

The Climate of Comanche County

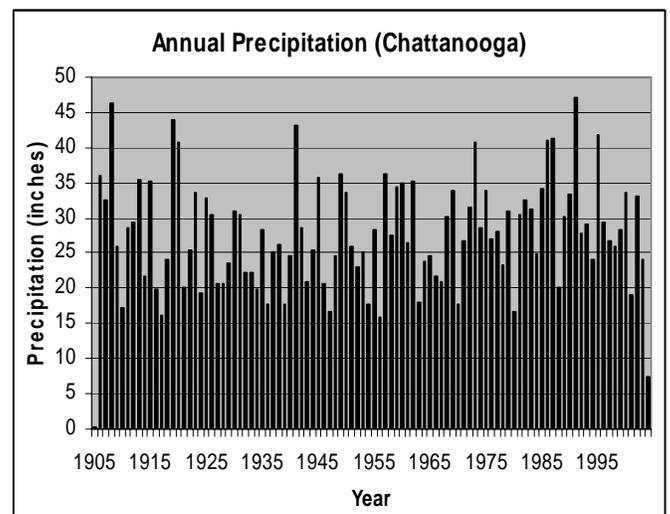
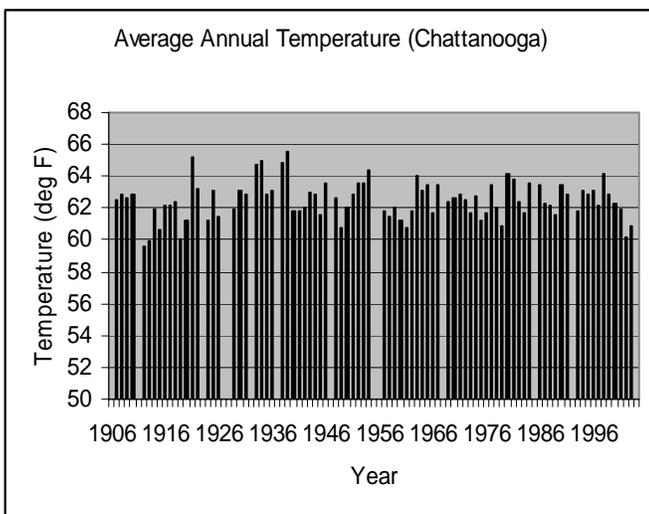


Comanche County is part of the Central Great Plains, encompassing some of the best agricultural land in Oklahoma. Average annual precipitation ranges from about 30 inches in western Comanche County to 33 inches in the east. June and October are the wettest months, on average, but much of the spring through fall receives sufficient rainfall. Nearly every winter has at least one inch of snow, with one year in eight 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 96 degrees in July to an average low of 26 degrees in January. Comanche County averages a growing season of 218 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 11.0 miles-per-hour. Relative humidity, on average, ranges from 36% to 89% 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 60% in winter to nearly 80% in summer.

Thunderstorms occur on about 45 days each year, predominantly in the spring and summer. During the period 1950 - 2003, Comanche County recorded 50 tornadoes. The most recent significant tornado (F2 intensity or greater) occurred on February 14, 1987. This F2 tornado passed through Medicine Park and Lake Lawtonka injuring one person. On June 8, 1979 an F3 tornado passed just one half of a mile north of the Lawton Airport. This tornado killed three people and injured 100. Typically, there are about 7 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 (1912-2003) | | | | 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 | 50.8 | 26.1 | 38.5 | 85 | (25th, 1950) | -11 | (18th, 1930) | | | 3 | 24 | * |
| Feb | 56.2 | 30.7 | 43.5 | 97 | (8th, 1943) | -3 | (8th, 1933) | | | 2 | 15 | * |
| Mar | 65.0 | 39.8 | 52.4 | 98 | (31st, 1940) | 6 | (11th, 1948) | | * | * | 6 | |
| Apr | 73.8 | 48.6 | 61.2 | 100 | (18th, 1925) | 22 | (13th, 1957) | | 1 | | 1 | |
| May | 81.8 | 58.7 | 70.2 | 108 | (24th, 2000) | 30 | (5th, 1917) | * | 5 | | | |
| Jun | 90.0 | 66.9 | 78.5 | 114 | (28th, 1994) | 45 | (2nd, 1917) | 2 | 17 | | | |
| Jul | 95.6 | 71.5 | 83.5 | 114 | (19th, 1936) | 52 | (12th, 1982) | 8 | 26 | | | |
| Aug | 94.8 | 70.2 | 82.5 | 115 | (11th, 1936) | 46 | (31st, 1915) | 8 | 25 | | | |
| Sep | 86.3 | 62.1 | 74.2 | 110 | (1st, 1939) | 35 | (26th, 1912) | 2 | 13 | | | |
| Oct | 75.8 | 50.3 | 63.1 | 104 | (1st, 1977) | 16 | (30th, 1917) | * | 2 | | 1 | |
| Nov | 62.1 | 37.8 | 50.0 | 88 | (5th, 1924) | 11 | (26th, 1975) | | | * | 9 | |
| Dec | 52.3 | 28.9 | 40.6 | 88 | (24th, 1955) | -8 | (22nd, 1989) | | | 2 | 21 | * |
| Annual | 73.8 | 49.4 | 61.6 | 115 | (Aug 11, 1936) | -11 | (Jan 18, 1930) | 20 | 89 | 8 | 77 | * |

