

Climatology of the United States

No. 20

1971-2000

Station: FRIONA, TX

COOP ID: 413368

Climate Division: TX 1

NWS Call Sign:

Elevation: 4,010 Feet Lat: 34° 39N

Lon: 102° 43W

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	49.9	21.7	35.8	80	1986	20	42.2	1986	-15	1963	13	27.5	1979	905	0	.0	.0	17.8	4.0	28.6	.2
Feb	55.1	25.4	40.3	83	1989	26	47.5	1976	-4	1985	2	32.6	1978	693	0	.0	.0	19.5	2.3	22.8	.4
Mar	62.9	31.7	47.3	91	1989	12	53.4	1974	7+	1987	30	42.5	1987	550	0	.0	@	26.8	.7	17.1	.0
Apr	70.7	39.7	55.2	96+	1989	22	59.9	1978	16	1973	8	49.0	1997	306	11	.0	.4	28.4	.0	6.4	.0
May	79.0	49.8	64.4	100	2000	24	70.8	1996	30+	1991	1	61.0	1976	102	84	@	4.1	30.8	.0	.3	.0
Jun	87.5	59.1	73.3	108+	1990	25	79.8	1990	42+	1983	1	69.4	1989	11	260	2.1	13.9	30.0	.0	.0	.0
Jul	89.8	63.0	76.4	105+	1995	28	80.6	1980	51+	1989	24	73.0	1975	0	353	1.1	18.7	31.0	.0	.0	.0
Aug	87.8	61.4	74.6	103	1982	16	78.9	2000	47	1992	27	70.2	1971	2	299	.2	14.6	31.0	.0	.0	.0
Sep	81.5	54.3	67.9	99+	2000	7	74.3	1998	29	1983	21	61.7	1974	50	138	.0	7.1	29.6	.0	.2	.0
Oct	72.2	42.7	57.5	96+	2000	3	60.7	1973	13	1991	31	51.0	1976	243	9	.0	.7	30.0	@	2.6	.0
Nov	59.3	30.9	45.1	86	1980	9	51.1	1999	2	1991	3	38.3	1972	597	0	.0	.0	23.3	.9	17.4	.0
Dec	50.8	23.1	37.0	79	1984	9	42.9	1980	-9	1978	9	28.9	1983	871	0	.0	.0	17.9	3.1	27.3	.6
Ann	70.5	41.9	56.2	108+	Jun 1990	25	80.6	Jul 1980	-15	Jan 1963	13	27.5	Jan 1979	4330	1154	3.4	59.5	316.1	11.0	122.7	1.2

+ 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: 1927-2001

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

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: FRIONA, TX

COOP ID: 413368

Climate Division: TX 1

NWS Call Sign:

Elevation: 4,010 Feet Lat: 34°39N

Lon: 102°43W

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	.56	.36	1.67	1999	30	2.43	1999	.00+	2000	3.7	1.7	.2	@	.00	.00	.04	.11	.20	.32	.46	.66	.94	1.44	1.95
Feb	.53	.34	1.16	1990	20	2.32	1986	.00+	2000	4.0	1.6	.2	@	.00	.00	.07	.15	.24	.35	.48	.65	.89	1.29	1.70
Mar	.91	.50	1.66	1985	20	2.87	1985	.00+	1997	4.1	2.4	.4	.2	.00	.04	.17	.30	.45	.63	.85	1.12	1.50	2.15	2.80
Apr	1.09	.97	1.95	1997	25	6.16	1997	.00+	1996	4.6	2.9	.6	.1	.00	.00	.25	.44	.63	.84	1.08	1.37	1.76	2.42	3.05
May	2.19	1.69	3.28	1951	17	5.63	1992	.00	1998	6.7	4.5	1.3	.5	.13	.34	.68	1.00	1.34	1.72	2.16	2.70	3.44	4.66	5.84
Jun	2.50	2.45	2.90	1963	2	5.04	1999	.06	1990	6.9	4.6	1.8	.7	.35	.55	.91	1.26	1.62	2.02	2.48	3.05	3.82	5.07	6.28
Jul	2.24	2.26	2.81	1991	14	4.80	1982	.22	1987	6.7	4.2	1.6	.7	.40	.60	.93	1.23	1.54	1.88	2.27	2.73	3.35	4.35	5.31
Aug	2.89	2.59	3.47	1932	29	6.54	1974	.00	2000	8.3	5.2	2.0	.6	.50	.89	1.39	1.78	2.16	2.57	3.01	3.54	4.22	5.30	6.30
Sep	2.28	2.27	2.81	1999	16	4.67	1978	.02	2000	7.0	4.3	1.6	.5	.28	.46	.78	1.10	1.44	1.81	2.24	2.78	3.51	4.71	5.87
Oct	1.60	1.06	3.90	1998	30	6.57	1998	.01	1992	4.7	2.8	1.1	.3	.06	.13	.31	.51	.76	1.06	1.43	1.91	2.60	3.80	5.01
Nov	.80	.59	1.65	1978	4	2.27	1986	.00+	1999	3.7	2.0	.5	.2	.00	.00	.14	.27	.41	.57	.76	1.00	1.31	1.86	2.39
Dec	.79	.48	2.35	1943	9	3.12	1991	.00+	1981	3.9	2.0	.5	.1	.00	.03	.13	.25	.38	.53	.72	.96	1.30	1.88	2.45
Ann	18.38	16.96	3.90	Oct 1998	30	6.57	Oct 1998	.00+	Aug 2000	64.3	38.2	11.8	3.9	11.48	12.75	14.41	15.70	16.86	17.99	19.17	20.50	22.12	24.50	26.60

