

Climatography of the United States

No. 20

1971-2000

Station: FREDERICKSBURG, TX

COOP ID: 413329

Climate Division: TX 7

NWS Call Sign:

Elevation: 1,685 Feet Lat: 30° 14N

Lon: 98° 55W

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	61.2	36.1	48.7	90	1943	23	54.7	1990	-5	1949	31	39.8	1978	515	3	.0	.0	25.6	.4	12.0	.0
Feb	65.8	39.3	52.6	96	1996	21	59.6	2000	-3	1951	2	43.0	1978	356	7	.0	.2	24.9	.5	7.2	@
Mar	72.9	46.6	59.8	101	1971	28	65.4	1974	12	1980	2	51.7	1987	196	32	@	.5	30.3	.0	2.9	.0
Apr	79.4	53.5	66.5	104	1963	9	70.7	1999	24	1987	3	61.2	1987	58	101	@	2.1	30.0	.0	.4	.0
May	84.5	62.2	73.4	102	1967	8	79.3	1998	38+	1984	9	69.0	1976	11	270	.1	5.8	31.0	.0	.0	.0
Jun	89.7	68.2	79.0	108	1980	27	83.8	1998	48	1903	13	75.4	1973	0	420	.7	15.5	30.0	.0	.0	.0
Jul	93.1	70.2	81.7	109	1980	2	86.1	1998	55	1947	20	77.0	1976	0	516	2.9	24.2	31.0	.0	.0	.0
Aug	93.2	69.2	81.2	109	1953	10	84.5	1999	54	1961	24	76.6	1971	0	501	1.6	25.6	31.0	.0	.0	.0
Sep	88.1	64.3	76.2	109	2000	5	80.9	1977	35	1942	27	70.2	1974	1	338	.5	12.9	30.0	.0	.0	.0
Oct	80.0	55.5	67.8	102	1951	3	71.5	1979	24	1993	31	58.7	1976	46	131	.0	1.8	30.8	.0	.2	.0
Nov	69.1	45.3	57.2	92	1949	28	63.9	1973	12	1948	29	49.5	1976	260	27	.0	@	28.6	.1	4.3	.0
Dec	62.2	37.7	50.0	88+	1955	24	57.5	1984	1	1989	23	41.4	1989	473	7	.0	.0	26.8	.5	10.5	.0
Ann	78.3	54.0	66.2	109+	Sep 2000	5	86.1	Jul 1998	-5	Jan 1949	31	39.8	Jan 1978	1916	2353	5.8	88.6	350.0	1.5	37.5	@

+ 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: 1896-2001

(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: FREDERICKSBURG, TX

COOP ID: 413329

Climate Division: TX 7

NWS Call Sign:

Elevation: 1,685 Feet Lat: 30°14N

Lon: 98°55W

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	1.36	1.13	2.18	1968	20	4.62	1989	.06+	1996	7.7	3.3	.8	.2	.11	.20	.38	.57	.78	1.01	1.30	1.65	2.15	2.97	3.78
Feb	1.91	1.70	2.63	1992	4	6.88	1992	.01	1999	6.9	3.7	1.2	.5	.11	.22	.45	.71	1.01	1.35	1.77	2.31	3.07	4.35	5.63
Mar	1.86	1.61	4.02	1910	30	5.20	1981	.05	1971	7.7	3.7	1.0	.4	.19	.33	.59	.84	1.12	1.44	1.81	2.27	2.90	3.95	4.97
Apr	2.40	2.04	4.12	1977	15	7.22	1977	.00	1983	6.3	3.9	1.6	.6	.27	.57	.97	1.31	1.66	2.03	2.45	2.95	3.62	4.69	5.70
May	4.29	3.73	6.90	1970	15	11.77	1975	.62	1998	8.9	5.7	3.0	1.3	1.13	1.53	2.16	2.70	3.24	3.81	4.44	5.18	6.16	7.69	9.12
Jun	3.97	3.76	7.70	1965	23	11.65	1981	.10	1990	6.5	5.1	2.3	1.3	.55	.87	1.44	2.00	2.57	3.21	3.95	4.86	6.08	8.08	10.00
Jul	2.00	1.24	6.15	1909	22	9.45	1988	.00+	1993	4.6	2.6	1.2	.7	.00	.02	.16	.37	.67	1.06	1.58	2.28	3.34	5.23	7.20
Aug	2.74	1.98	7.62	1944	30	12.51	1978	.00	1993	5.2	3.6	1.6	.9	.02	.12	.38	.73	1.15	1.67	2.34	3.23	4.51	6.76	9.05
Sep	3.07	2.26	8.03	1952	10	9.32	1980	.01	1999	6.8	4.3	1.8	.9	.25	.46	.86	1.29	1.76	2.29	2.93	3.74	4.85	6.71	8.55
Oct	3.72	3.16	6.90	1959	4	10.49	1984	.16	1987	6.9	4.5	2.3	1.3	.30	.54	1.03	1.54	2.11	2.76	3.54	4.53	5.89	8.17	10.42
Nov	2.19	2.27	4.30	1900	23	5.86	2000	.02	1999	6.8	3.7	1.5	.6	.22	.38	.68	.98	1.31	1.68	2.12	2.67	3.42	4.66	5.87
Dec	2.14	1.52	6.20	1991	20	15.05	1991	.17	1983	7.0	3.2	1.3	.5	.10	.21	.46	.74	1.07	1.47	1.95	2.57	3.45	4.97	6.49
Ann	31.65	30.37	8.03	Sep 1952	10	15.05	Dec 1991	.00+	Aug 1993	81.3	47.3	19.6	9.2	22.25	24.06	26.39	28.15	29.73	31.25	32.82	34.57	36.68	39.75	42.41

