

U. S. DEPARTMENT OF COMMERCE, WEATHER BUREAU  
 IN COOPERATION WITH CHAMBER OF COMMERCE  
 CLIMATOGRAPHY OF THE UNITED STATES NO. 20 - 34

LATITUDE 34° 10'  
 LONGITUDE 97° 08'  
 ELEV. (GROUND) 880 feet

CLIMATOLOGICAL SUMMARY

STATION ARDMORE, OKLAHOMA

MEANS AND EXTREMES FOR PERIOD 1931 - 1960

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	32° and below	0° and below				
																						Max.		Min.	
(a)	30	30	30	30		30																			
Jan.	54.7	31.8	43.2	86	1943	-1	1940	676	1.97	3.39	1946	1.8	6.5	1936	5.0	1956+	4	0	2	16	1	Jan.			
Feb.	58.5	35.3	46.9	86	1956	-2	1933	507	2.46	3.83	1938	0.7	4.3	1956	4.0	1960	5	0	1	11	*	Feb.			
Mar.	56.5	41.5	54.0	94	1946	7	1948+	375	2.95	3.43	1945	0.7	6.5	1942	6.5	1942	5	*	*	6	0	Mar.			
Apr.	76.0	51.8	63.9	98	1936	25	1940+	114	4.18	4.59	1949	T	T	1955+	T	1955+	6	1	0	1	0	Apr.			
May	82.1	60.1	71.1	98	1951	37	1954	9	5.74	6.00	1943	0	0	0	0	0	7	4	0	0	0	May			
June	90.9	68.8	79.9	106	1953	49	1947	0	3.97	3.93	1950	0	0	0	0	0	5	20	0	0	0	June			
July	95.9	69.9	84.0	110	1939+	54	1947	0	2.95	4.48	1945	0	0	0	0	0	4	27	0	0	0	July			
Aug.	96.5	71.9	84.2	114	1936	52	1940	0	2.54	4.15	1940	0	0	0	0	0	3	27	0	0	0	Aug.			
Sept.	89.6	64.9	77.3	108	1939	35	1942	0	2.87	3.07	1945	0	0	0	0	0	4	16	0	0	0	Sept.			
Oct.	79.5	54.6	67.0	102	1938	28	1957	84	3.16	3.95	1941	0	0	0	0	0	4	3	0	*	0	Oct.			
Nov.	65.9	41.2	53.6	90	1945	13	1940	336	2.06	2.80	1940	0.1	1.8	1951	1.8	1951	3	*	0	6	0	Nov.			
Dec.	56.9	34.5	45.7	92	1951	7	1950+	598	2.26	5.84	1932	0.7	8.0	1954	8.0	1954	4	*	1	13	0	Dec.			
Year	76.1	52.2	64.2	114	Aug. 1936	-2	Feb. 1933	2699	37.11	6.00	May 1943	4.0	8.0	Dec. 1954	8.0	Dec. 1954	54	98	4	53	1	Year			

(a) Average length of record, years.

+ Also on earlier dates, months, or years.

T Trace, an amount too small to measure.

\* Less than one half.

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

CLIMATE OF ARDMORE, OKLAHOMA

Ardmore, County Seat of Carter County, is located in the southeastern quarter of the County in the south-central part of Oklahoma. The area around Ardmore is gently rolling crop and pasture land interrupted by two major geographical features; these are the Arbuckle Mountains which rise 15 miles to the north, and the meandering Red River 20 miles to the south which forms the southern boundary of Oklahoma. Two major lakes are close at hand with Lake Murray four miles to the southeast, and Lake Texoma as close as 20 miles to the east and southeast.

The Ardmore area has a subhumid continental-type climate which is characteristic of this southeastern edge of the Great Plains. The area is primarily influenced by the warm, moist air currents from the Gulf of Mexico which provide a long, warm summer. The seasons have distinct characteristics with fall and winter months frequented by cold air masses from the north. These severe cold outbreaks cause abrupt drops in temperature, but are mostly of short duration with the winter season usually being short and mild. The heavy rains of spring coincide favorably with the early growing season and provide adequate moisture for the stock-forming period and sufficient subsoil reserves for the lighter precipitation months of summer when crops are maturing. Hot summer days are numerous, but moderated by good prevailing southerly winds, relatively low humidity, and occasional moderate showers.

