

The Climate of Ottawa County

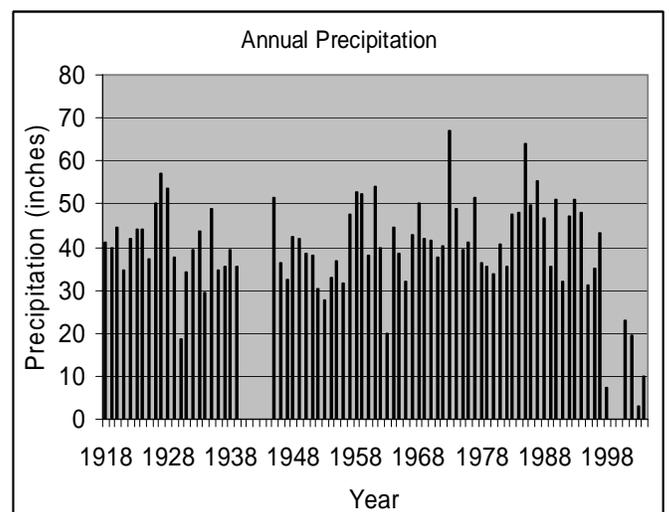
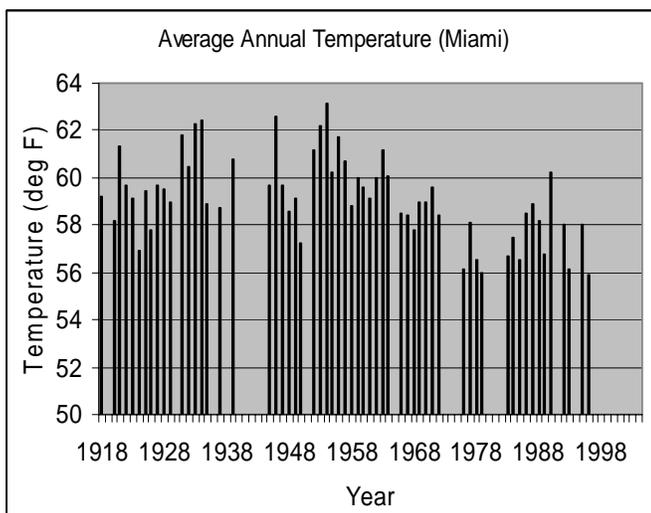


Ottawa County, in far northeastern Oklahoma, is where Oklahoma's prairies give way to the Ozark highlands. Average annual precipitation total just under 45 inches. May and September are the wettest months, on average, but Ottawa County generally receives abundant rainfall from March through November. Most winters have at least one inch of snow, with about one year in four having ten or more inches.

Temperatures exhibit a sharp contrast across the county, ranging from near 59 degrees in southern parts to less than 56 degrees in the northeast. Temperatures range from an average daytime high of 92 degrees in July to an average low of 22 degrees in January. Ottawa County averages a growing season of 201 days, but plants that can withstand short periods of colder temperatures may have an additional five weeks.

Winds from the south are quite dominant, averaging less than eight miles-per-hour. Relative humidity, on average, ranges from 50% to 92% during the day. During the year, humidity is relatively high year-round, with a slight decline in late winter to early spring. Winter months tend to be cloudier than summer months. The percentage of possible sunshine ranges from an average of less than 50% in winter to about 75% in summer.

