

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: SUGAR LAND, TX

1971-2000

COOP ID: 418728

Climate Division: TX 8

NWS Call Sign:

Elevation: 82 Feet

Lat: 29° 37N

Lon: 95° 38W

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	61.9	41.6	51.8	84+	1989	7	58.7	2000	6	1949	31	42.9	1978	433	14	.0	.0	25.5	.3	5.4	.0
Feb	65.7	44.5	55.1	89	1986	20	62.3	1999	9	1949	1	44.3	1978	296	19	.0	.0	25.2	.2	3.1	.0
Mar	72.5	51.4	62.0	92	1989	31	68.4	2000	21	1980	3	57.4	1983	141	47	.0	.1	30.3	.0	.7	.0
Apr	79.1	58.2	68.7	95	1948	29	73.9	1981	32	1987	3	63.6	1997	33	144	.0	.6	30.0	.0	@	.0
May	85.6	66.4	76.0	99	1996	28	80.4	1998	47	1996	1	71.7	1976	2	342	.0	6.2	31.0	.0	.0	.0
Jun	90.7	72.2	81.5	101+	1980	28	86.4	1998	56	1970	3	78.8	1983	0	493	.1	20.5	30.0	.0	.0	.0
Jul	93.7	74.4	84.1	105	1954	27	88.0	1998	63+	1985	1	81.4	1976	0	590	1.5	27.2	31.0	.0	.0	.0
Aug	93.6	74.0	83.8	105+	1962	14	87.0	1999	60	1967	13	81.0	1973	0	582	.8	26.4	31.0	.0	.0	.0
Sep	89.1	69.4	79.3	108	2000	5	82.7	1998	47	1989	25	75.1	1974	0	428	.2	16.6	30.0	.0	.0	.0
Oct	81.7	59.9	70.8	98	1952	3	73.7	1973	30+	1993	31	62.8	1976	18	198	.0	3.1	31.0	.0	.1	.0
Nov	71.9	50.9	61.4	91+	1950	3	68.7	1973	22	1976	29	53.5	1976	184	75	.0	@	29.4	.0	.8	.0
Dec	64.3	43.2	53.8	90	1948	14	61.8	1984	6	1989	23	44.3	1989	368	18	.0	.0	27.5	.2	4.0	.0
Ann	79.2	58.8	69.0	108	Sep 2000	5	88.0	Jul 1998	6+	Dec 1989	23	42.9	Jan 1978	1475	2950	2.6	100.7	351.9	.7	14.1	.0

+ 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: 1946-2001

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

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Lat: 29°37N

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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	4.06	3.49	3.00	1995	13	9.67	1991	.32	1971	9.2	5.9	2.4	1.3	.73	1.08	1.68	2.23	2.80	3.41	4.11	4.96	6.08	7.90	9.63
Feb	2.98	2.51	2.92	1991	5	10.31	1992	.36	1996	8.1	4.7	2.0	.9	.48	.74	1.17	1.58	2.01	2.47	3.00	3.64	4.51	5.91	7.25
Mar	3.24	2.36	4.45	1957	18	7.79	1985	.57	1978	7.3	4.9	2.1	1.0	.66	.95	1.43	1.86	2.30	2.77	3.31	3.95	4.79	6.15	7.44
Apr	3.48	2.65	3.96	1966	14	11.54	1997	.07	1998	6.0	3.7	2.3	1.3	.24	.45	.89	1.37	1.90	2.52	3.27	4.22	5.55	7.79	10.01
May	4.69	4.93	4.91	1970	16	9.02	1993	.02	1996	7.6	5.4	3.3	1.7	.42	.74	1.37	2.02	2.74	3.55	4.51	5.72	7.38	10.16	12.88
Jun	5.51	5.20	10.60	2001	7	17.04	1987	.47	1974	8.1	5.7	3.4	1.8	.66	1.09	1.86	2.63	3.45	4.36	5.42	6.74	8.52	11.46	14.32
Jul	3.30	2.84	6.45	1973	8	8.96	1983	.26	1994	7.8	5.5	1.9	.8	.77	1.08	1.56	1.99	2.42	2.88	3.39	4.00	4.80	6.08	7.28
Aug	4.29	3.48	8.29	1989	2	12.04	1983	.54	1978	8.5	5.8	2.6	1.2	.82	1.21	1.84	2.42	3.00	3.64	4.36	5.22	6.37	8.22	9.97
Sep	5.82	4.38	7.02	1983	19	17.45	1983	.30	1975	8.7	6.2	3.1	1.8	.70	1.15	1.97	2.78	3.65	4.61	5.73	7.11	9.00	12.09	15.10
Oct	4.03	2.99	8.75	1959	31	14.09	1994	.05	1978	6.4	4.6	2.6	1.3	.25	.49	.99	1.53	2.15	2.88	3.75	4.87	6.43	9.09	11.72
Nov	4.58	4.04	5.66	1985	12	12.23	2000	.92	1994	8.2	5.5	2.7	1.5	.83	1.23	1.90	2.52	3.16	3.85	4.63	5.58	6.84	8.88	10.82
Dec	3.36	3.11	3.85	1994	3	8.11	1986	.89	1989	8.3	5.6	2.2	1.0	.95	1.27	1.75	2.17	2.58	3.01	3.48	4.04	4.76	5.89	6.95
Ann	49.34	50.12	10.60	Jun 2001	7	17.45	Sep 1983	.02	May 1996	94.2	63.5	30.6	15.6	29.35	32.96	37.73	41.44	44.81	48.11	51.58	55.47	60.26	67.34	73.58