| Precipitation (inches) | | | | | | | | | | | |
|------------------------|-----------|----------------------|-----------|----------------|----------------------------------|------|--------|--------|--------|--------|--|
| | AVERAGE | EXTREMES (1912-2003) | | | AVG # DAYS PER MONTH (1971-2000) | | | | | | |
| | 1971-2000 | Monthly Max | Daily Max | | any | meas | 0.10"+ | 0.25"+ | 0.50"+ | 1.00"+ | |
| Jan | 1.15" | 5.36" (1949) | 3.81" | (31st, 1923) | 5 | 4 | 2 | 1 | 1 | * | |
| Feb | 1.50" | 4.96" (1938) | 2.85" | (27th, 1990) | 4 | 4 | 2 | 2 | 1 | * | |
| Mar | 2.58" | 6.89" (1953) | 2.80" | (30th, 1953) | 7 | 6 | 4 | 3 | 2 | 1 | |
| Apr | 2.94" | 9.76" (1915) | 4.63" | (17th, 1992) | 7 | 6 | 5 | 3 | 2 | 1 | |
| May | 5.03" | 16.33" (1982) | 7.86" | (12th, 1929) | 9 | 8 | 6 | 4 | 3 | 2 | |
| Jun | 4.01" | 12.50" (1962) | 5.05" | (15th, 1928) | 7 | 7 | 5 | 4 | 3 | 2 | |
| Jul | 2.02" | 8.41" (1990) | 3.85" | (21st, 1931) | 5 | 5 | 3 | 2 | 1 | 1 | |
| Aug | 2.40" | 9.45" (1996) | 5.10" | (4th, 1912) | 6 | 5 | 4 | 3 | 2 | 1 | |
| Sep | 3.29" | 9.08" (1945) | 5.02" | (22nd, 1969) | 7 | 6 | 5 | 3 | 2 | 1 | |
| Oct | 3.29" | 14.76" (1919) | 6.25" | (23rd, 1953) | 7 | 5 | 4 | 3 | 2 | 1 | |
| Nov | 1.80" | 6.97" (1931) | 2.60" | (1st, 1998) | 5 | 5 | 3 | 2 | 1 | * | |
| Dec | 1.75" | 5.83" (1991) | 2.77" | (23rd, 1932) | 5 | 4 | 3 | 2 | 1 | 1 | |
| Annual | 31.75" | 16.33" (May 1982) | 7.86" | (May 12, 1929) | 74 | 66 | 46 | 33 | 21 | 10 | |

