

The Climate of Woods County

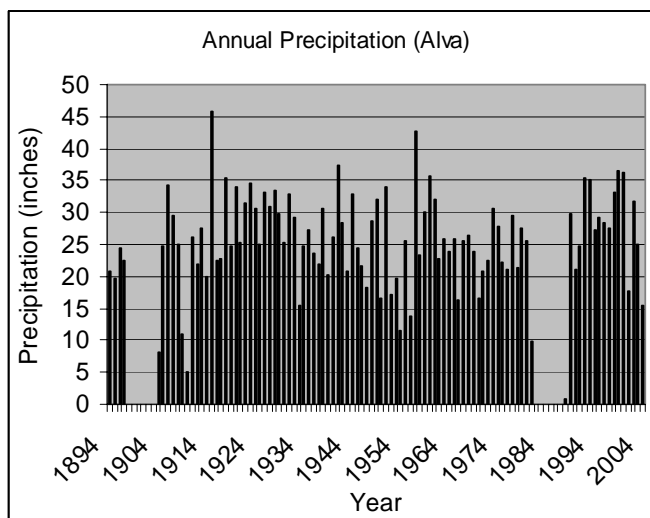
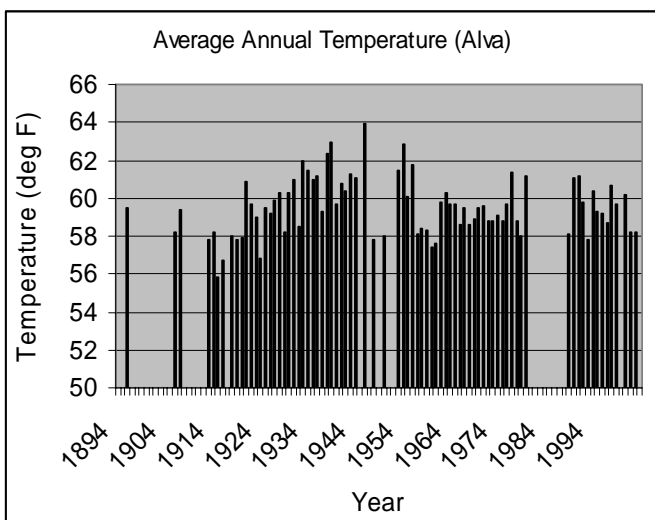


Woods County is part of the Central Great Plains in the south, encompassing some of the best agricultural land in Oklahoma. To the north is the grassy and elevated Southwestern Tablelands. Average annual precipitation ranges from about 27 inches in western Woods County to 30 inches in the east. May and 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 two 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 97 degrees in July to an average low of 23 degrees in January. Woods County averages a growing season of 199 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 near eleven miles-per-hour. Relative humidity, on average, ranges from 34% to 92% during the day. During the year, humidity is highest in December and lowest in July. Winter months tend to be cloudier than summer months. The percentage of possible sunshine ranges from an average of about 65% in winter to nearly 80% in summer.

Thunderstorms occur on about 47 days each year, predominantly in the spring and summer. During the period 1950 - 2003, Woods County recorded 44 tornadoes. The most recent significant tornado (F2 intensity or greater) occurred on April 17, 2002. This F2 tornado passed harmlessly near Orienta and Ingersol. The people of Woods County were not so lucky on April 9, 1947 when an F5 tornado took a 170 mile long path through parts of Texas, Oklahoma, and Kansas killing 181 and injuring 970. Typically, there are about 5 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 (1894-2004)				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	46.3	23.0	34.6	85	(22nd, 1943)	-15	(18th, 1930)			5	26	1
Feb	53.0	27.5	40.2	93	(22nd, 1996)	-16	(8th, 1933)		*	3	19	*
Mar	62.6	36.1	49.3	99	(21st, 1907)	-5	(11th, 1948)		*	1	11	
Apr	72.8	45.6	59.2	100	(14th, 1936)	16	(2nd, 1936)	*	1		2	
May	80.4	55.7	68.1	107	(23rd, 1996)	25	(1st, 1909)	*	5			
Jun	91.0	65.2	78.1	114	(25th, 1911)	41	(2nd, 1917)	3	18			
Jul	96.8	70.2	83.5	120	(18th, 1936)	51	(5th, 1915)	12	26			
Aug	94.7	68.5	81.6	118	(12th, 1936)	45	(31st, 1915)	9	23			
Sep	86.3	60.2	73.2	115	(3rd, 1939)	31	(23rd, 1895)	3	13		*	
Oct	75.8	47.9	61.9	103	(2nd, 1938)	10	(30th, 1917)		3		1	
Nov	59.1	35.1	47.1	92	(1st, 1950)	5	(29th, 1911)		*	*	11	
Dec	48.7	26.0	37.3	85	(24th, 1955)	-15	(23rd, 1989)			3	24	*
Annual	72.4	46.8	59.6	120	(Jul 18, 1936)	-16	(Feb 8, 1933)	28	91	12	95	1

