

# Climatography of the United States

No. 20

1971-2000

Station: BALMORHEA, TX

COOP ID: 410498

Climate Division: TX 5

NWS Call Sign:

Elevation: 3,220 Feet Lat: 30° 59N

Lon: 103° 44W

## Temperature (°F)

Mean (1)				Extremes										Degree Days (1) Base Temp 65		Mean Number of Days (3)					
Month	Daily Max	Daily Min	Mean	Highest Daily(2)	Year	Day	Highest Month(1) Mean	Year	Lowest Daily(2)	Year	Day	Lowest Month(1) Mean	Year	Heating	Cooling	Max >= 100	Max >= 90	Max >= 50	Max <= 32	Min <= 32	Min <= 0
Jan	59.6	30.1	44.9	89+	1950	22	51.2	1999	-8	1962	11	38.6	1979	625	0	.0	.0	24.8	.9	19.5	.0
Feb	65.4	33.2	49.3	92	1940	29	56.3	2000	-9	1933	8	42.3	1978	440	0	.0	.1	25.4	.4	13.6	.0
Mar	73.3	38.6	56.0	101	1946	31	62.3	1974	9	1948	11	49.5	1987	289	8	.0	.8	30.3	.1	6.3	.0
Apr	80.6	46.3	63.5	103	1948	29	68.5	1972	26	1936	7	57.7	1997	121	74	.0	6.5	29.6	.0	1.2	.0
May	88.4	55.4	71.9	108	1945	26	79.7	1996	34	1954	4	66.6	1987	30	244	1.9	16.7	31.0	.0	.0	.0
Jun	94.4	63.7	79.1	112	1939	15	85.2	1998	45	1983	29	75.5	1987	1	423	8.5	24.4	30.0	.0	.0	.0
Jul	94.7	66.4	80.6	111	1958	13	85.0	1980	55+	1940	8	75.4	1975	0	481	7.7	26.2	31.0	.0	.0	.0
Aug	92.4	65.0	78.7	110+	1944	3	82.8	1977	50	1971	6	75.5	1990	0	425	2.6	24.4	31.0	.0	.0	.0
Sep	86.2	58.9	72.6	109	1948	5	79.5	1977	39+	1945	29	65.6	1974	22	249	1.0	14.2	29.9	.0	.0	.0
Oct	78.8	48.6	63.7	101	2000	4	67.6	1998	26+	1993	31	55.8	1976	102	62	.1	4.5	30.7	.0	.6	.0
Nov	68.6	37.3	53.0	92	1952	1	57.7	1998	10	1976	28	45.7	1976	371	8	.0	.2	28.3	.1	8.5	.0
Dec	60.1	30.6	45.4	89	1958	4	51.5	1977	2	1983	29	38.8	1989	610	0	.0	.0	25.0	.7	19.7	.0
Ann	78.5	47.8	63.2	112	Jun 1939	15	85.2	Jun 1998	-9	Feb 1933	8	38.6	Jan 1979	2611	1974	21.8	118.0	347.0	2.2	69.4	.0

+ Also occurred on an earlier date(s)

@ Denotes mean number of days greater than 0 but less than .05

Complete documentation available from: [www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1923-2001

(3) Derived from 1971-2000 serially complete daily data

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# Climatography of the United States

## No. 20

### 1971-2000

National Climatic Data Center  
Federal Building  
151 Patton Avenue  
Asheville, North Carolina 28801  
www.ncdc.noaa.gov

Station: BALMORHEA, TX

COOP ID: 410498

Climate Division: TX 5

NWS Call Sign:

