

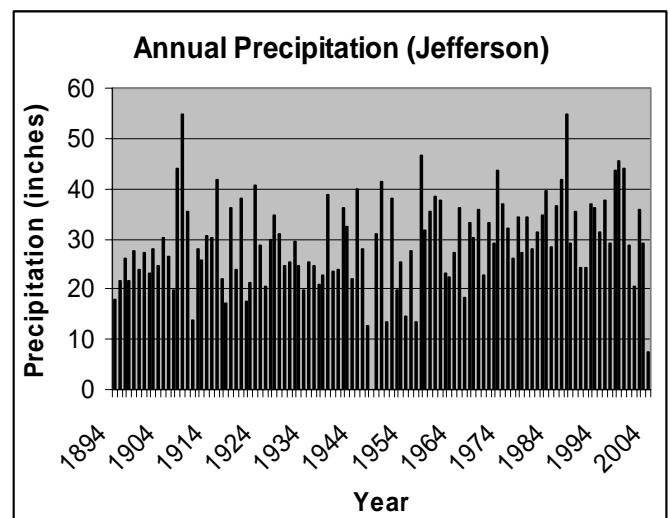
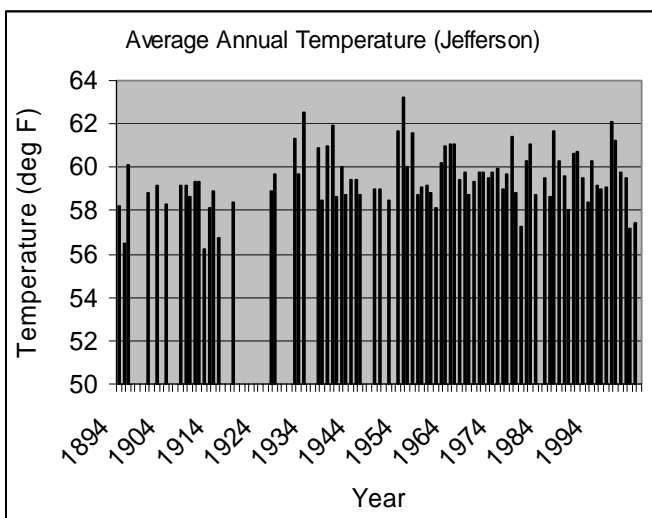
The Climate of Grant County

Grant County is located in a transitional zone between drier areas to the west and moist areas to the east. Average annual precipitation may vary by as much as four inches across the county, with higher totals generally in the eastern portions. On average, the county receives nearly 32 inches of precipitation each year. Most precipitation comes during the period from April - September, accounting for 67% of the total (21.6 inches). During these months, precipitation is fairly uniform, with a marked decrease during December - February. Snowfalls are infrequent, with an average annual total snowfall of nearly seven inches.

Temperatures are a little more uniform, with a mean of near 60 degrees. Temperatures range from an average daytime high of 97 degrees in July to an average low of 22 degrees in January. Grant County averages a growing season of 192 days, but plants that can withstand short periods of colder temperatures may have an additional three weeks.

Winds across Grant County are predominantly from the south to southeast, averaging nearly 10 miles-per-hour. Relative humidity, on average, ranges from 45% to 90% during the day. Relative humidity is slightly lower in the summer months than in winter. This is reflected in the lower afternoon humidity in the summer months; the nighttime maximums are all near 90% consistently. Winter months tend to be cloudier than summer months. The percentage of possible sunshine ranges from an average of 60% in winter to nearly 80% in summer.

Thunderstorms occur on about 51 days each year, predominantly in the spring and summer. During the period 1950 - 2003, Grant County recorded 56 tornadoes, although neighboring Kay County recorded 86 tornadoes, the highest in the state. The most recent significant tornado (F2 intensity or greater) cut a 5-mile path south of Lamont on 24 May 1998. Typically, there are 3-4 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 (1894-2003)			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	46.3	22.9	34.6	85	(31st, 1911)	-20	(22nd, 1930)			5	26	1
Feb	53.0	27.7	40.4	92	(22nd, 1996)	-23	(13th, 1905)		*	3	19	1
Mar	62.7	36.5	49.6	98	(31st, 1940)	-4	(3rd, 1960)		*	*	12	
Apr	72.5	45.7	59.1	102	(12th, 1972)	17	(9th, 1914)	*	1		3	
May	81.0	56.0	68.5	107	(31st, 1934)	25	(1st, 1909)	*	4		*	
Jun	91.1	65.3	78.2	114	(15th, 1953)	42	(4th, 1897)	3	19			
Jul	96.3	70.0	83.1	117	(18th, 1936)	44	(20th, 1899)	10	26			
Aug	95.1	68.4	81.8	118	(11th, 1936)	40	(10th, 1903)	9	25			
Sep	86.5	60.2	73.3	111	(2nd, 1939)	27	(30th, 1984)	2	12		*	
Oct	75.1	48.3	61.7	102	(2nd, 1898)	11	(30th, 1917)		2		2	
Nov	59.3	35.6	47.5	89	(6th, 1945)	2	(17th, 1894)			*	12	
Dec	48.7	26.0	37.3	86	(24th, 1955)	-16	(23rd, 1989)			3	24	1
Annual	72.4	47.0	59.7	118	(Aug 11, 1936)	-23	(Feb 13, 1905)	25	90	11	97	2

