

# The Climate of Murray County



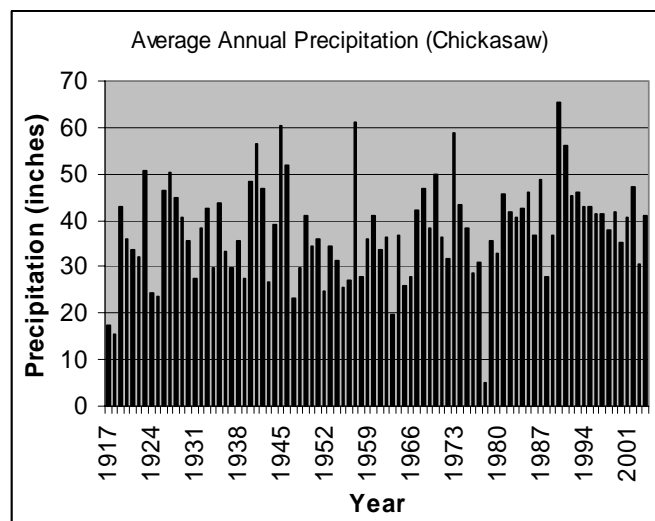
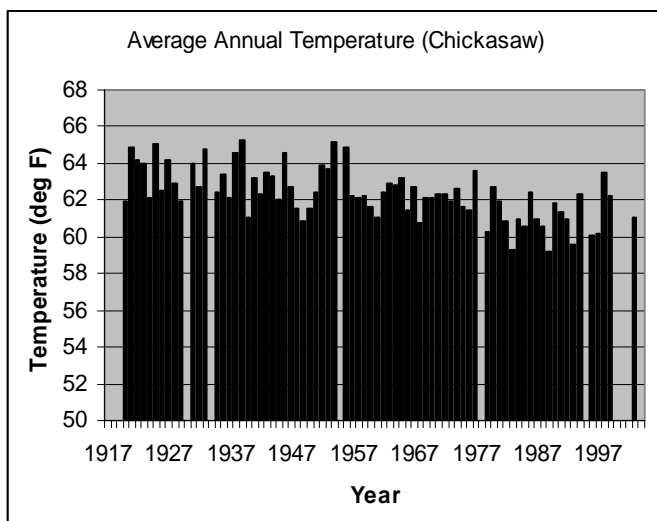
Murray County is part of the Crosstimbers. This region is a transition between prairies and the mountains of southeastern Oklahoma. Average annual precipitation ranges from about 36 inches in western Murray County to 42 inches in the east. May and October are the wettest months, on average, but much of the spring through fall receives sufficient rainfall. One in two winters have at least one inch of snow, with one year in seven having ten or more inches.

Temperatures average near 64 degrees, with a slight increase from north to south. Temperatures range from an average daytime high of 95 degrees in July and August to an average low of 31 degrees in January. Murray County averages a growing season of 231 days, but plants that can withstand short periods of colder temperatures may have an additional four to seven weeks.

Winds from the south to southeast are quite dominant, averaging nearly nine miles-per-hour. Relative humidity, on average, ranges from 41% to 94% during the day. During the year, humidity is highest in May and 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 75% in summer.

Thunderstorms occur on about 47 days each year, predominantly in the spring and summer. During the period 1950 - 2003, Murray County recorded 30 tornadoes. The most recent significant tornado (F2 intensity or greater) occurred on May 11, 1992 passing nearly harmlessly on a 3-mile path near Hickory. Typically, there are about 2 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.

The records from the Sulphur Platt National Park and the Chickasaw NRA COOP stations were combined to create the temperature and precipitation graphs. The station has been in the same location from 1917 to 2004, but received a name change in 1978.



