

The Climate of Blaine County



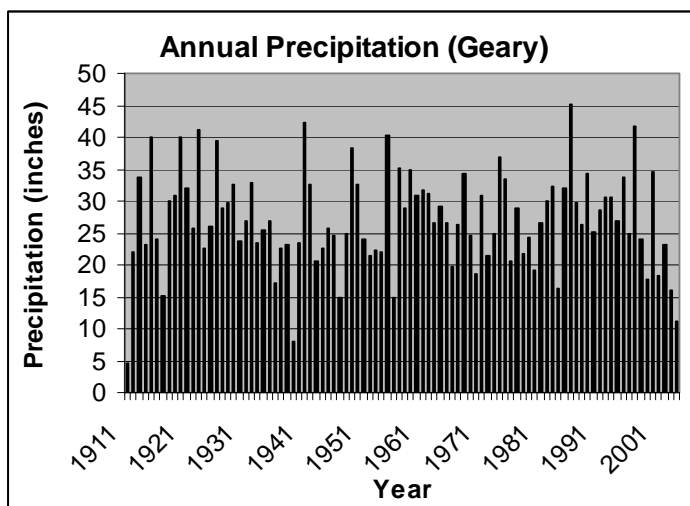
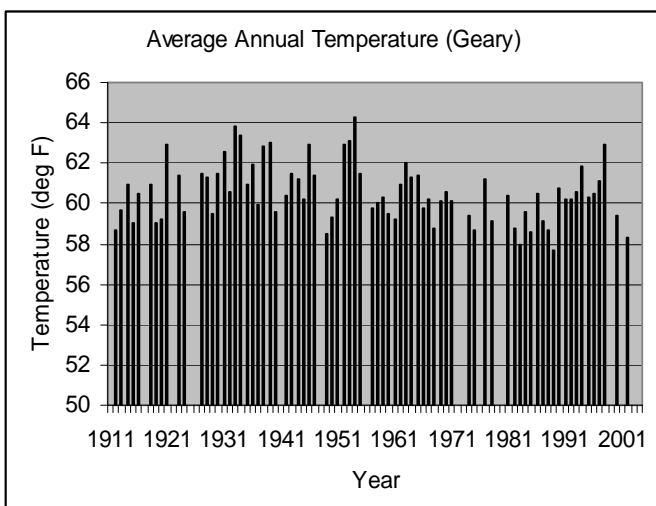
Blaine County is part of the Central Great Plains, encompassing some of the best agricultural land in Oklahoma. Average annual precipitation ranges from about 27 inches in western Blaine County to 33 inches in the east. June and September are the wettest months, on average, but much of the spring through fall receives sufficient rainfall. Nearly every winter has at least one inch of snow, with one year in three 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. Blaine County averages a growing season of 205 days, but plants that can withstand short periods of colder temperatures may have an additional three to six weeks.

Winds from the south to southwest are quite dominant, averaging just over 11 miles-per-hour. Relative humidity, on average, ranges from 35% to 91% during the day. During the year, humidity is highest in May and lowest in July. Winter months tend to be cloudier than summer months. The percentage of possible sunshine ranges from an average of about 60% in winter to nearly 80% in summer.

Thunderstorms occur on about 45 days each year, predominantly in the spring and summer. During the period 1950 - 2003, Blaine County recorded 39 tornadoes. The most recent significant tornado (F2 intensity or greater) occurred on October 4, 1998 9 miles east-northeast of Watonga.

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 (1911-2003)				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	47.5	25.9	36.7	81	(25th, 1950)	-11	(4th, 1947)			4	23	*
Feb	53.2	30.3	41.8	90	(22nd, 1996)	-7	(8th, 1933)		*	3	15	*
Mar	62.5	38.3	50.4	95	(21st, 1916)	-1	(3rd, 2002)		*	*	8	
Apr	71.4	47.0	59.2	100	(12th, 1972)	18	(2nd, 1936)	*	*		1	
May	79.4	56.9	68.1	103	(30th, 1985)	30	(3rd, 1954)	*	3			
Jun	87.8	65.6	76.7	111	(14th, 1953)	44	(2nd, 1917)	1	13			
Jul	93.4	70.3	81.8	113	(19th, 1936)	51	(21st, 1970)	4	23			
Aug	92.8	69.0	80.9	116	(12th, 1936)	48	(30th, 1915)	4	23			
Sep	84.5	61.2	72.9	110	(6th, 1947)	26	(23rd, 1943)	1	9			
Oct	73.3	49.9	61.6	102	(1st, 1938)	16	(30th, 1917)		1		1	
Nov	59.4	37.4	48.4	89	(9th, 1980)	8	(13th, 1940)			*	9	
Dec	49.5	28.7	39.1	90	(24th, 1955)	-12	(23rd, 1989)			3	20	*
Annual	71.3	48.5	59.9	116	(Aug 12, 1936)	-12	(Dec 23, 1989)	11	72	10	77	1

