

U. S. DEPARTMENT OF COMMERCE, WEATHER BUREAU
IN COOPERATION WITH
CLIMATOGRAPHY OF THE UNITED STATES NO. 20 -

LATITUDE 36° 18'
LONGITUDE 95° 37'
ELEV. (GROUND) 588 feet

CLIMATOLOGICAL SUMMARY

STATION CLAREMORE, OKLAHOMA

MEANS AND EXTREMES FOR PERIOD 1931 - 1964

Month	Temperature (°F)								** Mean degree days	Precipitation Totals (Inches)						Mean number of days					Month	
	Means			Extremes						Mean	Greatest daily	Year	Snow, Sleet				Precip. .10 inch or more	Temperatures				
	Daily maximum	Daily minimum	Monthly	Record highest	Year	Record lowest	Year	Mean					Maximum monthly	Year	Greatest daily	Year		90° and above		32° and below		
																		0° and above	32° and below	0° and below		32° and below
(a)	30	30	30	34		34			30	34		30	34	34		30	30	30	30	30		
Jan.	48.6	27.1	37.9	80	1950	-10	1947	840	1.85	1.72	1950	2.8	11.5	1937	5.0	1937	4	0	4	22	*	Jan.
Feb.	53.5	30.4	41.9	88	1962	-7	1933	647	1.87	1.75	1937	1.9	7.0	1942	4.0	1952+	4	0	1	16	*	Feb.
Mar.	61.8	37.3	49.5	90	1955+	-6	1948	496	2.54	3.07	1944	1.5	11.5	1958	6.5	1958	5	*	*	11	*	Mar.
Apr.	72.2	48.4	60.3	96	1960+	18	1936	180	3.95	3.82	1957	T	T	1953	T	1953	6	*	0	2	0	Apr.
May	79.6	57.2	68.4	99	1934	33	1954+	40	5.52	4.96	1943	0	0	0	0	0	7	2	0	0	0	May
June	88.4	66.2	77.3	107	1936	46	1935	0	4.91	3.23	1951	0	0	0	0	0	6	13	0	0	0	June
July	93.8	69.9	81.9	113	1954	54	1950	0	3.16	3.08	1932	0	0	0	0	0	4	23	0	0	0	July
Aug.	94.2	69.0	81.6	116	1936	48	1950	0	3.03	5.07	1938	0	0	0	0	0	4	24	0	0	0	Aug.
Sept.	87.1	60.6	73.9	110	1939	33	1942	15	3.89	6.00	1941	0	0	0	0	0	5	12	0	0	0	Sept.
Oct.	76.4	49.7	63.1	99	1939	22	1957+	155	3.36	5.12	1959	0	T	1957	T	1957	4	2	0	1	0	Oct.
Nov.	60.8	36.7	48.8	86	1949	7	1959	486	2.21	2.68	1964	0.1	1.5	1937	1.5	1937	4	0	*	11	0	Nov.
Dec.	51.5	30.0	40.7	78	1951	-4	1963	753	1.79	4.47	1932	1.1	13.0	1958	6.0	1958	3	0	1	19	*	Dec.
Year	72.3	48.5	60.4	116	Aug. 1936	-10	Jan. 1947	3612	38.08	6.00	Sept. 1941	7.4	13.0	Dec. 1958	6.5	Mar. 1958	56	76	6	82	*	Year

(a) Average length of record, years.

T Trace, an amount too small to measure.

** Base 65°F computed from mean monthly temperature rather than the actual degree-day averages.

+ Also on earlier dates, months, or years.

* Less than one half.

CLIMATE OF CLAREMORE, OKLAHOMA

Claremore, County Seat of Rogers County, is located in the prairie plains of northeastern Oklahoma about 50 miles south of the Kansas border and 60 miles west of the Arkansas border. Claremore is surrounded by gentle rolling pasture and crop land, interrupted by a few creeks and wooded areas. Oolagah Reservoir is the major geographical feature and covers 5850 acres in the northern part of the county and terminates 8 miles northwest of the city.

The moist climate of the Claremore area is typical of this southeastern part of the prairie plains and produces lush grasslands. Abundant moisture is received from storms which develop over Oklahoma when warm moisture-laden air arriving from the Gulf of Mexico conflicts with the cool and drier air advancing from the northern regions. Although changes from season to season are gradual, seasonal characteristics are distinct. Falls are normally mild and pleasant. Winters are usually moderate and sunny with cold outbreaks mostly of short duration. Heavy rains in spring provide adequate moisture for initial plant growth and subsoil reserves for the drier months of summer when crops are maturing. Hot summer days are numerous, but eased by light prevailing southerly winds, relatively low humidity, and occasional moderate showers.