+ 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: 1927-2001

(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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Station: FRIONA, TX

COOP ID: 413368

Climate Division: TX 1

NWS Call Sign:

Elevation: 4,010 Feet

Lat: 34° 39N

Lon: 102° 43W

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	3.6	1.8	#	#	12.5	1999	30	16.5	1999	16	1999	31	2	1973	1.8	1.3	.5	.1	@	2.5	.9	.2	.1
Feb	3.5	2.0	#	#	7.0	1983	1	14.0+	1986	14	1999	1	1+	1999	1.5	1.2	.4	.2	.0	1.6	.7	.3	.1
Mar	1.0	.5	#	0	3.0	1978	3	5.0	1999	3	1999	19	#+	2000	.7	.5	.1	.0	.0	.5	.1	.0	.0
Apr	.9	.0	#	0	5.0	1973	3	8.0	1973	5	1997	26	#+	2000	.3	.3	.2	@	.0	.2	.2	.1	.0
May	#	.0	0	0	#	1978	3	#	1978	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	.4	.0	#	0	4.0	1996	22	4.0+	1996	3	1976	29	#+	1979	.3	.2	@	.0	.0	.1	@	.0	.0
Nov	2.1	.0	#	0	6.0	1992	24	10.5	1980	6+	1992	25	2	1980	.9	.7	.4	.1	.0	1.0	.7	.2	.0
Dec	3.4	2.0	#	0	9.0	1971	2	14.5	1999	9+	2000	26	2	1997	1.5	1.3	.6	.3	.0	1.6	.8	.2	.0
Ann	14.9	6.3	N/A	N/A	12.5	Jan 1999	30	16.5	Jan 1999	16	Jan 1999	31	2+	Dec 1997	7.0	5.5	2.2	.7	@	7.5	3.4	1.0	.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

Complete documentation available from:

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No. 20 1971-2000

Station: FRIONA, TX

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Climate Division: TX 1

NWS Call Sign:

Elevation: 4,010 Feet

Lat: 34° 39N

Lon: 102° 43W

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	5/14	5/10	5/07	5/04	5/02	4/29	4/26	4/23	4/19
32	5/03	4/28	4/25	4/22	4/19	4/16	4/13	4/10	4/05
28	4/18	4/14	4/11	4/09	4/06	4/04	4/01	3/29	3/25
24	4/11	4/05	3/31	3/28	3/24	3/20	3/17	3/12	3/06
20	3/30	3/23	3/18	3/13	3/09	3/04	2/28	2/23	2/15
16	3/25	3/16	3/09	3/04	2/26	2/21	2/16	2/09	1/31
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	9/29	10/04	10/07	10/10	10/12	10/15	10/18	10/21	10/26
32	10/02	10/08	10/13	10/16	10/20	10/23	10/27	10/31	11/06
28	10/20	10/25	10/28	10/31	11/03	11/05	11/08	11/12	11/16
24	10/31	11/04	11/07	11/10	11/13	11/15	11/18	11/21	11/26
20	11/03	11/10	11/14	11/18	11/21	11/25	11/29	12/03	12/10
16	11/10	11/18	11/24	11/29	12/03	12/08	12/12	12/18	12/26
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	181	175	170	167	163	160	156	152	146
32	203	196	191	187	183	179	174	169	162
28	229	222	218	214	210	206	202	197	190
24	253	246	241	237	233	229	225	220	213
20	285	275	268	263	257	251	245	238	229
16	313	301	293	286	279	272	265	256	245

* 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

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Climate Division: TX 1 NWS Call Sign: Elevation: 4,010 Feet Lat: 34°39N Lon: 102°43W

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	905	693	550	306	102	11	0	2	50	243	597	871	4330
60	750	553	397	184	40	1	0	0	13	123	451	716	3228
57	657	469	309	127	19	0	0	0	5	71	368	623	2648
55	595	415	253	94	10	0	0	0	2	47	315	561	2292
50	444	286	136	36	2	0	0	0	0	13	199	411	1527
32	59	21	1	0	0	0	0	0	0	0	10	43	134

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	177	252	474	696	1005	1239	1376	1320	1077	789	403	195	9003
55	0	2	13	100	302	549	663	607	389	123	18	0	2766
57	0	0	6	72	248	489	601	545	332	86	11	0	2390
60	0	0	2	40	176	400	508	452	251	44	4	0	1877
65	0	0	0	11	84	260	353	299	138	9	0	0	1154
70	0	0	0	2	29	142	205	157	60	1	0	0	596

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	69	138	272	471	771	1010	1139	1081	849	558	220	86	69	207	479	950	1721	2731	3870	4951	5800	6358	6578	6664
45	26	68	162	334	618	860	984	926	700	411	127	34	26	94	256	590	1208	2068	3052	3978	4678	5089	5216	5250
50	3	25	75	213	463	710	829	771	555	271	57	6	3	28	103	316	779	1489	2318	3089	3644	3915	3972	3978
55	0	4	27	113	314	561	674	616	409	153	20	0	0	4	31	144	458	1019	1693	2309	2718	2871	2891	2891
60	0	0	2	46	188	412	520	461	276	67	1	0	0	0	2	48	236	648	1168	1629	1905	1972	1973	1973
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	93	140	229	333	487	647	749	716	540	364	185	97	93	233	462	795	1282	1929	2678	3394	3934	4298	4483	4580

(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