Precipitation (inches)										
	AVERAGE	EXTREMES (1894-2003)			AVG # DAYS PER MONTH (1971-2000)					
	1971-2000	Monthly Max	Daily Max		any	meas	0.10"+	0.25"+	0.50"+	1.00"+
Jan	1.03"	4.87" (1949)	1.74"	(19th, 1894)	6	3	2	1	1	*
Feb	1.30"	4.32" (1915)	3.09"	(21st, 1997)	5	4	3	1	1	*
Mar	3.03"	10.23" (1973)	3.50"	(10th, 1974)	7	6	5	4	2	1
Apr	3.16"	7.66" (1994)	4.48"	(28th, 1994)	8	7	5	4	2	1
May	4.97"	14.36" (1987)	4.20"	(21st, 1977)	10	9	7	5	3	1
Jun	4.31"	11.96" (1957)	4.83"	(10th, 1989)	9	8	6	5	3	1
Jul	3.45"	8.86" (1958)	4.00"	(2nd, 1976)	6	6	5	3	2	1
Aug	3.06"	10.19" (1960)	5.88"	(6th, 1898)	7	6	5	3	2	1
Sep	3.39"	12.19" (1908)	6.10"	(3rd, 1908)	7	6	5	3	2	1
Oct	3.15"	15.76" (1998)	10.00"	(11th, 1973)	6	5	4	3	2	1
Nov	2.32"	7.71" (1909)	4.90"	(3rd, 1974)	6	5	4	2	2	1
Dec	1.39"	4.35" (1999)	2.68"	(4th, 1944)	6	4	3	2	1	*
Annual	34.57"	15.76" (Oct 1998)	10.00"	(Oct 11, 1973)	82	69	54	36	22	9

Snow and Sleet (inches)											
	AVERAGE	EXTREMES (1894-2003)				AVG # DAYS PER MONTH (1971-2000)					
	1971-2000	Monthly Max	Daily Max		Greatest Depth		any	meas	0.50"+	1.00"+	Pot. Glazing
Jan	2.2"	32.2" (1930)	14.0"	(7th, 1988)	14.0"	(9th, 1930)	2	1	1	1	2
Feb	2.3"	25.5" (1982)	14.5"	(2nd, 1982)	16.0"	(11th, 1982)	1	1	1	1	1
Mar	0.6"	11.5" (1970)	8.0"	(26th, 1913)	18.0"	(13th, 1999)	*	*	*	*	*
Apr	0.2"	7.0" (1938)	7.0"	(8th, 1938)	4.0"	(9th, 1973)	*	*	*	*	
May		0.0" (1955)	0.0"	(5th, 1950)							
Jun		0.0" (1950)	0.0"	(27th, 1950)							
Jul		0.1" (1951)	0.0"	(4th, 1951)							
Aug											
Sep											
Oct	0.0"	1.0" (1913)	1.0"	(28th, 1913)			*				*
Nov	0.5"	20.0" (1937)	6.5"	(20th, 1898)	5.0"	(18th, 1972)	*	*	*	*	*
Dec	1.2"	14.0" (1918)	12.0"	(23rd, 1918)	20.0"	(31st, 1939)	1	1	1	1	1
Annual	7.0"	32.2" (Jan 1930)	14.5"	(Feb 2, 1982)	20.0"	(Dec 31, 1939)	5	2	2	2	5

