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: CANYON DAM, TX **COOP ID: 411429**

Climate Division: TX 7 **NWS Call Sign:** **Elevation: 1,000 Feet** **Lat: 29˚52N** **Lon: 98˚12W**

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	60.4	37.6	49.0	88	1972	24	55.7	1998	6	1962	12	39.8	1979	507	4	.0	.0	24.3	.4	9.0	.0
Feb	64.8	41.2	53.0	99	1996	22	60.2	1999	11	1981	12	43.0	1978	347	11	.0	.2	24.5	.4	4.5	.0
Mar	72.3	48.3	60.3	98	1971	29	65.3	1974	16	1980	2	54.9	1996	175	29	.0	.3	30.0	.0	1.3	.0
Apr	78.8	55.3	67.1	100+	1982	14	72.3	1972	33	1987	4	62.4	1997	49	109	@	1.4	30.0	.0	.0	.0
May	84.9	63.3	74.1	103+	1998	8	79.8	1998	44	1992	7	69.5	1976	9	290	@	6.4	31.0	.0	.0	.0
Jun	90.8	69.2	80.0	105+	1998	16	85.4	1998	52+	1964	2	77.2	1983	0	450	.7	17.5	30.0	.0	.0	.0
Jul	94.7	71.4	83.1	105+	1995	29	86.5	1998	61	1967	17	78.5	1976	0	559	3.5	27.0	31.0	.0	.0	.0
Aug	95.0	71.0	83.0	105+	1986	20	85.8	1999	56	1961	24	78.5	1971	0	558	2.8	27.4	31.0	.0	.0	.0
Sep	89.5	66.5	78.0	109	2000	6	82.0	1977	46	1967	29	70.2	1974	0	390	.6	17.1	30.0	.0	.0	.0
Oct	81.0	57.5	69.3	98	1999	15	72.7	1979	28	1993	31	60.2	1976	30	162	.0	3.5	30.8	.0	@	.0
Nov	70.1	47.9	59.0	93	1973	25	65.3	1973	22	1976	29	51.0	1976	225	45	.0	@	28.7	.0	1.7	.0
Dec	62.3	40.3	51.3	87	1973	14	58.6	1984	2+	1989	24	41.1	1989	435	10	.0	.0	26.5	.3	6.0	.0
Ann	78.7	55.8	67.3	109	Sep 2000	6	86.5	Jul 1998	2+	Dec 1989	24	39.8	Jan 1979	1777	2617	7.6	100.8	347.8	1.1	22.5	.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: 1961-2001

(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	2.01	1.61	3.48	1968	20	5.55	1991	.06	1996
Feb	1.97	1.69	2.59	1998	1	6.41	1998	.02	1974
Mar	2.26	1.91	3.33	1979	20	6.65	1979	.19	1971
Apr	3.00	2.28	4.76	1991	5	9.46	1976	.12	1984
May	4.60	4.25	5.35	1972	12	11.89	1972	.63	1998
Jun	4.43	3.76	4.26	1973	12	12.09	1997	.55	1974
Jul	2.22	1.38	3.54+	1985	4	9.34	1979	.00+	1993
Aug	2.69	2.02	5.07	1978	1	9.31	1974	.00	1985
Sep	3.63	2.81	5.48	1973	27	8.72	1973	.09	1999
Oct	4.13	2.79	19.00	1998	18	24.29	1998	.27	1978
Nov	3.25	3.07	4.71	2000	3	11.01	2000	.04	1999
Dec	2.27	1.75	3.15	1991	19	13.86	1991	.21+	1989
Ann	36.46	35.71	19.00	Oct 1998	18	24.29	Oct 1998	.00+	Jul 1993

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	8.9	4.7	1.1	.3
Feb	7.2	3.8	1.2	.4
Mar	8.9	4.2	1.3	.6
Apr	8.3	4.4	1.8	.8
May	10.1	6.0	2.9	1.3
Jun	7.4	5.1	2.6	1.4
Jul	5.7	3.3	1.2	.6
Aug	5.9	4.0	1.8	.8
Sep	8.1	5.4	2.1	.9
Oct	7.8	4.6	2.2	.9
Nov	8.7	4.5	1.8	1.0
Dec	8.6	4.2	1.4	.6
Ann	95.6	54.2	21.4	9.6