| Snow and Sleet (inches) | | | | | | | | | | | |
|-------------------------|-----------|----------------------|-----------|----------------|----------------|----------------------------------|-----|------|--------|--------|--------------|
| | AVERAGE | EXTREMES (1912-2003) | | | | AVG # DAYS PER MONTH (1971-2000) | | | | | |
| | 1971-2000 | Monthly Max | Daily Max | | Greatest Depth | | any | meas | 0.50"+ | 1.00"+ | Pot. Glazing |
| Jan | 0.8" | 14.3" (1949) | 9.0" | (7th, 1988) | 9.0" | (10th, 1930) | 1 | * | * | * | 1 |
| Feb | 0.4" | 16.6" (1921) | 9.1" | (19th, 1921) | 8.0" | (18th, 1921) | * | * | * | * | * |
| Mar | 0.0" | 8.6" (1948) | 7.3" | (1st, 1942) | 6.0" | (11th, 1948) | * | | | | |
| Apr | 0.0" | 3.2" (1938) | 3.2" | (8th, 1938) | 2.0" | (8th, 1938) | * | | | | |
| May | | 0.0" (1951) | 0.0" | (1st, 1949) | | | | | | | |
| Jun | | 0.0" (1951) | 0.0" | (9th, 1951) | | | | | | | |
| Jul | | | | | | | | | | | |
| Aug | | | | | | | | | | | |
| Sep | | 0.0" (1949) | 0.0" | (3rd, 1949) | | | | | | | |
| Oct | | 0.0" (1953) | 0.0" | (15th, 1953) | | | | | | | |
| Nov | 0.0" | 7.5" (2001) | 4.0" | (29th, 2001) | 5.0" | (29th, 2001) | * | | | | * |
| Dec | 0.1" | 10.0" (1954) | 6.5" | (7th, 1942) | 6.0" | (7th, 1942) | * | * | * | * | * |
| Annual | 1.3" | 16.6" (Feb 1921) | 9.1" | (Feb 19, 1921) | 9.0" | (Jan 10, 1930) | 1 | 1 | * | * | 2 |

TEMPERATURE AND PRECIPITATION

From Lawton Cooperative Observer Station (345063); April 1912 – December 2003

Latitude: 3437N Longitude: 09828W Elevation: 1149 ft

| Exceedence values (2 in 10 years) | | | | |
|-----------------------------------|----------------------------------|---------------------------------|--------------------------|--------------------------|
| Month: | Maximum Temperature Higher Than: | Minimum Temperature Lower Than: | Precipitation Less Than: | Precipitation More Than: |
| January | 77 | 4 | 0.25 | 1.95 |
| February | 83 | 9 | 0.41 | 2.20 |
| March | 90 | 15 | 0.77 | 3.19 |
| April | 93 | 29 | 1.28 | 4.34 |
| May | 99 | 41 | 2.25 | 7.50 |
| June | 104 | 53 | 1.74 | 5.36 |
| July | 107 | 59 | 0.66 | 3.98 |
| August | 108 | 56 | 0.70 | 3.91 |
| September | 103 | 43 | 1.14 | 5.59 |
| October | 96 | 30 | 0.97 | 5.27 |
| November | 84 | 19 | 0.33 | 3.35 |
| December | 78 | 9 | 0.36 | 2.65 |
| Annual | 110 | 0 | 20.92 | 37.2 |

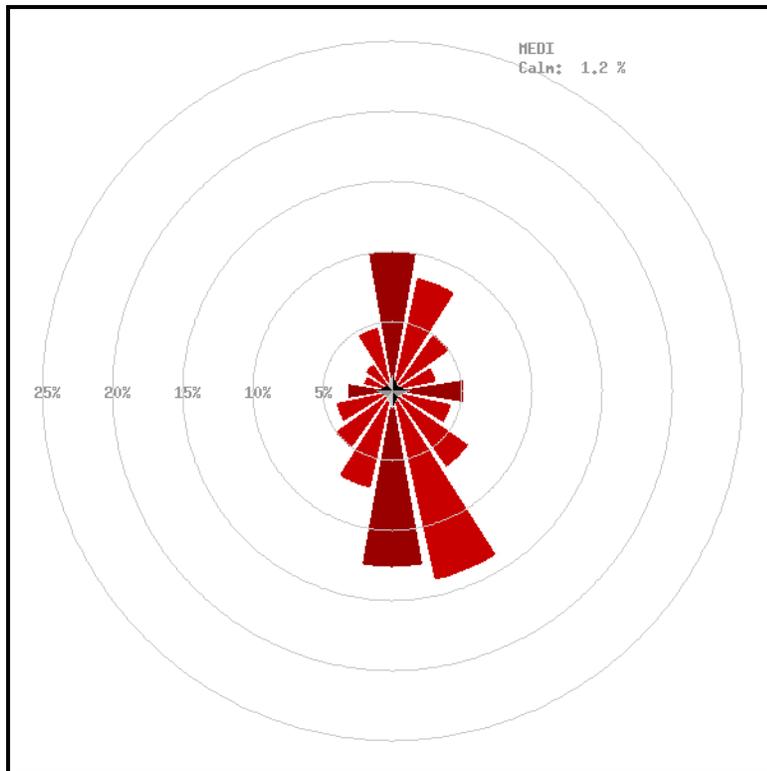
| First Freezing Temperature in Fall | | | |
|-------------------------------------|---------------|---------------|---------------|
| Probability | 24 F or Lower | 28 F or Lower | 32 F or Lower |
| 1 Year in 10 Earlier Than – | November 4 | October 28 | October 18 |
| 2 Years in 10 Earlier Than – | November 10 | November 3 | October 24 |
| 5 Years in 10 Earlier Than – | November 27 | November 12 | November 3 |
| 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 31 | April 7 | April 16 |
| 2 Years in 10 Later Than – | March 26 | March 31 | April 13 |
| 5 Years in 10 Later Than – | March 14 | March 22 | March 31 |

