

The Climate of Major County

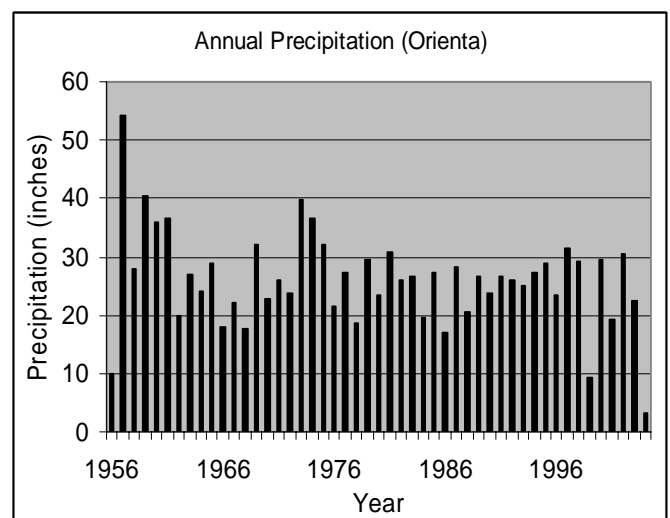
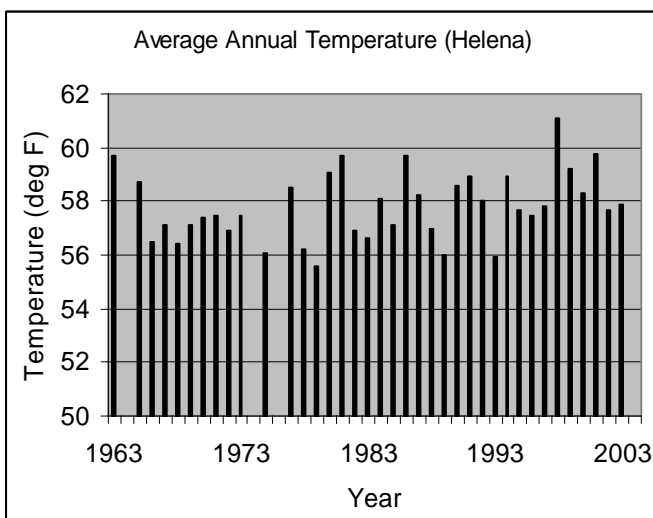


Major County is part of the Central Great Plains, encompassing some of the best agricultural land in Oklahoma. Average annual precipitation ranges from about 24 inches in western Major County to 30 inches in the east. May and June are the wettest months, on average, but much of the spring through fall receives sufficient rainfall. Nearly every winter has at least one inch of snow, with one year in three having ten or more inches.

Temperatures average near 58 degrees, with a slight increase from north to south. Temperatures range from an average daytime high of 95 degrees in July to an average low of 21 degrees in January. Major County averages a growing season of 200 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 nearly ten miles-per-hour. Relative humidity, on average, ranges from 33% to 89% during the day. During the year, humidity is highest in May and December and lowest in July and August. 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 50 days each year, predominantly in the spring and summer. During the period 1950 - 2003, Major County recorded 35 tornadoes. The most recent significant tornado (F2 intensity or greater) occurred on April 17, 2002 passing nearly harmlessly on a 34-mile path near Orienta and Ingersol. 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.



Major County lacks a Cooperative Observer Station having a complete enough data set for temperature. Therefore, Helena in Alfalfa County was used to represent the average annual temperature for Major County.

