U. S. DEPARTMENT OF COMMERCE
Environmental Science Services Administration

in cooperation with
Cotton Economic Research and
Bureau of Business Research of
The University of Texas at Austin

CLIMATOGRAPHY OF THE UNITED STATES NO. 20-41

LATITUDE 35° 55' N
LONGITUDE 100° 22' W
ELEV. (GROUND) 2335 ft.

CLIMATOLOGICAL SUMMARY

STATION CANADIAN, TEXAS

MEANS AND EXTREMES FOR PERIOD 1934 - 1969

Month	Temperature (°F) Means: Daily maximum	Daily minimum	Monthly	Extremes: Record highest	Year	Record lowest	Year	** Mean degree days	Precipitation Totals (Inches): Mean	Greatest daily	Year	Snow, Sleet: Mean	Maximum monthly	Year	Greatest Depth	Year	Mean number of days: Precip. .10 inch or more	Temperatures Max.: 90° and above	32° and below	Min.: 32° and below	0° and below	Month
(a)	33	33	33	33		33		14	34	34		34	34		14		14	14	14	14	14	
Jan	49.8	22.3	36.1	81	1967+	-14	1942	861	0.53	2.50	1944	1.8	8.0	1940	4	1966	1	0	3	27	1	Jan
Feb	54.5	26.5	40.5	90	1962	-8	1951	700	0.72	1.33	1948	2.0	-		12	1964	2	*	2	22	0	Feb
Mar	63.3	33.1	48.2	95	1946	-1	1960	521	0.83	1.15	1961	1.0	7.0	1948	5	1961	2	1	1	16	*	Mar
Apr	74.4	44.5	59.5	97	1946+	16	1936	181	1.45	1.53	1945	0.3	8.0	1938	0		2	3	0	2	0	Apr
May	80.8	53.9	67.4	103	1963	29	1954	50	3.94	4.75	1951	0	0		0		5	9	0	*	0	May
Jun	89.4	63.3	76.4	108	1945	42	1947	3	3.07	3.57	1949	0	0		0		6	17	0	0	0	Jun
Jul	95.2	67.9	81.6	108	1934	52	1951	8	2.30	4.65	1950	0	0		0		5	26	0	0	0	Jul
Aug	94.0	66.8	80.4	109	1969+	48	1950	1	2.32	3.80	1955	0	0		0		5	25	0	0	0	Aug
Sep	85.4	58.1	71.8	105	1939	34	1967	17	2.04	3.85	1937	0	0		0		4	9	0	0	0	Sep
Oct	76.1	46.7	61.4	97	1967	22	1957	164	1.75	2.35	1968	*	0.5	1941	0		3	3	0	1	0	Oct
Nov	62.0	32.4	47.2	87	1966	6	1940	495	0.64	1.43	1948	0.2	3.0	1941	1	1959	2	0	*	13	0	Nov
Dec	53.0	25.9	39.5	84	1955	-3	1963	775	0.71	2.15	1943	2.2	12.0	1960	2	1966+	1	0	2	25	*	Dec
Year	73.2	45.1	59.2	109	Aug. 1969+	-14	Jan. 1942	3776	20.30	4.75	May 1951	7.5	-		12	Feb. 1964	38	93	8	106	1	Year

(a) Average length of record, years.

T Trace, an amount too small to measure.

** Base 65°F

+ Also on earlier dates, months, or years.

* Less than one half.

THE CLIMATE OF CANADIAN, TEXAS

Canadian, county seat, oil and ranching center of Hemphill County lies on the south bank of the Canadian River, in the northeastern part of the Texas Panhandle. The elevation is 2,335 feet above mean sea level. A building material plant is located at Canadian; a hospital is located here also. Lake Marvin, located 12 miles east of Canadian is owned by the U.S. Forest Service, and provides a variety of outdoor recreation. Its facilities include cabins and camp sites. Deer and turkey are in abundance during the fall hunting season.

