U. S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric 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

CLIMATOLOGICAL SUMMARY

LATITUDE 30° 59' N
LONGITUDE 103°45' W
ELEV. (GROUND) 3210 ft.

STATION BALMORHEA, TEXAS

MEANS AND EXTREMES FOR PERIOD 1941-1970

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)	30	30	30	30		30		14	30	30							14	14	14	14	14	
Jan	62.7	31.1	46.9	89	1950+	-8	1962	566	0.64	1.81	1946						1	0	*	18	0	Jan
Feb	67.7	34.3	51.0	89	1962+	0	1951	416	0.49	0.83	1958						2	0	*	13	0	Feb
Mar	74.4	39.7	57.1	101	1946	9	1948	281	0.44	1.98	1945						1	1	*	7	0	Mar
Apr	84.0	49.3	66.7	103	1948	28	1948	67	0.59	1.94	1955						1	9	0	*	0	Apr
May	90.9	57.1	74.0	108	1945	34	1954	10	1.50	2.36	1965						3	21	0	0	0	May
Jun	96.9	65.2	81.1	111	1948	43	1964	*	1.48	2.10	1960						3	26	0	0	0	Jun
Jul	96.5	67.0	81.8	111	1958	56	1958+	0	1.56	2.45	1945						4	27	0	0	0	Jul
Aug	95.4	65.9	80.7	110	1944	52	1950	1	1.41	1.80	1966+						4	24	0	0	0	Aug
Sep	89.8	59.9	74.9	109	1948	39	1945+	7	1.69	2.30	1958						4	17	0	0	0	Sep
Oct	81.5	50.0	65.8	98	1969+	32	1966+	88	1.23	2.04	1941						3	6	0	*	0	Oct
Nov	71.1	38.9	55.0	92	1952	13	1957	301	0.55	1.59	1968						2	0	0	6	0	Nov
Dec	63.7	32.5	48.1	89	1958	4	1953	529	0.54	0.70	1960						1	0	*	16	0	Dec
Year	81.2	49.2	65.3	111	July 1958+	-8	Jan. 1962	2266	12.12	2.45	Jul. 1945						29	131	*	60	0	Year

Insufficient data

(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 BALMORHEA, TEXAS

Balmorhea, in southern Reeves County, is the center of irrigated farmland, watered by historic San Solomon Springs. In earlier times, the springs were an important watering place for buffaloes, Indians and pioneers. Balmorhea State Park is located at the springs, four miles southwest of Balmorhea, where facilities include camping and trailer sites, cabins, swimming, play and picnic areas. A huge walled swimming pool is fed by the springs, which flow 26 million gallons daily. With a 68,000-square foot surface, the pool is one of the world's largest. Balmorhea lies almost in the shadow of the Davis Mountains, which are to the west and south, in Jeff Davis County. Reeves County is rolling plains, broken by many draws, and by tributaries of the Pecos River. Two-thirds of the agricultural income is from cotton, vegetables and other irrigated crops. Businesses include the production of oil, gas and sulphur, and agribusinesses.

Balmorhea has a subtropical steppe climate with low summer humidity. Mean annual total precipitation is 12.12 inches with approximately three-fourths of this amount falling within the six-month period, May through October. During May and June much of the precipitation occurs from thunderstorms associated with cold frontal systems. Throughout the rest of the summer, most precipitation results from local thundershowers, and from thundershowers that develop on the mountains to the west and south. Showers occur with greatest frequency during July, August and September. Monthly and annual precipitation totals are extremely variable. The wettest year of record (1924-1970) was 1932, when a total of 28.15 inches fell, while only 3.41 inches fell in 1956, the driest year. Periods of several weeks with no measurable precipitation are not uncommon.

The wind flow at Balmorhea is influenced by the mountain ranges which lie to the west, south and southeast of the town, so that the prevailing wind is northwesterly, November through February; northeasterly, May through October, and southwesterly, during March and April. The mean relative humidity, at noon, c.s.t., is estimated at 44 percent in January, 33 percent in April, 41 percent in July and 40 percent in October. Balmorhea receives in an average year, an estimated 70 percent of the total possible sunshine in winter, 77 percent in spring, 79 percent in summer and 74 percent in fall.