Temperatures summarized over the recent 30 years show winters to be mild and short as evidenced by the fact that on the average, winter daytime temperatures range from the lower 30's to the mid 50's. There are, on the average, only three days per year when the temperature fails to rise above freezing, and less than one day a year when the temperature drops to zero or below. The longest period that temperatures remained below freezing was 19 days in January 1930, with a record low of -8° observed on January 18, 1930. Long, hot summers are substantiated by the fact that 90° or above temperatures occur on the average of 98 days per year, and have occurred in all months except January. Temperatures of 100° or more occur 21 days per year, with the warmest spell of 100° or above lasting 41 days in July and August 1934. The record high of 114° was observed on August 11, 1936.

Ardmore's 37-inch annual rainfall is well distributed throughout the seasons for most agricultural pursuits.

May is the heaviest month with a secondary maximum occurring in October which provides maximum benefits for crops and pastures. Only one year in 10 will have over 50 inches of rainfall, with a record of 56.26 inches falling in 1940. The greatest amount in one month was 16.00 inches in May 1943. The greatest daily precipitation was 8.80 inches for the 24-hour period ended at 7AM on July 14, 1927. Subsequent to July 1901 there have been only eight years when no measurable precipitation fell at Ardmore, producing dry spells lasting from 32 to 53 days. Most of these occurred in fall or winter so that crops were generally not damaged. The most severe drought lasted 43 days during the August 1936 heat wave.

Snowfall averages four inches per year at Ardmore with measurable amounts falling in three out of four years. The greatest seasonal snowfall of 14.0 inches fell in 1904-05, all of which fell in the month of February 1905. Greatest 24-hour snowfall was 8.0 inches on December 29, 1954. Snow amounts rarely remain on the ground more than a few days, so that they seldom become an operational hazard.

Wind and relative humidity are not observed, but general interpolations can be made from Oklahoma City, Wichita Falls, and Dallas data. Winter relative humidity should average near 61% in the afternoon and near 79% at night, whereas in summer, the readings should average near 47% in the afternoon and near 83% at night. The prevailing wind direction is southerly except during January and February when north winds predominate. The mean hourly wind speed can be expected to range from near 10 miles per hour during summer to 15 miles per hour in March and April. The combined action of wind and sun help deplete the surface moisture by evaporation. Lake evaporation amounts to 57 inches per year with 69% of this occurring during the growing season of May to October.

Average dates of occurrences of various temperature values:

Temperature To Or Lower Than	Equal	Average Dates Last In	Of Occurrences Spring-First In	Length Of Period
32°		March 29	November 11	227 days
28°		March 15	November 23	253 "
24°		March 2	December 7	280 "
20°		February 14	December 17	306 "
16°		February 2	December 21	321 "

(Continued under Average Temperature Table)

