

# The Climate of McClain County

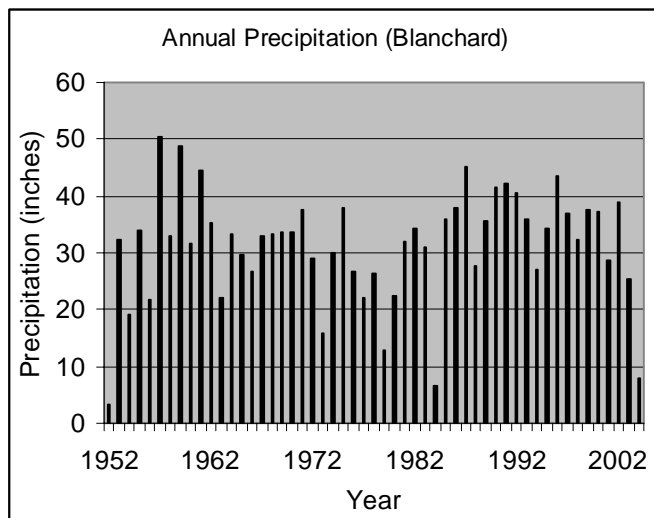
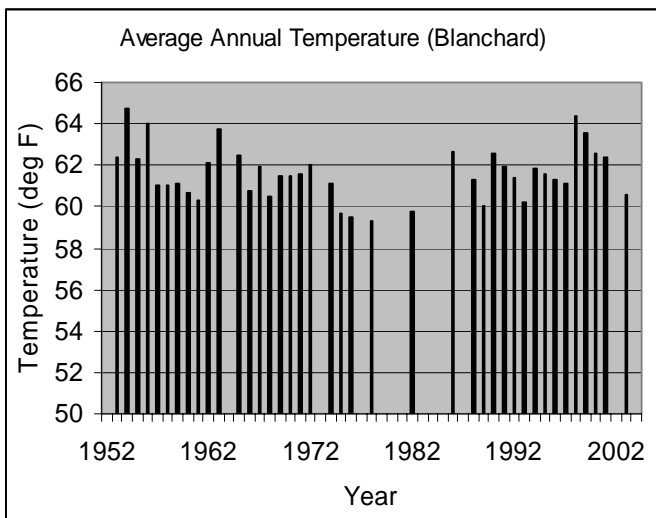


McClain County is part of the Central Great Plains, encompassing some of the best agricultural land in Oklahoma. Parts of western and eastern McClain County are also part of the transitional Crosstimbers. Average annual precipitation ranges from about 33 inches in western McClain County to 39 inches in the east. May and October 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 four having ten or more inches.

Temperatures average near 61 degrees, with a slight increase from north to south. Temperatures range from an average daytime high of 94 degrees in July to an average low of 28 degrees in January. McClain County averages a growing season of 224 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 nine miles-per-hour. Relative humidity, on average, ranges from 39% to 94% during the day. During the year, humidity is highest in June and lowest in August. Winter months tend to be cloudier than summer months. The percentage of possible sunshine ranges from an average of about 55% in winter to nearly 80% in summer.

Thunderstorms occur on about 48 days each year, predominantly in the spring and summer. During the period 1950 - 2003, McClain County recorded 39 tornadoes. The most recent significant tornado (F2 intensity or greater) occurred on May 3, 1999. This tornado had a 38 mile long path and affected parts of Newcastle, Oklahoma City and Moore. The F5 tornado was one of the costliest in Oklahoma history. 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 (1952-2003)				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	49.3	27.5	38.4	80	(22nd, 1967)	-6	(8th, 1988)			4	21	*
Feb	55.6	32.0	43.8	91	(22nd, 1996)	-2	(4th, 1996)		*	2	14	*
Mar	64.2	39.8	52.0	95	(11th, 1967)	4	(3rd, 1960)		*	*	7	
Apr	73.3	48.9	61.1	100	(12th, 1972)	19	(3rd, 1975)	*	*		1	
May	80.4	58.7	69.6	102	(24th, 2000)	33	(3rd, 1954)	*	2			
Jun	87.8	65.9	76.8	107	(14th, 1953)	44	(5th, 1964)	1	12			
Jul	94.0	70.5	82.2	110	(12th, 1954)	53	(21st, 1970)	6	24			
Aug	93.5	69.6	81.5	112	(5th, 1964)	50	(26th, 1962)	5	24			
Sep	85.7	62.2	74.0	110	(3rd, 2000)	36	(24th, 1989)	1	11			
Oct	75.1	50.7	62.9	100	(4th, 1963)	18	(31st, 1993)	*	1		1	
Nov	61.0	38.9	50.0	85	(1st, 1952)	10	(3rd, 1991)			*	8	
Dec	51.2	30.1	40.7	85	(24th, 1955)	-11	(23rd, 1989)			2	18	*
Annual	72.7	49.7	61.2	112	(Aug 5, 1964)	-11	(Dec 23, 1989)	12	75	9	70	*