Winter: This season is characterized by fair, dry weather, generally with mild days and cool nights. Prolonged cold spells are infrequent, occurring only when exceptionally strong outbreaks of cold dry Polar Canadian air sweep southward across the area. The lowest temperature of record is -3°F, and occurred January 30, 1949.

Summer: Daytime temperatures are hot; however, very low humidity and clear skies in the region permit rapid cooling to take place immediately after sundown, resulting in pleasantly cool nights throughout the summer. Evaporative-type home air conditioners are effective for cooling. Automotive air conditioning is recommended for daytime travel.

Spring and fall are exceptionally pleasant seasons in the Balmorhea area. The weather is characterized by mild, sunny days, and crisp cool nights.

At Balmorhea, the mean length of the warm season (freeze free period) is 226 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 1 and November 12, respectively. In an average year, free water (lake) evaporation exceeds precipitation by about 56 inches.

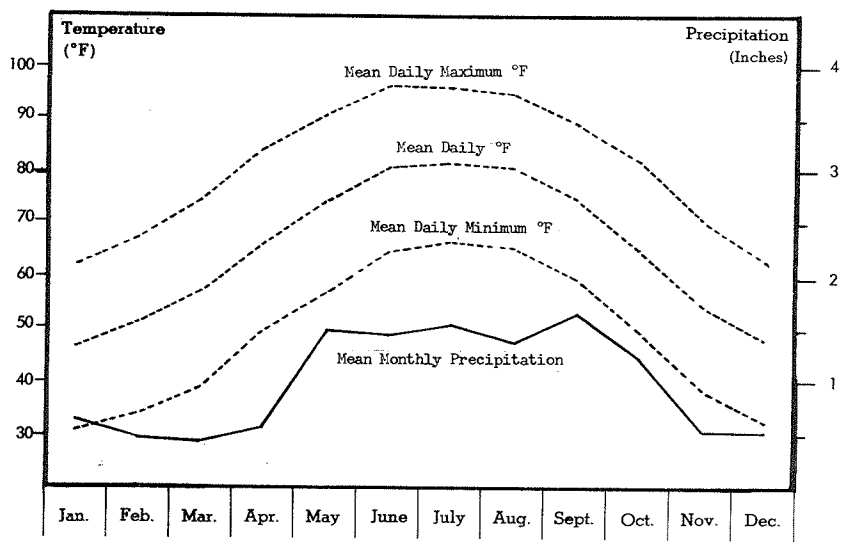
BALMORHEA, TEXAS

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1941	1.51	1.26	0.48	2.17	5.32	3.77	1.07	1.89	4.94	4.89	0.08	0.38	27.76
1942	0.21	0.34	0.22	0.47	1.45	1.11	1.07	3.75	0.63	0.52	0.23	1.52	11.52
1943	0.15	T	T	0.10	1.99	1.16	0.59	0.37	1.25	1.68	0.80	0.67	8.76
1944	0.82	1.01	0	T	0.29	1.60	1.04	2.06	4.99	0.15	1.28	1.33	14.57
1945	-	0.03	2.00	0.07	0.43	0.17	6.60	1.22	0.47	3.29	0	0.02	-
1946	4.05	T	T	0.47	0.43	1.74	0.85	0.33	2.23	2.31	0.23	1.44	14.08