Thunderstorms occur on about 53 days each year, predominantly in the spring and summer. During the period 1950 - 2003, Ottawa County recorded 25 tornadoes, roughly one about every-other year. A significant tornado (F2 intensity or greater) has not been recorded since April 7, 1980, when a tornado cut a 22-mile path beginning in Mayes County and ending in southern portions of Ottawa County. Typically, there is about one event 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 (1917-2002)				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	44.6	21.8	33.2	77	(21st, 1933)	-25	(22nd, 1930)			6	26	1
Feb	50.1	26.4	38.3	85	(23rd, 1996)	-12	(4th, 1996)			3	20	1
Mar	60.7	36.0	48.4	92	(24th, 1929)	-3	(12th, 1948)		*	1	12	
Apr	70.8	45.2	58.0	98	(12th, 1972)	17	(3rd, 1936)		*		2	
May	77.9	54.3	66.1	101	(31st, 1934)	30	(14th, 1921)		1		*	
Jun	86.1	63.7	74.9	106	(18th, 1918)	44	(12th, 1985)	*	10			
Jul	91.5	67.8	79.7	116	(14th, 1954)	47	(31st, 1971)	3	21			
Aug	91.2	65.8	78.5	114	(9th, 1936)	47	(21st, 1950)	3	20			
Sep	82.8	58.1	70.4	110	(3rd, 1947)	29	(30th, 1984)	*	8		*	
Oct	72.2	45.9	59.0	99	(1st, 1953)	13	(31st, 1993)		*		2	
Nov	58.2	35.5	46.9	86	(5th, 1921)	7	(29th, 1976)			*	12	
Dec	48.1	26.3	37.2	78	(7th, 1966)	-15	(23rd, 1989)			3	23	1
Annual	69.6	45.7	57.6	116	(Jul 14, 1954)	-25	(Jan 22, 1930)	6	59	13	98	3

Precipitation (inches)											
	AVERAGE	EXTREMES (1917-2002)				AVG # DAYS PER MONTH (1971-2000)					
	1971-2000	Monthly Max	Daily Max		any	meas	0.10"+	0.25"+	0.50"+	1.00"+	
Jan	1.65"	6.44" (1949)	1.80"	(5th, 1929)	7	5	4	2	1	*	
Feb	2.15"	7.83" (1985)	5.78"	(23rd, 1985)	7	5	4	2	2	*	
Mar	3.95"	10.46" (1973)	5.90"	(25th, 1920)	9	8	6	4	3	1	
Apr	4.15"	10.43" (1927)	3.40"	(30th, 1970)	9	9	6	4	3	1	
May	5.29"	11.57" (1957)	4.00"	(31st, 1946)	11	10	8	6	4	2	
Jun	4.01"	14.10" (1935)	5.40"	(22nd, 1948)	9	8	6	4	3	1	
Jul	3.61"	18.81" (1958)	9.15"	(7th, 1958)	7	6	5	3	2	1	
Aug	3.55"	8.35" (1920)	4.08"	(20th, 1989)	7	6	5	3	2	1	
Sep	5.13"	14.94" (1986)	6.00"	(25th, 1993)	9	8	6	4	3	2	
Oct	3.70"	13.15" (1919)	4.95"	(16th, 1980)	8	7	5	4	2	1	
Nov	4.51"	11.08" (1985)	4.47"	(12th, 1985)	8	7	5	4	3	2	
Dec	2.81"	7.27" (1992)	5.57"	(23rd, 1932)	7	6	4	3	2	1	
Annual	44.51"	18.81" (Jul 1958)	9.15"	(Jul 7, 1958)	99	86	63	45	30	13	

Snow and Sleet (inches)											
	AVERAGE	EXTREMES (1917-2002)				AVG # DAYS PER MONTH (1971-2000)					
	1971-2000	Monthly Max	Daily Max		Greatest Depth		any	meas	0.50"+	1.00"+	Pot. Glazing
Jan	2.3"	11.0" (1918)	8.0"	(10th, 1918)	9.0"	(19th, 1918)	1	1	1	1	1
Feb	0.9"	9.0" (1929)	5.0"	(14th, 1966)	8.0"	(16th, 1993)	1	1	*	*	1
Mar	0.7"	16.0" (1968)	14.0"	(12th, 1968)	14.0"	(12th, 1968)	1	*	*	*	*
Apr	0.0"	3.0" (1957)	3.0"	(12th, 1957)	0.1"	(18th, 1953)	*				*
May											
Jun											
Jul		0.0" (1952)	0.0"	(14th, 1952)							
Aug											
Sep											
Oct	0.0"	0.0" (1925)	0.0"	(28th, 1925)	1.0"	(21st, 1994)	*				
Nov	0.2"	12.0" (1951)	9.0"	(6th, 1951)	9.0"	(6th, 1951)	*	*	*	*	*
Dec	1.0"	12.0" (1917)	10.0"	(7th, 1917)	11.0"	(9th, 1917)	1	1	1	*	1
Annual	5.1"	16.0" (Mar 1968)	14.0"	(Mar 12, 1968)	14.0"	(Mar 12, 1968)	4	2	2	2	4