Precipitation (inches)											
	AVERAGE	EXTREMES (1952-2003)			AVG # DAYS PER MONTH (1971-2000)						
	1971-2000	Monthly Max	Daily Max		any	meas	0.10"+	0.25"+	0.50"+	1.00"+	
Jan	1.22"	4.26" (1998)	2.82"	(4th, 1998)	7	4	2	1	1	*	
Feb	1.69"	4.01" (1997)	2.18"	(21st, 1997)	7	5	3	2	1	1	
Mar	2.73"	6.78" (1973)	2.82"	(17th, 1987)	9	7	5	3	2	1	
Apr	3.34"	8.33" (1957)	3.60"	(26th, 1963)	8	7	5	3	2	1	
May	5.21"	12.33" (1957)	7.65"	(28th, 1987)	11	9	7	5	3	2	
Jun	3.85"	10.01" (1989)	4.09"	(5th, 1985)	8	7	5	4	3	1	
Jul	2.54"	9.32" (1959)	4.07"	(21st, 1961)	7	5	4	2	2	1	
Aug	2.50"	11.80" (1996)	3.86"	(23rd, 1969)	7	6	4	3	2	1	
Sep	3.79"	10.97" (1970)	4.90"	(22nd, 1970)	8	6	5	4	3	1	
Oct	3.60"	13.13" (1983)	8.60"	(19th, 1983)	7	6	4	3	2	1	
Nov	2.22"	7.13" (1964)	2.48"	(17th, 1964)	8	6	4	3	2	*	
Dec	1.96"	5.24" (1991)	2.72"	(8th, 1980)	8	5	3	2	1	1	
Annual	34.67"	13.13" (Oct 1983)	8.60"	(Oct 19, 1983)	93	74	51	35	23	11	

Snow and Sleet (inches)											
	AVERAGE	EXTREMES (1952-2003)				AVG # DAYS PER MONTH (1971-2000)					
	1971-2000	Monthly Max	Daily Max		Greatest Depth		any	meas	0.50"+	1.00"+	Pot. Glazing
Jan	2.7"	19.0" (1988)	13.0"	(7th, 1988)	7.0"	(9th, 1965)	2	1	1	1	3
Feb	1.1"	10.0" (1968)	6.0"	(21st, 1966)	8.0"	(17th, 1978)	1	1	1	*	1
Mar	0.6"	11.0" (1968)	8.8"	(12th, 1958)	6.0"	(12th, 1958)	1	*	*	*	*
Apr	0.1"	2.0" (1973)	2.0"	(8th, 1973)	0.1"	(12th, 1957)	*	*	*	*	
May		0.0" (1954)	0.0"	(1st, 1954)							
Jun		0.0" (1954)	0.0"	(15th, 1954)	1.0"	(4th, 1989)					
Jul											
Aug											
Sep											
Oct	0.0"	0.2" (1993)	0.2"	(30th, 1993)	0.1"	(30th, 1993)	*	*			*
Nov	0.6"	6.0" (2001)	4.5"	(18th, 1972)	6.0"	(29th, 2001)	1	*	*	*	*
Dec	1.0"	11.5" (1954)	5.5"	(28th, 1954)	6.0"	(30th, 1969)	2	1	1	*	1
Annual	6.1"	19.0" (Jan 1988)	13.0"	(Jan 7, 1988)	8.0"	(Feb 17, 1978)	8	4	3	2	6

## **TEMPERATURE AND PRECIPITATION**

From Blanchard Cooperative Observer Station (340830); September 1952 – December 2003