1947	1.29	T	0.85	0.22	2.17	0.88	0.44	1.17	0.55	0.15	1.20	0.66	9.58
1948	0.25	0.32	0.06	0.52	0.60	0.46	0.85	-	-	-	-	-	-
1949	2.68	0.29	0.01	1.98	1.05	2.26	2.35	1.11	2.05	1.37	0	0.22	15.37
1950	0.06	0.14	0	0.66	0.39	0.60	2.73	0.33	3.39	0.47	-	-	-
1951	0.02	0.18	1.07	T	1.40	0.65	1.57	1.19	0.39	0.23	0.10	0.10	6.90
1952	0.07	0.40	T	1.69	1.47	1.94	4.00	0.17	0.47	0	0.93	0.66	11.80
1953	T	0.06	T	0.32	0.32	0.43	0.49	0.15	0.30	2.59	0.01	0.56	5.23
1954	0.20	0.21	0.52	0.75	3.13	1.46	0.25	1.11	0.07	0.32	0	T	8.02
1955	1.18	0	0	3.58	1.35	0.20	1.84	0.45	3.20	1.50	1.08	0.05	14.43
1956	0.48	0.63	0.02	0.29	0.55	0.17	0.34	0.29	0.37	0.15	0	0.12	3.41
1957	0.07	1.74	0	0.32	2.13	1.41	0.58	0.39	0.21	1.96	0.87	0.14	9.82
1958	2.39	1.78	1.08	0.40	1.98	1.54	0.63	0.62	6.89	1.94	0.52	0	19.77
1959	0.15	0.39	0.06	0.52	2.77	0.67	1.48	0.74	0.48	1.28	1.00	0.41	9.95
1960	0.38	0.62	0.53	0.13	0.30	4.78	2.44	2.97	0.58	2.04	0.21	2.11	17.09
1961	1.04	0.26	0.34	0	2.42	3.68	0.76	-	-	-	-	-	-
1962	0.26	0.46	0.08	0.48	1.70	0.78	-	-	-	-	-	-	-
1963	0.02	0.49	0.02	0.40	4.28	1.26	1.84	0.96	1.66	1.35	0.66	0.45	13.39
1964	0.14	0.05	0.25	0.33	1.44	3.29	1.75	1.95	2.48	0.43	0.02	0.63	12.76
1965	0.02	1.68	0.37	0	2.87	0.38	0.53	1.03	0.69	0	0.19	0.56	8.32
1966	0.51	0.06	0.38	0.03	0.41	1.70	0.42	4.05	1.40	1.99	0	0	10.95
1967	0	0	1.16	0.51	0.57	3.75	1.43	1.77	1.56	0.46	0.68	0.80	12.69
1968	0.48	0.71	1.59	0.61	0.41	0.04	4.65	4.73	0.77	0.10	3.45	0	17.54
1969	0.03	0.09	0.27	0.75	1.19	0.59	1.81	0.57	0.07	0.83	1.38	1.25	8.83
1970	0.17	1.36	1.74	0	0.04	1.77	0.78	2.82	4.55	1.71	0	T	14.94