| Number of Days in Growing Season | | | |
|----------------------------------|------------------|------------------|------------------|
| Probability | Higher than 24 F | Higher than 28 F | Higher than 32 F |
| 9 Years in 10 | 231 | 212 | 194 |
| 8 Years in 10 | 235 | 220 | 200 |
| 5 Years in 10 | 262 | 239 | 218 |
| 2 Years in 10 | 285 | 258 | 234 |
| 1 Year in 10 | 290 | 272 | 239 |

WINDS

From Medicine Park Mesonet Site (MEDI); Jan 1994 – Dec 2001

Latitude: 3473N Longitude: 09857W Elevation: 1601 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, Medicine Park records a south-southeasterly wind about 14 percent of the time, with northerly winds just over 10 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: 72.7 mph

Maximum Sustained: 53.3 mph

Overall Average Speed: 11.0 mph

| MEDI | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Totals |
|-----------|------|------|-----|-----|-----|-----|-----|------|------|------|------|-----|-----|-----|-----|------|--------|
| Calm | | | | | | | | | | | | | | | | | 1.2% |
| 1- 5 mph | 0.8 | 0.7 | 0.7 | 1.0 | 1.6 | 1.4 | 1.2 | 1.0 | 0.8 | 0.6 | 0.5 | 0.5 | 0.5 | 0.7 | 0.9 | 0.9 | 13.9% |
| 6-10 mph | 1.6 | 1.7 | 1.8 | 1.4 | 2.8 | 2.0 | 2.8 | 5.0 | 3.1 | 1.5 | 1.5 | 1.6 | 1.5 | 1.0 | 0.6 | 1.0 | 30.8% |
| 11-15 mph | 2.4 | 2.6 | 1.8 | 0.7 | 0.7 | 0.8 | 1.9 | 5.0 | 4.4 | 2.2 | 1.8 | 1.4 | 0.9 | 0.3 | 0.4 | 0.9 | 28.1% |
| 16-20 mph | 2.2 | 1.9 | 0.6 | 0.1 | 0.1 | 0.1 | 0.7 | 2.2 | 3.2 | 1.9 | 0.9 | 0.5 | 0.2 | 0.1 | 0.3 | 0.9 | 16.0% |
| 21-25 mph | 1.7 | 0.9 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.7 | 1.0 | 0.8 | 0.2 | 0.1 | 0.1 | 0.0 | 0.2 | 0.7 | 6.7% |
| 26-30 mph | 0.9 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 2.3% |
| 31-35 mph | 0.3 | 0.1 | 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 | 0.7% |
| 35+ mph | 0.2 | 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 | 0.3% |
| Totals | 10.1 | 8.4 | 5.1 | 3.3 | 5.2 | 4.3 | 6.8 | 13.9 | 12.6 | 7.2 | 5.1 | 4.2 | 3.2 | 2.2 | 2.5 | 4.8 | 100.0% |
| MEDI | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| Max Gust | 68 | 73 | 51 | 41 | 40 | 49 | 61 | 57 | 65 | 66 | 53 | 53 | 53 | 54 | 62 | 73 | |
| Max 5 Min | 53 | 48 | 38 | 28 | 30 | 37 | 45 | 42 | 46 | 47 | 40 | 39 | 40 | 36 | 46 | 48 | |
| Avg Speed | 15.5 | 13.5 | 9.9 | 7.1 | 6.4 | 6.7 | 9.0 | 10.9 | 12.4 | 13.0 | 11.1 | 9.9 | 9.0 | 7.3 | 9.0 | 13.3 | |

