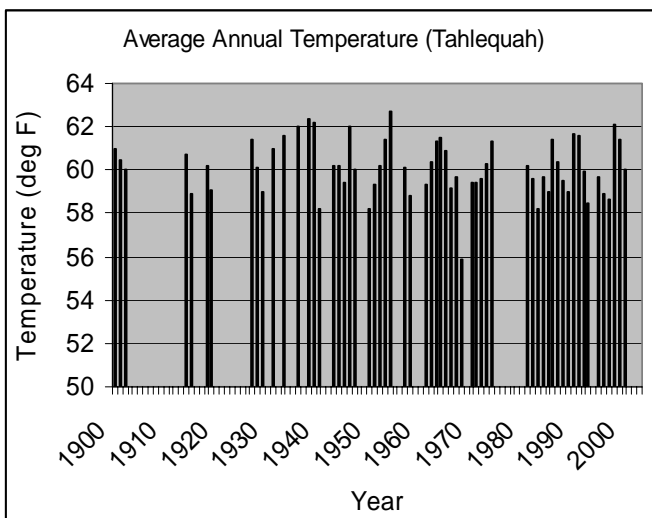


Cherokee County is part of the Ozark Forest, also known as the Boston Mountains, to the south and the Ozark Highlands to the north. Average annual precipitation ranges from about 48 inches in western Cherokee County to 51 inches in the east. May and June are the wettest months, on average, but much of the spring through fall receives sufficient rainfall. Nearly every winter has at least one inch of snow, with one year in five 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 92 degrees in July and August to an average low of 27 degrees in January. Cherokee County averages a growing season of 195 days, but plants that can withstand short periods of colder temperatures may have an additional three to seven weeks.

Winds from the southeast are quite dominant, averaging just nearly seven miles-per-hour. Relative humidity, on average, ranges from 43% to 94% during the day. During the year, humidity is highest in May and June and lowest in March and April. Winter months tend to be cloudier than summer months. The percentage of possible sunshine ranges from an average of about 50% in winter to nearly 75% in summer.