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	47.0	51.5	49.5	59.6	66.6	81.8	84.4	82.0	83.2	70.7	59.6	48.6	65.3
1932	45.4	54.8	51.7	66.0	70.6	79.5	84.0	84.2	76.6	64.2	50.0	41.3	64.0
1933	52.0	44.6	56.6	64.9	72.6	80.2	85.8	81.4	80.6	67.4	55.9	46.4	66.1
1934	46.0	46.8	51.8	64.4	71.8	83.7	85.0	89.2	76.0	69.8	58.1	46.4	-
1935	47.6	-	61.2	62.1	67.3	76.4	83.6	84.2	72.0	65.8	49.6	43.2	-
1936	39.4	39.1	60.6	64.4	72.3	81.6	85.0	88.4	78.8	61.1	51.1	47.4	64.1
1937	37.4	44.6	49.8	64.4	72.9	80.8	84.5	85.0	76.3	70.6	49.3	40.7	62.5
1938	45.7	50.6	59.3	61.6	70.2	78.0	83.0	85.1	77.6	70.6	51.4	45.4	64.9
1939	46.5	40.8	57.0	61.0	68.0	75.6	86.2	84.4	82.1	69.5	52.2	48.8	64.9
1940	30.7	45.0	57.0	61.7	68.4	78.2	79.4	78.6	74.1	68.2	49.0	46.0	60.9
1941	45.0	45.1	48.9	-	72.1	75.2	81.8	81.6	77.7	70.2	53.6	48.4	-
1942	41.5	46.8	54.4	64.8	70.1	79.6	82.7	82.6	72.8	64.7	59.0	46.5	63.8
1943	44.1	50.4	48.9	67.6	70.9	81.4	83.2	83.6	75.8	64.7	54.3	42.1	64.5
1944	44.7	49.0	53.4	63.2	70.4	80.6	83.6	85.0	76.0	67.2	51.1	39.8	64.1
1945	40.4	45.2	57.2	59.8	69.6	77.5	79.8	80.8	75.8	63.2	57.8	40.5	62.1
1946	42.8	49.9	58.4	66.7	67.8	76.8	83.9	83.2	73.4	67.8	54.9	49.7	64.6
1947	41.8	40.6	47.0	62.2	68.2	78.3	81.6	82.6	78.6	70.8	46.8	43.0	62.0
1948	33.0	41.5	49.9	69.4	69.9	81.4	83.5	83.5	77.5	65.5	53.2	47.4	63.0
1949	35.3	43.5	52.9	61.5	73.5	80.1	84.6	81.4	72.7	64.8	57.2	45.7	62.8
1950	43.5	49.4	54.9	63.2	72.8	79.1	79.5	79.4	74.2	71.1	53.7	44.6	63.8
1951	43.6	47.8	54.6	63.1	70.7	77.6	84.0	87.5	77.6	67.7	50.0	47.5	64.3
1952	52.4	56.6	53.4	61.4	71.8	83.6	84.8	88.7	78.5	64.8	53.6	44.2	65.3
1953	49.8	49.0	60.2	62.1	71.9	87.0	83.6	82.6	68.1	68.1	54.1	44.9	66.0
1954	43.8	57.3	54.4	70.1	67.8	81.5	89.7	83.1	79.2	68.4	56.1	48.7	67.3
1955	44.9	47.1	56.6	69.0	74.6	77.3	85.0	84.1	79.1	66.2	54.0	44.5	65.2
1956	42.2	47.8	57.7	64.0	76.9	82.9	88.0	83.9	81.2	71.2	51.2	49.1	66.9
1957	41.0	50.3	52.3	62.1	70.7	79.0	87.1	83.9	74.2	62.0	52.2	50.3	63.6
1958	44.7	48.6	48.3	61.8	73.4	80.9	83.0	83.8	77.2	66.6	53.6	45.3	63.3
1959	42.0	47.9	55.4	63.9	74.4	79.5	81.0	83.1	78.0	65.1	48.9	49.6	64.1
1960	43.6	41.8	46.4	67.6	71.0	81.1	83.7	83.1	78.9	68.7	57.7	42.7	63.9

CLIMATE (Continued)

The latest spring freeze occurred April 26, 1903, when a 32° temperature was recorded, and the earliest fall freeze occurred October 18, 1903, when 28° was recorded.

Garter County has reportedly been frequented by 15 tornadoes in the last 87 years. This amounts to a frequency of 1.8 tornadoes per 100 square miles for the period. During the last 30 years, only eight tornadoes have occurred in the County with only one of these striking within the City of Ardmore on February 13, 1946. One person was killed and 15 others injured. Damage estimates neared \$1,000,000. Fifty homes were demolished while 48 more were damaged to the extent that they were uninhabitable. An additional 1,500 houses were damaged to some extent and 200 other buildings were destroyed or damaged. Other severe storms are provided by occasional heavy hail which causes some damage to crops, roots, and windows.