TEMPERATURE AND PRECIPITATION

From Miami Cooperative Observer Station (345855); December 1917 – June 2003

Latitude: 3653N Longitude: 09453W Elevation: 804 ft

Exceedence values (2 in 10 years)				
Month:	Maximum Temperature Higher Than:	Minimum Temperature Lower Than:	Precipitation Less Than:	Precipitation More Than:
January	72	-3	0.73	2.82
February	78	1	0.98	2.70
March	84	11	1.44	5.22
April	89	27	2.33	5.66
May	92	37	2.57	7.21
June	100	48	2.55	6.56
July	104	54	1.33	6.28
August	105	52	1.53	5.30
September	100	37	1.60	8.03
October	92	27	1.46	6.31
November	81	15	1.17	5.60
December	73	2	0.90	3.75
Annual	107	-7	35.31	50.12

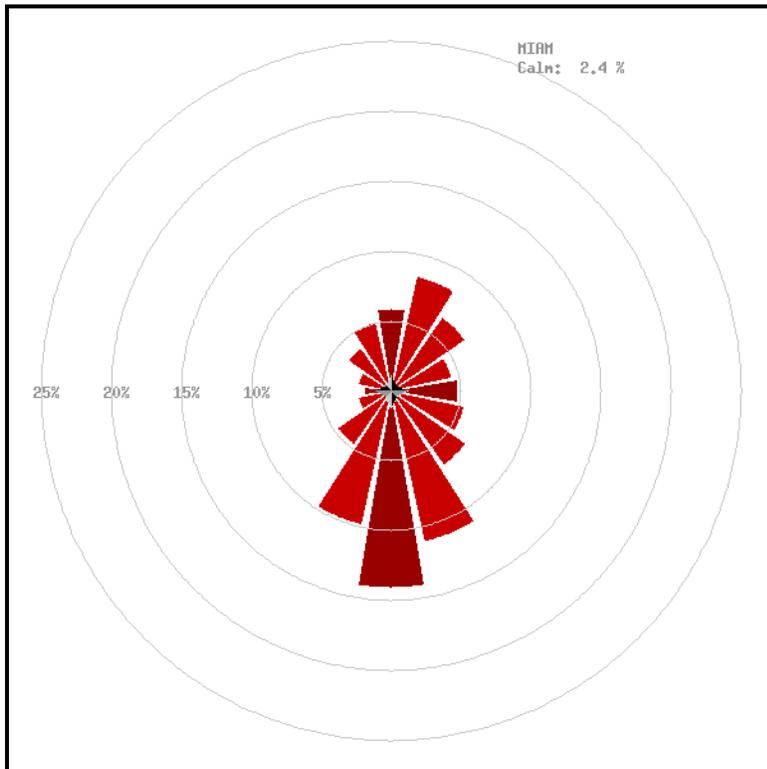
First Freezing Temperature in Fall			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Earlier Than –	October 31	October 21	October 10
2 Years in 10 Earlier Than –	November 3	October 27	October 16
5 Years in 10 Earlier Than –	November 14	November 5	October 28
Last Freezing Temperature in Spring			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Later Than –	April 3	April 13	April 22
2 Years in 10 Later Than –	March 29	April 6	April 17
5 Years in 10 Later Than –	March 17	March 30	April 9

Number of Days in Growing Season			
Probability	Higher than 24 F	Higher than 28 F	Higher than 32 F
9 Years in 10	220	201	177
8 Years in 10	224	207	189
5 Years in 10	238	220	201
2 Years in 10	260	236	212
1 Year in 10	270	247	223

WINDS

From Miami Mesonet Site (MIAM); Jan 1994 – Dec 2001

Latitude: 3653N Longitude: 09451W Elevation: 811 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, Miami records a south-southeasterly wind about 11 percent of the time, with northerly winds just under 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: 74.1 mph

