

Climatography of the United States No. 20

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

Station: BROWNWOOD, TX

1971-2000

COOP ID: 411138

Climate Division: TX 5

NWS Call Sign:

Elevation: 1,385 Feet Lat: 31°41N

Lon: 98°58W

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	57.2	29.6	43.4	89	2000	20	50.9	2000	0+	1973	13	35.8	1979	670	0	.0	.0	23.2	1.2	18.0	.1
Feb	62.3	34.7	48.5	95+	1996	22	56.3	2000	0+	1951	3	39.0	1978	466	3	.0	.2	23.5	.8	10.7	.0
Mar	70.0	42.5	56.3	97	1967	14	63.7	1974	10	1980	2	50.7	1987	290	19	.0	.7	29.9	.1	4.6	.0
Apr	77.5	51.1	64.3	100+	1974	1	70.3	1972	26+	1987	4	58.5	1997	103	81	.1	3.6	29.9	.0	.7	.0
May	84.1	60.5	72.3	107	1967	12	78.1	2000	37	1979	12	68.2	1979	17	243	.7	9.9	31.0	.0	.0	.0
Jun	90.6	67.6	79.1	107+	1972	24	83.1	1998	49	1964	1	74.4	1983	0	423	2.2	21.5	30.0	.0	.0	.0
Jul	95.0	70.7	82.9	110	1964	26	87.0	1998	53	1990	14	78.9	1976	0	553	8.0	28.3	31.0	.0	.0	.0
Aug	94.6	70.0	82.3	111	1964	7	86.7	1999	51	1992	28	77.6	1971	0	536	8.0	27.1	31.0	.0	.0	.0
Sep	88.3	63.4	75.9	109	2000	6	81.7	1977	37	1989	25	68.7	1974	6	331	1.9	17.0	30.0	.0	.0	.0
Oct	79.5	52.2	65.9	102	1951	4	69.5	1979	21	1993	31	60.2	1976	65	91	.2	4.0	30.8	.0	.4	.0
Nov	67.5	41.1	54.3	91+	1980	8	60.3	1999	12	1979	30	47.5	1976	335	13	.0	@	28.2	@	6.0	.0
Dec	59.8	32.5	46.2	89+	1954	5	51.0	1984	-6	1989	23	35.9	1983	584	0	.0	.0	25.9	.8	15.7	@
Ann	77.2	51.3	64.3	111	Aug 1964	7	87.0	Jul 1998	-6	Dec 1989	23	35.8	Jan 1979	2536	2293	21.1	112.3	344.4	2.9	56.1	.1

+ 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

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1947-2001

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

044-A

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No. 20
1971-2000**

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Station: BROWNWOOD, TX

COOP ID: 411138

Climate Division: TX 5

NWS Call Sign:

Elevation: 1,385 Feet Lat: 31°41N

Lon: 98°58W

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	1.28	1.00	2.34	1961	7	4.40	1991	.00+	1986	4.6	2.8	.7	.2	.00	.11	.32	.52	.74	.97	1.25	1.59	2.06	2.83	3.59
Feb	2.09	1.53	3.49	1992	4	8.94	1997	.12+	1999	4.6	3.2	1.3	.6	.12	.24	.49	.77	1.09	1.47	1.93	2.52	3.34	4.75	6.15
Mar	2.07	1.93	4.01	1977	27	4.84	1995	.00	1971	4.7	3.2	1.6	.6	.15	.36	.70	1.00	1.32	1.67	2.07	2.56	3.22	4.30	5.35
Apr	2.45	1.69	4.40	1949	20	14.66	1990	.06	1998	5.1	3.5	1.6	.5	.25	.43	.76	1.10	1.47	1.89	2.38	2.99	3.82	5.21	6.57
May	3.62	3.03	3.40	1970	24	9.63	1994	.39	1977	6.6	5.1	2.6	1.3	.70	1.02	1.55	2.04	2.54	3.07	3.68	4.41	5.38	6.93	8.41
Jun	3.75	3.50	6.60	2000	15	9.49	2000	.33	1984	6.1	4.5	2.1	1.0	.50	.81	1.35	1.87	2.42	3.02	3.72	4.58	5.75	7.66	9.50
Jul	1.80	1.51	2.57	1999	11	5.38	1973	.00+	1993	4.1	2.9	1.1	.7	.00	.06	.28	.53	.83	1.18	1.62	2.18	2.97	4.34	5.72
Aug	2.28	1.79	4.25	1971	2	9.25	1971	.00+	2000	4.9	3.3	1.5	.7	.00	.08	.36	.68	1.05	1.50	2.05	2.75	3.76	5.48	7.21
Sep	2.67	2.36	5.28	1967	15	7.87	1974	.00+	1983	5.2	4.0	1.5	.7	.00	.24	.70	1.12	1.57	2.06	2.63	3.32	4.28	5.85	7.39
Oct	3.01	2.81	6.60	1959	5	9.57	2000	.05	1978	5.5	3.8	1.7	.9	.16	.33	.69	1.09	1.56	2.10	2.77	3.63	4.84	6.91	8.97
Nov	1.62	1.71	2.50	1965	9	4.07	2000	.00	1999	4.4	2.9	1.0	.5	.03	.13	.34	.56	.82	1.12	1.49	1.96	2.62	3.75	4.87
Dec	1.68	1.11	2.80	1986	12	7.75	1986	.00+	1978	4.6	2.9	.9	.4	.00	.00	.13	.34	.61	.95	1.39	1.98	2.83	4.33	5.86
Ann	28.32+	26.82+	6.60+	Jun 2000	15	14.66	Apr 1990	.00+	Aug 2000	60.4	42.1	17.6	8.1	17.78	19.72	22.26	24.23	26.00	27.73	29.53	31.55	34.02	37.66	40.84