Thunderstorms occur on about 50 days each year, predominantly in the spring and summer. During the period 1950 - 2003, Cherokee County recorded 20 tornadoes. The most recent significant tornado (F2 intensity or greater) occurred on June 1, 1999. Two people were killed and five injured when this tornado passed near the town of Hulbert. On May 2, 1920 the people of Cherokee County suffered a deadly F4 tornado that took the lives of 71 people and injured 100. Typically, there are about 2 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	48.3	26.5	37.4	78	(11th, 1916)	-23	(18th, 1930)			3	22	*
Feb	54.1	30.6	42.4	88	(22nd, 1996)	-13	(10th, 1929)			2	16	*
Mar	63.8	39.6	51.7	96	(21st, 1916)	-10	(12th, 1948)		*	*	8	
Apr	72.6	47.8	60.2	94	(5th, 1946)	19	(3rd, 1936)		*		2	
May	79.2	56.9	68.1	97	(31st, 1934)	30	(4th, 1954)		*			
Jun	86.3	64.5	75.4	108	(22nd, 1936)	41	(4th, 1919)	*	9			
Jul	92.0	68.7	80.3	118	(18th, 1936)	45	(31st, 1971)	3	21			
Aug	92.3	67.7	80.0	118	(9th, 1936)	45	(31st, 1915)	3	22			
Sep	84.3	60.8	72.5	109	(3rd, 1939)	28	(30th, 1984)	1	9		*	
Oct	73.9	50.1	62.0	98	(1st, 1953)	16	(30th, 1917)		*		1	
Nov	60.7	39.3	50.0	89	(1st, 1927)	6	(24th, 1950)			*	9	
Dec	50.7	29.7	40.2	80	(14th, 1948)	-14	(23rd, 1989)			2	19	*
Annual	71.6	48.6	60.1	118	(Jul 18, 1936)	-23	(Jan 18, 1930)	7	62	8	77	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	2.40"	12.95" (1916)	3.73"	(21st, 1916)	8	6	4	3	1	1	
Feb	2.36"	8.68" (1938)	3.60"	(17th, 1938)	7	6	4	3	2	1	
Mar	4.15"	10.82" (1945)	3.78"	(12th, 1975)	9	8	6	4	3	1	
Apr	4.06"	11.28" (1945)	4.03"	(15th, 1945)	9	8	6	5	3	1	
May	5.69"	17.35" (1943)	4.72"	(10th, 1943)	10	10	8	6	4	2	
Jun	5.17"	14.23" (2000)	4.04"	(9th, 1974)	9	8	7	5	3	2	
Jul	3.56"	13.44" (1961)	6.13"	(15th, 1961)	6	6	4	3	2	1	
Aug	3.24"	13.09" (1915)	7.35"	(14th, 2002)	6	5	4	3	2	1	
Sep	5.28"	12.67" (1970)	6.23"	(26th, 1996)	8	8	6	5	3	1	
Oct	4.29"	16.45" (1941)	6.60"	(9th, 1970)	7	7	5	4	3	1	
Nov	4.55"	11.34" (1994)	5.37"	(5th, 1994)	7	7	6	4	3	2	
Annual	48.04"	17.35" (May 1943)	7.35"	(Aug 14, 2002)	94	83	66	49	30	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	2.5"	17.5" (1977)	14.0"	(9th, 1977)	14.0"	(9th, 1977)	2	1	1	1	2
Feb	1.9"	11.4" (1961)	8.0"	(23rd, 1975)	11.0"	(24th, 1975)	1	1	1	1	2
Mar	0.3"	18.0" (1964)	12.0"	(10th, 1964)	14.0"	(6th, 1989)	*	*	*	*	*
Apr		2.6" (1957)	2.6"	(13th, 1957)	2.0"	(13th, 1957)					
May											
Jun		0.0" (1951)	0.0"	(16th, 1951)							
Jul											
Aug		0.8" (1947)	0.8"	(17th, 1947)							
Sep											
Oct	0.0"	0.0" (1913)	0.0"	(26th, 1913)	0.1"	(30th, 1993)	*				
Nov	0.5"	4.7" (1972)	3.5"	(23rd, 1971)	4.0"	(23rd, 1971)	*	*	*	*	*
Dec	0.9"	7.4" (1969)	5.5"	(11th, 1985)	6.0"	(31st, 1969)	1	*	*	*	1
Annual	6.2"	18.0" (Mar 1964)	14.0"	(Jan 9, 1977)	14.0"	(Jan 9, 1977)	4	3	2	2	6

## **TEMPERATURE AND PRECIPITATION**

From Talequah Cooperative Observer Station (348677); January 1900 – November 2003

Latitude: 3556N      Longitude: 09458W      Elevation: 849 ft

Exceedence values (2 in 10 years)				
Month:	Maximum Temperature Higher Than:	Minimum Temperature Lower Than:	Precipitation Less Than:	Precipitation More Than:
January	74	-2	0.83	3.14
February	78	4	0.96	3.45
March	85	13	1.69	5.09
April	89	26	2.30	6.30
May	91	36	3.36	8.10
June	99	46	2.18	8.30
July	104	54	0.96	5.12
August	106	53	1.76	5.35
September	101	38	2.01	6.29
October	90	26	1.53	6.21
November	81	15	1.17	5.23
December	75	5	0.88	4.34
<b>Annual</b>	<b>108</b>	<b>-5</b>	<b>32.07</b>	<b>53.56</b>