TEMPERATURE AND PRECIPITATION

From Jefferson Cooperative Observer Station (344573); Jan 1894 – June 2003

Latitude: 3643N Longitude: 09747W Elevation: 1044 ft

Exceedence values (2 in 10 years)				
Month:	Maximum Temperature Higher Than:	Minimum Temperature Lower Than:	Precipitation Less Than:	Precipitation More Than:
January	72	-6	0.22	1.63
February	79	-3	0.23	2.04
March	88	9	0.61	3.07
April	92	24	1.30	4.20
May	98	35	1.78	6.71
June	105	48	1.96	6.26
July	108	54	0.95	5.10
August	109	51	1.03	4.70
September	104	36	0.86	5.06
October	95	25	0.73	4.43
November	82	11	0.06	3.10
December	73	1	0.30	2.08
Annual	110	-9	23.03	37.47

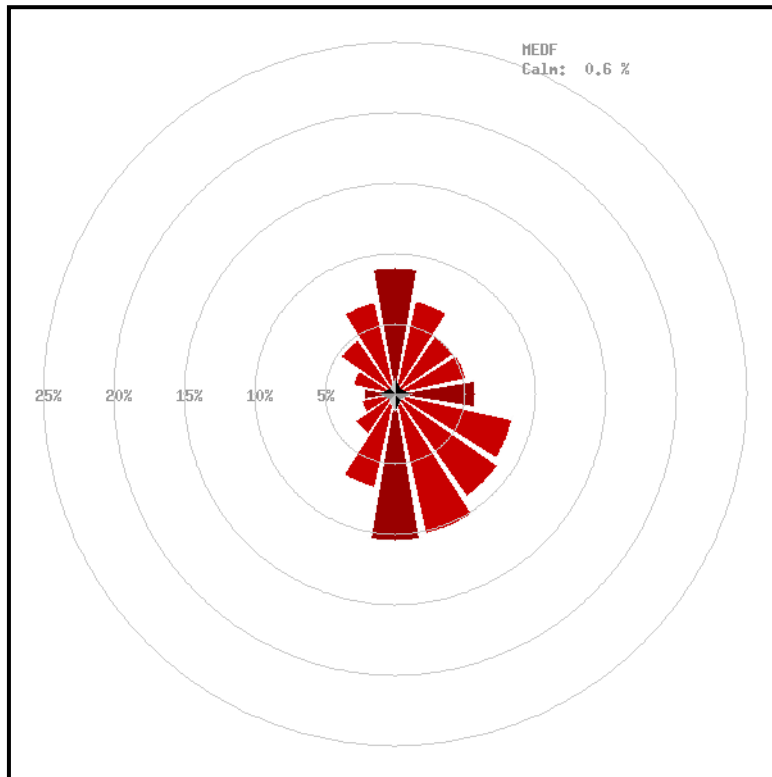
First Freezing Temperature in Fall			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Earlier Than –	October 19	October 8	September 24
2 Years in 10 Earlier Than –	October 27	October 19	October 8
5 Years in 10 Earlier Than –	November 11	November 4	October 20
Last Freezing Temperature in Spring			
Probability	24 F or Lower	28 F or Lower	32 F or Lower
1 Year in 10 Later Than –	April 13	April 18	May 1
2 Years in 10 Later Than –	April 6	April 13	April 27
5 Years in 10 Later Than –	March 24	April 5	April 16

Number of Days in Growing Season (minimum temperature threshold)			
Probability	Higher than 24 F	Higher than 28 F	Higher than 32 F
9 Years in 10	201	182	157
8 Years in 10	213	196	171
5 Years in 10	232	211	191
2 Years in 10	249	229	201
1 Year in 10	262	240	208

WINDS

From Medford Mesonet Site (MEDF); Jan 1994 – Dec 2001

Latitude: 3548N Longitude: 09745W Elevation: 1089 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, Medford records a southerly wind just over 10 percent of the time, with northerly winds 9 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: 73.2 mph

