

# Climatography of the United States

No. 20

1971-2000

Station: SPEARMAN, TX

COOP ID: 418523

Climate Division: TX 1

NWS Call Sign:

Elevation: 3,094 Feet Lat: 36° 11N

Lon: 101° 11W

## 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	52.7	22.4	37.6	83	1943	22	46.9	1986	-22	1959	4	26.3	1979	851	0	.0	.0	18.2	3.7	26.9	.8
Feb	58.5	26.5	42.5	92	1981	20	49.9	1976	-13+	1951	2	30.6	1978	631	0	.0	@	20.1	2.5	20.5	.4
Mar	66.9	33.6	50.3	95	1971	27	57.0	1986	-12	1948	6	44.6	1998	459	1	.0	.2	27.4	.5	13.9	.0
Apr	75.4	42.2	58.8	100	1989	22	65.2	1981	10+	1940	12	50.5	1997	228	42	@	1.3	29.0	.0	3.8	.0
May	82.6	52.1	67.4	105+	2000	23	74.1	1996	26+	1954	3	61.0	1995	74	148	.7	5.3	30.9	.0	.1	.0
Jun	91.4	61.4	76.4	110+	1998	27	81.5	1990	41+	1928	12	71.8	1995	4	345	2.9	16.9	30.0	.0	.0	.0
Jul	95.5	65.9	80.7	110	1934	31	85.8	1980	50+	1990	14	77.6	1975	0	487	5.4	25.2	31.0	.0	.0	.0
Aug	93.6	64.7	79.2	111	1936	13	86.5	2000	47+	1988	29	75.1	1992	0	438	3.5	22.2	31.0	.0	.0	.0
Sep	87.1	56.9	72.0	109	2000	4	78.3	1998	30	1985	30	65.4	1974	17	227	.9	11.0	29.9	.0	.1	.0
Oct	77.4	45.1	61.3	101	2000	1	65.5	1998	13	1993	30	53.9	1976	154	37	.1	1.7	30.5	@	2.1	.0
Nov	63.3	32.5	47.9	87+	1980	8	55.8	1999	0+	1976	28	38.8	1972	514	1	.0	.0	24.2	.5	14.9	@
Dec	53.8	24.4	39.1	87	1955	25	44.5	1994	-11	1932	12	26.2	1983	802	0	.0	.0	18.9	2.8	25.9	.7
Ann	74.9	44.0	59.4	111	Aug 1936	13	86.5	Aug 2000	-22	Jan 1959	4	26.2	Dec 1983	3734	1726	13.5	83.8	321.1	10.0	108.2	1.9

+ 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: 1920-2001

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

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## No. 20 1971-2000

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

**Station: SPEARMAN, TX**

**COOP ID: 418523**

**Climate Division: TX 1**

**NWS Call Sign:**

**Elevation: 3,094 Feet Lat: 36°11N**

**Lon: 101°11W**

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	.53	.49	1.54	1990	19	1.59	1980	.00+	1998	3.5	1.6	.2	@	.00	.05	.13	.22	.31	.40	.52	.66	.85	1.17	1.49
Feb	.62	.59	1.40	1928	6	1.59	1982	.00+	1991	3.6	1.9	.3	.0	.00	.00	.07	.16	.26	.39	.54	.75	1.03	1.53	2.02
Mar	1.52	1.11	2.15	1926	30	6.15	1973	.00	1997	5.3	3.6	1.1	.3	.03	.12	.32	.53	.77	1.06	1.41	1.85	2.47	3.54	4.59
Apr	1.58	1.08	3.10	1985	29	6.57	1997	.00	1996	4.9	3.1	1.1	.4	.04	.14	.35	.58	.83	1.12	1.48	1.93	2.56	3.63	4.68
May	2.83	2.39	5.80	1965	14	6.77	1978	.52	1974	8.6	5.5	1.9	.5	.73	.99	1.40	1.77	2.13	2.50	2.93	3.42	4.08	5.11	6.07
Jun	2.97	2.95	4.22	1942	8	7.49	2000	.06	1998	7.8	4.9	2.1	.9	.42	.66	1.09	1.50	1.93	2.41	2.96	3.63	4.54	6.02	7.45
Jul	2.77	2.49	3.02	1961	8	8.56	1996	.05	1980	6.5	4.2	1.9	.9	.36	.58	.97	1.36	1.76	2.21	2.74	3.38	4.25	5.68	7.06
Aug	2.38	2.03	3.50	1939	8	4.93	1992	.35	1988	6.6	4.6	1.7	.6	.36	.56	.91	1.24	1.58	1.95	2.39	2.91	3.62	4.77	5.87
Sep	2.08	1.33	4.35	1996	18	8.16	1996	.05+	1992	6.0	3.3	1.4	.5	.09	.20	.43	.70	1.02	1.41	1.88	2.49	3.36	4.86	6.36
Oct	1.35	.90	4.90	1968	16	5.90	1998	.00	1975	3.9	2.4	.9	.3	.01	.07	.21	.38	.60	.85	1.18	1.61	2.22	3.29	4.37
Nov	1.01	.68	3.90	1971	17	5.19	1971	.00+	1999	4.0	2.3	.6	.1	.00	.00	.20	.37	.55	.75	.98	1.26	1.65	2.30	2.93
Dec	.66	.46	2.38	1959	17	2.98	1991	.02	1976	3.5	2.1	.3	.0	.06	.11	.20	.29	.39	.50	.64	.81	1.04	1.43	1.81
Ann	20.30	20.70	5.80	May 1965	14	8.56	Jul 1996	.00+	Nov 1999	64.2	39.5	13.5	4.5	14.54	15.66	17.09	18.18	19.14	20.08	21.04	22.10	23.39	25.26	26.87