Hemphill County is solping plains, broken by the Canadian and Washita Rivers. Soils are sandy, red, and dark types. Elevations range from 2,200 to 2,800 feet above mean sea level. The economy of Hemphill County is based on oil and gas production, and agribusiness. Cattle and wheat are the most important agricultural products. Some sorghums and cotton are produced also. An estimated 1,825 acres are irrigated.

Canadian has a dry steppe climate with mild winters. Mean annual total precipitation is 20.30 inches. Also, the climate is continental, characterized by a wide annual range in temperature. In an average year, more than four-fifths of the total precipitation falls during the warm season, May through October. Monthly and annual amounts are extremely variable. A total of 39.08 inches fell at Canadian in 1923, the wettest year of record, while only 10.76 inches fell in 1956, the driest year. Warm season rainfall occurs most often as the result of thunderstorms, and in exceptionally wet months or years, a significant proportion of the total may be lost from the land due to runoff. In an average year, thunderstorms occur on 50 days at Canadian. The prevailing winds are south-southwesterly in November, December, January and March; northerly in February and southerly, April through September. The annual average wind speed is about 13.6 miles per hour. At noon, Central Standard Time. The mean relative humidity is estimated at 53 percent in January, 43 percent in April, 44 percnet in July, and 44 percent in October. These values are representative of the four seasons. In summer, Canadian receives approximately 76 percent of the total possible sunshine, compared to about 66 percent in winter. In an average year, free water (lake) evaporation exceeds precipitation by 44 inches.

Winter: The Canadian area is subjected to sharp drops in temperature when cold polar air masses sweep southward across the level plains: sometimes these air mass changes are accompanied by strong, northerly winds. However, cold spells rarely last longer than 48 hours before sunshine and southwesterly winds bring rapid warming. Nights are usually clear and cold with freezes almost every night, while most days are sunny and mild. In spite of occasional low temperatures, the winters are actually mild in this area compared to those of the northern Great Plains. The lowest temperature of record at Canadian (since 1907) is -14°F, and occurred twice: on January 10, 1930, and again on January 5, 1942. Winter is a dry season since frequent "northers" cut off the supply of moisture from the Gulf of Mexico. Precipitation most often falls in the form of light snow, which piles up in drifts, so that the snow melt is not uniformly distributed. More often than not, the arithmetic mean will over estimate expected snowfall in any given year, since a few exceptionally heavy snows cause the frequency distribution of snowfall amounts to be positively skewed.

Spring offers the greatest variety in weather. Warm and cold spells follow each other in rapid succession throughout March and April. Trees and shrubs may bloom too early and be nipped by a late freeze. Occasionally, strong southwesterly to northwesterly winds, in late winter and in the spring, may cause blowing dust in the area. Thunderstorms, which rarely occur in winter, are frequent in late spring.

Summer is one of the most pleasant seasons at Canadian. While afternoon temperatures are sometimes hot, most nights are pleasantly cool. Thundershowers are frequent, and cloudiness and precipitation, when present during the day, cause significant cooling. Evaporative-type air-conditioners operate efficently in this relatively dry climate. The highest temperature of record at Canadian (since 1907) is 111°F, and occurred on July 18, 1925.

Fall, like summer, is very pleasant. While the weather offers greater variety than in summer, temperatures are moderate. Winds are not so strong as in the spring. Rainfall decreases in October, then drops off more sharply in November. Mild sunny days and clear, cool nights characterize the fall season.

The warm season (freeze free period) at Canadian averages 204 days. The mean dates of the last occurrence of 32°F or below in the spring, and the first occurrence of 32°F or below in the fall, are April 9 and October 30, respectively.