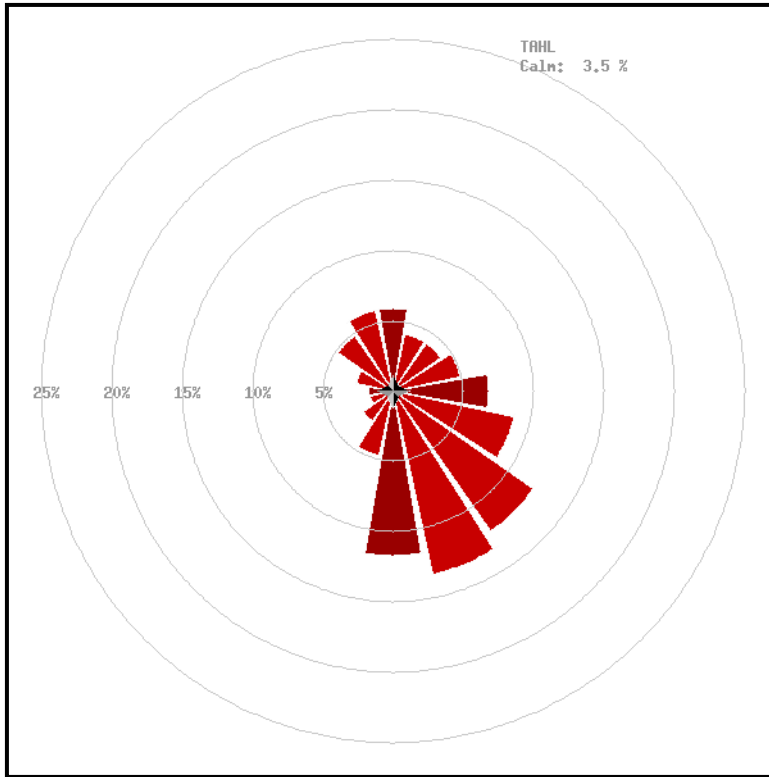
First Freezing Temperature in Fall			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Earlier Than –	October 30	October 19	October 7
2 Years in 10 Earlier Than –	November 2	October 25	October 15
5 Years in 10 Earlier Than –	November 13	November 4	October 24
Last Freezing Temperature in Spring			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Later Than –	April 6	April 15	April 26
2 Years in 10 Later Than –	March 30	April 10	April 21
5 Years in 10 Later Than –	March 20	March 31	April 12

Number of Days in Growing Season			
Probability	Higher than 24 F	Higher than 28 F	Higher than 32 F
9 Years in 10	214	198	177
8 Years in 10	221	202	180
5 Years in 10	244	217	195
2 Years in 10	259	232	211
1 Year in 10	270	238	217

## WINDS

From Tahlequah Mesonet Site (TAHL); Jan 1994 – Dec 2001

Latitude: 3597N Longitude: 09489W Elevation: 951 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, Tahlequah records a south-southeasterly wind about 13 percent of the time, with northerly winds nearly 6 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: 59.3 mph*

*Maximum Sustained: 34.2 mph*

*Overall Average Speed: 6.9 mph*

TAHL	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Totals
Calm																	3.5%
1- 5 mph	1.7	1.6	1.7	2.1	3.7	3.8	3.1	2.4	1.5	0.9	0.7	0.6	0.7	1.0	1.4	1.7	28.8%
6-10 mph	2.9	2.1	2.2	2.5	2.8	4.2	6.0	5.9	4.3	2.0	1.2	0.7	0.8	1.1	1.8	2.6	43.1%
11-15 mph	1.2	0.5	0.3	0.3	0.2	0.7	2.4	3.7	3.8	1.3	0.6	0.2	0.3	0.5	1.2	1.4	18.6%
16-20 mph	0.1	0.0	0.0	0.0	0.0	0.1	0.6	1.2	1.8	0.4	0.1	0.1	0.1	0.1	0.3	0.3	5.2%
21-25 mph	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.8%
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%
31-35 mph						0.0	0.0	0.0	0.0		0.0			0.0			0.0%
35+ mph																	0.0%
<b>Totals</b>	<b>5.9</b>	<b>4.2</b>	<b>4.2</b>	<b>4.9</b>	<b>6.8</b>	<b>8.8</b>	<b>12.2</b>	<b>13.4</b>	<b>11.7</b>	<b>4.8</b>	<b>2.7</b>	<b>1.7</b>	<b>1.8</b>	<b>2.7</b>	<b>4.8</b>	<b>6.0</b>	<b>100.0%</b>
TAHL	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
Max Gust	49	35	33	35	39	47	44	45	52	47	55	48	59	56	45	45	
Max 5 Min	26	20	20	23	27	34	34	31	31	28	33	29	27	30	29	28	
<b>Avg Speed</b>	<b>6.8</b>	<b>5.8</b>	<b>5.4</b>	<b>5.3</b>	<b>4.6</b>	<b>5.4</b>	<b>7.3</b>	<b>8.6</b>	<b>10.0</b>	<b>8.5</b>	<b>7.3</b>	<b>6.3</b>	<b>6.2</b>	<b>6.8</b>	<b>7.5</b>	<b>7.3</b>	