+ 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: 1920-2001

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

Complete documentation available from:

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**Climate Division: TX 1**

**NWS Call Sign:**

**Elevation: 3,094 Feet**

**Lat: 36° 11N**

**Lon: 101° 11W**

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	4.7	4.2	#	#	8.0	1984	18	17.5	1987	9	1987	18	2	1979	2.7	1.9	.6	.2	.0	4.4	2.4	.6	.0
Feb	5.1	2.5	#	#	9.0	1990	21	17.0	1982	11	1971	22	3	1982	1.9	1.5	.7	.2	.0	2.5	1.7	1.0	@
Mar	2.7	1.0	#	#	14.0	1988	17	21.5	1987	14	1988	17	1	1994	1.2	1.1	.4	.1	.1	1.0	.5	.2	.1
Apr	.9	.0	#	0	6.0	1973	8	7.0	1983	6	1973	8	#+	1995	.5	.4	.1	@	.0	.4	.1	@	.0
May	.2	.0	#	0	3.0	1978	4	5.5	1978	3	1978	3	#	1978	.1	.1	@	.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	#	1985	29	#+	1985	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.4	.0	#	0	5.0	1979	31	5.0	1979	5	1979	31	#+	1996	.1	.1	.1	@	.0	.1	.1	@	.0
Nov	2.2	1.0	#	#	8.0	1992	25	21.5	1972	8	1972	21	2	1972	1.2	1.0	.3	.1	.0	1.1	.4	.1	.0
Dec	3.6	1.6	#	#	12.0	1987	14	15.5	1983	14	1997	25	3	1997	1.6	1.2	.5	.3	.1	2.1	1.0	.4	.1
Ann	19.8	10.3	N/A	N/A	14.0	Mar 1988	17	21.5+	Mar 1987	14+	Dec 1997	25	3+	Dec 1997	9.3	7.3	2.7	.9	.2	11.6	6.2	2.3	.2

+ 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

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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	5/12	5/07	5/03	4/30	4/27	4/24	4/21	4/17	4/12
32	4/28	4/23	4/20	4/18	4/16	4/13	4/11	4/08	4/03
28	4/14	4/09	4/06	4/03	4/01	3/29	3/27	3/24	3/19
24	4/10	4/04	3/30	3/27	3/23	3/20	3/16	3/11	3/05
20	4/06	3/30	3/24	3/20	3/16	3/11	3/07	3/01	2/22
16	3/29	3/20	3/14	3/08	3/03	2/26	2/21	2/14	2/05
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	9/25	10/01	10/05	10/09	10/12	10/16	10/19	10/23	10/29
32	10/07	10/13	10/16	10/20	10/23	10/26	10/29	11/02	11/07
28	10/20	10/25	10/29	11/01	11/04	11/07	11/10	11/14	11/19
24	10/28	11/02	11/06	11/09	11/12	11/15	11/18	11/22	11/27
20	11/03	11/10	11/15	11/19	11/23	11/26	11/30	12/05	12/12
16	11/11	11/18	11/23	11/28	12/02	12/06	12/10	12/15	12/22
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	189	182	176	172	168	163	159	153	146
32	205	200	196	193	189	186	183	179	173
28	238	231	225	221	216	212	207	202	194
24	259	250	244	238	233	228	223	216	207
20	276	268	262	256	251	246	241	235	226
16	309	297	288	280	273	266	258	249	237

\* 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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**Climate Division: TX 1      NWS Call Sign:      Elevation: 3,094 Feet    Lat: 36° 11N      Lon: 101° 11W**

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	851	631	459	228	74	4	0	0	17	154	514	802	3734
60	697	500	314	133	28	0	0	0	3	67	373	647	2762
57	608	422	235	88	14	0	0	0	0	36	295	556	2254
55	551	373	189	64	8	0	0	0	0	22	247	497	1951
50	409	261	98	23	1	0	0	0	0	5	147	356	1300
32	71	33	1	0	0	0	0	0	0	0	5	41	151

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	243	326	567	804	1096	1331	1510	1461	1200	906	482	262	10188
55	9	21	42	177	391	641	797	748	510	215	34	5	3590
57	4	15	26	142	335	581	735	686	450	167	22	2	3165
60	1	9	12	96	257	491	642	593	363	105	10	0	2579
65	0	0	1	42	148	345	487	438	227	37	1	0	1726
70	0	0	0	14	70	212	332	290	120	8	0	0	1046

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	86	160	327	553	837	1079	1251	1202	945	639	259	99	86	246	573	1126	1963	3042	4293	5495	6440	7079	7338	7437
45	37	84	214	410	683	929	1096	1047	796	489	152	39	37	121	335	745	1428	2357	3453	4500	5296	5785	5937	5976
50	11	30	117	280	530	779	941	892	648	346	77	11	11	41	158	438	968	1747	2688	3580	4228	4574	4651	4662
55	0	8	58	167	379	629	786	737	503	217	29	1	0	8	66	233	612	1241	2027	2764	3267	3484	3513	3514
60	0	0	19	81	239	481	631	582	366	115	5	0	0	0	19	100	339	820	1451	2033	2399	2514	2519	2519
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	100	154	260	377	532	699	810	784	616	421	199	98	100	254	514	891	1423	2122	2932	3716	4332	4753	4952	5050

(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/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/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.

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| <ol style="list-style-type: none"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
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## 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)