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: VERNON, TX **COOP ID: 419346**

Climate Division: TX 2 **NWS Call Sign:** **Elevation: 1,227 Feet** **Lat: 34˚09N** **Lon: 99˚20W**

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	52.1	25.7	38.9	88+	1950	25	44.6	1990	-7+	1947	5	28.7	1979	809	0	.0	.0	19.7	2.7	23.5	.1
Feb	58.3	30.7	44.5	93+	1996	23	52.4	1976	-1	1951	1	32.6	1978	574	0	.0	.1	21.0	1.6	14.6	@
Mar	67.0	38.8	52.9	103	1971	27	59.1	1974	4	1948	11	48.6	1996	376	2	.1	.9	28.5	.1	6.2	.0
Apr	75.4	48.0	61.7	102	1972	12	67.4	1972	21	1957	13	56.3	1997	153	53	.1	2.5	29.6	.0	.9	.0
May	83.9	58.7	71.3	111+	2000	25	78.2	1996	36	1984	8	66.9	1976	30	224	1.2	9.0	31.0	.0	.0	.0
Jun	92.0	67.5	79.8	118	1994	28	85.4	1998	42	1919	3	75.3	1983	1	444	4.0	20.5	30.0	.0	.0	.0
Jul	97.2	71.8	84.5	114+	1944	27	90.3	1980	55	1952	9	80.6	1975	0	606	12.2	28.4	31.0	.0	.0	.0
Aug	95.6	70.4	83.0	119	1943	3	88.4	2000	54	1992	28	77.4	1992	0	558	10.8	26.3	31.0	.0	.0	.0
Sep	87.1	62.6	74.9	110	1947	1	82.1	1998	35	1984	30	67.8	1974	11	307	2.5	14.9	30.0	.0	.0	.0
Oct	77.2	50.4	63.8	105	1977	1	68.3	1979	21	1993	31	55.6	1976	106	69	.2	3.5	30.7	.0	.6	.0
Nov	63.6	38.0	50.8	91	1945	6	57.8	1999	12	1959	17	44.9	1972	430	3	.0	@	26.3	.1	8.3	.0
Dec	54.3	28.3	41.3	89+	1955	24	44.8+	1999	-9	1989	23	28.4	1983	735	0	.0	.0	22.0	1.7	20.7	.1
Ann	75.3	49.2	62.3	119	Aug 1943	3	90.3	Jul 1980	-9	Dec 1989	23	28.4	Dec 1983	3225	2266	31.1	106.1	330.8	6.2	74.8	.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: 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	1.09	.85	2.21	1939	8	3.66	1999	.00+	1986
Feb	1.34	1.09	2.80	1997	20	4.54	1997	.00+	1996
Mar	1.98	1.94	3.05	2000	23	4.36	1973	.00	1997
Apr	2.36	2.34	4.05	1957	20	5.86	1977	.00	1987
May	4.11	3.45	5.42	1952	17	9.29	1987	.22	1988
Jun	3.82	2.70	8.50	1995	10	17.22	1995	.62	1984
Jul	1.94	1.15	5.33	1991	27	8.41	1975	.00	1980
Aug	3.07	2.79	14.82	1995	2	17.60	1995	.00+	2000
Sep	3.54	2.81	5.40	1997	23	13.25	1986	.00+	2000
Oct	2.70	1.81	4.53	1983	20	10.98	1983	.00+	1992
Nov	1.48	1.25	2.40	1984	17	4.74	2000	.00	1989
Dec	1.12	.66	2.18	1947	4	4.29	1991	.00+	1996
Ann	28.55	27.41	14.82	Aug 1995	2	17.60	Aug 1995	.00+	Sep 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.4	2.2	.9	.2
Feb	3.6	2.7	.8	.2
Mar	4.6	3.4	1.5	.5
Apr	5.4	4.0	1.7	.7
May	6.7	5.3	2.5	1.5
Jun	5.9	4.6	2.5	1.1
Jul	4.2	3.1	1.1	.6
Aug	5.6	4.2	1.6	.9
Sep	5.3	4.3	2.3	1.2
Oct	5.4	3.9	1.6	.9
Nov	4.0	2.8	.9	.5
Dec	3.4	2.4	.6	.3
Ann	57.5	42.9	18.0	8.6