Thirty years of Claremore temperature records show evidence of warm summers. Temperatures of 90° and above occur on an average of 77 days from March through October, and 100° or higher occur on 15 days per year from March through September. Only one year in nine will fail to have temperatures of 100° or above. Hottest summer was in 1936 when there were 70 days of 100° and above and August of that year had 26 such days, 22 of them consecutively. August 1936 also provided a record high of 116° for Claremore on the 11th. Summers with 110° and above occur in only one year out of six while cool summers with temperatures remaining below the century mark happen about once every five years. Besides a mean daily variation of 23.8°, a stimulating climate is provided by freezing temperatures which occur on an average of 82 days per year. Readings of zero and below are common, having occurred on 33 days in 16 different years during the period 1931-1964.

Annual precipitation at Claremore averages 38 inches. Only one year in 10 will receive less than 27 inches or more than 48 inches while annual extremes have ranged from 19.89 inches in 1963 to 62.48 inches in 1941. Seasonal

distribution of rainfall is favorable for most agricultural pursuits with 32% received in spring, 29% in summer, 25% in fall, and 14% in winter. Maximum monthly rainfall has ranged from 4.45 inches in February 1938 to 18.62 inches in May 1943. Dry months are most likely during July through January, while only four individual months have failed to receive measurable precipitation during the 49 years since 1915. Greatest daily amount of 7.00 inches occurred during the 24-hour period ending at 6PM on January 20, 1904.

Snow falls between November and April for an average seasonal total of seven inches with measurable snow occurring in 15 out of 16 seasons. Winter total of 11 inches or more occur once every 16 seasons. Greatest seasonal total was 29.1 inches in 1923-1924. March 1924 provided the greatest monthly snowfall of 17.6 inches. The greatest daily snowfall of 8.0 inches fell on January 9, 1930; 8 inches also stands as the greatest snow depth which first occurred on February 8, 1928.

Relative humidity and wind data have not been recorded at Claremore, however, these data can be reasonably interpolated. Relative humidity in winter averages near 68% in the afternoon and near 80% at night while summer readings average 52% in the afternoon and 85% at night. The mean hourly wind speed can be expected to range from 9 miles per hour in July to 13 miles per hour in March. The prevailing wind direction is southerly except during January when northerly winds predominate. The combined action of wind and summer heat provides an annual lake evaporation of 49 inches with 72% of this amount occurring from May through October.

Average dates of occurrences of various temperature values:

Temperature Equal To Or Lower Than	Average Dates Of Occurrences Last In Spring-First In Fall	Length Of Period
32°	April 3 October 29	210
28°	March 28 November 3	234
24°	March 12 November 18	272
20°	March 1 December 5	275
16°	February 15 December 16	288

(Continued under Average Temperature Table)