Precipitation (inches)										
	AVERAGE	EXTREMES (1894-2004)			AVG # DAYS PER MONTH (1971-2000)					
	1971-2000	Monthly Max	Daily Max		any	meas	0.10"+	0.25"+	0.50"+	1.00"+
Jan	0.90"	4.10" (1949)	1.40"	(9th, 1930)	4	3	2	1	1	*
Feb	0.87"	4.58" (1911)	2.33"	(16th, 1911)	4	3	2	1	1	*
Mar	2.44"	8.52" (2000)	2.52"	(23rd, 2000)	6	6	4	3	2	1
Apr	2.55"	8.06" (1999)	3.07"	(27th, 1938)	7	6	4	3	2	1
May	4.72"	11.64" (1957)	4.23"	(16th, 1957)	9	8	6	5	3	2
Jun	3.37"	12.78" (1951)	4.36"	(23rd, 1963)	8	7	5	4	2	1
Jul	2.61"	6.23" (1906)	3.40"	(19th, 1911)	6	6	5	3	2	1
Aug	3.44"	11.10" (1917)	6.96"	(17th, 1932)	7	6	5	3	2	1
Sep	2.22"	11.20" (1920)	4.84"	(6th, 1920)	6	6	4	3	1	1
Oct	1.89"	9.60" (2002)	4.60"	(3rd, 2002)	4	4	3	2	1	*
Nov	1.79"	7.70" (1909)	3.60"	(13th, 1909)	5	4	3	2	1	*
Dec	1.06"	3.98" (1918)	1.78"	(5th, 1999)	5	4	2	1	1	*
Annual	27.86"	12.78" (Jun 1951)	6.96"	(Aug 17, 1932)	72	63	45	31	19	8

Snow and Sleet (inches)											
	AVERAGE	EXTREMES (1894-2004)				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"	20.1" (1930)	14.0"	(9th, 1930)	17.0"	(16th, 1930)	2	1	1	1	2
Feb	3.2"	26.0" (1913)	13.0"	(22nd, 1971)	17.0"	(3rd, 1913)	1	1	1	1	2
Mar	2.1"	37.0" (1924)	10.5"	(5th, 1941)	12.0"	(30th, 1926)	1	1	1	1	1
Apr	0.6"	10.0" (1973)	8.0"	(8th, 1973)	6.0"	(9th, 1938)	*	*	*	*	
May											
Jun		9.0" (1896)	8.0"	(26th, 1896)							
Jul											
Aug		6.0" (1897)	6.0"	(5th, 1897)							
Sep											
Oct		3.0" (1941)	3.0"	(31st, 1941)	0.1"	(31st, 1941)					*
Nov	1.0"	24.0" (1951)	10.0"	(1st, 1951)	10.0"	(1st, 1951)	*	*	*	*	*
Dec	2.7"	18.5" (1904)	13.0"	(23rd, 1918)	15.0"	(31st, 1918)	2	1	1	1	2
Annual	11.9"	37.0" (Mar 1924)	14.0"	(Jan 9, 1930)	17.0"	(Feb 3, 1913)	6	5	5	4	7

TEMPERATURE AND PRECIPITATION

From Alva Cooperative Observer Station (340193); April 1894 – February 2004

Latitude: 3648N Longitude: 09839W Elevation: 1404 ft

Exceedence values (2 in 10 years)				
Month:	Maximum Temperature Higher Than:	Minimum Temperature Lower Than:	Precipitation Less Than:	Precipitation More Than:
January	75	-4	0.16	1.44
February	82	1	0.24	1.94
March	90	9	0.44	2.68
April	95	25	1.13	4.07
May	100	36	1.81	6.18
June	106	49	1.78	5.46
July	110	56	1.10	3.77
August	111	52	1.24	5.02
September	105	40	1.19	4.08
October	96	26	0.74	3.18
November	83	13	0.13	2.66
December	75	2	0.34	1.63
Annual	112	-5	22.02	32.93