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

HUMIDITY

From Medicine Park Mesonet Site (MEDI); Jan 1994 – Dec 2003

Latitude: 3473N Longitude: 09857W Elevation: 1601 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 | 83 | 43 | 63 | 27 | 3.9 |
| February | 81 | 42 | 62 | 31 | 4.9 |
| March | 83 | 41 | 63 | 36 | 5.9 |
| April | 84 | 41 | 62 | 46 | 8.0 |
| May | 89 | 47 | 68 | 58 | 9.5 |
| June | 89 | 47 | 69 | 65 | 11.8 |
| July | 81 | 38 | 59 | 66 | 19.1 |
| August | 80 | 36 | 58 | 65 | 19.0 |
| September | 84 | 41 | 62 | 59 | 13.1 |
| October | 83 | 43 | 64 | 49 | 8.4 |
| November | 85 | 45 | 66 | 39 | 5.2 |
| December | 82 | 43 | 63 | 30 | 4.2 |
| Annual | 84 | 42 | 63 | 48 | 9.5 |

Vapor pressure is given in millibars.

SOIL TEMPERATURES

From Medicine Park Mesonet Site (MEDI); Jan 1994 – Dec 2003

Latitude: 3473N Longitude: 09857W Elevation: 1601 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 | 42 | 42 | 46 | 39 |
| February | 46 | 46 | 51 | 41 |
| March | 51 | 51 | 58 | 46 |
| April | 60 | 62 | 70 | 55 |
| May | 70 | 72 | 80 | 66 |
| June | 76 | 81 | 89 | 74 |
| July | 83 | 88 | 97 | 80 |
| August | 83 | 87 | 96 | 80 |
| September | 76 | 78 | 86 | 72 |
| October | 65 | 66 | 73 | 60 |
| November | 54 | 53 | 58 | 48 |
| December | 45 | 44 | 48 | 41 |
| Annual | 63 | 64 | 71 | 59 |

Average daily maximum and minimum temperatures based on bare soil.

TORNADOES

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

| Date | Path | Deaths | Injuries | Rating | Counties Affected |
|-------------------|-------------|---------------|-----------------|---------------|---|
| May 12, 1896 | unknown | 0 | 3 | F2 | Comanche |
| May 28, 1904 | unknown | 0 | 0 | F2 | Comanche |
| June 3, 1904 | 10 miles | 0 | 3 | F3 | Cotton, Comanche |
| May 28, 1908 | 10 miles | 0 | unknown | F3 | Comanche, Stephens |
| April 8, 1922 | 5 miles | 3 | 40 | F3 | Comanche |
| May 22, 1923 | 2 miles | 0 | 0 | F2 | Comanche |
| May 3, 1930 | 2 miles | 0 | 0 | F2 | Comanche |
| March 31, 1933 | 3 miles | 0 | 3 | F2 | Comanche |
| May 12, 1933 | 7 miles | 1 | 1 | F2 | Comanche |
| April 19, 1941 | 5 miles | 0 | 0 | F2 | Comanche |
| June 20, 1948 | 35 miles | 0 | 1 | F2 | Tillman, Comanche |
| April 30, 1949 | 35 miles | 0 | 4 | F3 | Comanche, Grady |
| May 23, 1952 | 0.3 miles | 0 | 1 | F2 | Comanche |
| May 23, 1952 | 12 miles | 0 | 0 | F2 | Comanche |
| May 24, 1957 | 22 miles | 4 | 5 | F4 | Cotton, Comanche |
| June 2, 1973 | unknown | 0 | 2 | F2 | Comanche |
| April 5, 1978 | 10 miles | 0 | 0 | F2 | Comanche, Stephens |
| April 10, 1979 | 64 miles | 1 | 5 | F2 | Wilbarger (TX), Wichita (TX), Tillman, Cotton, Comanche, Stephens |
| April 10, 1979 | 7 miles | 0 | 3 | F2 | Comanche |
| April 10, 1979 | 4 miles | 3 | 100 | F3 | Comanche |
| October 19, 1983 | 2.6 miles | 0 | 0 | F2 | Comanche |
| February 14, 1987 | 3.5 miles | 0 | 1 | F2 | Comanche |

About the Data:

The temperature and precipitation data from Lawton 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 1912, yielding a 92-year series of data. Extremes, frost and freeze data, and growing season lengths were determined using the entire 92-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 Medicine Park (3 miles west of town), which has been operational since 1994. The Medicine Park Mesonet site was chosen because it is the only Mesonet site in Comanche 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

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.