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	41.8	46.1	45.4	56.3	63.0	78.7	81.9	76.6	79.4	66.5	55.6	48.2	61.5
1932	40.2	49.6	44.8	63.0	68.1	76.6	81.4	80.8	73.7	60.2	44.4	37.1	60.0
1933	46.0	38.0	51.4	60.0	69.6	78.5	82.3	78.4	77.0	60.6	51.2	43.6	61.6
1934	41.3	41.2	47.6	60.9	69.4	81.7	87.2	87.0	69.4	64.6	52.8	38.9	61.8
1935	39.3	43.3	55.7	56.0	64.2	72.4	82.8	82.6	70.3	60.8	44.8	37.4	59.1
1936	32.8	31.8	57.6	59.6	71.0	80.4	88.0	89.9	78.8	59.6	46.6	43.6	61.6
1937	31.8	39.7	46.0	59.5	67.8	75.4	82.2	84.4	73.2	61.0	45.7	37.4	59.1
1938	40.2	46.5	58.0	60.0	69.6	78.2	80.8	82.1	73.2	68.2	48.3	40.9	61.8
1939	43.9	39.0	54.2	59.1	70.6	77.0	83.8	82.0	80.4	66.2	47.2	44.6	62.2
1940	23.1	39.7	51.7	59.0	67.3	75.4	80.0	78.2	71.4	65.4	45.4	42.0	58.2
1941	41.4	39.2	46.1	63.0	72.0	75.2	81.9	80.4	74.0	65.6	48.6	43.5	60.9
1942	36.4	39.0	50.4	63.0	67.4	76.6	81.0	79.2	70.8	61.5	52.6	41.0	59.9
1943	36.7	45.4	45.0	63.4	67.6	79.0	84.2	86.0	70.9	59.6	49.2	36.8	60.3
1944	38.8	44.2	48.6	58.5	69.6	78.6	80.5	81.2	72.6	64.0	52.6	35.6	60.4
1945	38.8	41.6	55.4	59.5	66.3	73.9	78.1	79.6	73.1	61.8	51.8	35.0	59.6
1946	38.8	46.6	57.6	65.1	64.8	77.0	83.6	82.4	73.2	65.9	50.0	46.6	62.6
1947	39.2	36.4	44.2	59.6	65.6	76.6	78.0	85.1	76.8	69.0	46.5	41.6	59.8
1948	31.2	38.3	46.4	66.6	69.1	77.4	79.7	79.1	73.9	61.0	49.4	42.2	59.6
1949	34.1	40.7	49.6	59.1	70.3	78.2	80.6	76.8	67.9	62.1	52.9	42.7	59.6
1950	39.1	44.9	47.5	57.6	67.6	75.2	75.1	74.2	68.9	64.7	44.6	35.7	57.9
1951	37.8	41.9	47.9	56.5	68.3	74.2	80.1	81.7	69.6	60.3	42.2	38.9	58.3
1952	42.9	45.9	46.5	55.7	69.4	81.7	82.0	84.1	74.5	59.4	48.9	39.7	60.8
1953	41.4	44.4	55.7	55.7	69.4	83.9	79.7	79.5	76.0	50.8	50.8	40.9	62.0
1954	37.8	49.7	49.3	67.4	63.9	79.0	89.5	86.6	78.9	65.5	51.2	41.9	64.4
1955	40.4	41.8	50.8	65.6	70.9	74.5	85.5	81.7	76.6	61.5	47.5	39.0	61.3
1956	35.9	43.0	52.8	58.3	73.3	77.3	84.0	86.6	77.9	68.0	47.8	42.9	62.3
1957	34.8	47.2	48.3	58.7	68.4	76.6	84.6	82.2	70.5	58.3	47.0	46.0	60.2
1958	37.9	35.2	42.2	58.9	69.4	77.0	80.0	78.7	73.1	60.4	52.1	36.4	58.4
1959	34.3	41.2	50.7	60.9	71.2	75.8	77.3	80.7	73.4	59.0	43.5	49.3	59.3
1960	37.8	37.6	40.7	63.3	67.9	77.9	79.8	80.4	76.1	66.0	52.3	38.6	59.9
1961	35.3	44.2	53.8	58.7	67.2	74.4	79.1	77.7	71.0	64.3	48.7	37.8	59.4
1962	32.7	45.8	48.3	59.4	75.3	76.5	82.2	82.0	73.4	66.5	50.7	40.1	60.9
1963	28.5	36.6	51.6	64.4	70.0	79.4	83.3	82.5	75.6	70.5	50.5	29.9	60.2
1964	38.1	37.8	44.3	63.1	69.8	76.0	83.0	79.7	72.5	59.0	52.8	36.7	59.4