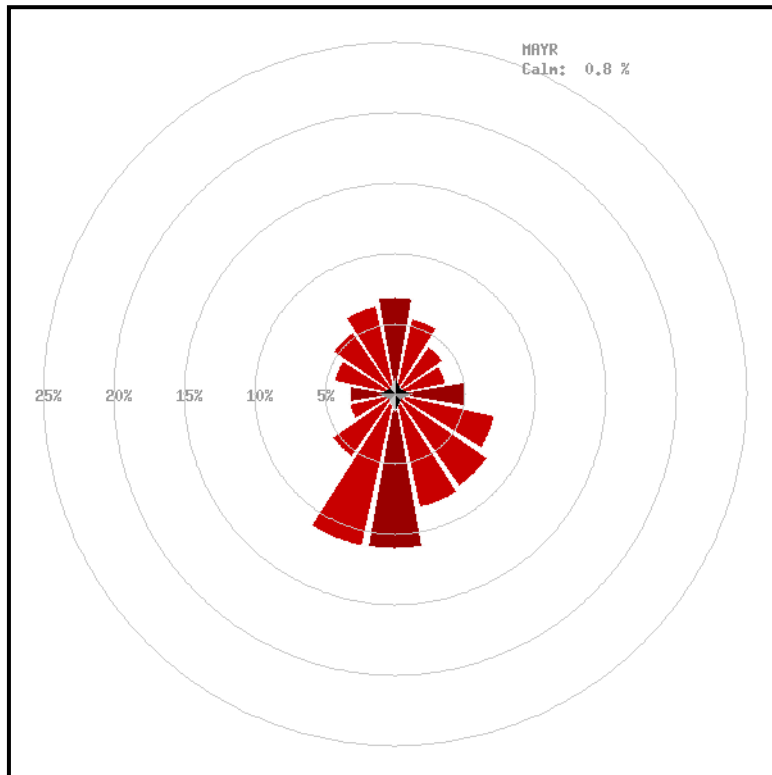
First Freezing Temperature in Fall			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Earlier Than –	November 2	October 26	October 10
2 Years in 10 Earlier Than –	November 6	October 28	October 17
5 Years in 10 Earlier Than –	November 17	November 7	October 27
Last Freezing Temperature in Spring			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Later Than –	April 6	April 13	April 28
2 Years in 10 Later Than –	April 1	April 11	April 21
5 Years in 10 Later Than –	March 22	April 1	April 10

Number of Days in Growing Season			
Probability	Higher than 24 F	Higher than 28 F	Higher than 32 F
9 Years in 10	220	197	179
8 Years in 10	225	208	191
5 Years in 10	241	223	199
2 Years in 10	260	238	212
1 Year in 10	267	245	219

WINDS

From May Ranch Mesonet Site (MAYR); Jan 1994 – Dec 2001

Latitude: 3699N Longitude: 09901W Elevation: 1811 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, May Ranch records a south-southwesterly wind about 11 percent of the time, with northerly winds near 7 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: 73.4 mph

Maximum Sustained: 53.5 mph

Overall Average Speed: 10.7 mph

MAYR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Totals
Calm																	0.8%
1- 5 mph	0.5	0.5	0.6	0.6	0.9	1.3	1.2	0.9	0.9	0.9	0.8	0.8	0.7	0.6	0.5	0.5	12.2%
6-10 mph	1.9	1.8	1.8	1.8	2.3	3.6	3.7	2.7	2.7	2.8	1.9	1.3	1.3	1.6	1.7	1.7	34.6%
11-15 mph	2.1	1.8	1.3	1.0	1.3	1.8	2.4	2.9	3.4	3.2	1.4	0.8	0.8	1.3	1.8	1.9	29.0%
16-20 mph	1.5	1.0	0.4	0.3	0.4	0.5	0.6	1.3	2.4	2.4	0.9	0.3	0.3	0.5	0.8	1.2	15.0%
21-25 mph	0.6	0.3	0.1	0.0	0.1	0.1	0.1	0.3	1.2	1.3	0.3	0.1	0.1	0.2	0.4	0.8	6.0%
26-30 mph	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.1	0.0	0.0	0.1	0.2	0.3	1.8%
31-35 mph	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.5%
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	0.0	0.0	0.1%
Totals	6.9	5.5	4.2	3.7	5.0	7.3	8.0	8.3	11.0	11.1	5.5	3.4	3.2	4.4	5.4	6.4	100.0%
MAYR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
Max Gust	66	58	66	50	51	58	54	58	73	56	57	72	69	60	64	70	
Max 5 Min	48	42	45	35	38	44	37	39	50	42	43	54	49	43	45	50	
Avg Speed	12.6	11.1	9.2	8.5	8.4	8.2	8.8	10.6	12.7	12.9	10.5	8.9	8.8	10.4	11.7	13.2	