CANADIAN, TEXAS

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1934	39.0	40.2	46.4	58.7	67.8	80.6	86.4	83.8	68.5	63.6	49.4	39.4	60.3
1935	39.4	42.6	53.7	55.0	61.4	73.9	83.8	82.5	69.4	59.9	43.8	37.6	58.6
1936	31.8	27.9	51.7	58.1	69.0	77.5	83.8	84.5	70.7	56.2	45.8	41.2	58.2
1937	28.4	41.6	45.6	60.4	70.2	74.2	83.2	83.1	71.8	60.7	46.3	38.4	58.7
1938	42.1	43.8	54.8	58.3	67.6	77.0	82.1	84.4	74.0	65.8	46.1	40.8	61.4
1939	41.9	35.0	51.4	58.6	69.2	76.8	-	80.2	77.7	63.8	46.2	41.6	-
1940	22.8	40.9	51.0	59.9	67.4	75.4	83.4	78.0	72.8	66.4	45.7	41.1	58.7
1941	38.2	39.1	43.8	57.4	68.0	72.7	79.2	76.7	72.4	60.3	48.4	39.5	58.0
1942	35.0	37.7	47.3	60.2	65.2	75.4	79.6	77.8	69.6	59.2	48.8	38.6	57.9
1943	36.8	44.4	43.6	61.2	62.6	77.0	82.0	-	71.2	58.4	45.6	33.8	-
1944	35.5	42.3	45.0	54.4	67.2	77.9	79.2	81.2	70.5	60.0	49.0	36.1	58.2
1945	37.7	40.8	51.4	52.8	66.4	73.4	80.0	80.6	71.2	60.0	48.0	35.4	58.1
1946	37.2	46.3	53.1	64.4	64.8	76.4	83.6	80.2	70.1	60.6	48.0	43.9	60.7
1947	36.2	36.1	42.5	55.3	64.0	73.2	-	-	73.0	66.5	41.3	38.9	-
1948	32.0	32.4	40.9	62.6	68.1	76.8	80.2	77.8	71.9	59.0	43.3	40.1	57.1
1949	24.9	-	-	58.2	70.4	77.7	84.2	-	-	62.5	-	38.6	-
1950	38.3	47.7	-	59.6	67.1	77.6	76.9	-	66.9	63.6	44.7	-	-
1951	-	42.1	-	-	65.5	-	80.0	81.1	72.0	-	39.7	-	-
1952	-	43.6	-	-	-	80.8	78.7	85.2	-	-	-	-	-
1953	-	-	-	-	-	82.7	80.5	78.5	-	61.1	48.5	39.4	-
1954	39.3	50.1	46.5	61.8	62.3	78.3	85.8	80.9	75.2	60.3	51.7	41.6	61.2
1955	37.0	38.1	49.6	61.3	68.8	-	80.7	79.4	74.0	61.4	45.9	39.2	-
1956	36.8	37.3	49.2	56.4	71.3	80.0	82.4	-	-	65.3	45.3	41.2	-
1957	-	-	45.6	-	62.7	72.7	84.2	81.3	70.1	57.9	43.5	44.8	-
1958	39.5	39.4	-	-	-	-	80.1	79.3	73.3	60.9	49.8	38.7	-
1959	34.2	41.3	49.6	57.7	69.0	75.7	77.1	80.7	73.3	56.7	44.1	42.2	58.5
1960	35.0	34.7	43.3	62.2	66.8	75.6	77.2	78.5	72.7	60.8	48.8	37.7	57.8
1961	36.9	41.6	49.5	57.7	66.9	74.1	79.2	78.0	69.5	61.0	45.7	38.2	58.2
1962	33.0	45.3	48.1	58.7	74.2	73.0	81.5	80.3	72.3	63.8	49.8	43.2	60.3
1963	29.3	44.3	50.8	64.3	71.3	77.0	-	81.3	73.7	66.9	49.5	32.6	58.3
1964	40.3	35.3	48.1	62.6	71.7	76.0	84.1	82.3	72.7	60.6	48.5	38.6	60.1
1965	43.0	40.7	40.7	63.9	69.6	75.1	-	79.3	71.8	61.0	55.0	45.6	-
1966	31.4	37.4	54.0	57.7	68.8	77.7	84.9	75.9	69.6	60.2	52.9	37.4	59.0
1967	41.2	42.5	56.0	64.3	65.4	76.2	78.7	77.1	69.7	62.5	47.9	38.6	60.0
1968	39.2	39.6	51.8	57.9	64.7	75.9	79.5	80.0	71.4	63.5	46.6	37.0	58.9
1969	41.4	42.4	40.2	60.7	67.7	75.6	85.4	82.6	73.2	56.3	48.8	41.1	59.6