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	.23	.38	.66	.94	1.24	1.57	1.97	2.45	3.12	4.21	5.28
Feb	.12	.23	.47	.74	1.04	1.40	1.83	2.38	3.15	4.45	5.75
Mar	.39	.58	.91	1.22	1.54	1.89	2.28	2.76	3.40	4.43	5.41
Apr	.32	.54	.96	1.38	1.83	2.33	2.93	3.67	4.68	6.35	7.98
May	1.13	1.56	2.23	2.83	3.42	4.04	4.74	5.57	6.66	8.37	9.99
Jun	.88	1.28	1.93	2.52	3.13	3.77	4.51	5.39	6.56	8.43	10.21
Jul	.00	.05	.27	.56	.91	1.35	1.91	2.64	3.70	5.54	7.42
Aug	.07	.25	.61	.99	1.42	1.92	2.52	3.29	4.35	6.14	7.92
Sep	.35	.61	1.10	1.60	2.15	2.77	3.51	4.43	5.69	7.78	9.83
Oct	.23	.46	.95	1.51	2.14	2.89	3.80	4.98	6.63	9.44	12.25
Nov	.19	.38	.78	1.22	1.72	2.30	3.01	3.92	5.20	7.36	9.52
Dec	.16	.30	.59	.90	1.25	1.65	2.13	2.75	3.61	5.05	6.49
Ann	21.77	24.42	27.92	30.65	33.12	35.55	38.09	40.95	44.46	49.65	54.22

\+ 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: 1961-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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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	1.0	.0	#	0
Feb	#	.0	0	0
Mar	#	.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	1.0	.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	8.5	1985	13	11.5	1985	#	1973	10	#	1973
Feb	#	1994	1	#+	1994	0	0	0	0	0
Mar	#	1989	6	#	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	.0	0	0	.0	0	0	0	0	0	0
Dec	.0	0	0	.0	0	0	0	0	0	0
Ann	8.5	Jan 1985	13	11.5	Jan 1985	#	Jan 1973	10	#	Jan 1973

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.2	.2	.2	.1	.0
Feb	.0	.0	.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	.2	.2	.2	.1	.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	4/02	3/28	3/24	3/20	3/17	3/14	3/11	3/07	3/01
32	3/21	3/12	3/06	3/01	2/24	2/19	2/14	2/07	1/30
28	3/10	2/28	2/21	2/15	2/09	2/03	1/27	1/19	1/07
24	2/25	2/15	2/08	2/01	1/26	1/20	1/13	1/04	12/19
20	2/13	2/03	1/25	1/17	1/07	12/21	0/00	0/00	0/00
16	2/01	1/12	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	10/31	11/07	11/11	11/15	11/19	11/23	11/27	12/02	12/08
32	11/11	11/18	11/23	11/27	12/01	12/05	12/09	12/14	12/21
28	11/16	11/25	12/01	12/07	12/12	12/17	12/23	12/30	1/10
24	12/03	12/13	12/21	12/27	1/03	1/09	1/17	1/28	0/00
20	12/20	12/31	1/08	1/17	1/26	2/12	0/00	0/00	0/00
16	1/04	1/27	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	272	263	257	251	246	241	236	229	221
32	310	300	292	286	280	274	267	260	249
28	>365	335	322	313	305	298	290	281	268
24	>365	>365	>365	346	336	329	322	314	305
20	>365	>365	>365	>365	>365	>365	354	341	328
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)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	507	347	175	49	9	0	0	0	0	30	225	435	1777
60	368	229	82	11	1	0	0	0	0	7	134	298	1130
57	294	171	45	3	0	0	0	0	0	2	91	227	833
55	250	139	28	1	0	0	0	0	0	1	68	187	674
50	160	72	7	0	0	0	0	0	0	0	28	104	371
32	9	0	0	0	0	0	0	0	0	0	0	1	10

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	536	589	878	1051	1305	1440	1582	1581	1380	1154	810	599	12905
55	63	83	193	361	592	750	869	868	690	443	188	72	5172
57	45	60	148	303	530	690	807	806	630	382	151	50	4602
60	27	34	92	221	437	600	714	713	540	293	104	28	3803
65	4	11	29	109	290	450	559	558	390	162	45	10	2617
70	0	0	6	39	164	300	404	403	248	65	16	1	1646

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	317	402	642	817	1063	1205	1340	1344	1151	916	584	378	317	719	1361	2178	3241	4446	5786	7130	8281	9197	9781	10159
45	204	280	492	667	908	1055	1185	1189	1001	761	441	252	204	484	976	1643	2551	3606	4791	5980	6981	7742	8183	8435
50	116	175	348	518	753	905	1030	1034	851	608	305	149	116	291	639	1157	1910	2815	3845	4879	5730	6338	6643	6792
55	54	93	218	373	598	755	875	879	701	458	194	73	54	147	365	738	1336	2091	2966	3845	4546	5004	5198	5271
60	18	39	114	238	443	605	720	724	552	317	106	29	18	57	171	409	852	1457	2177	2901	3453	3770	3876	3905
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	199	247	397	530	728	834	902	897	782	608	356	229	199	446	843	1373	2101	2935	3837	4734	5516	6124	6480	6709

(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