Temperature (deg Fahrenheit)												
	AVERAGES (1971-2000)			EXTREMES (1906-2004)				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	44.0	21.0	32.5	82	(23rd, 1967)	-14	(8th, 1988)			6	28	1
Feb	50.2	25.5	37.8	92	(13th, 1962)	-15	(6th, 1982)		*	4	21	1
Mar	59.7	34.5	47.1	99	(19th, 1907)	0	(3rd, 2002)		*	1	13	
Apr	69.5	43.4	56.5	99	(13th, 1972)	18	(3rd, 1975)		*		3	
May	78.8	54.1	66.4	105	(31st, 1985)	29	(6th, 1944)	*	3			
Jun	88.9	64.0	76.5	113	(25th, 1911)	44	(18th, 1914)	2	15			
Jul	94.8	68.9	81.9	113	(30th, 1986)	50	(14th, 1990)	8	25			
Aug	93.5	67.4	80.5	112	(7th, 1964)	48	(29th, 1988)	7	23			
Sep	84.6	59.2	71.9	108	(4th, 2000)	31	(30th, 1984)	2	11		*	
Oct	72.9	46.7	59.8	98	(1st, 1979)	12	(31st, 1993)		1		2	
Nov	57.4	33.7	45.5	88	(9th, 1980)	5	(26th, 1975)			1	14	
Dec	46.7	24.3	35.5	78	(8th, 1966)	-15	(23rd, 1989)			4	26	1
Annual	70.2	45.3	57.8	113	(Jun 25, 1911)	-15	(Feb 6, 1982)	19	79	16	108	3

Precipitation (inches)										
	AVERAGE	EXTREMES (1956-2004)			AVG # DAYS PER MONTH (1971-2000)					
	1971-2000	Monthly Max	Daily Max		any	meas	0.10"+	0.25"+	0.50"+	1.00"+
Jan	0.80"	2.69" (1975)	1.74"	(31st, 1975)	3	3	2	1	*	*
Feb	1.05"	3.83" (1997)	1.98"	(4th, 1960)	4	3	2	1	1	*
Mar	2.34"	10.57" (1973)	2.45"	(23rd, 2000)	6	5	4	3	1	1
Apr	2.49"	7.87" (1957)	3.52"	(18th, 1970)	6	6	4	3	2	1
May	4.19"	14.30" (1957)	5.25"	(16th, 1957)	8	8	6	5	3	1
Jun	3.18"	11.95" (1957)	4.60"	(23rd, 1963)	6	6	5	4	2	1
Jul	2.72"	7.61" (1979)	3.00"	(31st, 1979)	5	5	4	3	2	1
Aug	2.74"	7.52" (1992)	3.11"	(14th, 1989)	5	4	4	3	2	1
Sep	2.74"	9.19" (1959)	4.50"	(23rd, 1997)	5	5	4	3	2	1
Oct	2.40"	8.05" (2002)	5.46"	(11th, 1973)	5	4	3	2	1	*
Nov	1.82"	8.28" (1974)	2.98"	(4th, 1974)	5	4	3	2	1	1
Dec	1.06"	3.33" (1999)	1.90"	(19th, 1987)	4	4	2	1	1	*
Annual	27.52"	14.30" (May 1957)	5.46"	(Oct 11, 1973)	61	58	45	31	19	8

Snow and Sleet (inches)											
	AVERAGE	EXTREMES (1906-2004)				AVG # DAYS PER MONTH (1971-2000)					
	1971-2000	Monthly Max	Daily Max		Greatest Depth		any	meas	0.50"+	1.00"+	Pot. Glazing
Jan	4.1"	22.0" (1949)	8.0"	(30th, 1942)	14.0"	(7th, 1988)	4	2	2	2	4
Feb	4.7"	27.0" (1971)	19.0"	(22nd, 1971)	24.0"	(22nd, 1971)	3	1	1	1	3
Mar	2.9"	18.0" (1988)	12.0"	(9th, 1994)	13.0"	(18th, 1988)	2	1	1	1	1
Apr	0.6"	12.0" (1973)	6.0"	(8th, 1973)	10.0"	(9th, 1973)	*	*	*	*	*
May		0.0" (1945)	0.0"	(15th, 1945)							
Jun		0.0" (1953)	0.0"	(9th, 1951)							
Jul		0.0" (1953)	0.0"	(4th, 1953)							
Aug		0.0" (1954)	0.0"	(31st, 1954)							
Sep		0.0" (1950)	0.0"	(17th, 1950)							
Oct	0.1"	2.0" (1991)	2.0"	(31st, 1991)	2.0"	(31st, 1991)	*	*	*	*	*
Nov	1.4"	16.0" (1972)	8.0"	(19th, 1972)	10.0"	(19th, 1972)	1	*	*	*	1
Dec	4.2"	21.0" (1987)	10.0"	(11th, 1974)	16.0"	(15th, 1987)	3	2	2	2	3
Annual	17.8"	27.0" (Feb 1971)	19.0"	(Feb 22, 1971)	24.0"	(Feb 22, 1971)	13	6	6	6	12