Temperature (deg Fahrenheit)												
	AVERAGES (1971-2000)			EXTREMES (1917-2004)				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	50.0	26.7	38.1	85	(24th, 1943)	-15	(18th, 1930)	0	0	3	23	*
Feb	56.5	31.9	44.0	92	(22nd, 1996)	-4	(10th, 1929)	0	*	1	15	*
Mar	64.9	40.7	52.6	96	(31st, 1974)	1	( 3rd, 1943)	0	*	*	7	0
Apr	73.3	49.0	60.9	100	(18th, 1925)	22	( 5th, 1920)	0	*	0	1	0
May	80.2	58.1	68.9	103	(28th, 1927)	33	( 9th, 1923)	0	2	0	0	0
Jun	87.7	66.6	76.9	108	(29th, 1925)	43	( 4th, 1954)	1	12	0	0	0
Jul	93.7	70.8	82.0	111	(19th, 1936)	50	( 9th, 1952)	5	24	0	0	0
Aug	93.9	69.6	81.5	114	(11th, 1936)	48	(24th, 1961)	5	24	0	0	0
Sep	85.8	62.2	73.7	111	( 4th, 2000)	31	(27th, 1942)	2	11	0	0	0
Oct	75.3	50.7	62.8	99	( 3rd, 1951)	15	(31st, 1993)	0	1	0	1	0
Nov	62.1	39.1	50.4	89	( 6th, 1945)	7	(29th, 1976)	0	0	*	9	0
Dec	53.2	30.1	41.4	87	(30th, 1951)	-11	(23rd, 1989)	0	0	2	18	*
Annual	73.2	49.7	61.1	114	(Aug 11, 1936)	-15	(Jan 18, 1930)	12	75	7	74	1

Precipitation (inches)										
	AVERAGE	EXTREMES (1917-2004)			AVG # DAYS PER MONTH (1971-2000)					
	1971-2000	Monthly Max	Daily Max		any	meas	0.10"+	0.25"+	0.50"+	1.00"+
Jan	1.86"	8.36" (1998)	3.30" ( 4th, 1998)		2	2	2	2	2	2
Feb	2.12"	9.55" (1938)	4.85" (16th, 1938)		2	2	2	2	2	2
Mar	3.82"	9.76" (1945)	4.20" (30th, 1985)		4	4	4	4	4	4
Apr	3.68"	12.34" (1990)	5.30" (26th, 1990)		4	4	4	4	4	4
May	5.61"	15.72" (1982)	6.50" (13th, 1933)		6	6	6	6	6	6
Jun	4.34"	10.99" (1945)	4.90" (21st, 1928)		4	4	4	4	4	4
Jul	2.90"	9.46" (2004)	4.08" (29th, 2004)		3	3	3	3	3	3
Aug	2.32"	8.28" (1926)	4.32" (17th, 1926)		2	2	2	2	2	2
Sep	4.74"	12.68" (1936)	7.26" (14th, 1993)		5	5	5	5	5	5
Oct	4.26"	16.43" (1970)	11.61" ( 8th, 1970)		4	4	4	4	4	4
Nov	3.04"	8.02" (1973)	3.10" (23rd, 1931)		3	3	3	3	3	3
Dec	2.39"	9.30" (1932)	7.35" (23rd, 1932)		2	2	2	2	2	2
Annual	41.14"	16.43" (Oct 1970)	11.61" (Oct 8, 1970)		41	41	41	41	41	41

Snow and Sleet (inches)											
	AVERAGE	EXTREMES (1917-2004)					AVG # DAYS PER MONTH (1971-2000)				
	1971-2000	Monthly Max	Daily Max		Greatest Depth		any	meas	0.50"+	1.00"+	Pot. Glazing
Jan	2.9"	18.1" (1930)	8.0"	(9th, 1977)	13.0"	(7th, 1988)	1	1	1	1	1
Feb	1.6"	14.3" (1978)	5.5"	( 7th, 1979)	7.0"	( 2nd, 1985)	1	1	1	1	1
Mar	0.3"	14.5" (1942)	13.5"	(1st, 1942)	6.0"	( 1st, 1942)	*	*	*	*	*
Apr	0	.5" (1938)	.5"	( 8th, 1938)	1.0"	( 8th, 1938)	0	0	0	0	0
May	0	.0" -	.0" -		.0" -		0	0	0	0	0
Jun	0	.0" -	.0" -		.0" -		0	0	0	0	0
Jul	0	.0" -	.0" -		.0" -		0	0	0	0	0
Aug	0	.0" -	.0" -		.0" -		0	0	0	0	0
Sep	0	.0" -	.0" -		.0" -		0	0	0	0	0
Oct	0	.7" (1993)	.7"	(30th, 1993)	.1"	(31st, 1993)	*	*	*	0	*
Nov	0.3"	6.0" (1980)	6.0"	(17th, 1980)	1.0"	(30th, 1974)	*	*	*	*	*
Dec	0.6"	7.0" (1975)	7.0"	(25th, 1975)	5.0"	(31st, 1969)	1	*	*	*	1
Annual	5.5"	18.1" (Jan 1930)	13.5"	(Mar 1, 1942)	13.0"	(Jan 7, 1988)	4	2	2	2	4

## **TEMPERATURE AND PRECIPITATION**

From Chickasaw Cooperative Observer Station (341745); February 1917 – December 2004

