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: CLAUDE, TX **COOP ID: 411778**

Climate Division: TX 1 **NWS Call Sign:** **Elevation: 3,396 Feet** **Lat: 35˚07N** **Lon: 101˚22W**

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	48.5	21.2	34.9	80+	1986	21	42.3	1986	-9+	1963	13	24.3	1979	935	0	.0	.0	16.4	4.6	28.8	.5
Feb	53.4	25.2	39.3	86	1963	1	47.2	1976	-16	1905	13	28.0	1978	720	0	.0	.0	17.9	3.2	23.2	.5
Mar	61.6	31.7	46.7	92	1989	12	52.4	1974	3	1996	8	41.7	1998	568	0	.0	.1	26.0	.8	16.8	.0
Apr	69.9	39.7	54.8	98	1989	23	61.8	1981	16	1994	7	48.0	1997	320	15	.0	.8	28.3	@	5.9	.0
May	77.8	49.9	63.9	102	2000	25	71.3	1996	30+	1991	2	59.1	1976	118	82	.4	3.5	30.7	.0	.2	.0
Jun	86.1	59.6	72.9	108+	1980	28	78.9	1990	42+	1983	7	67.8	1989	17	252	1.4	11.5	30.0	.0	.0	.0
Jul	90.5	64.2	77.4	107+	1980	2	82.6	1980	49+	1906	8	74.1	1972	0	384	1.9	19.8	31.0	.0	.0	.0
Aug	88.6	63.1	75.9	105	1967	9	80.8	2000	50+	1979	12	71.6	1992	2	339	.9	16.9	31.0	.0	.0	.0
Sep	81.6	55.6	68.6	102	1983	7	74.9	1998	29	1984	30	61.4	1974	48	155	.3	7.4	29.7	.0	.1	.0
Oct	71.9	43.8	57.9	97+	1979	9	61.5	1979	10	1993	31	51.8	1976	233	12	@	.7	30.0	@	2.9	.0
Nov	58.5	31.4	45.0	90	1980	9	53.1	1999	5+	1976	29	37.7	1972	601	0	.0	@	22.6	.9	16.5	.0
Dec	49.8	23.2	36.5	85	1908	5	41.6	1994	-7+	1990	23	24.2	1983	884	0	.0	.0	17.2	3.8	27.7	.8
Ann	69.9	42.4	56.2	108+	Jun 1980	28	82.6	Jul 1980	-16	Feb 1905	13	24.2	Dec 1983	4446	1239	4.9	60.7	310.8	13.3	122.1	1.8

\+ 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: 1904-2001

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

Issue Date: February 2004

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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	.51	.46	1.90	1999	30	2.25	1999	.00+	2000
Feb	.58	.46	2.05	1915	20	2.03	1998	.00+	2000
Mar	1.23	1.20	2.24	1923	11	4.84	1973	.00+	1997
Apr	1.60	.93	2.62	1997	3	11.05	1997	.00	1996
May	3.34	2.68	10.27	1982	27	12.37	1982	.12	1984
Jun	3.33	2.81	5.92	1951	1	8.06	1989	.13	1998
Jul	3.08	2.58	4.70	1920	27	6.71	1981	.09	1983
Aug	3.00	2.44	3.75	1935	1	7.74	1977	.54	1983
Sep	2.37	2.19	4.05	1923	15	7.16	1985	.15	2000
Oct	1.91	1.20	3.78	1914	23	6.37	1998	.00+	1982
Nov	.82	.74	2.50	1933	1	2.57	1971	.00+	1999
Dec	.62	.42	1.94	1959	17	2.59	1991	.00+	1981
Ann	22.39	22.63	10.27	May 1982	27	12.37	May 1982	.00+	Feb 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	2.6	1.5	.3	.1
Feb	3.0	1.9	.3	.0
Mar	3.4	2.4	.9	.4
Apr	4.0	2.8	.9	.4
May	6.3	4.8	2.1	.9
Jun	6.9	5.2	2.4	1.0
Jul	6.1	4.3	2.0	.8
Aug	6.3	4.9	1.9	.9
Sep	5.1	4.0	1.6	.7
Oct	4.6	3.2	1.1	.5
Nov	3.4	2.2	.3	.2
Dec	2.9	1.8	.4	.0
Ann	54.6	39.0	14.2	5.9

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	.00	.13	.23	.35	.49	.65	.88	1.26	1.62
Feb	.00	.00	.00	.12	.24	.37	.53	.73	1.00	1.47	1.93
Mar	.00	.00	.25	.45	.67	.91	1.19	1.55	2.02	2.82	3.60
Apr	.01	.07	.23	.44	.69	.99	1.38	1.89	2.63	3.92	5.24
May	.33	.58	1.03	1.50	2.00	2.57	3.24	4.07	5.22	7.11	8.97
Jun	.61	.90	1.39	1.85	2.31	2.81	3.37	4.06	4.97	6.44	7.85
Jul	.45	.70	1.15	1.57	2.02	2.51	3.07	3.76	4.69	6.20	7.65
Aug	.53	.80	1.24	1.64	2.06	2.51	3.03	3.65	4.48	5.82	7.10
Sep	.23	.40	.73	1.05	1.41	1.82	2.29	2.89	3.70	5.06	6.38
Oct	.00	.09	.36	.64	.96	1.33	1.78	2.34	3.13	4.47	5.81
Nov	.00	.00	.19	.33	.47	.63	.81	1.04	1.33	1.83	2.32
Dec	.00	.00	.08	.19	.31	.44	.59	.78	1.05	1.48	1.91
Ann	15.25	16.61	18.36	19.70	20.89	22.05	23.26	24.59	26.21	28.58	30.63