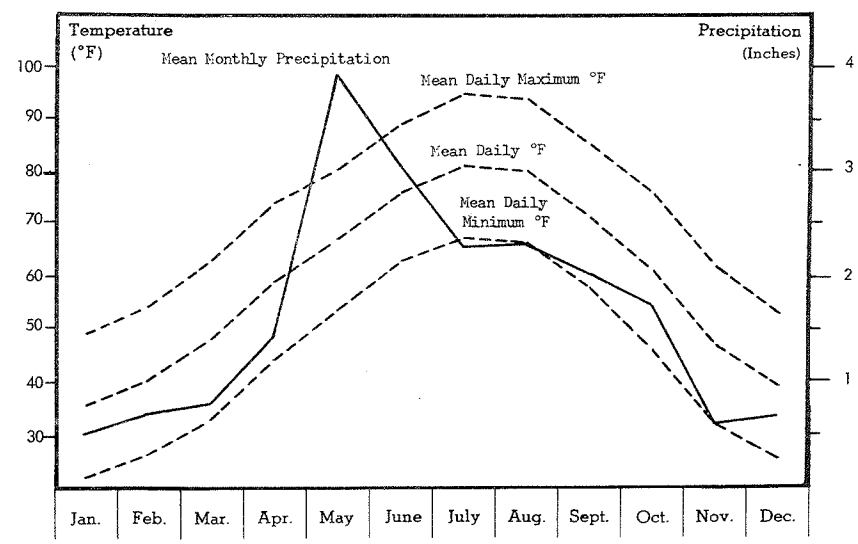
CANADIAN, TEXAS

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1934	T	0.16	0.68	1.33	5.18	2.39	0.15	1.48	0.45	0.42	0.49	0.34	13.07
1935	0.41	0.44	1.15	0	4.41	1.23	0.20	1.33	0.62	1.79	1.25	0.31	13.14
1936	0.53	T	0.08	1.37	6.59	2.33	0.13	0.55	4.23	0.80	0	0.71	17.32
1937	0.33	0.25	1.34	0.71	2.99	2.99	1.09	2.43	4.21	1.55	T	0.20	18.09
1938	0.20	1.06	1.37	2.50	4.45	2.87	1.26	0.75	1.89	1.03	0.13	0.31	17.82
1939	2.12	0.25	0.52	1.78	2.28	8.03	2.00	1.18	0.08	0.25	T	0.80	19.29
1940	0.80	0.72	0.08	0.96	2.78	1.48	3.05	2.25	1.50	0.50	2.70	0.67	17.49
1941	1.91	1.51	1.74	4.92	5.01	4.08	2.60	2.84	1.36	9.85	0.35	0.15	36.32
1942	0.09	0.24	1.32	3.51	2.16	4.08	2.40	3.60	1.81	6.99	0.20	1.23	27.63
1943	T	0	0.05	1.35	5.65	2.29	2.50	0.07	1.18	0.30	0.43	3.10	16.92
1944	3.10	0.85	0.89	3.23	3.90	1.47	3.51	2.76	2.99	3.36	0.82	1.96	28.84
1945	1.00	0.87	0.70	2.93	1.24	1.20	0.37	1.80	2.32	0.31	0	0.12	12.86
1946	0.33	1.31	1.20	0.30	3.39	1.74	1.18	2.93	2.18	2.98	1.69	0.80	20.03
1947	0.65	0.05	1.05	2.69	4.49	2.75	-	0.73	0.09	0.81	0.94	1.59	-
1948	0.61	2.95	1.68	1.01	3.08	3.19	1.86	3.78	1.10	0.32	2.36	0.02	21.96
1949	-	-	-	-	6.52	8.54	0.96	0.76	-	1.06	-	0.65	-
1950	T	0.25	-	0.23	-	-	12.10	6.87	4.17	0.23	T	-	-
1951	-	1.47	-	-	11.11	-	0.40	0.37	2.06	-	0.48	-	-
1952	-	0.43	-	-	-	1.39	0.42	0.90	-	-	-	-	-
1953	0.44	0.87	0.69	0.75	2.02	1.52	2.04	1.61	T	3.88	0.16	0.62	14.60
1954	0.16	T	0.13	1.57	5.91	0.64	0.48	2.16	0.68	0.74	T	0.18	12.65
1955	0.28	0.48	0.05	0.46	6.47	2.04	0.82	4.75	1.31	0.11	0.05	0	16.82
1956	0.32	1.10	0.39	0.23	2.98	1.25	1.88	1.85	0	0.76	T	T	10.76
1957	0.37	1.20	3.68	2.72	5.87	4.12	1.72	1.75	2.12	2.32	1.24	T	27.11
1958	0.83	0.35	-	-	-	-	6.12	3.65	3.69	T	0.43	0.30	-
1959	0.63	0.02	0.02	3.07	4.37	4.07	4.33	2.41	1.60	2.54	0.05	4.21	27.32
1960	0.69	2.20	0.54	0.75	2.02	5.76	7.71	2.19	2.42	4.65	0	1.00	29.93
1961	0.09	1.01	2.76	0.24	2.10	4.79	1.81	2.76	1.76	1.57	2.00	0.10	20.99
1962	0.79	0.08	0.17	1.26	0.13	4.80	3.79	1.49	2.65	0.45	0.25	0.42	16.28
1963	0.03	0.13	0.15	1.02	3.22	1.27	4.00	2.97	2.99	0.27	0.61	0.42	17.08
1964	T	1.58	0.02	0.40	4.02	2.93	0.62	0.50	3.63	0.59	4.15	1.77	20.21
1965	0.07	0.62	1.07	1.21	2.75	3.80	0.67	4.47	4.23	2.83	0	0.70	22.42
1966	0.36	0.71	0	1.00	0.68	1.59	2.56	2.79	1.32	0.60	T	0.20	11.81
1967	T	0.04	0.43	1.44	3.80	4.18	1.89	4.59	4.90	1.79	0.37	0.34	23.77
1968	0.41	0.84	0.42	1.35	5.38	3.98	2.16	2.47	1.13	2.45	0.49	0.12	21.20
1969	T	1.30	1.41	0.16	2.99	2.60	1.87	3.64	2.64	1.27	T	0.22	18.10