Precipitation (inches)										
	AVERAGE	EXTREMES (1911-2003)				AVG # DAYS PER MONTH (1971-2000)				
	1971-2000	Monthly Max	Daily Max		any	meas	0.10"+	0.25"+	0.50"+	1.00"+
Jan	0.80"	6.01" (1949)	2.10"	(30th, 1982)	2	2	1	1	1	*
Feb	1.23"	4.30" (1915)	2.40"	(21st, 1997)	3	3	2	2	1	*
Mar	2.42"	7.80" (1973)	2.62"	(28th, 1989)	4	4	4	3	2	1
Apr	2.83"	9.25" (1997)	3.46"	(10th, 1944)	5	5	4	3	2	1
May	4.81"	12.99" (1982)	5.79"	(17th, 1982)	7	7	6	5	3	2
Jun	4.15"	15.43" (1948)	11.25"	(23rd, 1948)	6	6	5	4	3	1
Jul	2.01"	8.77" (1950)	4.32"	(1st, 1913)	3	3	3	2	1	1
Aug	2.35"	9.16" (1950)	3.75"	(16th, 1950)	4	4	3	3	2	1
Sep	3.03"	13.43" (1986)	6.98"	(13th, 1961)	5	4	4	3	2	1
Oct	2.60"	10.63" (1960)	5.24"	(3rd, 1955)	4	4	4	3	2	1
Nov	1.90"	7.06" (1994)	5.30"	(20th, 1994)	3	3	3	2	1	1
Dec	1.34"	4.90" (1999)	2.85"	(9th, 1911)	3	3	2	2	1	*
Annual	29.48"	15.43" (Jun 1948)	11.25"	(Jun 23, 1948)	50	47	42	31	20	9

Snow and Sleet (inches)											
	AVERAGE	EXTREMES (1911-2003)				AVG # DAYS PER MONTH (1971-2000)					
	1971-2000	Monthly Max	Daily Max		Greatest Depth		any	meas	0.50"+	1.00"+	Pot. Glazing
Jan	1.9"	18.2" (1930)	8.2"	(9th, 1930)	9.0"	(17th, 1930)	1	1	1	1	1
Feb	1.2"	14.2" (1913)	8.0"	(18th, 1921)	9.0"	(8th, 1929)	1	1	1	*	1
Mar	0.1"	25.1" (1924)	10.0"	(19th, 1924)	9.0"	(28th, 1944)	*	*	*	*	*
Apr		13.0" (1938)	10.0"	(8th, 1938)	0.1"	(1st, 1926)					
May		0.0" (1954)	0.0"	(13th, 1946)							
Jun		0.0" (1949)	0.0"	(19th, 1949)							
Jul											
Aug		0.0" (1954)	0.0"	(30th, 1954)							
Sep		0.0" (1954)	0.0"	(30th, 1954)							
Oct	0.0"	1.0" (1991)	1.0"	(31st, 1991)	1.0"	(10th, 1940)	*	*	*	*	*
Nov	0.6"	4.8" (1951)	4.0"	(17th, 1980)	75.0"	(21st, 1926)	*	*	*	*	*
Dec	0.8"	15.0" (1918)	12.0"	(23rd, 1918)	85.0"	(26th, 1939)	1	*	*	*	*
Annual	4.5"	25.1" (Mar 1924)	12.0"	(Dec 23, 1918)	85.0"	(Dec 26, 1939)	3	2	2	2	2