Maximum Sustained: 44.5 mph

Overall Average Speed: 7.6 mph

MIAM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Totals
Calm																	2.4%
1- 5 mph	1.2	1.7	1.9	2.0	2.8	2.9	2.8	2.6	2.4	1.6	1.0	0.7	0.6	0.8	1.0	1.0	26.9%
6-10 mph	2.4	3.6	2.9	1.8	1.5	1.9	2.8	5.3	5.9	3.6	2.0	1.1	0.9	1.0	1.6	2.1	40.4%
11-15 mph	1.7	2.4	1.4	0.6	0.4	0.4	0.7	2.5	3.6	2.7	1.2	0.5	0.3	0.4	0.9	1.4	21.2%
16-20 mph	0.6	0.7	0.3	0.1	0.1	0.1	0.1	0.6	1.8	1.5	0.4	0.2	0.1	0.1	0.3	0.5	7.3%
21-25 mph	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.4	0.1	0.1	0.0	0.0	0.1	1.5%
26-30 mph	0.0	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	0.0	0.0	0.2%
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%
35+ mph	0.0	0.0						0.0						0.0		0.0	0.0%
Totals	5.9	8.5	6.5	4.4	4.8	5.3	6.5	11.1	14.1	9.8	4.8	2.5	2.0	2.5	3.9	5.1	100.0%
MIAM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
Max Gust	52	51	57	43	38	40	44	48	54	51	46	52	74	51	52	68	
Max 5 Min	40	35	33	33	29	30	31	35	35	34	29	33	31	36	34	45	
Avg Speed	8.6	8.4	7.2	5.8	4.9	4.9	5.7	7.7	9.3	9.9	8.4	7.7	7.4	6.8	7.8	8.8	

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

HUMIDITY

From Miami Mesonet Site (MIAM); Jan 1994 – Dec 2003

Latitude: 3653N Longitude: 09451W Elevation: 811 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	90	53	73	26	2.3
February	88	46	68	30	3.5
March	88	45	66	35	4.7
April	89	45	67	46	6.6
May	94	55	76	58	6.3
June	95	56	77	66	7.8
July	94	53	75	70	9.9
August	93	46	72	68	11.5
September	94	47	73	59	8.6
October	92	47	72	49	5.9
November	91	49	71	38	4.0
December	92	54	75	29	2.4
Annual	92	50	72	48	6.1

Vapor pressure is given in millibars.

SOIL TEMPERATURES

From Miami Mesonet Site (MIAM); Jan 1994 – Dec 2003

Latitude: 3653N Longitude: 09451W Elevation: 811 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	39	34
February	41	41	46	37
March	46	47	54	42
April	56	57	64	51
May	65	68	76	62
June	72	76	84	70
July	77	82	91	75
August	78	82	91	75
September	71	73	81	66
October	61	61	67	55
November	51	49	54	44
December	42	40	43	37
Annual	58	60	66	54

Average daily maximum and minimum temperatures based on bare soil.

TORNADOES

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

Date	Path	Deaths	Injuries	Rating	Counties Affected
April 24, 1904	15 miles	5	35	F4	Delaware, Ottawa
October 9, 1914	15 miles	6	14	F4	Ottawa, Cherokee (KS)
January 4, 1922	7 miles	0	12	F2	Ottawa
February 24, 1935	15 miles	1	40	F2	Ottawa, Cherokee (KS)
May 29, 1938	0.5 miles	0	0	F2	Ottawa
April 3, 1956	40 miles	0	54	F4	Ottawa, Cherokee (KS), Jasper (MO)
May 5, 1960	35 miles	0	2	F3	Craig, Ottawa
August 7, 1960	4 miles	0	0	F2	Ottawa
May 15, 1965	5 miles	0	0	F2	Ottawa
January 25, 1967	5 miles	0	6	F2	Ottawa
September 24, 1973	20 miles	0	14	F3	Craig, Ottawa
April 24, 1975	7 miles	0	3	F2	Craig, Ottawa
April 7, 1980	22 miles	0	4	F3	Mayes, Craig, Delaware, Ottawa

About the Data:

The temperature and precipitation data from Miami 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 1917, yielding an 86-year series of data. Extremes, frost and freeze data, and growing season lengths were determined using the entire 86-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 Miami (2 miles northeast of town), which has been operational since 1994. 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
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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.