+ 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: 1946-2001

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

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Station: SUGAR LAND, TX

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Climate Division: TX 8

NWS Call Sign:

Elevation: 82 Feet

Lat: 29°37N

Lon: 95°38W

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	1.0	1973	11	2.0	1973	2	1973	12	#+	1985	.1	.1	.0	.0	.0	.1	.0	.0	.0
Feb	.1	.0	#	0	1.0	1973	9	1.0	1973	1	1973	9	#	1973	@	@	.0	.0	.0	@	.0	.0	.0
Mar	#	.0	0	0	#	1989	5	#	1989	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	#	.0	0	0	#	1976	28	#	1976	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.0	.0	#	0	.3	1989	22	.3	1989	#+	1990	23	#+	1990	@	.0	.0	.0	.0	.0	.0	.0	.0
Ann	.2	.0	N/A	N/A	1.0+	Feb 1973	9	2.0	Jan 1973	2	Jan 1973	12	#+	Dec 1990	.1	.1	.0	.0	.0	.1	.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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NWS Call Sign:

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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	3/28	3/20	3/14	3/09	3/04	2/27	2/22	2/16	2/07
32	3/18	3/07	2/28	2/21	2/15	2/08	2/02	1/25	1/14
28	3/02	2/17	2/08	1/31	1/23	1/14	1/03	12/14	0/00
24	2/12	2/02	1/24	1/17	1/09	12/29	0/00	0/00	0/00
20	1/23	1/11	12/26	0/00	0/00	0/00	0/00	0/00	0/00
16	12/26	0/00	0/00	0/00	0/00	0/00	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	10/29	11/06	11/12	11/16	11/21	11/25	11/30	12/05	12/13
32	11/10	11/20	11/28	12/04	12/10	12/16	12/22	12/30	1/09
28	11/28	12/06	12/12	12/18	12/24	12/30	1/07	0/00	0/00
24	12/13	12/25	1/03	1/12	1/22	2/05	0/00	0/00	0/00
20	12/30	1/12	1/29	0/00	0/00	0/00	0/00	0/00	0/00
16	1/06	0/00	0/00	0/00	0/00	0/00	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	292	282	274	267	261	255	248	241	230
32	339	319	309	301	294	287	280	271	259
28	>365	>365	>365	343	328	318	308	298	286
24	>365	>365	>365	>365	>365	355	343	332	320
20	>365	>365	>365	>365	>365	>365	>365	>365	>365
16	>365	>365	>365	>365	>365	>365	>365	>365	>365

* 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 8 NWS Call Sign: Elevation: 82 Feet Lat: 29°37N Lon: 95°38W

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	433	296	141	33	2	0	0	0	0	18	184	368	1475
60	307	189	61	6	0	0	0	0	0	4	105	242	914
57	243	139	32	2	0	0	0	0	0	1	69	182	668
55	207	111	19	0	0	0	0	0	0	1	50	147	535
50	127	52	4	0	0	0	0	0	0	0	20	75	278
32	6	0	0	0	0	0	0	0	0	0	0	0	6

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	618	647	929	1100	1363	1483	1613	1605	1418	1202	881	673	13532
55	106	113	235	410	650	793	900	892	728	490	241	107	5665
57	80	86	186	352	588	733	838	830	668	429	200	80	5070
60	51	52	123	267	495	643	745	737	578	338	146	47	4222
65	14	19	47	144	342	493	590	582	428	198	75	18	2950
70	9	6	12	59	201	343	435	427	280	86	30	4	1892

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	400	463	696	872	1129	1255	1373	1360	1185	960	652	453	400	863	1559	2431	3560	4815	6188	7548	8733	9693	10345	10798
45	274	337	545	722	974	1105	1218	1205	1035	805	508	316	274	611	1156	1878	2852	3957	5175	6380	7415	8220	8728	9044
50	169	224	400	573	819	955	1063	1050	885	650	369	202	169	393	793	1366	2185	3140	4203	5253	6138	6788	7157	7359
55	92	128	262	425	664	805	908	895	735	498	249	116	92	220	482	907	1571	2376	3284	4179	4914	5412	5661	5777
60	47	64	149	287	509	655	753	740	585	353	147	55	47	111	260	547	1056	1711	2464	3204	3789	4142	4289	4344
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	239	282	437	583	794	881	941	931	821	646	408	271	239	521	958	1541	2335	3216	4157	5088	5909	6555	6963	7234

(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