Elevation: 3,220 Feet Lat: 30°59N

Lon: 103°44W

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med- ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.58	.44	1.81	1946	7	1.80	1992	.00+	2000	3.1	2.0	.3	.0	.00	.00	.10	.20	.31	.43	.56	.73	.96	1.33	1.69
Feb	.56	.16	1.71+	1997	20	2.96	1992	.00+	2000	1.9	1.2	.3	.2	.00	.00	.00	.01	.09	.22	.39	.62	.97	1.61	2.26
Mar	.24	.16	1.98	1945	31	1.27	1990	.00+	2000	1.4	.9	.1	.0	.00	.00	.00	.03	.08	.14	.21	.30	.42	.64	.86
Apr	.63	.23	2.34	1981	15	4.81	1981	.00+	1998	2.3	1.5	.5	@	.00	.00	.00	.04	.13	.26	.44	.69	1.08	1.78	2.51
May	1.45	.86	3.37	1972	31	5.86	1992	.00+	2000	4.0	2.9	.7	.3	.00	.08	.29	.51	.75	1.03	1.36	1.78	2.37	3.37	4.36
Jun	1.24	.81	3.30	1930	6	4.59	1984	.04	1975	4.4	3.0	.8	.3	.08	.16	.31	.48	.67	.90	1.16	1.50	1.98	2.78	3.57
Jul	1.78	1.26	4.13	1973	15	11.31	1973	.00+	1995	5.3	3.7	1.1	.4	.00	.06	.26	.51	.80	1.15	1.58	2.15	2.95	4.33	5.72
Aug	2.29	2.00	3.17	1940	6	6.40	1990	.22	1994	5.7	4.1	1.5	.5	.28	.47	.79	1.11	1.45	1.82	2.26	2.80	3.54	4.74	5.91
Sep	3.08	2.07	3.30	1932	29	12.11	1974	.07	1997	6.0	4.5	2.0	1.0	.10	.23	.54	.93	1.40	1.98	2.70	3.65	5.02	7.40	9.82
Oct	1.19	.69	2.04	1941	24	6.47	1974	.00+	1999	3.7	2.6	.7	.1	.00	.00	.07	.23	.43	.68	1.00	1.42	2.03	3.08	4.15
Nov	.54	.40	1.59	1968	27	2.61	1978	.00+	1999	2.1	1.3	.3	.1	.00	.00	.00	.00	.16	.33	.50	.71	.99	1.44	1.86
Dec	.61	.43	2.00	1986	21	2.01	1986	.00+	1999	2.0	1.3	.5	@	.00	.00	.00	.10	.23	.38	.55	.77	1.06	1.57	2.06
Ann	14.19	11.69	4.13	Jul 1973	15	12.11	Sep 1974	.00+	May 2000	41.9	29.0	8.8	2.9	6.32	7.59	9.34	10.77	12.11	13.45	14.89	16.54	18.62	21.77	24.61

+ Also occurred on an earlier date(s)

# Denotes amounts of a trace

@ Denotes mean number of days greater than 0 but less than .05

\*\* Statistics not computed because less than six years out of thirty had measurable precipitation

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1923-2001

(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:

www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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Federal Building  
151 Patton Avenue  
Asheville, North Carolina 28801  
[www.ncdc.noaa.gov](http://www.ncdc.noaa.gov)

**Station: BALMORHEA, TX**

**COOP ID: 410498**

**Climate Division: TX 5**

**NWS Call Sign:**

**Elevation: 3,220 Feet**

**Lat: 30° 59N**

**Lon: 103° 44W**

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										Snow Fall >= Thresholds					Snow Depth >= Thresholds			
Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year	0.1	1.0	3.0	5.0	10.0	1	3	5	10
Jan	3.1	3.0	#	0	8.0	1983	1	12.0	1985	8	1983	1	1	1983	1.0	.9	.5	.1	.0	.4	.3	.1	.0
Feb	.6	.0	#	0	5.0	1979	6	5.0	1979	3	1979	6	#+	1982	.2	.2	.1	.1	.0	@	@	.0	.0
Mar	#	.0	0	0	#	1989	20	#+	1989	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Apr	.1	.0	#	0	1.0	1983	7	1.0	1983	1	1983	7	#	1983	.1	.1	.0	.0	.0	@	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jun	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jul	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Aug	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Sep	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.3	.0	#	0	4.0	1976	12	5.0	1976	6	1980	18	1	1980	.2	.1	.1	.0	.0	.0	.0	.0	.0
Dec	.5	.0	#	0	3.5	1974	26	3.8	1974	4	1974	26	#+	1997	.2	.1	.1	.0	.0	.1	@	.0	.0
Ann	4.6	3.0	N/A	N/A	8.0	Jan 1983	1	12.0	Jan 1985	8	Jan 1983	1	1+	Jan 1983	1.7	1.4	.8	.2	.0	.5	.3	.1	.0