+ 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: 1904-2001
(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	2.8	.0	#	#
Feb	3.5	1.0	#	#
Mar	1.2	.0	#	0
Apr	.2	.0	#	0
May	.0	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	#	.0	0	0
Oct	.1	.0	#	0
Nov	.4	.0	#	0
Dec	3.7	2.8	#	0
Ann	11.9	3.8	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	8.0	1997	9	12.6	1987	7	1994	31	1	1997
Feb	7.9	1971	22	16.0	1986	12+	1986	10	2	1986
Mar	5.0	1987	24	8.3	1987	3+	1998	17	#+	1998
Apr	2.0	1988	1	2.0	1988	2	1988	1	#+	1992
May	.0	0	0	.0	0	#	1999	25	#	1999
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	#	1984	29	#	1984	0	0	0	0	0
Oct	3.0	1991	31	3.0	1991	3	1991	31	#	1991
Nov	3.0	1992	22	6.7	1972	5	1992	25	1	1992
Dec	10.0	1987	14	18.0	1987	13	1987	15	3	1987
Ann	10.0	Dec 1987	14	18.0	Dec 1987	13	Dec 1987	15	3	Dec 1987

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	1.2	1.0	.6	.2	.0
Feb	1.4	1.0	.4	.1	.0
Mar	.6	.5	.2	@	.0
Apr	.1	.1	.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
Nov	.4	.3	@	.0	.0
Dec	1.4	1.0	.3	.1	@
Ann	5.1	3.9	1.5	.4	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	1.5	.8	.3	.0
Feb	1.4	.8	.5	.2
Mar	.2	@	.0	.0
Apr	.1	.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
Nov	.4	@	.0	.0
Dec	2.8	1.2	.6	.2
Ann	6.4	2.8	1.4	.4

+ 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	5/16	5/10	5/06	5/02	4/29	4/26	4/22	4/18	4/12
32	5/03	4/28	4/25	4/22	4/19	4/16	4/13	4/09	4/04
28	4/18	4/13	4/10	4/08	4/05	4/03	3/31	3/28	3/24
24	4/12	4/06	4/02	3/29	3/26	3/22	3/19	3/14	3/09
20	4/07	3/30	3/24	3/19	3/14	3/10	3/05	2/27	2/19
16	3/28	3/19	3/13	3/07	3/02	2/25	2/20	2/14	2/05

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	9/28	10/03	10/06	10/09	10/12	10/14	10/17	10/21	10/25
32	10/04	10/10	10/14	10/17	10/20	10/23	10/27	10/30	11/05
28	10/17	10/23	10/27	10/30	11/03	11/06	11/09	11/13	11/19
24	10/31	11/05	11/09	11/12	11/14	11/17	11/20	11/23	11/28
20	11/05	11/10	11/14	11/18	11/21	11/24	11/27	12/01	12/07
16	11/09	11/18	11/24	11/30	12/05	12/11	12/16	12/23	1/01

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	188	180	175	170	165	160	155	150	142
32	204	197	192	188	184	180	175	170	163
28	230	223	218	214	210	207	202	198	191
24	255	248	242	237	233	228	224	218	211
20	279	269	263	257	251	245	239	233	223
16	308	297	290	283	277	271	265	257	247

***** 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)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	935	720	568	320	118	17	0	2	48	233	601	884	4446
60	780	580	415	200	51	3	0	0	13	117	456	729	3344
57	687	501	329	143	26	0	0	0	5	68	373	636	2768
55	625	448	274	110	16	0	0	0	2	45	321	576	2417
50	479	322	157	48	3	0	0	0	0	12	206	431	1658
32	89	43	3	0	0	0	0	0	0	0	13	67	215

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	177	247	458	684	987	1226	1407	1359	1097	801	403	207	9053
55	0	8	16	104	290	536	694	646	409	133	20	2	2858
57	0	5	9	77	238	476	632	584	352	94	13	0	2480
60	0	0	2	45	170	389	539	491	270	50	5	0	1961
65	0	0	0	15	82	252	384	339	155	12	0	0	1239
70	0	0	0	3	29	141	237	197	73	2	0	0	682

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	67	130	267	471	762	1006	1176	1131	874	575	227	83	67	197	464	935	1697	2703	3879	5010	5884	6459	6686	6769
45	25	67	157	335	608	856	1021	976	725	426	135	35	25	92	249	584	1192	2048	3069	4045	4770	5196	5331	5366
50	0	29	80	215	456	706	866	821	578	288	62	6	0	29	109	324	780	1486	2352	3173	3751	4039	4101	4107
55	0	4	32	118	311	556	711	666	435	171	25	0	0	4	36	154	465	1021	1732	2398	2833	3004	3029	3029
60	0	0	9	54	184	410	556	511	301	81	4	0	0	0	9	63	247	657	1213	1724	2025	2106	2110	2110
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	87	129	216	323	476	656	776	749	562	371	175	95	87	216	432	755	1231	1887	2663	3412	3974	4345	4520	4615

(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