Latitude: 3507N      Longitude: 09740W      Elevation: 1274 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	0.15	1.93
February	81	8	0.70	2.63
March	89	15	1.30	3.61
April	92	29	1.81	5.00
May	96	41	2.34	8.55
June	101	51	1.81	5.31
July	108	58	0.48	4.29
August	106	56	1.21	4.03
September	102	42	1.90	5.76
October	94	30	1.00	5.36
November	83	17	0.66	3.63
December	75	7	0.59	2.76
<b>Annual</b>	<b>109</b>	<b>0</b>	<b>27.15</b>	<b>39.02</b>

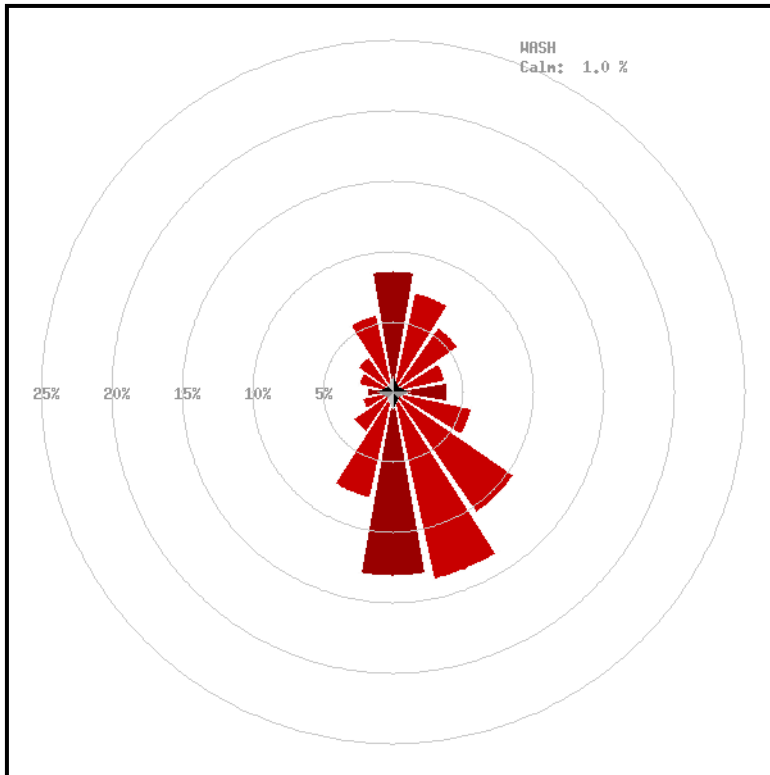
First Freezing Temperature in Fall			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Earlier Than –	November 3	October 30	October 19
2 Years in 10 Earlier Than –	November 2	November 3	October 26
5 Years in 10 Earlier Than –	November 25	November 11	November 5
Last Freezing Temperature in Spring			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Later Than –	March 30	April 6	April 16
2 Years in 10 Later Than –	March 25	April 1	April 11
5 Years in 10 Later Than –	March 12	March 22	April 4

Number of Days in Growing Season			
Probability	Higher than 24 F	Higher than 28 F	Higher than 32 F
9 Years in 10	229	217	197
8 Years in 10	241	223	204
5 Years in 10	258	237	218
2 Years in 10	275	247	231
1 Year in 10	286	261	242

## WINDS

From Washington Mesonet Site (WASH); Jan 1994 – Dec 2001

Latitude: 3498N Longitude: 09752W Elevation: 1115 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, Washington records a south-southeasterly wind about 14 percent of the time, with northerly winds just over 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:* 85.3 mph

*Maximum Sustained:* 57.4 mph

*Overall Average Speed:* 8.7 mph

WASH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Totals
Calm																	1.0%
1- 5 mph	1.0	1.2	1.5	1.4	1.7	2.6	3.0	2.1	1.2	0.9	0.7	0.6	0.7	0.7	0.6	0.6	20.7%
6-10 mph	3.1	3.0	2.7	1.8	1.7	2.5	5.2	5.6	4.0	2.7	1.2	0.9	0.8	1.3	1.3	1.8	39.6%
11-15 mph	2.6	2.1	1.2	0.5	0.5	0.6	1.8	4.2	4.8	2.5	0.9	0.5	0.3	0.4	0.7	1.6	24.9%
16-20 mph	1.4	0.8	0.3	0.1	0.1	0.1	0.4	1.4	2.5	1.3	0.4	0.2	0.1	0.1	0.4	1.1	10.5%
21-25 mph	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.3	0.1	0.1	0.0	0.0	0.1	0.5	2.8%
26-30 mph	0.1	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	0.1	0.5%
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	0.0	0.1%
35+ mph	0.0							0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Totals	8.6	7.3	5.6	3.9	3.9	5.7	10.4	13.6	13.1	7.8	3.5	2.3	1.9	2.6	3.1	5.7	100.0%
WASH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
Max Gust	60	50	43	40	38	44	43	53	65	64	68	51	54	54	65	85	
Max 5 Min	44	33	30	25	26	30	33	37	38	43	41	38	38	36	36	57	
Avg Speed	10.6	9.1	7.4	6.1	5.7	5.5	6.9	9.1	11.1	10.4	9.2	8.0	6.5	7.1	9.2	11.5	