T - Trace

Monthly Temperatures and Precipitation



STATION HISTORY

Temperature and precipitation observations began at the Canadian Academy in November 1906. The instruments were located three blocks south-southwest of the Court House, one mile south of the Canadian River. A river gage was installed on the river at the Railway bridge, 1.6 miles northeast of the Canadian Post Office building, in April 1914. The climatological station was consolidated with the river and rainfall station, known as Canadian 1NE, on August 14, 1956. The instrument shelter was relocated to 206 Purcell Street, 900 feet southwest of the post office. Claude B. Murray, who was appointed Cooperative Weather Observer for the river and rainfall station on April 1, 1952, was appointed observer for the consolidated station. Mr. Wilson Crawford was appointed Cooperative Weather Observer on June 25, 1958, and the station was relocated to 620 N E 8th Street, 0.7 mile east-northeast of the post office, and the name of the station was changed from Canadian to Canadian 1ENE. This climatological station was separated from river and rainfall services. Station equipment consists of a cotton region shelter, maximum and minimum thermometers, and a standard, eight-inch, non-recording rain gage. Daily temperature and rainfall data are published monthly in Climatological Data-Texas. Station index number: 41-1412-01.

The river and rainfall station is known as Canadian. Station index number: 41-1413-N. The observer is Gordon R. Rivers, appointed October 1, 1959. A standard eight-inch, non-recording rain gage (property of the Weather Bureau) is located at the observer's residence, 0.2 mile north-northeast of the post office. Two wire-weight river gages and one recording river gage (all property of the U.S. Geological Survey) are located on the Canadian River. Data are not published by ESSA.

ESSA State Climatologist for Texas
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Single copies of this summary are available without charge from the Bureau of Business Research, The University of Texas, Austin, Texas, 78712. Quantity rates upon request.