TEMPERATURE AND PRECIPITATION

From Helena Cooperative Observer Station (344019); January 1906 – February 2004

Latitude: 3653N Longitude: 09826W Elevation: 1349 ft

Exceedence values (2 in 10 years)				
Month:	Maximum Temperature Higher Than:	Minimum Temperature Lower Than:	Precipitation Less Than:	Precipitation More Than:
January	74	-3	0.18	1.44
February	79	0	0.30	2.27
March	87	11	0.55	3.52
April	90	25	1.09	3.83
May	97	37	2.00	6.97
June	103	49	1.55	5.89
July	108	57	1.31	5.07
August	107	55	1.15	5.98
September	103	39	0.82	4.84
October	94	27	0.58	3.82
November	81	15	0.24	2.91
December	72	1	0.33	1.94
Annual	109	-6	21.77	36.47

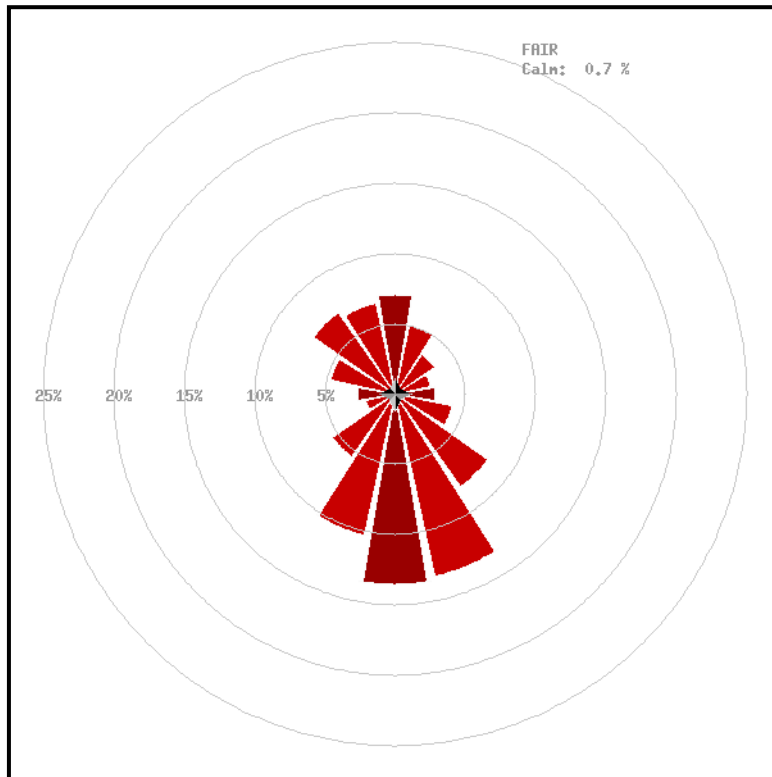
First Freezing Temperature in Fall			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Earlier Than –	November 1	October 24	October 16
2 Years in 10 Earlier Than –	November 4	October 29	October 19
5 Years in 10 Earlier Than –	November 20	November 10	October 29
Last Freezing Temperature in Spring			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Later Than –	April 5	April 15	May 2
2 Years in 10 Later Than –	March 31	April 10	April 20
5 Years in 10 Later Than –	March 22	April 2	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	219	197	181
8 Years in 10	226	209	186
5 Years in 10	242	220	200
2 Years in 10	261	242	214
1 Year in 10	276	247	220

WINDS

From Fairview Mesonet Site (FAIR); Jan 1994 – Dec 2001

Latitude: 3626N Longitude: 09849W Elevation: 1335 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, Fairview records a south-southeasterly wind about 13 percent of the time, with northerly winds just over 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: 78.5 mph

