U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

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: SPUR, TX **COOP ID: 418566**

Climate Division: TX 2 **NWS Call Sign:** **Elevation: 2,297 Feet** **Lat: 33˚29N** **Lon: 100˚53W**

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	53.7	25.5	39.6	85+	1953	26	44.7	1986	-10	1947	4	30.9	1979	786	0	.0	.0	20.8	2.5	25.4	.0
Feb	58.9	29.4	44.2	91+	1996	23	51.8	1976	-17	1933	8	32.8	1978	585	0	.0	.1	21.8	1.4	18.0	.1
Mar	67.4	36.0	51.7	102	1946	31	57.4	1974	-3	1943	6	47.4	1996	413	1	.0	.6	28.3	.2	9.4	.0
Apr	76.6	44.3	60.5	103+	1959	25	65.5	1978	20	1954	1	54.3	1997	174	37	@	3.2	29.4	.0	1.8	.0
May	84.1	54.6	69.4	111	2000	25	76.6	1996	32+	1960	2	64.6	1976	45	179	1.3	8.9	31.0	.0	.0	.0
Jun	91.7	63.2	77.5	117	1994	28	82.5	1994	43+	1947	14	73.6	1982	2	374	3.9	19.8	30.0	.0	.0	.0
Jul	95.4	67.0	81.2	111	1916	18	86.9	1980	51	1915	5	76.7	1976	0	502	7.4	27.0	31.0	.0	.0	.0
Aug	93.6	66.1	79.9	111	1936	12	84.0	1999	45	1915	31	74.7	1971	0	460	5.4	24.4	31.0	.0	.0	.0
Sep	85.8	58.9	72.4	108	2000	6	79.0	1998	32	1989	24	65.5	1974	19	239	1.3	13.3	30.0	.0	@	.0
Oct	76.9	47.5	62.2	104	2000	3	66.2	1998	19	1993	31	55.0	1976	131	44	.1	2.7	30.5	@	.6	.0
Nov	64.5	35.0	49.8	93	1945	1	56.2	1999	10+	1991	4	43.2	1972	461	3	.0	@	26.1	.3	11.3	.0
Dec	55.2	27.1	41.2	87+	1954	4	45.6	1994	-8	1989	23	31.5	1983	739	0	.0	.0	22.2	1.6	23.2	.1
Ann	75.3	46.2	60.8	117	Jun 1994	28	86.9	Jul 1980	-17	Feb 1933	8	30.9	Jan 1979	3355	1839	19.4	100.0	332.1	6.0	89.7	.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/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1911-2001

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

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Precipitation (inches)

Precipitation Totals

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	.55	.50	1.67	1990	19	1.67	1990	.00+	2000
Feb	.70	.50	1.49	1993	15	2.61	1992	.00	1999
Mar	.84	.63	2.50	2000	23	3.33	2000	.00	1997
Apr	1.53	1.15	2.74	1925	27	5.46	1997	.23	1987
May	3.18	2.98	3.47	1914	30	6.55	1987	.65	1984
Jun	2.68	1.88	3.47	1991	3	8.55	1992	.21	1998
Jul	1.74	1.80	3.93	1914	3	3.36	1988	.10	1999
Aug	2.12	1.62	4.70	1996	29	7.75	1996	.00	2000
Sep	2.17	1.59	3.52	1991	19	9.65	1991	.00	2000
Oct	1.66	1.38	4.28	1960	18	7.09	1986	.00	1988
Nov	.82	.66	2.30	1920	8	2.36	2000	.00+	1999
Dec	.69	.40	2.45	1930	4	4.60	1991	.00+	2000
Ann	18.68	16.69	4.70	Aug 1996	29	9.65	Sep 1991	.00+	Dec 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.8	1.9	.2	.1
Feb	4.2	2.2	.4	.1
Mar	4.5	2.1	.6	.1
Apr	5.5	3.4	.9	.2
May	8.0	5.6	2.5	.8
Jun	7.5	5.2	1.9	.6
Jul	6.2	3.0	.8	.3
Aug	8.0	4.7	1.3	.5
Sep	6.6	4.3	1.7	.7
Oct	5.3	3.5	1.2	.4
Nov	4.2	1.9	.5	.2
Dec	4.1	2.0	.4	.1
Ann	67.9	39.8	12.4	4.1

Precipitation Probabilities (1)

Probability that the monthly/annual precipitation will be equal to or less than the indicated amount

Monthly/Annual Precipitation vs Probability Levels
These values were determined from the incomplete gamma distribution

Month	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.00	.00	.09	.19	.29	.40	.53	.69	.91	1.27	1.62
Feb	.01	.06	.15	.24	.36	.49	.65	.85	1.14	1.62	2.11
Mar	.04	.11	.24	.36	.49	.64	.82	1.03	1.33	1.82	2.31
Apr	.22	.35	.57	.78	1.00	1.25	1.53	1.87	2.34	3.09	3.82
May	.83	1.13	1.60	2.00	2.40	2.82	3.29	3.84	4.56	5.69	6.76
Jun	.51	.75	1.15	1.51	1.88	2.27	2.72	3.26	3.98	5.13	6.23
Jul	.27	.42	.68	.92	1.17	1.44	1.75	2.13	2.64	3.47	4.26
Aug	.22	.47	.83	1.13	1.45	1.78	2.16	2.62	3.23	4.22	5.15
Sep	.10	.29	.61	.93	1.27	1.66	2.11	2.67	3.43	4.70	5.94
Oct	.02	.08	.26	.47	.73	1.05	1.45	1.97	2.73	4.04	5.37
Nov	.00	.00	.18	.32	.46	.62	.80	1.03	1.33	1.84	2.34
Dec	.00	.02	.10	.19	.30	.44	.61	.82	1.14	1.68	2.22
Ann	10.29	11.76	13.72	15.27	16.68	18.08	19.55	21.22	23.28	26.35	29.07