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

## HUMIDITY

From Tahlequah Mesonet Site (TAHL); Jan 1994 – Dec 2003

Latitude: 3597N      Longitude: 09489W      Elevation: 951 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	89	51	71	28	2.6
February	87	45	66	31	4.0
March	87	43	65	36	5.2
April	88	43	66	46	7.0
May	94	55	76	59	6.5
June	94	57	78	66	7.7
July	93	53	75	70	10.3
August	91	46	70	68	12.5
September	92	49	72	60	9.0
October	91	47	71	50	6.1
November	91	50	72	39	4.0
December	90	51	72	31	2.8
<b>Annual</b>	<b>91</b>	<b>49</b>	<b>71</b>	<b>49</b>	<b>6.5</b>

Vapor pressure is given in millibars.

## SOIL TEMPERATURES

From Tahlequah Mesonet Site (TAHL); Jan 1994 – Dec 2003

Latitude: 3597N      Longitude: 09489W      Elevation: 951 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	43	40	45	37
February	45	44	51	40
March	50	50	57	44
April	58	59	67	52
May	66	69	78	62
June	73	77	86	70
July	77	83	93	75
August	78	83	93	75
September	73	75	83	68
October	64	64	72	57
November	55	52	58	47
December	47	43	48	40
<b>Annual</b>	<b>61</b>	<b>62</b>	<b>69</b>	<b>56</b>

Average daily maximum and minimum temperatures based on bare soil.

## **TORNADOES**

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

<b>Date</b>	<b>Path</b>	<b>Deaths</b>	<b>Injuries</b>	<b>Rating</b>	<b>Counties Affected</b>
April 12, 1911	30 miles	1	10	F3	Craig, Cherokee (Ks), Jasper (Mo)
October 9, 1914	15 miles	6	14	F4	Ottawa, Cherokee (Ks)
May 2, 1920	3 miles	71	100	F4	Cherokee
May 13, 1933	15 miles	0	5	F2	Cherokee
February 24, 1935	15 miles	1	40	F2	Ottawa, Cherokee (Ks)
November 9, 1935	25 miles	0	5	F2	Wagoner, Cherokee
March 30, 1938	45 miles	10	200	F4	Craig (La)Bette, Cherokee (Ks)
April 12, 1945	4 miles	4	8	F2	Cherokee
February 24, 1956	20 miles	0	0	F2	Muskogee, Cherokee
April 3, 1956	40 miles	0	54	F4	Ottawa, Cherokee (Ks), Jasper (Mo)
September 27, 1959	20 miles	0	1	F4	Craig (La)Bette, Cherokee (Ks)
May 10, 1964	2 miles	0	0	F2	Cherokee
April 11, 1966	6 miles	0	0	F2	Cherokee
May 5, 1971	35 miles	0	0	F2	Muskogee, Wagoner, Cherokee
April 17, 1995	7 miles	0	0	F2	Cherokee
June 1, 1999	2 miles	2	5	F3	Cherokee

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

The temperature and precipitation data from Tahlequah 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 104-year series of data. Extremes, frost and freeze data, and growing season lengths were determined using the entire 104-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 Tahlequah (4 miles north of town), which has been operational since 1994. The Tahlequah Mesonet site was chosen because it is the only Mesonet site in Cherokee 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.