

# The Climate of Atoka County



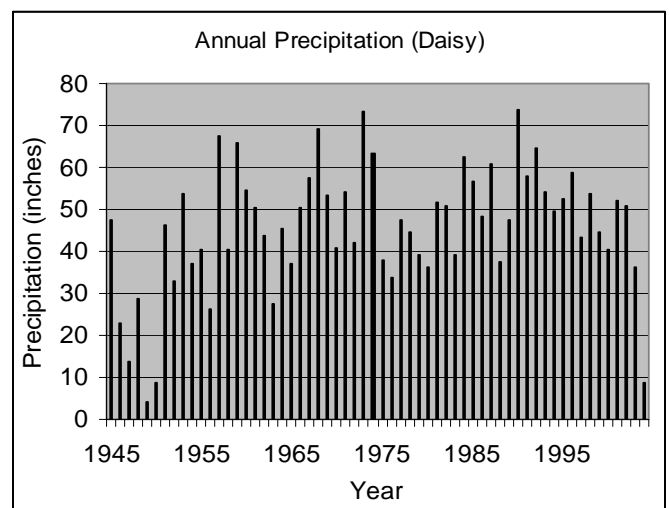
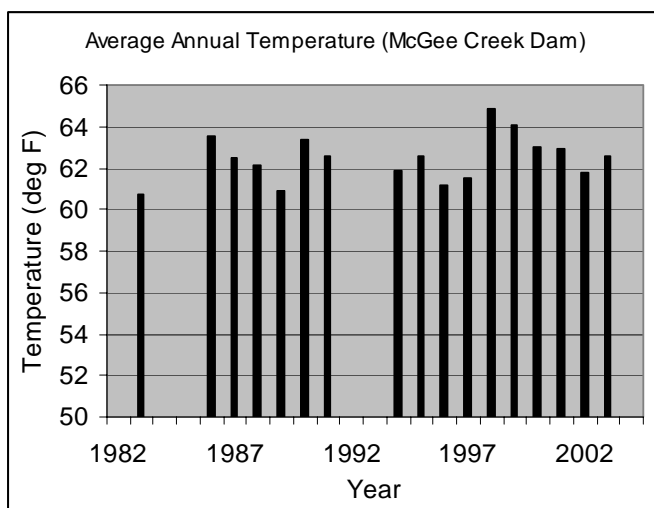
Atoka County is part of the Crosstimbers in the west, the Ouachita Mountains to the north and the Cypress Swamp and Forest in the southeast part of the county. Average annual precipitation ranges from about 42 inches in western Atoka County to 45 inches in the east. May and July are the wettest months, on average, but much of the spring through fall receives sufficient rainfall. About every one in two winters has at least one inch of snow, with one year in ten having ten or more inches.

Temperatures average near 62 degrees, with a slight increase from north to south. Temperatures range from an average daytime high of 95 degrees in August to an average low of 28 degrees in January. Atoka County averages a growing season of 232 days, but plants that can withstand short periods of colder temperatures may have an additional two to six weeks.

Winds from the southeast are quite dominant, averaging just over six miles-per-hour. Relative humidity, on average, ranges from 42% to 96% 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 50% in winter to nearly 75% in summer.

Thunderstorms occur on about 54 days each year, predominantly in the spring and summer. During the period 1950 - 2003, Atoka County recorded 31 tornadoes. The most recent significant tornado (F2 intensity or greater) occurred on April 11, 2001 when two F2 tornados affected Atoka County. There were 5 injuries and 1 death caused by these tornadoes.

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 (1970-1999)			EXTREMES (1963-1999)				AVG # DAYS PER MONTH (1970-1999)				
	Daily Max	Daily Min	Daily Avg	Record High		Record Low		Max>100	Max>90	Max<32	Min<32	Min<0
Jan	49.7	27.7	38.7	79	(9th, 1969)	-5	(10th, 1977)			3	22	*
Feb	55.8	32.5	44.2	91	(23rd, 1996)	2	(18th, 1978)		*	1	13	
Mar	64.2	40.8	52.5	91	(13th, 1967)	14	(4th, 1978)		*	*	6	
Apr	73.1	49.1	61.1	95	(1st, 1974)	27	(3rd, 1975)		*		1	
May	79.9	58.3	69.1	95	(31st, 1985)	37	(19th, 1971)		2			
Jun	88.3	67.0	77.7	104	(27th, 1980)	47	(1st, 1983)	1	13			
Jul	94.0	71.3	82.7	110	(8th, 1984)	50	(6th, 1972)	6	25			
Aug	94.6	70.2	82.4	110	(3rd, 1998)	53	(13th, 1967)	7	25			
Sep	86.2	63.2	74.7	112	(8th, 1985)	40	(29th, 1967)	2	12			
Oct	75.8	51.4	63.6	99	(1st, 1998)	27	(20th, 1989)		2		*	
Nov	63.2	40.3	51.7	87	(5th, 1987)	11	(30th, 1976)			*	6	
Dec	53.8	31.6	42.7	80	(8th, 1966)	1	(25th, 1983)			2	16	
Annual	73.3	50.4	61.8	112	(Sep 8, 1985)	-5	(Jan 10, 1977)	15	79	6	65	*

