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: LAREDO 2, TX **COOP ID: 415060**

Climate Division: TX 9 **NWS Call Sign:** **Elevation: 430 Feet** **Lat: 27˚34N** **Lon: 99˚30W**

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	67.5	43.7	55.6	95	1975	26	62.8	1998	19+	1975	14	48.5	1978	323	32	.0	.4	28.3	.1	3.8	.0
Feb	73.0	48.2	60.6	103	1986	20	69.3	2000	20	1973	10	52.0	1978	176	53	.1	1.3	27.1	.1	1.5	.0
Mar	81.8	56.0	68.9	105+	1991	6	74.6	2000	27+	1988	19	62.6	1987	41	162	.4	6.4	30.9	.0	.4	.0
Apr	89.4	62.6	76.0	110	1989	8	80.5	1999	32	1987	3	69.8	1987	3	333	2.1	14.5	30.0	.0	@	.0
May	95.2	70.0	82.6	114	1995	13	87.2+	1998	45	1984	20	77.8	1972	0	545	6.9	22.6	31.0	.0	.0	.0
Jun	99.7	74.1	86.9	114	1998	4	92.7	1998	58	1970	3	83.7	1973	0	656	12.2	27.9	30.0	.0	.0	.0
Jul	101.6	75.4	88.5	113	1998	14	92.8	1998	66	1981	8	83.0	1976	0	728	19.6	29.9	31.0	.0	.0	.0
Aug	100.8	75.0	87.9	111+	1999	15	91.3	1997	61+	1973	28	81.9	1973	0	710	18.3	30.0	31.0	.0	.0	.0
Sep	95.0	71.3	83.2	110+	2000	6	87.5	1986	49	1967	29	77.5	1974	0	544	6.3	24.1	30.0	.0	.0	.0
Oct	86.8	63.3	75.1	104	1979	8	79.1	1979	28	1993	31	67.1	1976	5	316	.5	12.2	30.9	.0	@	.0
Nov	76.7	53.4	65.1	97	1965	26	70.8	1994	27	1993	28	56.6	1976	103	104	.0	1.7	29.6	.0	.8	.0
Dec	68.6	45.3	57.0	95	1977	4	63.7	1984	11	1983	30	48.4	1983	280	30	.0	.2	29.1	.1	3.2	.0
Ann	86.3	61.5	74.0	114+	Jun 1998	4	92.8	Jul 1998	11	Dec 1983	30	48.4	Dec 1983	931	4213	66.4	171.2	358.9	.3	9.7	.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/normals/usnormals.html

(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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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	.76	.64	1.00	1990	6	3.67	1992	.00	1996
Feb	.94	.66	1.58	1982	19	3.66	1973	.00	1976
Mar	.92	.63	2.71	1993	12	3.08	1997	.00+	1978
Apr	1.55	1.12	2.31	1968	29	5.18	1981	.00+	1984
May	2.73	2.52	6.37	1972	10	11.48	1972	.00	1998
Jun	2.99	2.61	5.85	1973	9	12.29	1973	.00	1980
Jul	1.79	1.16	6.65	1981	8	7.64	1976	.00+	1993
Aug	2.42	1.45	6.29	1974	7	10.00	1971	.00	1997
Sep	2.73	2.23	6.48	1971	12	11.54	1971	.03	1977
Oct	2.72	1.99	3.91	1971	5	9.27	1971	.00	1979
Nov	1.13	.58	2.84	1990	7	3.66	1976	.00+	1988
Dec	.85	.36	2.41	1994	27	2.79	1986	.00	1973
Ann	21.53	18.69	6.65	Jul 1981	8	12.29	Jun 1973	.00+	May 1998

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.1	2.1	.3	@
Feb	5.0	1.9	.6	.2
Mar	3.9	1.6	.5	.2
Apr	4.2	2.4	1.1	.5
May	5.3	3.4	1.7	.9
Jun	5.3	3.5	1.8	.9
Jul	4.1	2.8	1.0	.4
Aug	4.8	3.0	1.3	.6
Sep	6.3	3.8	1.8	1.0
Oct	4.5	2.9	1.7	.9
Nov	4.0	2.2	.6	.2
Dec	5.5	1.7	.5	.2
Ann	59.0	31.3	12.9	6.0