TEMPERATURE AND PRECIPITATION

From Geary Cooperative Observer Station (343497); November 1911 – December 2003

Latitude: 3538N Longitude: 09819W Elevation: 1594 ft

Exceedence values (2 in 10 years)				
Month:	Maximum Temperature Higher Than:	Minimum Temperature Lower Than:	Precipitation Less Than:	Precipitation More Than:
January	74	0	0.15	1.44
February	79	6	0.26	2.02
March	87	13	0.75	3.20
April	91	28	1.34	4.00
May	97	38	1.81	6.65
June	103	50	1.78	6.20
July	107	58	0.80	3.70
August	107	55	0.96	4.04
September	102	40	1.09	5.12
October	94	30	0.73	3.80
November	82	16	0.35	2.58
December	74	5	0.18	2.14
Annual	109	-3	23.01	34.22

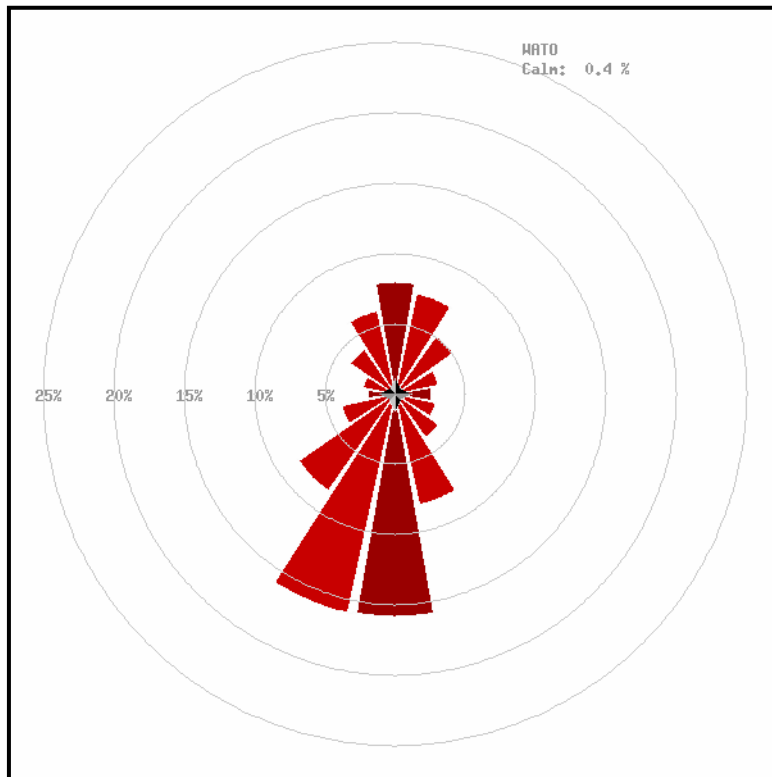
First Freezing Temperature in Fall			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Earlier Than –	November 1	October 27	October 18
2 Years in 10 Earlier Than –	November 10	November 2	October 20
5 Years in 10 Earlier Than –	November 20	November 11	November 2
Last Freezing Temperature in Spring			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Later Than –	April 4	April 12	April 20
2 Years in 10 Later Than –	March 27	April 7	April 15
5 Years in 10 Later Than –	March 20	March 27	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	221	205	189
8 Years in 10	229	212	194
5 Years in 10	247	226	205
2 Years in 10	269	243	222
1 Year in 10	279	247	233

WINDS

From Watonga Mesonet Site (WATO); Jan 1994 – Dec 2001

Latitude: 3584N Longitude: 09852W Elevation: 1692 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, Watonga records a south-southwesterly wind about 16 percent of the time, with northerly winds 8 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: 66.1 mph