Maximum Sustained: 47.0 mph

Overall Average Speed: 9.7 mph

MEDF	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Totals
Calm																	0.6%
1- 5 mph	1.0	0.9	1.4	1.8	1.8	1.9	1.3	1.0	0.7	0.5	0.5	0.6	0.6	0.6	0.7	0.9	16.2%
6-10 mph	2.8	2.4	2.4	2.5	3.1	4.9	4.3	4.2	3.2	1.4	1.1	1.2	1.1	1.4	1.9	2.3	40.0%
11-15 mph	2.4	2.1	0.9	0.7	0.7	1.5	2.4	3.2	3.2	1.9	1.0	0.4	0.4	0.6	1.0	1.5	24.1%
16-20 mph	1.8	1.0	0.2	0.1	0.1	0.3	0.7	1.4	2.2	1.7	0.6	0.1	0.1	0.3	0.6	1.1	12.5%
21-25 mph	0.8	0.2	0.0	0.0	0.0	0.0	0.1	0.3	1.0	1.0	0.2	0.0	0.1	0.1	0.3	0.7	4.8%
26-30 mph	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.0	0.0	0.0	0.1	0.2	1.4%
31-35 mph	0.1	0.0	0.0			0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.3%
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	0.1%
Totals	9.0	6.8	5.0	5.2	5.8	8.5	8.9	10.2	10.5	6.8	3.5	2.4	2.3	3.1	4.7	6.8	100.0%
MEDF	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
Max Gust	66	67	49	66	55	54	52	61	65	51	73	68	60	54	61	59	
Max 5 Min	44	41	35	43	36	33	38	42	40	40	47	42	45	40	44	46	
Avg Speed	11.8	10.1	7.1	6.3	6.3	7.2	8.6	10.1	12.1	13.9	11.0	7.6	8.1	8.9	10.2	11.7	

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

HUMIDITY

From Medford Mesonet Site (MEDF); Jan 1994 – Dec 2003

Latitude: 3548N Longitude: 09745W Elevation: 1089 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	49	72	25	2.4
February	89	47	70	30	3.4
March	89	46	69	35	4.3
April	89	45	69	45	6.3
May	93	48	73	58	7.9
June	91	43	68	64	12.6
July	88	38	63	67	17.6
August	87	39	63	66	16.7
September	88	42	66	58	11.8
October	89	45	69	48	6.8
November	90	49	72	38	3.7
December	91	54	76	29	2.2
Annual	90	45	69	47	8.0

Vapor pressure is given in millibars.

SOIL TEMPERATURES

From Medford Mesonet Site (MEDF); Jan 1994 – Dec 2003

Latitude: 3548N Longitude: 09745W Elevation: 1089 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	39	37	40	35
February	41	42	47	38
March	47	48	54	43
April	58	58	66	52
May	69	70	77	63
June	76	78	85	72
July	82	85	92	78
August	82	84	91	77
September	74	74	81	69
October	63	62	68	57
November	52	49	54	45
December	45	40	43	37
Annual	61	61	67	56

Average daily maximum and minimum temperatures based on bare soil.

TORNADOES

Significant Tornadoes (F2 intensity or greater) affecting Grant County, 1880 – 2003. Source: *Significant Tornadoes, 1880-1989: Volume I* and National Climatic Data Center.

Date	Path	Deaths	Injuries	Rating	Counties Affected
August 13, 1903	unknown	0	unknown	F2	Grant
May 17, 1908	unknown	0	0	F2	Grant
April 17, 1914	25 miles	0	12	F4	Grant, Kay, Sumner (KS)
March 18, 1927	35 miles	0	3	F3	Garfield, Grant, Kay
April 19, 1929	15 miles	0	0	F2	Grant
May 8, 1935	5 miles	0	4	F3	Grant
June 14, 1937	2 miles	0	0	F2	Grant
March 30, 1949	40 miles	0	7	F3	Garfield, Grant, Kay
March 30, 1949	12 miles	0	0	F2	Grant
May 10, 1953	32 miles	0	1	F2	Grant, Sumner (KS)
May 25, 1955	12 miles	0	1	F2	Grant
April 2, 1956	18 miles	0	4	F3	Garfield, Grant
November 17, 1958	35 miles	0	0	F2	Garfield, Grant, Kay
May 17, 1959	6 miles	0	0	F2	Grant
May 6, 1964	3.5 miles	0	0	F2	Grant
March 16, 1965	55 miles	0	7	F4	Grant, Kay, Sumner (KS), Cowley (KS)
April 30, 1973	20 miles	0	6	F2	Alfalfa / Grant
March 13, 1990	19 miles	0	0	F3	Grant
March 13, 1990	4 miles	0	0	F2	Grant
March 26, 1991	44 miles	0	0	F3	Grant, Kay
April 12, 1991	9 miles	0	0	F3	Grant
April 12, 1991	9.5 miles	0	0	F3	Grant
May 24, 1998	5 miles	0	0	F3	Grant

About the Data:

The data from Jefferson 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 1894, yielding a 110-year series of data. Extremes, frost and freeze data, and growing season lengths were determined using the entire 110 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 Medford (one mile southwest 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:

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.