+ Also occurred on an earlier date(s) #Denotes trace amounts

@ Denotes mean number of days greater than 0 but less than .05

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

(1) Derived from Snow Climatology and 1971-2000 daily data

(2) Derived from 1971-2000 daily data

Complete documentation available from:

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Freeze Data									
Spring Freeze Dates (Month/Day)									
Temp (F)	Probability of later date in spring (thru Jul 31) than indicated(*)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	4/24	4/19	4/16	4/13	4/10	4/07	4/04	4/01	3/27
32	4/14	4/09	4/05	4/02	3/30	3/27	3/24	3/20	3/15
28	4/07	3/31	3/25	3/21	3/16	3/12	3/07	3/02	2/22
24	3/22	3/14	3/08	3/04	2/27	2/23	2/18	2/12	2/04
20	3/14	3/04	2/25	2/19	2/14	2/08	2/02	1/25	1/14
16	2/24	2/12	2/04	1/27	1/20	1/12	1/03	12/23	0/00
Fall Freeze Dates (Month/Day)									
Temp (F)	Probability of earlier date in fall (beginning Aug 1) than indicated(*)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	10/12	10/18	10/22	10/25	10/29	11/01	11/04	11/08	11/14
32	10/23	10/29	11/02	11/05	11/09	11/12	11/15	11/19	11/25
28	11/01	11/06	11/10	11/14	11/17	11/20	11/24	11/28	12/03
24	11/09	11/16	11/22	11/27	12/01	12/06	12/11	12/16	12/24
20	11/19	11/26	12/02	12/07	12/12	12/16	12/21	12/27	1/06
16	11/26	12/09	12/18	12/26	1/03	1/12	1/22	2/07	0/00
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	221	214	209	205	201	197	192	187	180
32	244	236	231	227	223	219	214	209	202
28	274	264	257	251	245	239	233	226	216
24	311	299	291	283	277	270	263	254	243
20	340	323	314	307	300	294	287	280	269
16	>365	>365	>365	>365	354	334	320	306	290

\* Probability of observing a temperature as cold, or colder, later in the spring or earlier in the fall than the indicated date.

**0/00** Indicates that the probability of occurrence of threshold temperature is less than the indicated probability.

Derived from 1971-2000 serially complete daily data

Complete documentation available from:  
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Degree Days to Selected Base Temperatures (°F)													
Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	625	440	289	121	30	1	0	0	22	102	371	610	2611
60	471	308	162	51	8	0	0	0	6	36	242	456	1740
57	384	233	104	25	3	0	0	0	1	16	178	367	1311
55	326	188	73	15	1	0	0	0	0	8	141	311	1063
50	198	101	22	2	0	0	0	0	0	1	70	184	578
32	5	0	0	0	0	0	0	0	0	0	0	2	7

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	403	484	742	943	1236	1412	1504	1448	1217	983	628	415	11415
55	11	28	101	268	524	722	791	735	527	278	79	11	4075
57	6	17	71	218	464	662	729	673	468	224	55	5	3592
60	1	8	36	154	377	572	636	580	382	151	30	1	2928
65	0	0	8	74	244	423	481	425	249	62	8	0	1974
70	0	0	1	26	138	280	327	273	143	18	0	0	1206