+ 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: 1947-2001

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

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

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No. 20

1971-2000

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Station: **BROWNWOOD, TX**

COOP ID: **411138**

Climate Division: **TX 5**

NWS Call Sign:

Elevation: **1,385 Feet**

Lat: **31°41N**

Lon: **98°58W**

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	1.0	.0	#	0	5.5	1982	15	5.5	1982	6	1982	15	1	1973	.4	.3	.1	@	.0	@	.0	.0	.0
Feb	.1	.0	#	0	1.3	1973	20	1.3	1973	1+	1977	1	#+	1977	.1	@	.0	.0	.0	@	.0	.0	.0
Mar	.0	.0	0	0	.5	1978	4	.5	1978	0	0	0	0	0	@	.0	.0	.0	.0	.0	.0	.0	.0
Apr	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.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	.2	.0	#	0	5.0	1976	13	5.0+	1976	5	1976	13	#	1976	.0	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.1	.0	#	0	2.5	1983	16	2.5	1983	#+	1997	11	#+	1997	.2	@	.0	.0	.0	.0	.0	.0	.0
Ann	1.4	.0	N/A	N/A	5.5	Jan 1982	15	5.5	Jan 1982	6	Jan 1982	15	1	Jan 1973	.7	.3	.1	@	.0	@	.0	.0	.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:

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

Climatography of the United States

No. 20 1971-2000

Station: BROWNWOOD, TX

COOP ID: 411138

Climate Division: TX 5

NWS Call Sign:

Elevation: 1,385 Feet

Lat: 31° 41N

Lon: 98° 58W

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	4/22	4/16	4/13	4/09	4/06	4/03	3/31	3/27	3/22
32	4/10	4/05	4/01	3/28	3/25	3/22	3/19	3/15	3/09
28	3/29	3/21	3/15	3/10	3/06	3/01	2/24	2/18	2/10
24	3/19	3/10	3/04	2/26	2/21	2/16	2/11	2/05	1/27
20	2/28	2/18	2/11	2/05	1/30	1/24	1/17	1/08	12/23
16	2/16	2/07	1/30	1/24	1/17	1/09	12/25	0/00	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	10/14	10/21	10/25	10/29	11/02	11/06	11/10	11/15	11/21
32	10/26	10/31	11/05	11/08	11/11	11/15	11/18	11/22	11/28
28	10/31	11/07	11/11	11/15	11/19	11/23	11/27	12/01	12/08
24	11/05	11/13	11/18	11/23	11/27	12/02	12/07	12/12	12/20
20	11/22	12/01	12/08	12/14	12/20	12/26	1/02	1/12	0/00
16	12/07	12/17	12/25	1/02	1/10	1/20	0/00	0/00	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	235	226	220	214	209	204	198	192	183
32	252	245	239	235	231	226	222	216	209
28	290	279	271	264	258	251	245	237	226
24	315	303	294	286	278	271	263	254	242
20	>365	>365	352	333	322	313	305	296	284
16	>365	>365	>365	>365	>365	362	344	330	314

* 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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Station: BROWNWOOD, TX

COOP ID: 411138

Climate Division: TX 5 NWS Call Sign: Elevation: 1,385 Feet Lat: 31°41N Lon: 98°58W

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	670	466	290	103	17	0	0	0	6	65	335	584	2536
60	521	337	175	40	3	0	0	0	0	19	213	434	1742
57	435	266	121	19	0	0	0	0	0	7	154	349	1351
55	379	223	91	11	0	0	0	0	0	4	121	295	1124
50	254	135	37	2	0	0	0	0	0	0	58	180	666
32	20	4	0	0	0	0	0	0	0	0	0	5	29

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	373	466	752	969	1249	1413	1576	1559	1316	1049	668	444	11834
55	19	40	130	290	536	723	863	846	626	340	99	21	4533
57	13	27	98	238	474	663	801	784	566	282	72	13	4031
60	7	15	59	169	384	573	708	691	476	200	41	5	3328
65	0	3	19	81	243	423	553	536	331	91	13	0	2293
70	0	0	4	28	130	278	398	382	202	29	2	0	1453

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	223	324	555	767	1041	1205	1355	1336	1102	836	469	259	223	547	1102	1869	2910	4115	5470	6806	7908	8744	9213	9472
45	126	210	408	617	886	1055	1200	1181	952	681	333	151	126	336	744	1361	2247	3302	4502	5683	6635	7316	7649	7800
50	57	125	278	470	731	905	1045	1026	802	530	216	77	57	182	460	930	1661	2566	3611	4637	5439	5969	6185	6262
55	24	59	167	330	578	755	890	871	652	380	118	32	24	83	250	580	1158	1913	2803	3674	4326	4706	4824	4856
60	2	23	82	204	424	605	735	716	503	242	56	7	2	25	107	311	735	1340	2075	2791	3294	3536	3592	3599
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	181	234	366	497	694	807	887	870	729	548	307	198	181	415	781	1278	1972	2779	3666	4536	5265	5813	6120	6318

(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

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
- 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.

- | | |
|---|---|
| <ol style="list-style-type: none">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. Freeze Data Table
1971-2000 serially complete daily data |
|---|---|

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html
Snow Climatology Project Description, 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