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	.01	.04	.13	.23	.35	.49	.67	.90	1.24	1.82	2.40
Feb	.01	.06	.17	.30	.45	.62	.84	1.13	1.53	2.22	2.91
Mar	.00	.00	.04	.15	.30	.49	.74	1.08	1.57	2.43	3.32
Apr	.00	.00	.16	.37	.63	.94	1.34	1.86	2.59	3.88	5.18
May	.08	.27	.64	1.03	1.47	1.97	2.58	3.34	4.40	6.18	7.95
Jun	.04	.18	.51	.91	1.39	1.96	2.66	3.58	4.90	7.16	9.45
Jul	.00	.00	.19	.44	.73	1.10	1.56	2.15	3.00	4.48	5.98
Aug	.02	.12	.36	.67	1.05	1.52	2.10	2.87	3.98	5.91	7.87
Sep	.20	.38	.73	1.10	1.52	2.00	2.58	3.32	4.34	6.05	7.75
Oct	.13	.37	.78	1.18	1.60	2.08	2.65	3.35	4.31	5.90	7.45
Nov	.00	.00	.13	.29	.49	.71	1.00	1.37	1.89	2.79	3.69
Dec	.01	.04	.13	.24	.37	.53	.74	1.01	1.39	2.07	2.76
Ann	10.58	12.41	14.91	16.91	18.76	20.60	22.57	24.80	27.60	31.81	35.58

\+ 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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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	#	.0	0	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
Nov	.0	.0	0	0
Dec	#	.0	0	0
Ann	.1	.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	#	1992	16	#+	1992	0	0	0	0	0
Feb	2.7	1973	9	3.1	1973	0	0	0	0	0
Mar	.0	0	0	.0	0	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	#	1993	30	#	1993	0	0	0	0	0
Nov	.0	0	0	.0	0	0	0	0	0	0
Dec	#	1989	22	#	1989	0	0	0	0	0
Ann	2.7	Feb 1973	9	3.1	Feb 1973	0	0	0	0	0

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.0	.0	.0	.0	.0
Feb	.1	@	.0	.0	.0
Mar	.0	.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	.0	.0	.0	.0	.0
Ann	.1	@	.0	.0	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.0	.0	.0	.0
Feb	.0	.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	.0	.0	.0	.0
Ann	.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

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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	3/21	3/12	3/06	3/01	2/24	2/19	2/14	2/08	1/30
32	3/10	2/28	2/21	2/15	2/09	2/03	1/28	1/21	1/11
28	3/05	2/19	2/10	2/01	1/23	1/14	1/03	12/13	0/00
24	2/01	1/21	1/11	1/01	12/15	0/00	0/00	0/00	0/00
20	1/06	12/17	0/00	0/00	0/00	0/00	0/00	0/00	0/00
16	0/00	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	11/07	11/13	11/17	11/21	11/25	11/28	12/02	12/07	12/13
32	11/12	11/20	11/26	12/01	12/05	12/10	12/15	12/21	12/29
28	11/25	12/05	12/11	12/17	12/23	12/30	1/07	1/22	0/00
24	12/15	12/24	1/01	1/09	1/24	0/00	0/00	0/00	0/00
20	12/23	1/08	0/00	0/00	0/00	0/00	0/00	0/00	0/00
16	0/00	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	307	295	287	280	273	266	259	251	239
32	337	324	314	306	299	291	283	274	261
28	>365	>365	>365	347	334	324	314	303	290
24	>365	>365	>365	>365	>365	>365	>365	350	331
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

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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	323	176	41	3	0	0	0	0	0	5	103	280	931
60	212	99	11	0	0	0	0	0	0	1	45	173	541
57	160	63	4	0	0	0	0	0	0	0	24	123	374
55	128	44	2	0	0	0	0	0	0	0	15	93	282
50	62	16	0	0	0	0	0	0	0	0	4	39	121
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	732	801	1144	1319	1568	1646	1751	1733	1534	1334	991	774	15327
55	147	201	433	629	855	956	1038	1020	844	621	316	154	7214
57	117	163	373	569	793	896	976	958	784	559	265	121	6574
60	76	115	287	479	700	806	883	865	694	466	196	78	5645
65	32	53	162	333	545	656	728	710	544	316	104	30	4213
70	13	18	72	199	392	506	573	555	394	181	43	10	2956

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	507	621	903	1070	1310	1391	1493	1479	1297	1090	758	543	507	1128	2031	3101	4411	5802	7295	8774	10071	11161	11919	12462
45	364	480	748	920	1155	1241	1338	1324	1147	936	609	397	364	844	1592	2512	3667	4908	6246	7570	8717	9653	10262	10659
50	237	350	595	770	1000	1091	1183	1169	997	781	465	268	237	587	1182	1952	2952	4043	5226	6395	7392	8173	8638	8906
55	140	232	446	621	845	941	1028	1014	847	629	329	160	140	372	818	1439	2284	3225	4253	5267	6114	6743	7072	7232
60	74	134	311	475	691	791	873	859	697	476	214	83	74	208	519	994	1685	2476	3349	4208	4905	5381	5595	5678
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	316	393	591	707	874	910	961	954	863	736	496	342	316	709	1300	2007	2881	3791	4752	5706	6569	7305	7801	8143

(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:
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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