Growing Degree Units (2)																								
Base	Growing Degree Units (Monthly)												Growing Degree Units (Accumulated Monthly)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
40	236	327	538	737	1020	1183	1272	1219	998	762	431	241	236	563	1101	1838	2858	4041	5313	6532	7530	8292	8723	8964
45	132	214	388	591	865	1033	1117	1064	848	608	297	138	132	346	734	1325	2190	3223	4340	5404	6252	6860	7157	7295
50	57	119	256	446	710	883	962	909	699	459	183	65	57	176	432	878	1588	2471	3433	4342	5041	5500	5683	5748
55	21	53	141	307	556	733	807	754	549	313	92	23	21	74	215	522	1078	1811	2618	3372	3921	4234	4326	4349
60	2	19	64	186	402	583	652	599	406	183	33	1	2	21	85	271	673	1256	1908	2507	2913	3096	3129	3130
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	211	267	389	485	639	744	811	789	644	493	319	216	211	478	867	1352	1991	2735	3546	4335	4979	5472	5791	6007

(1) Derived from the 1971-2000 Monthly Normals

(2) Derived from 1971-2000 serially complete daily data

**Note:** For corn, temperatures below 50 are set to 50, and temperatures above 86 are set to 86

Complete documentation available from:

[www.ncdc.noaa.gov/oa/climate/normals/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normals/usnormals.html)

## Notes

- a. The monthly means are simple arithmetic averages computed by summing the monthly values for the period 1971-2000 and dividing by thirty. Prior to averaging, the data are adjusted if necessary to compensate for data quality issues, station moves or changes in station reporting practices. Missing months are replaced by estimates based on neighboring stations.
- b. The median is defined as the middle value in an ordered set of values. The median is being provided for the snow and precipitation elements because the mean can be a misleading value for precipitation normals.
- c. Only observed validated values were used to select the extreme daily values.
- d. Extreme monthly temperature/precipitation means were selected from the monthly normals data.  
Monthly snow extremes were calculated from daily values quality controlled to be consistent with the Snow Climatology.
- e. Degree Days were derived using the same techniques as the 1971-2000 normals.  
Complete documentation for the 1971-2000 Normals is available on the internet from:  
[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)
- f. Mean "number of days statistics" for temperature and precipitation were calculated from a serially complete daily data set.  
Documentation of the serially complete data set is available from the link below:
- g. Snowfall and snow depth statistics were derived from the Snow Climatology.  
Documentation for the Snow Climatology project is available from the link under references.

## Data Sources for Tables

Several different data sources were used to create the Clim20 climate summaries. In some cases the daily extremes appear inconsistent with the monthly extremes and or the mean number of days statistics. For example, a high daily extreme value may not be reflected in the highest monthly value or the mean number of days threshold that is less than and equal to the extreme value. Some of these difference are caused by different periods of record. Daily extremes are derived from the station's entire period of record while the serial data and normals data were for the 1971-2000 period. Therefore extremes observed before 1971 would not be included in the 1971-2000 normals or the 1971-2000 serial daily data set. Inconsistencies can also occur when monthly values are adjusted to reflect the current observing conditions or were replaced during the 1971-2000 Monthly Normals processing and are not reconciled with the Summary of the Day data.

- a. Temperature/ Precipitation Tables
  - 1. 1971-2000 Monthly Normals
  - 2. Cooperative Summary of the Day
  - 3. National Weather Service station records
  - 4. 1971-2000 serially complete daily data
- b. Degree Day Table
  - 1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals
  - 2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data
- c. Snow Tables
  - 1. Snow Climatology
  - 2. Cooperative Summary of the Day
- d. Freeze Data Table  
1971-2000 serially complete daily data

## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html)  
Eischeid, J. K., P. Pasteris, H. F. Diaz, M. Plantico, and N. Lott, 2000: Creating a serially complete, national daily time series of temperature and precipitation for the Western United States. J. Appl. Meteorol., 39, 1580-1591,  
[www1.ncdc.noaa.gov/pub/data/special/serialcomplete\\_jam\\_0900.pdf](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)