Maximum Sustained: 48.3 mph

Overall Average Speed: 9.6 mph

FAIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Totals
Calm																	0.7%
1- 5 mph	1.0	0.9	0.8	0.8	0.9	1.1	1.5	1.8	1.4	0.9	0.6	0.5	0.7	0.9	1.2	1.2	16.3%
6-10 mph	2.1	1.7	1.5	1.3	1.4	2.0	4.3	6.5	4.6	2.6	1.3	0.7	1.2	2.3	2.9	2.4	38.8%
11-15 mph	2.3	1.5	0.9	0.5	0.5	0.8	1.9	3.7	4.2	2.6	1.6	0.5	0.6	1.1	1.8	1.7	26.1%
16-20 mph	1.4	0.7	0.2	0.1	0.1	0.2	0.4	1.1	2.3	2.2	1.2	0.3	0.2	0.3	0.8	1.0	12.4%
21-25 mph	0.3	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.8	1.3	0.5	0.1	0.0	0.1	0.2	0.3	4.2%
26-30 mph	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.2	0.0	0.0	0.0	0.1	0.1	1.2%
31-35 mph	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	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	0.0	0.0	0.0%
Totals	7.1	5.0	3.5	2.6	2.9	4.1	8.1	13.3	13.6	10.2	5.4	2.2	2.7	4.8	7.1	6.6	100.0%
FAIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
Max Gust	63	57	52	49	50	53	51	49	65	55	79	67	63	57	56	55	
Max 5 Min	46	45	38	34	36	38	35	37	43	42	41	48	43	36	42	36	
Avg Speed	10.8	9.7	7.9	6.9	6.8	7.2	7.8	8.7	11.0	13.3	12.2	9.3	7.9	8.4	9.3	9.8	

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

HUMIDITY

From Fairview Mesonet Site (FAIR); Jan 1994 – Dec 2003

Latitude: 3626N Longitude: 09849W Elevation: 1335 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	85	44	66	24	3.3
February	85	43	65	29	4.2
March	87	42	65	35	5.2
April	87	40	64	44	7.4
May	92	45	70	57	9.0
June	89	40	65	63	14.0
July	82	33	57	65	21.3
August	81	35	57	64	19.8
September	85	39	62	57	13.4
October	86	43	65	47	7.8
November	87	44	67	36	4.7
December	88	48	70	28	3.0
Annual	86	42	65	46	9.4

Vapor pressure is given in millibars.

SOIL TEMPERATURES

From Fairview Mesonet Site (FAIR); Jan 1994 – Dec 2003

Latitude: 3626N Longitude: 09849W Elevation: 1335 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	39	43	36
February	43	43	49	39
March	49	50	57	45
April	59	61	69	55
May	69	72	80	65
June	77	80	88	73
July	84	88	97	81
August	83	87	95	80
September	76	77	85	71
October	65	64	71	58
November	53	51	57	47
December	44	41	45	38
Annual	62	63	70	57

Average daily maximum and minimum temperatures based on bare soil.

TORNADOES

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

Date	Path	Deaths	Injuries	Rating	Counties Affected
May 10, 1908	80 miles	5	40	F4	Hemphill (TX), Ellis, Dewey, Woodward, Major
May 10, 1908	15 miles	0	0	F2	Major, Woods, Alfalfa
April 19, 1910	unknown	1	unknown	F1	Major
April 3, 1934	5 miles	0	2	F2	Major
April 14, 1939	80 miles	7	33	F5	Dewey, Woodward, Major, Woods, Alfalfa, Barber (KS)
June 6, 1947	1.5 miles	0	0	F2	Major
April 8, 1956	5 miles	0	0	F3	Major
May 7, 1961	5 miles	0	0	F2	Major, Alfalfa
May 2, 1979	24 miles	1	25	F4	Major, Garfield
May 2, 1979	15 miles	0	10	F2	Major
October 31, 1984	20 miles	0	0	F3	Woodward, Major
October 31, 1984	8 miles	0	0	F2	Major
April 12, 1991	9 miles	0	0	F2	Major
April 17, 2002	34 miles	0	1	F2	Major, Woods, Alfalfa

About the Data:

The temperature and snowfall data from Helena 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 1906, yielding a 98-year series of data. Extremes, frost and freeze data, and growing season lengths were determined using the entire 98-year series. The precipitation data are from the Orienta Cooperative Observer station. The station has been in operation since 1956, yielding a 48-year series of data. 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 Fairview (1 mile west of town), which has been operational since 1994. The Fairview Mesonet site was chosen because of its more central location in the county. An additional Mesonet site is located in Major County at Lahoma. 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.