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	.27	-	1.89	4.05	6.57	2.12	3.55	9.01	.41	5.83	6.63	.90	-
1932	5.74	1.29	1.58	1.75	2.87	6.09	7.29	.83	.72	3.05	.92	6.28	38.41
1933	2.38	1.04	2.08	6.03	6.81	.08	4.15	6.58	4.86	3.19	1.99	1.36	40.65
1934	2.59	1.60	.75	1.90	4.24	2.39	.61	2.19	7.79	1.24	4.82	.82	29.74
1935	1.99	1.61	5.77	2.03	4.40	10.66	.04	1.30	3.88	5.24	2.41	1.74	41.07
1936	.17	.62	.46	1.76	3.73	.67	.04	.07	9.96	5.81	1.13	2.21	26.63
1937	4.21	.37	1.94	2.60	2.67	2.76	4.52	2.82	4.39	2.29	1.58	1.20	31.35
1938	1.64	4.45	5.75	2.37	5.36	5.89	2.97	5.10	.99	.30	1.91	.70	37.43
1939	2.63	1.04	.75	1.07	7.59	4.53	3.62	2.22	.06	1.52	1.90	1.20	28.13
1940	.39	2.33	.48	6.47	3.93	6.38	.83	4.17	3.50	2.09	5.94	1.50	38.41
1941	3.14	2.07	.70	9.12	1.80	7.62	3.10	4.91	12.02	14.70	1.90	1.40	62.48
1942	.60	1.63	.78	8.08	2.09	12.60	3.75	4.83	5.65	3.58	1.69	3.08	48.36
1943	.08	.80	2.37	1.89	18.62	6.15	T	1.59	6.72	3.64	.01	3.10	44.97
1944	1.58	3.51	4.18	2.77	3.11	6.50	3.12	5.17	5.17	1.98	4.24	1.36	40.12
1945	.75	3.13	5.53	8.20	1.73	4.56	5.27	.37	9.70	.40	.42	.24	40.30
1946	3.49	2.79	2.45	3.85	7.21	1.76	.11	2.56	1.27	1.34	6.78	3.10	36.71
1947	.74	.21	1.48	9.82	4.87	3.94	1.42	1.74	4.49	.97	2.60	1.49	33.77
1948	.73	1.86	4.79	1.84	4.08	11.08	3.74	5.97	.01	.80	1.70	2.00	38.60
1949	6.19	3.10	2.53	2.05	11.41	5.10	5.96	1.67	5.65	2.11	.50	1.83	48.10
1950	2.92	2.51	.95	1.27	9.93	3.58	5.80	3.90	1.74	1.05	.22	.18	34.05
1951	2.12	4.34	1.49	2.59	1.15	11.28	3.89	2.94	3.87	8.09	2.71	.57	45.04
1952	.95	2.01	2.58	4.58	2.99	1.48	2.55	2.01	1.01	T	3.10	.95	22.21
1953	1.71	.80	5.11	6.75	3.68	2.08	7.08	.32	2.25	5.64	2.68	1.15	39.25
1954	.91	.98	1.08	4.51	5.71	1.72	.73	5.16	2.45	4.54	.40	2.85	31.04
1955	.98	1.59	3.20	1.42	4.85	2.71	.00	4.33	1.96	4.04	.00	.37	25.45
1956	.88	.87	1.26	3.05	5.87	4.76	2.05	.91	.31	2.87	1.78	2.52	27.13
1957	1.57	1.93	4.28	7.77	10.72	9.44	.83	2.47	4.82	2.19	2.07	1.68	49.77
1958	1.83	.97	5.49	2.87	4.32	2.85	5.31	2.92	3.08	.26	1.75	.85	32.50
1959	.49	2.52	2.95	1.70	5.22	4.09	6.14	.52	9.27	9.07	1.80	2.92	46.69
1960	1.57	2.56	1.49	4.36	8.18	2.56	6.24	2.24	1.16	2.95	.91	4.00	38.22
1961	1.14	1.76	4.35	1.52	7.05	6.05	10.37	4.80	7.45	1.11	3.27	1.75	50.67
1962	1.23	1.04	3.05	3.00	1.72	5.38	1.26	1.89	6.11	3.60	1.68	.39	32.28
1963	1.09	.05	2.35	1.43	3.05	2.52	3.07	2.28	.97	.35	1.75	.98	19.69
1964	.46	1.84	3.49	6.54	3.90	3.97	.84	5.85	2.12	1.18	4.89	.68	35.76

CLIMATE (Continued)

The average freeze-free season in the adjacent areas of Rogers County ranges from 207 days in the northeast part to 215 days in the southern portion. Latest spring freezes have varied from March 7 in 1922 to April 22 in 1921 and 1931, while earliest fall freezes have varied from October 1 in 1958 to November 23 in 1934.

Rogers County has reported 20 tornadoes during the past 90 years for a frequency ratio of 1.8 tornadoes per 100 square miles for the period. Only two tornadoes have occurred in the City of Claremore and five others within a five mile radius of the City. None of these seven caused any deaths or injuries and totaled less than \$100,000 in damages. Only two of the Rogers County tornadoes have resulted in a total of five deaths since most of them have struck in rural areas with damage limited to farmsteads.

STATION HISTORY

The Claremore station was established on February 12, 1900 at the Frisco Railway Depot where an intermittent record was kept by H. A. Bessey, A. L. Kates and F. G. Grieswald until the station was closed in November 1904. Subsequent locations have all remained within 1.3 miles of the Post Office while elevations have varied from 599 feet to its present level of 588 feet.

The station was reestablished on July 17, 1915 at the residence of Charles Krause. Succeeding observers were Hiram S. Garst, Samuel G. Feezell, George E. Feezell, Brynne Swift, J. Carl Thomas and W. F. Paris through October 8, 1963. Mr. George E. Feezell was senior observer at Claremore with nearly 31 years of service before resigning on December 5, 1955. The station is now located at the Claremore Sewage Disposal Plant at the south side of the city where the plant manager, V. L. Anderson has served as observer since October 9, 1963.

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The original equipment location between February 12, 1900 and November 1904 provided the only known exposure irregularity during which time only a fair exposure was caused by a shelter location too close to the overhang of the Railway Depot.