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

## HUMIDITY

From Washington Mesonet Site (WASH); Jan 1994 – Dec 2003

Latitude: 3498N      Longitude: 09752W      Elevation: 1115 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	46	69	28	3.2
February	87	43	66	32	4.6
March	88	43	66	37	5.4
April	89	44	66	47	7.1
May	93	52	74	60	7.6
June	94	52	75	67	9.3
July	91	42	67	68	15.1
August	91	39	65	67	15.7
September	92	46	70	61	10.3
October	91	47	71	51	6.7
November	91	48	71	40	4.3
December	91	48	71	31	3.1
<b>Annual</b>	<b>91</b>	<b>46</b>	<b>69</b>	<b>49</b>	<b>7.7</b>

Vapor pressure is given in millibars.

## SOIL TEMPERATURES

From Washington Mesonet Site (WASH); Jan 1994 – Dec 2003

Latitude: 3498N      Longitude: 09752W      Elevation: 1115 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	41	46	37
February	46	45	52	40
March	51	52	59	46
April	60	62	71	55
May	69	73	82	66
June	76	81	90	73
July	82	88	97	80
August	82	87	96	79
September	75	76	85	70
October	65	65	72	59
November	55	52	58	47
December	46	43	47	39
<b>Annual</b>	<b>63</b>	<b>64</b>	<b>71</b>	<b>58</b>

Average daily maximum and minimum temperatures based on bare soil.

## **TORNADOES**

Significant Tornadoes (F2 intensity or greater) affecting McClain 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 25, 1893	12 miles	2	unknown	F2	Grady, McClain
April 25, 1893	7 miles	0	0	F2	McClain, Cleveland
April 25, 1893	15 miles	31	100	F4	McClain, Cleveland
March 28, 1924	unknown	0	unknown	F2	McClain
June 22, 1936	3 miles	1	0	F1	McClain
September 26, 1945	8 miles	0	0	F2	McClain, Cleveland
March 18, 1948	6 miles	0	0	F3	McClain, Cleveland
April 30, 1949	22 miles	0	48	F4	McClain, Cleveland
April 30, 1949	17 miles	0	1	F3	Garvin, McClain
April 5, 1951	5 miles	0	2	F2	Grady, McClain
March 13, 1953	2 miles	0	2	F2	McClain
May 24, 1957	48 miles	0	0	F3	Garvin, McClain, Pottawatomie
September 14, 1957	30 miles	2	6	F4	McClain, Cleveland, Pottawatomie, Seminole
May 26, 1962	5 miles	0	0	F2	McClain, Cleveland
November 19, 1973	24 miles	5	53	F3	McClain, Cleveland, Oklahoma
March 2, 1977	4 miles	0	0	F2	Grady, McClain
March 26, 1985	0.1 miles	0	0	F2	McClain
March 13, 1990	28 miles	0	1	F2	Grady, McClain, Cleveland
March 13, 1990	18 miles	0	0	F2	McClain, Cleveland
September 2, 1992	8 miles	0	1	F2	McClain
May 25, 1997	6 miles	0	2	F2	McClain
October 4, 1998	5 miles	0	0	F2	Grady, McClain
May 3, 1999	38 miles	36	583	F5	Grady, McClain, Cleveland, Oklahoma

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

The temperature and precipitation data from Blanchard 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 1952, yielding a 51-year series of data. Extremes, frost and freeze data, and growing season lengths were determined using the entire 51-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 Washington (6 miles south-southwest of town), which has been operational since 1994. The Washington Mesonet site was chosen because it is the only Mesonet site in McClain 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.