Precipitation (inches)											
	AVERAGE	EXTREMES (1963-1999)				AVG # DAYS PER MONTH (1970-1999)					
	1970-1999	Monthly Max	Daily Max		any	meas	0.10"+	0.25"+	0.50"+	1.00"+	
Jan	2.25"	6.95" (1998)	2.88"	(17th, 1990)	7	5	4	2	1	*	
Feb	2.53"	5.85" (1966)	4.40"	(9th, 1966)	6	4	4	3	1	1	
Mar	4.03"	8.16" (1968)	2.79"	(20th, 1979)	8	6	5	4	2	1	
Apr	4.41"	10.29" (1967)	3.90"	(20th, 1976)	8	7	5	4	3	1	
May	5.90"	10.53" (1982)	2.85"	(28th, 1987)	9	7	6	4	3	2	
Jun	4.85"	8.11" (1974)	4.02"	(12th, 1970)	7	6	5	4	3	1	
Jul	2.79"	8.69" (1996)	2.97"	(7th, 1982)	6	5	4	3	2	1	
Aug	2.40"	8.55" (1966)	3.40"	(27th, 1964)	6	5	3	2	1	1	
Sep	5.09"	13.35" (1980)	6.60"	(5th, 1986)	7	6	5	3	3	1	
Oct	4.00"	16.55" (1981)	4.69"	(22nd, 1984)	7	6	4	3	2	1	
Nov	3.55"	7.31" (1994)	2.60"	(29th, 1982)	6	5	4	3	2	1	
Dec	2.99"	8.11" (1991)	3.01"	(21st, 1987)	6	5	3	2	2	1	
Annual	44.79"	16.55" (Oct 1981)	6.60"	(Sep 5, 1986)	83	67	51	37	25	11	

Snow and Sleet (inches)											
	AVERAGE	EXTREMES (1963-1999)				AVG # DAYS PER MONTH (1970-1999)					
	1970-1999	Monthly Max	Daily Max		Greatest Depth		any	meas	0.50"+	1.00"+	Pot. Glazing
Jan	0.7"	7.8" (1966)	4.0"	(9th, 1977)	4.0"	(16th, 1964)	1	*	*	*	2
Feb	0.9"	10.5" (1979)	6.5"	(7th, 1979)	4.0"	(9th, 1978)	1	*	*	*	1
Mar	0.0"	3.8" (1965)	3.5"	(25th, 1965)	1.0"	(12th, 1968)	*	*	*	*	*
Apr											
May											
Jun											
Jul											
Aug											
Sep											
Oct											
Nov	0.1"	2.0" (1976)	2.0"	(14th, 1976)	0.1"	(23rd, 1971)	*	*	*	*	
Dec	0.1"	2.0" (1975)	2.0"	(29th, 1975)	1.0"	(27th, 1967)	*	*	*	*	1
Annual	1.8"	10.5" (Feb 1979)	6.5"	(Feb 7, 1979)	4.0"	(Jan 16, 1964)	3	1	1	1	4

## **TEMPERATURE AND PRECIPITATION**

From Atoka Dam Cooperative Observer Station (340394); January 1963 – December 1999