Maximum Sustained: 44.4 mph

Overall Average Speed: 11.3 mph

WATO	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Totals
Calm																	0.4%
1- 5 mph	0.9	0.9	0.9	0.9	0.8	0.9	0.9	0.8	0.5	0.4	0.3	0.3	0.3	0.5	0.8	0.9	10.9%
6-10 mph	2.8	2.5	2.3	1.7	1.4	1.6	2.0	3.3	3.4	2.4	1.6	1.1	0.9	1.1	1.7	2.2	32.0%
11-15 mph	2.5	2.4	1.5	0.6	0.4	0.5	0.8	2.7	4.9	4.6	2.8	1.5	0.5	0.5	0.9	1.7	28.7%
16-20 mph	1.3	1.2	0.3	0.1	0.1	0.1	0.2	1.1	4.2	4.6	2.3	0.7	0.2	0.2	0.4	0.9	17.9%
21-25 mph	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.2	2.1	2.9	1.0	0.1	0.1	0.1	0.1	0.3	7.6%
26-30 mph	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.0	0.2	0.0	0.0	0.0	0.0	0.1	2.1%
31-35 mph	0.0	0.0	0.0		0.0		0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.3%
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%
Totals	8.0	7.3	5.1	3.2	2.7	3.0	3.8	8.1	15.9	15.9	8.4	3.9	2.0	2.3	3.9	6.1	100.0%
WATO	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
Max Gust	63	51	49	42	44	41	44	56	53	66	60	57	64	50	53	54	
Max 5 Min	41	35	38	28	30	28	32	38	38	42	44	43	41	35	39	36	
Avg Speed	10.4	10.2	8.5	6.8	6.5	6.8	7.4	10.1	14.0	15.4	13.9	11.3	9.0	8.5	8.8	10.1	

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

HUMIDITY

From Watonga Mesonet Site (WATO); Jan 1994 – Dec 2003

Latitude: 3584N Longitude: 09852W Elevation: 1692 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	84	46	67	25	3.1
February	84	45	65	29	4.1
March	86	45	67	35	4.7
April	85	42	65	44	7.0
May	91	46	70	56	8.6
June	89	43	67	63	12.6
July	83	35	59	65	19.1
August	81	37	59	64	18.1
September	84	40	63	56	12.6
October	83	45	65	47	7.5
November	86	47	68	37	4.3
December	86	49	69	28	3.0
Annual	85	43	65	46	8.8

Vapor pressure is given in milibars.

SOIL TEMPERATURES

From Watonga Mesonet Site (WATO); Jan 1994 – Dec 2003

Latitude: 3584N Longitude: 09852W Elevation: 1692 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	39	43	37
February	43	43	48	39
March	48	49	55	45
April	57	60	66	54
May	66	70	78	64
June	73	79	87	73
July	79	86	93	79
August	79	85	92	78
September	73	76	83	70
October	63	63	69	58
November	52	50	55	46
December	43	41	45	38
Annual	60	62	68	57

Average daily maximum and minimum temperatures based on bare soil.

TORNADOES

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

Date	Path	Deaths	Injuries	Rating	Counties Affected
July 15, 1894	3 miles	0	0	F2	Blaine
May 19, 1898	unknown	unknown	unknown	F2	Blaine
May 23, 1903	10 miles	0	4	F2	Blaine
October 30, 1903	5 miles	2	10	F3	Custer, Blaine
June 4, 1906	unknown	0	unknown	F2	Blaine
June 4, 1906	10 miles	0	1	F3	Caddo, Blaine
April 27, 1912	27 miles	5	15	F4	Washita, Caddo, Blaine
March 15, 1919	18 miles	2	8	F4	Washita, Caddo, Blaine
May 21, 1923	2 miles	0	8	F3	Blaine
May 5, 1930	10 miles	3	18	F3	Blaine
April 9, 1944	13 miles	0	4	F2	Custer, Blaine
May 11, 1947	15 miles	0	5	F3	Blaine
March 30, 1949	20 miles	4	31	F4	Dewey, Blaine
May 20, 1949	27 miles	0	0	F2	Blaine, Kingfisher
May 20, 1949	12 miles	0	0	F2	Blaine
May 20, 1949	15 miles	1	7	F4	Blaine
March 25, 1959	12 miles	0	0	F2	Custer, Blaine
May 4, 1961	20 miles	1	0	F3	Blaine, Canadian, Kingfisher
June 10, 1967	25 miles	0	0	F2	Custer, Blaine
June 10, 1967	unknown	0	0	F3	Blaine
June 10, 1967	5 miles	0	0	F4	Blaine
May 22, 1981	unknown	0	0	F2	Blaine
October 4, 1998	12 miles	0	0	F2	Blaine

About the Data:

The temperature and precipitation data from Geary 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 1911, yielding a 92-year series of data. Extremes, frost and freeze data, and growing season lengths were determined using the entire 92-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 Watonga (7 miles west of town), which has been operational since 1994. The Watonga Mesonet site was chosen because it is the only Mesonet site in Blaine 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:

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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.