Latitude: 3430N      Longitude: 09658W      Elevation: 999ft

Exceedence values (2 in 10 years)				
Month:	Maximum Temperature Higher Than:	Minimum Temperature Lower Than:	Precipitation Less Than:	Precipitation More Than:
January	76	0	0.46	2.74
February	82	9	0.79	3.13
March	89	15	1.45	4.37
April	91	26	2.25	5.47
May	95	38	2.80	8.21
June	100	49	2.28	6.44
July	106	57	1.06	4.65
August	108	55	0.95	4.14
September	103	39	1.16	6.54
October	95	28	1.31	6.22
November	84	17	0.74	4.46
December	77	7	0.77	3.47
<b>Annual</b>	<b>109</b>	<b>-1</b>	<b>30.88</b>	<b>46.87</b>

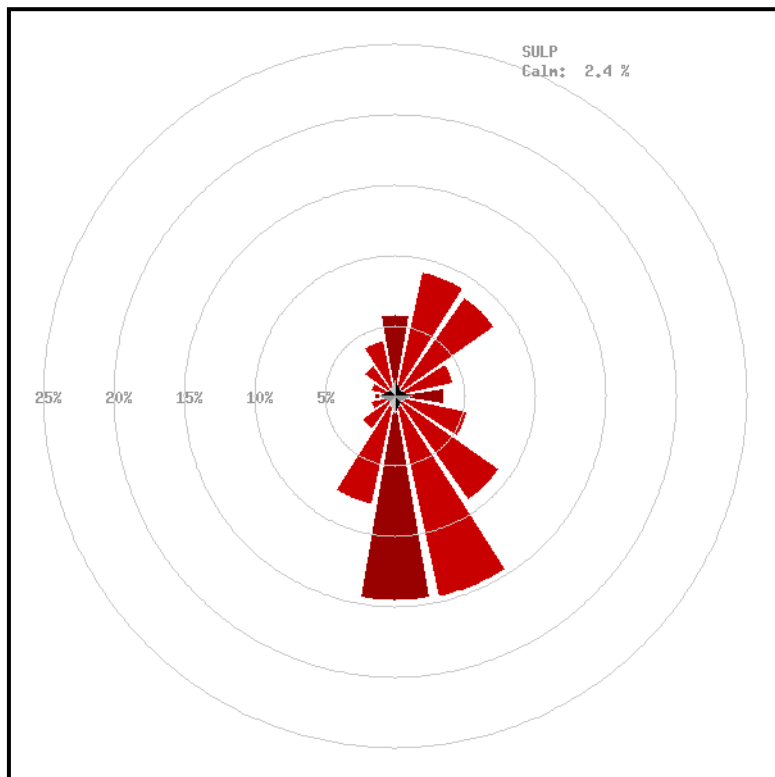
First Freezing Temperature in Fall			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Earlier Than –	November 2	October 20	October 14
2 Years in 10 Earlier Than –	November 5	October 28	October 18
5 Years in 10 Earlier Than –	November 15	November 7	October 29
Last Freezing Temperature in Spring			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Later Than –	April 3	April 14	April 18
2 Years in 10 Later Than –	March 28	April 7	April 14
5 Years in 10 Later Than –	March 14	March 29	April 6

Number of Days in Growing Season			
Probability	Higher than 24 F	Higher than 28 F	Higher than 32 F
9 Years in 10	221	201	189
8 Years in 10	229	205	193
5 Years in 10	246	223	205
2 Years in 10	264	240	220
1 Year in 10	277	248	228

## WINDS

From Sulphur Mesonet Site (SULP); Jan 1994 – Dec 2001

Latitude: 3457N Longitude: 09695W Elevation: 1050 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, Sulphur records a south-southeasterly wind about 15 percent of the time, with northerly winds nearly 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:* 70.4 mph