Latitude: 3427N      Longitude: 09604W      Elevation: 594 ft

<b>Exceedence values (2 in 10 years)</b>				
<b>Month:</b>	<b>Maximum Temperature Higher Than:</b>	<b>Minimum Temperature Lower Than:</b>	<b>Precipitation Less Than:</b>	<b>Precipitation More Than:</b>
January	76	4	0.53	3.13
February	80	10	1.34	3.51
March	88	21	2.03	5.78
April	89	31	2.60	6.58
May	93	42	2.74	8.15
June	100	51	2.66	6.47
July	106	58	1.26	4.06
August	106	58	1.35	3.24
September	102	44	2.19	8.17
October	94	34	1.06	6.69
November	84	20	1.26	5.23
December	77	9	1.27	4.03
<b>Annual</b>	<b>109</b>	<b>4</b>	<b>36.43</b>	<b>51.48</b>

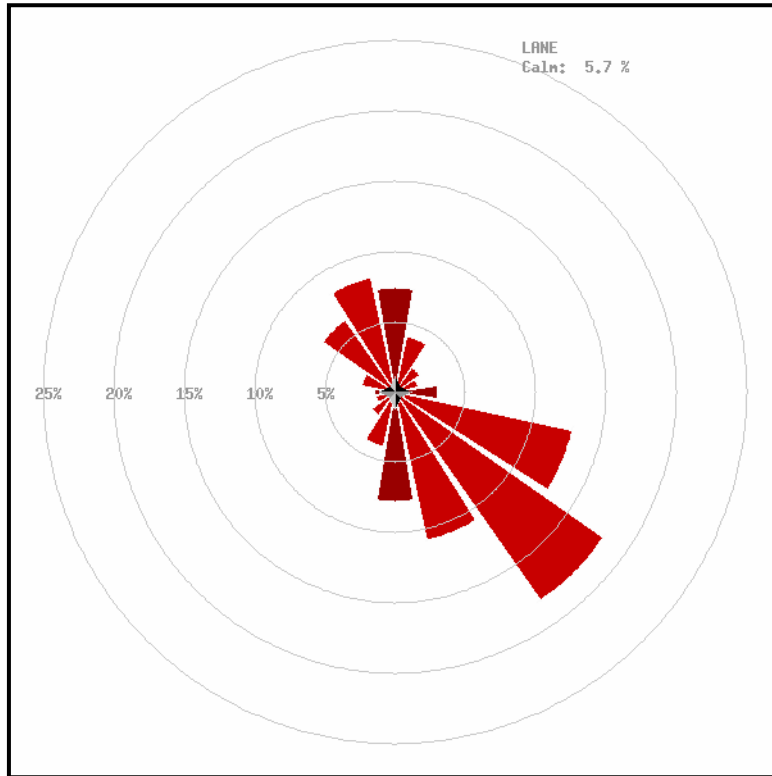
<b>First Freezing Temperature in Fall</b>			
<b>Probability</b>	<b>24 F or Lower</b>	<b>28 F or Lower</b>	<b>32 F or Lower</b>
1 Year in 10 Earlier Than –	November 13	November 4	October 20
2 Years in 10 Earlier Than –	November 13	November 9	November 2
5 Years in 10 Earlier Than –	November 24	November 16	November 11
<b>Last Freezing Temperature in Spring</b>			
<b>Probability</b>	<b>24 F or Lower</b>	<b>28 F or Lower</b>	<b>32 F or Lower</b>
1 Year in 10 Later Than –	March 26	March 31	April 15
2 Years in 10 Later Than –	March 10	March 23	April 12
5 Years in 10 Later Than –	March 1	March 20	March 28

<b>Number of Days in Growing Season</b>			
<b>Probability</b>	<b>Higher than 24 F</b>	<b>Higher than 28 F</b>	<b>Higher than 32 F</b>
9 Years in 10	249	230	205
8 Years in 10	253	236	213
5 Years in 10	277	246	232
2 Years in 10	311	262	244
1 Year in 10	326	279	259

## WINDS

From Lane Mesonet Site (LANE); Jan 1994 – Dec 2001

Latitude: 3431N      Longitude: 09599W    Elevation: 597 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, Lane records a southeasterly wind about 18 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: 57.3 mph*