+ 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: 1896-2001

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

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Climate Division: TX 7

NWS Call Sign:

Elevation: 1,685 Feet

Lat: 30° 14N

Lon: 98° 55W

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	1.5	1983	21	1.5	1983	#	1973	11	#	1973	.1	.1	.0	.0	.0	.0	.0	.0	.0
Feb	#	.0	0	0	#	1979	19	#+	1979	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Mar	#	.0	0	0	#	1982	6	#+	1982	0	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	.1	.0	0	0	1.5	1996	24	1.5	1996	0	0	0	0	0	.1	.1	.0	.0	.0	.0	.0	.0	.0
Dec	#	.0	#	0	#	1991	1	#+	1991	#	1971	10	#	1971	.0	.0	.0	.0	.0	.0	.0	.0	.0
Ann	.2	.0	N/A	N/A	1.5+	Nov 1996	24	1.5+	Nov 1996	#+	Jan 1973	11	#+	Jan 1973	.2	.2	.0	.0	.0	.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:

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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	4/20	4/14	4/10	4/06	4/02	3/30	3/26	3/21	3/15
32	4/11	4/03	3/28	3/23	3/18	3/13	3/08	3/02	2/22
28	3/26	3/18	3/11	3/06	3/01	2/24	2/19	2/13	2/04
24	3/17	3/06	2/26	2/19	2/12	2/06	1/29	1/20	1/07
20	2/27	2/17	2/09	2/03	1/27	1/20	1/12	12/27	0/00
16	2/11	1/31	1/22	1/14	1/05	12/23	0/00	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	10/15	10/21	10/25	10/29	11/02	11/05	11/09	11/14	11/20
32	10/26	11/01	11/05	11/08	11/12	11/15	11/18	11/22	11/28
28	11/04	11/11	11/16	11/20	11/24	11/28	12/02	12/06	12/13
24	11/17	11/24	11/29	12/04	12/08	12/12	12/17	12/22	12/31
20	11/30	12/09	12/16	12/22	12/28	1/03	1/11	1/26	0/00
16	12/12	12/25	1/03	1/13	1/24	2/12	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	237	229	223	218	213	208	203	197	189
32	267	257	250	244	238	232	226	219	209
28	300	288	280	273	267	260	253	245	234
24	>365	326	314	305	297	289	281	272	260
20	>365	>365	>365	349	335	325	317	308	296
16	>365	>365	>365	>365	>365	364	344	330	316

* 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	515	356	196	58	11	0	0	0	1	46	260	473	1916
60	373	233	100	15	1	0	0	0	0	12	156	331	1221
57	296	171	59	5	0	0	0	0	0	5	108	256	900
55	250	137	39	2	0	0	0	0	0	2	81	211	722
50	157	68	11	0	0	0	0	0	0	0	33	123	392
32	7	0	0	0	0	0	0	0	0	0	0	1	8

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	523	575	860	1033	1282	1410	1539	1524	1327	1107	757	558	12495
55	53	68	186	345	569	720	826	811	637	397	148	55	4815
57	37	47	144	288	507	660	764	749	577	337	115	37	4262
60	21	24	92	208	415	570	671	656	487	252	73	20	3489
65	3	7	32	101	270	420	516	501	338	131	27	7	2353
70	0	0	8	35	148	273	361	346	200	49	8	0	1428

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	304	398	629	799	1038	1167	1287	1274	1088	862	518	334	304	702	1331	2130	3168	4335	5622	6896	7984	8846	9364	9698
45	193	274	476	649	883	1017	1132	1119	938	707	381	211	193	467	943	1592	2475	3492	4624	5743	6681	7388	7769	7980
50	106	170	336	500	728	867	977	964	788	556	256	120	106	276	612	1112	1840	2707	3684	4648	5436	5992	6248	6368
55	49	88	205	360	573	717	822	809	638	404	153	56	49	137	342	702	1275	1992	2814	3623	4261	4665	4818	4874
60	15	37	112	226	418	567	667	654	489	264	73	22	15	52	164	390	808	1375	2042	2696	3185	3449	3522	3544
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	207	258	399	526	708	806	868	854	736	574	331	221	207	465	864	1390	2098	2904	3772	4626	5362	5936	6267	6488

(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