T - Trace

Monthly Temperatures and Precipitation



BALMORHEA, TEXAS

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1941	47.2	51.5	53.2	63.2	71.7	74.4	78.2	78.7	74.0	67.3	54.2	48.0	63.5
1942	45.3	50.0	56.7	66.0	74.0	81.3	81.2	78.4	72.2	64.9	59.9	52.4	65.2
1943	48.8	54.8	58.0	70.0	73.4	80.4	81.7	85.7	73.8	64.9	53.5	44.4	65.8
1944	45.3	52.7	57.7	65.8	73.8	82.4	84.0	81.8	72.4	65.2	54.0	44.9	65.0
1945	-	54.8	59.6	64.2	75.8	81.0	78.6	80.9	76.6	64.0	58.2	49.5	-
1946	44.6	51.8	59.7	70.2	73.4	81.0	82.9	82.2	78.0	68.9	54.3	50.3	66.4
1947	47.3	47.2	56.2	65.0	74.5	82.6	83.7	83.8	77.2	71.5	53.4	47.0	65.5
1948	44.2	50.9	55.3	72.7	76.1	84.6	83.9	83.2	75.1	65.0	54.5	52.3	66.5
1949	39.4	51.8	59.9	62.7	75.1	81.5	81.7	78.7	75.0	63.9	60.1	48.8	64.9
1950	54.5	55.5	60.1	67.5	74.1	81.8	80.4	79.3	74.5	69.6	-	-	-
1951	47.3	51.0	57.1	64.6	74.2	82.1	83.7	81.8	75.5	69.3	54.4	52.6	66.1
1952	54.8	53.5	55.6	65.2	73.9	82.8	79.6	83.2	73.8	64.8	51.7	47.1	65.5
1953	55.5	50.8	61.8	65.5	71.9	84.4	83.2	80.3	76.0	65.5	53.8	42.6	66.0
1954	49.5	54.9	56.8	68.1	70.0	79.1	80.8	79.7	77.1	66.4	55.1	48.2	65.5
1955	42.8	47.6	57.2	66.6	72.0	78.8	79.3	78.0	74.0	64.5	52.8	49.9	63.6
1956	48.2	46.3	58.3	63.7	76.6	82.6	80.9	79.7	75.6	69.0	52.1	49.5	65.2
1957	51.9	58.9	60.1	65.0	71.4	82.3	82.7	81.7	74.3	62.8	49.9	51.7	66.0
1958	44.6	48.5	52.4	65.2	73.4	83.3	84.2	80.9	76.5	63.0	56.0	49.5	64.8
1959	47.4	50.8	56.7	64.4	74.7	80.3	79.4	80.7	77.0	66.9	51.6	-	-
1960	45.2	47.0	56.3	68.0	74.2	83.5	80.2	78.6	74.6	66.4	56.1	42.3	64.4
1961	43.0	52.3	57.8	65.5	74.8	79.0	79.8	-	-	-	-	-	-
1962	42.7	57.1	54.6	67.9	78.4	79.6	-	-	-	-	-	-	-
1963	43.8	50.8	60.1	71.5	76.7	80.1	83.3	80.6	73.8	67.9	56.5	44.9	65.8
1964	45.4	44.4	57.4	66.9	75.3	79.6	-	-	74.7	65.2	55.9	48.5	-
1965	51.3	-	52.3	68.7	74.0	80.4	81.9	78.8	75.3	64.8	60.3	50.6	-
1966	43.0	46.4	60.0	65.6	73.5	81.2	85.1	78.8	75.4	61.7	59.0	47.0	64.7
1967	46.7	51.0	63.6	71.4	73.9	80.3	81.8	77.3	72.1	65.5	57.1	42.8	65.3
1968	46.0	48.4	53.9	64.4	74.7	80.9	79.0	78.2	72.2	67.5	53.0	46.5	63.7
1969	51.9	51.6	49.5	67.3	72.5	81.3	84.3	84.7	75.2	65.0	52.7	48.6	65.4
1970	46.7	49.8	53.0	67.3	72.8	80.1	82.8	82.3	74.5	60.0	55.4	51.7	64.7

STATION HISTORY

Temperature and rainfall observations began at the Texas A&M University Agricultural Experiment Station, 3½ miles northeast of Balmorhea, in September 1923. A two-foot, sunken, Young screen evaporation pan was added to the station equipment on January 12, 1940. A class "A", four-foot Weather Bureau-type evaporation pan was added the next day, January 13, 1940. In 1948, two index numbers were assigned to the station, to separate the evaporation records; 41-0496 for the two-foot sunken pan, and 41-0498 for the four-foot Weather Bureau pan. The Agricultural Experiment Station was closed in 1964, and the climatological station was moved to the Soil Conservation Service office, 0.2 mile south-southwest of Balmorhea, on August 28, 1964. The evaporation pan observations were discontinued. The name of the station was changed from Balmorhea Exp. Pan to Balmorhea. On May 5, 1966, the station was relocated 500 feet east of the Balmorhea post office, at the Reeves County Water District Office. On September 1, 1971, the station was moved back to the Soil Conservation Service Office, 0.2 mile south-southwest of the post office. Station equipment consists of a cotton region shelter, maximum and minimum thermometers, and a standard eight-inch, non-recording rain gage. Daily temperature and precipitation data are published monthly in Climatological Data-Texas. Station index number, 41-0498-05.

Climatologist of Texas
National Weather Service
3600 Manor Road, Austin, Texas 78723
December 1971

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.