\+ 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: 1911-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	1.1	.0	#	0
Feb	.2	.0	#	0
Mar	.0	.0	0	0
Apr	.0	.0	0	0
May	.0	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.0	.0	0	0
Nov	#	.0	#	0
Dec	.2	.0	#	0
Ann	1.5	.0	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	5.0	1992	18	7.0	1992	5	1992	19	1	1992
Feb	1.0	1987	19	2.0	1987	1+	1996	3	#+	1996
Mar	.1	1989	21	.1	1989	0	0	0	0	0
Apr	.0	0	0	.0	0	0	0	0	0	0
May	.0	0	0	.0	0	0	0	0	0	0
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	.0	0	0	.0	0	0	0	0	0	0
Nov	#	2000	19	#	2000	#	2000	19	#	2000
Dec	1.0	1987	26	1.0	1988	1	1990	30	#+	1999
Ann	5.0	Jan 1992	18	7.0	Jan 1992	5	Jan 1992	19	1	Jan 1992

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.6	.6	.1	.1	.0
Feb	.2	.2	.0	.0	.0
Mar	.1	.0	.0	.0	.0
Apr	.0	.0	.0	.0	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.0	.0	.0	.0	.0
Nov	.0	.0	.0	.0	.0
Dec	.3	.2	.0	.0	.0
Ann	1.2	1.0	.1	.1	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.4	.2	.2	.0
Feb	.1	.0	.0	.0
Mar	.0	.0	.0	.0
Apr	.0	.0	.0	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.0	.0	.0	.0
Nov	.0	.0	.0	.0
Dec	.3	.0	.0	.0
Ann	.8	.2	.2	.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

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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	4/25	4/21	4/18	4/15	4/12	4/10	4/07	4/04	3/30
32	4/15	4/11	4/08	4/05	4/02	3/31	3/28	3/25	3/21
28	4/11	4/05	3/31	3/27	3/24	3/20	3/16	3/11	3/05
24	4/03	3/25	3/19	3/14	3/09	3/04	2/26	2/20	2/11
20	3/17	3/08	3/02	2/24	2/19	2/14	2/09	2/02	1/24
16	3/05	2/24	2/17	2/12	2/06	1/31	1/25	1/17	1/02

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	10/04	10/10	10/14	10/18	10/22	10/25	10/29	11/03	11/09
32	10/22	10/26	10/30	11/01	11/04	11/07	11/10	11/13	11/18
28	10/28	11/02	11/06	11/10	11/13	11/16	11/19	11/23	11/28
24	11/03	11/10	11/14	11/18	11/22	11/25	11/29	12/04	12/10
20	11/05	11/15	11/22	11/29	12/05	12/11	12/17	12/25	1/04
16	11/22	12/03	12/11	12/17	12/24	12/30	1/07	1/16	2/03

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	212	205	200	196	192	188	184	179	172
32	235	228	223	219	215	211	207	202	195
28	258	250	244	238	233	229	223	217	209
24	288	278	270	263	257	251	245	237	226
20	322	308	300	293	286	280	273	265	254
16	>365	>365	342	329	319	311	302	292	279

***** 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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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	786	585	413	174	45	2	0	0	19	131	461	739	3355
60	632	452	268	83	13	0	0	0	4	51	324	585	2412
57	541	375	190	46	5	0	0	0	0	25	249	493	1924
55	481	325	147	28	2	0	0	0	0	14	205	434	1636
50	340	217	66	6	0	0	0	0	0	3	116	294	1042
32	32	17	0	0	0	0	0	0	0	0	2	18	69

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	269	357	611	853	1157	1362	1525	1483	1210	937	534	302	10600
55	5	21	45	191	447	672	812	770	520	238	47	5	3773
57	2	14	26	149	387	612	750	708	460	187	31	2	3328
60	0	7	11	96	302	522	657	615	373	120	16	0	2719
65	0	0	1	37	179	374	502	460	239	44	3	0	1839
70	0	0	0	10	88	235	348	308	131	10	0	0	1130

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	124	219	405	640	937	1142	1294	1246	983	706	332	155	124	343	748	1388	2325	3467	4761	6007	6990	7696	8028	8183
45	57	128	272	495	782	992	1139	1091	833	552	217	74	57	185	457	952	1734	2726	3865	4956	5789	6341	6558	6632
50	19	62	162	353	628	842	984	936	685	403	123	31	19	81	243	596	1224	2066	3050	3986	4671	5074	5197	5228
55	0	29	81	228	475	692	829	781	541	268	58	4	0	29	110	338	813	1505	2334	3115	3656	3924	3982	3986
60	0	3	34	128	326	542	674	626	397	149	18	0	0	3	37	165	491	1033	1707	2333	2730	2879	2897	2897
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	134	190	301	421	596	741	832	804	636	454	247	144	134	324	625	1046	1642	2383	3215	4019	4655	5109	5356	5500

(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

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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.
Compete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normals/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 are 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/normals.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normals/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