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Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	1.00	5.80	3.79	1.22	1.08	0.60	5.31	1.12	0.43	8.56	3.57	2.38	34.86
1932	6.92	4.14	0.58	3.33	2.90	5.92	1.70	1.33	1.71	1.26	0.57	9.23	39.59
1933	2.43	1.55	5.41	2.66	9.23	0.06	2.53	2.14	2.86	1.17	1.10	0.37	31.81
1934	1.65	3.42	4.36	2.46	2.40	0.73	0.05	1.72	5.62	0.90	4.80	0.47	28.58
1935	1.23	1.20	6.93	1.84	13.16	9.86	0.37	5.37	4.13	2.68	1.95	2.78	51.40
1936	0.85	0.24	2.02	1.86	10.96	1.28	1.83	0.00	10.54	3.75	0.20	1.98	35.51
1937	-	0.21	4.43	5.46	2.26	1.97	1.51	6.27	0.20	4.87	0.96	4.81	-
1938	2.27	6.42	5.59	2.25	2.80	2.55	1.15	1.38	1.21	0.66	2.33	0.83	29.44
1939	3.35	5.70	3.59	2.84	2.82	5.43	1.47	2.52	0.16	1.46	1.96	0.69	27.22
1940	0.86	4.04	1.12	8.40	12.74	5.97	7.33	4.63	0.20	2.19	7.13	2.65	56.26
1941	2.08	3.61	0.46	7.28	3.75	6.33	2.69	3.76	1.52	14.11	1.13	1.18	47.30
1942	0.76	1.42	0.85	10.01	3.49	9.36	1.77	3.44	2.93	3.85	1.48	1.85	41.21
1943	0.39	0.50	3.88	4.64	16.00	4.08	0.14	0.05	5.60	0.94	0.57	3.45	40.04
1944	2.25	5.70	3.59	2.20	4.44	3.56	2.17	2.64	0.67	4.14	3.63	3.98	39.87
1945	2.03	4.80	8.57	7.11	2.23	6.55	8.30	1.87	9.28	1.57	0.95	0.35	53.91
1946	5.17	3.16	2.81	3.07	7.06	3.56	0.35	8.95	1.08	0.39	5.93	6.75	48.28
1947	0.71	0.73	1.56	5.48	6.68	3.77	0.59	1.32	1.81	2.29	3.12	1.46	29.54
1948	1.84	3.86	1.06	0.92	5.68	6.17	5.42	1.30	0.01	1.27	0.32	0.98	27.83
1949	1.38	1.92	3.21	5.95	6.92	3.58	1.24	1.64	6.63	1.52	0.00	1.84	45.29
1950	2.08	1.60	0.05	5.09	6.52	3.99	8.20	8.18	2.89	1.20	0.02	1	41.82
1951	0.65	2.50	3.23	2.40	4.20	9.33	3.15	0.49	2.75	5.01	0.86	0.21	34.78
1952	0.26	1.68	5.48	4.29	3.74	4.79	4.79	1.84	0.39	0.05	4.30	1.25	25.04
1953	0.26	1.68	5.66	3.23	2.88	2.05	4.29	2.87	0.39	5.76	2.68	1.22	32.82
1954	1.64	0.91	0.08	7.25	7.42	2.63	0.55	0.85	1.78	5.24	0.47	3.41	32.03
1955	1.43	2.01	3.59	1.44	5.98	4.15	2.02	0.28	3.62	0.69	0.03	0.32	28.75
1956	1.38	2.88	0.48	3.33	3.00	0.75	0.75	1.28	1	2.64	2.86	2.78	28.02
1957	1.32	0.23	4.01	10.80	11.64	3.16	6.32	0.62	6.72	2.33	5.29	1.58	56.02
1958	4.20	0.32	2.80	2.62	3.63	3.28	4.29	3.51	3.64	0.80	1.91	0.83	31.43
1959	0.28	0.45	2.50	4.01	3.67	3.30	5.11	2.69	2.44	6.69	0.90	3.15	35.19
1960	3.91	2.51	1.97	1.99	2.77	0.87	2.46	3.35	5.36	5.09	0.09	4.22	34.39

STATION HISTORY

Climatological records were begun in Ardmore in July 1901 with the equipment 10-02 feet 0.8 mile southeast of the Ardmore Post Office at a ground elevation within the feet Mean Sea Level. The station has always occupied a ground location within the City, not over 0.8 mile distant from the Post Office and within eight feet of the same elevation.

Until July 1903, observations were made by Hesse F. Rutherford who was followed by Henshal T. Nesbett through June 1919. From July 1919 until October 1927, the records were maintained by the following observers: David T. Nesbett, Silas J. Worley, Robert G. Shaw, Forest S. Crum, and Robert C. Augbury. The records were maintained the longest by Edna C. Winfrey from November 1927 until January 27, 1948, at her residence which is one-quarter mile northwest of the Post Office. The equipment was then moved to its present site at the City Fire Department, one-quarter mile south of the Post Office, where Chief Jim Ozment supervises observations by station personnel.

The only exposure irregularities were from July 28, 1903, until June 30, 1919, during which time the instrument shelter was exposed one foot above the ground, and for the period April 6, 1921, through March 19, 1924, when the standard rain gage was exposed eight feet above the ground.