*Maximum Sustained:* 51.0 mph

*Overall Average Speed:* 8.6 mph

SULP	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Totals
Calm																	2.4%
1- 5 mph	0.9	2.8	3.2	1.9	1.4	1.6	1.9	2.0	1.7	1.2	0.8	0.5	0.5	0.5	0.5	0.6	21.9%
6-10 mph	2.0	3.1	3.1	1.7	1.5	2.4	4.0	5.6	4.3	3.0	1.1	0.6	0.6	0.8	1.0	1.3	36.1%
11-15 mph	1.8	2.2	1.7	0.6	0.5	1.0	2.4	4.7	5.0	2.6	0.7	0.4	0.3	0.4	0.8	1.3	26.4%
16-20 mph	0.8	0.9	0.5	0.1	0.1	0.2	0.7	1.9	2.7	1.0	0.2	0.2	0.1	0.2	0.4	0.7	10.6%
21-25 mph	0.2	0.2	0.1	0.0	0.0	0.0	0.1	0.4	0.7	0.2	0.1	0.1	0.0	0.0	0.1	0.2	2.3%
26-30 mph	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	0.0	0.3%
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	0.0%
35+ mph	0.0	0.0					0.0					0.0	0.0	0.0	0.0	0.0	0.0%
Totals	5.8	9.1	8.6	4.3	3.5	5.3	9.0	14.6	14.5	7.9	2.9	1.9	1.5	1.8	2.8	4.1	100.0%
SULP	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
Max Gust	74	58	47	38	43	44	48	50	52	45	52	65	56	58	65	55	
Max 5 Min	51	38	32	28	29	33	37	34	34	31	33	35	36	36	42	37	
Avg Speed	9.8	8.0	7.0	5.9	6.0	7.1	8.2	9.7	10.9	9.5	8.1	8.6	7.8	8.1	9.3	10.1	

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

## **HUMIDITY**

From Sulphur Mesonet Site (SULP); Jan 1994 – Dec 2003

Latitude: 3457N      Longitude: 09695W    Elevation: 1050 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	91	47	70	30	3.1
February	90	44	68	33	4.2
March	90	43	67	38	5.3
April	91	45	67	48	7.0
May	94	54	75	61	7.2
June	94	52	75	67	9.2
July	90	44	67	69	14.6
August	90	41	66	67	14.8
September	92	47	71	61	10.0
October	92	46	71	52	6.7
November	92	48	72	41	4.4
December	92	48	72	32	3.1
<b>Annual</b>	<b>92</b>	<b>47</b>	<b>70</b>	<b>50</b>	<b>7.5</b>

Vapor pressure is given in millibars.

## **SOIL TEMPERATURES**

From Sulphur Mesonet Site (SULP); Jan 1994 – Dec 2003

Latitude: 3457N      Longitude: 09695W    Elevation: 1050 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	44	47	41
February	46	48	52	44
March	52	54	60	49
April	61	64	71	59
May	70	74	81	69
June	76	84	91	78
July	82	90	98	84
August	82	89	96	82
September	75	80	86	74
October	65	69	75	64
November	55	55	60	51
December	47	46	50	43
<b>Annual</b>	<b>63</b>	<b>67</b>	<b>72</b>	<b>62</b>

Average daily maximum and minimum temperatures based on bare soil.

## **TORNADOES**

Significant Tornadoes (F2 intensity or greater) affecting Murray 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>
May 19, 1898	unknown	unknown	unknown	F2	Murray
May 6, 1915	4 miles	0	8	F2	Murray
March 24, 1916	10 miles	8	5	F4	Murray
June 1, 1917	3 miles	5	5	F3	Murray
March 13, 1922	4 miles	3	40	F3	Murray
May 3, 1948	55 miles	0	3	F4	Murray, Johnston, Atoka
June 5, 1953	15 miles	0	0	F3	Garvin, Murray
July 15, 1955	1.5 miles	1	2	F1	Murray
April 2, 1957	25 miles	0	2	F3	Murray, Garvin
April 2, 1957	2 miles	1	2	F3	Carter, Murray
November 17, 1958	3 miles	0	0	F2	Murray
November 19, 1963	1 mile	0	0	F2	Murray
June 11, 1970	2 miles	0	2	F2	Murray
April 19, 1972	27 miles	5	9	F4	Carter, Murray, Garvin
October 21, 1979	1 mile	0	0	F2	Murray
May 13, 1983	7 miles	0	1	F2	Murray
May 11, 1992	3 miles	0	0	F2	Murray, Pontotoc

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

The temperature and precipitation data from Chickasaw National Recreation Area are from the National Weather Service Cooperative Observer station, which records daily maximum and minimum temperatures, precipitation, and snowfall. This station was combined with the records from the Sulphur Platt National Park station. These two stations have remained in the same location, but underwent a name change when the name of the park changed. The station therefore, has been in operation since 1917, yielding an 88-year series of data. Extremes, frost and freeze data, and growing season lengths were determined using the entire 102-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 Sulphur (4 miles north-northeast of town), which has been operational since 1994. The Sulphur Mesonet site was chosen because it is the only Mesonet station in Murray 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.