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

HUMIDITY

From Alva Mesonet Site (ALVA); Jan 1994 – Dec 2003

Latitude: 3680N Longitude: 09867W Elevation: 1371 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	87	44	68	23	2.9
February	86	42	66	27	3.9
March	87	43	67	34	4.7
April	87	41	65	42	7.1
May	92	45	70	56	8.7
June	89	39	65	62	14
July	84	34	59	65	19.4
August	83	36	60	64	18.3
September	85	38	62	56	13.0
October	86	43	66	46	7.3
November	87	44	68	35	4.4
December	89	49	72	26	2.6
Annual	87	42	66	45	8.9

Vapor pressure is given in millibars.

SOIL TEMPERATURES

From Alva Mesonet Site (ALVA); Jan 1994 – Dec 2003

Latitude: 3680N Longitude: 09867W Elevation: 1371 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	38	37	40	35
February	41	42	45	39
March	46	48	52	44
April	57	59	65	54
May	66	70	76	65
June	74	79	86	74
July	81	86	93	80
August	79	84	91	79
September	73	76	82	71
October	62	63	68	58
November	50	50	54	46
December	40	39	42	37
Annual	59	61	66	57

Average daily maximum and minimum temperatures based on bare soil.

TORNADOES

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

Date	Path	Deaths	Injuries	Rating	Counties Affected
May 17, 1898	4 miles	0	1	F2	Woods
May 23, 1903	10 miles	2	20	F3	Woods, Alfalfa
May 10, 1908	15 miles	0	0	F2	Major, Woods, Alfalfa
May 21, 1908	10 miles	0	0	F2	Woods
May 26, 1908	50 miles	7	8	F4	Woodward, Woods, Alfalfa
May 22, 1923	10 miles	2	9	F4	Harper, Woodward, Woods
May 22, 1923	25 miles	0	4	F3	Woodward, Woods, Barber (KS)
May 18, 1938	25 miles	0	0	F2	Woods
April 14, 1939	80 miles	7	33	F5	Dewey, Woodward, Major, Woods, Alfalfa, Barber (KS)
June 5, 1945	12 miles	0	3	F3	Woods
April 9, 1947	170 miles	181	970	F5	Gray (TX), Roberts (TX), Hemphill (TX), Lipscomb (TX), Ellis, Woodward, Woods, Barber (KS), Kingman (KS)
May 20, 1949	20 miles	0	0	F2	Woodward, Woods
May 20, 1949	30 miles	0	0	F3	Woodward, Woods
June 18, 1955	3 miles	0	0	F2	Woods
April 2, 1956	20 miles	0	3	F3	Woods, Alfalfa
August 13, 1964	unknown	0	0	F2	Woods
June 4, 1965	1.5 miles	0	0	F2	Woods
April 2, 1991	5 miles	0	0	F2	Woods
May 17, 1995	12 miles	0	0	F2	Woods, Alfalfa
October 4, 1998	10 miles	0	0	F2	Woods, Alfalfa
May 25, 2000	8 miles	0	0	F2	Woods
April 17, 2002	34 miles	0	1	F2	Major, Woods, Alfalfa

About the Data:

The temperature and precipitation data from Alva 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 1894, yielding a 110-year series of data. Extremes, frost and freeze data, and growing season lengths were determined using the entire 110-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 data is from May Ranch Mesonet station and humidity data are compiled from the Oklahoma Mesonet station at Alva which has been operational since 1994. The Alva Mesonet station was moved to a different location in 1999, therefore data was insufficient to use for wind data. The Alva Mesonet site was chosen because of its more central location in the county. An additional Mesonet site is located in Woods County at May Ranch. 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

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.