*Maximum Sustained: 33.5mph*

*Overall Average Speed: 6.6 mph*

LANE	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Totals
Calm																	5.7%
1- 5 mph	1.4	1.3	1.2	1.0	1.9	5.8	6.4	2.1	1.2	0.8	0.6	0.5	0.7	1.2	2.8	2.4	31.3%
6-10 mph	2.5	1.9	0.9	0.6	1.0	6.0	8.7	4.7	3.0	1.7	1.0	0.6	0.6	0.9	2.2	2.6	38.8%
11-15 mph	2.3	0.7	0.1	0.1	0.1	1.1	2.7	3.2	2.7	1.2	0.5	0.3	0.2	0.3	0.9	2.1	18.4%
16-20 mph	1.0	0.1	0.0	0.0	0.0	0.1	0.3	0.7	0.8	0.3	0.1	0.1	0.1	0.1	0.4	1.1	5.0%
21-25 mph	0.2	0.0	0.0		0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.7%
26-30 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%
31-35 mph	0.0										0.0	0.0		0.0	0.0		0.0%
35+ mph																	0.0%
<b>Totals</b>	<b>7.5</b>	<b>4.1</b>	<b>2.2</b>	<b>1.7</b>	<b>3.1</b>	<b>12.9</b>	<b>18.1</b>	<b>10.8</b>	<b>7.8</b>	<b>4.0</b>	<b>2.1</b>	<b>1.5</b>	<b>1.5</b>	<b>2.5</b>	<b>6.2</b>	<b>8.4</b>	<b>100.0%</b>
LANE	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
Max Gust	47	40	42	29	41	43	37	46	49	51	49	57	47	46	44	45	
Max 5 Min	33	26	23	18	25	26	25	27	28	26	33	31	29	32	29	34	
Avg Speed	9.4	6.7	4.9	4.2	4.3	5.4	6.2	8.3	9.1	8.3	7.3	6.8	6.1	5.6	6.3	8.6	

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

## HUMIDITY

From Lane Mesonet Site (LANE); Jan 1994 – Dec 2003

Latitude: 3431N      Longitude: 09599W      Elevation: 597 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	92	49	73	32	2.9
February	92	45	70	35	4.2
March	92	45	69	41	5.0
April	94	45	70	50	6.7
May	96	54	77	62	7.1
June	96	54	78	69	8.5
July	94	47	73	71	12.7
August	94	42	70	69	13.6
September	94	47	74	63	9.3
October	95	48	75	53	6.1
November	95	50	75	43	4.1
December	93	50	74	35	3.0
<b>Annual</b>	<b>94</b>	<b>48</b>	<b>73</b>	<b>52</b>	<b>7.0</b>

Vapor pressure is given in milibars.

## SOIL TEMPERATURES

From Lane Mesonet Site (LANE); Jan 1994 – Dec 2003

Latitude: 3431N      Longitude: 09599W      Elevation: 597 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	44	42	47	38
February	47	46	52	41
March	53	52	59	46
April	62	61	68	55
May	71	71	79	65
June	79	79	87	72
July	83	85	95	77
August	83	85	95	77
September	77	77	85	70
October	67	65	73	59
November	56	53	59	48
December	47	45	50	41
<b>Annual</b>	<b>64</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 Atoka County, 1880 – 2003. Source: *Significant Tornadoes, 1880-1989: Volume I* and National Weather Service, Norman office.

Date	Path	Deaths	Injuries	Rating	Counties Affected
April 23, 1926	20 miles	4	15	F4	Johnston, Atoka
April 13, 1945	3 miles	0	10	F3	Atoka
May 3, 1948	55 miles	0	3	F4	Murray, Johnston, Atoka
April 27, 1966	10 miles	0	2	F4	Johnston, Atoka
November 22, 1982	5 miles	0	0	F2	Atoka
February 23, 1985	10 miles	0	3	F2	Atoka
November 30, 1985	4 miles	0	4	F2	Atoka
April 23, 1926	20 miles	4	15	F4	Johnston, Atoka
March 21, 1991	19 miles	0	6	F2	Atoka
May 11, 1992	16 miles	0	0	F2	Atoka, Pushmataha
April 11, 2001	19 miles	0	4	F2	Johnston, Atoka
April 11, 2001	13 miles	1	1	F2	Coal, Atoka

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

The precipitation data from Daisy and temperature data from Atoka Dam are from the National Weather Service Cooperative Observer station, which records daily maximum and minimum temperatures, precipitation, and snowfall. The station at Daisy was in operation from 1963 to 1999, yielding a 36-year series of data. The station at Atoka Dam has been in operation since 1944, yielding a 36-year series of data. Extremes, frost and freeze data, and growing season lengths were determined using the entire 59-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 Lane (1 mile west-northwest of town), which has been operational since 1994. The Lane Mesonet site was chosen because it is the only Mesonet site in Atoka 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.