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	.00	.00	.09	.25	.44	.67	.95	1.32	1.84	2.73	3.63
Feb	.00	.03	.17	.35	.57	.83	1.17	1.60	2.23	3.32	4.42
Mar	.21	.44	.77	1.06	1.35	1.67	2.02	2.45	3.02	3.93	4.81
Apr	.20	.46	.85	1.19	1.55	1.93	2.37	2.91	3.63	4.79	5.90
May	.62	.97	1.56	2.13	2.72	3.37	4.11	5.02	6.25	8.24	10.15
Jun	.65	.98	1.54	2.06	2.60	3.19	3.85	4.67	5.75	7.50	9.17
Jul	.07	.22	.50	.78	1.09	1.44	1.85	2.38	3.10	4.30	5.49
Aug	.00	.27	.79	1.28	1.79	2.35	3.01	3.81	4.92	6.76	8.54
Sep	.00	.28	.86	1.41	2.00	2.66	3.44	4.39	5.70	7.89	10.03
Oct	.00	.08	.39	.76	1.20	1.74	2.40	3.25	4.47	6.58	8.71
Nov	.07	.21	.43	.65	.88	1.14	1.44	1.82	2.33	3.18	4.01
Dec	.00	.00	.15	.31	.51	.73	1.01	1.36	1.86	2.71	3.57
Ann	15.78	18.02	21.01	23.37	25.52	27.64	29.89	32.42	35.55	40.21	44.35

\+ 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	2.3	.0	#	0
Feb	.9	.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
Nov	.2	.0	#	0
Dec	.0	.0	#	0
Ann	3.4	.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	6.0	1977	9	9.7	1992	6	1977	9	#+	1996
Feb	5.5	1978	9	12.5	1978	5	1978	9	1	1978
Mar	1.0	1998	8	1.0	1998	1	1998	8	#+	1999
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	3.0	1980	17	4.0	1980	#	1997	15	#	1997
Dec	.5	1990	21	.9	1990	1	1990	21	#+	1997
Ann	6.0	Jan 1977	9	12.5	Feb 1978	6	Jan 1977	9	1	Feb 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.4	.4	.3	.1	.0
Feb	.4	.3	.1	.1	.0
Mar	@	@	.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	.1	.1	@	.0	.0
Dec	.1	.0	.0	.0	.0
Ann	1.0	.8	.4	.2	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.4	.3	.1	.0
Feb	.0	.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	.1	.0	.0	.0
Ann	.5	.3	.1	.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	4/23	4/18	4/14	4/11	4/08	4/06	4/02	3/30	3/25
32	4/12	4/08	4/04	4/02	3/30	3/28	3/25	3/22	3/17
28	4/06	3/30	3/25	3/21	3/17	3/13	3/09	3/04	2/26
24	3/25	3/17	3/11	3/06	3/01	2/24	2/19	2/13	2/04
20	3/09	2/28	2/23	2/18	2/13	2/08	2/03	1/28	1/20
16	2/26	2/16	2/09	2/03	1/28	1/21	1/14	1/02	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	10/09	10/15	10/20	10/24	10/27	10/31	11/04	11/09	11/15
32	10/23	10/29	11/02	11/06	11/09	11/12	11/16	11/20	11/26
28	10/27	11/03	11/07	11/12	11/15	11/19	11/24	11/28	12/05
24	11/09	11/16	11/21	11/25	11/29	12/02	12/06	12/11	12/18
20	11/09	11/20	11/28	12/05	12/12	12/18	12/25	1/02	1/13
16	11/30	12/08	12/15	12/20	12/25	12/31	1/07	1/17	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	229	219	213	207	201	196	190	183	173
32	244	237	231	227	223	219	215	210	203
28	270	261	254	248	242	237	231	224	215
24	304	293	285	278	272	266	259	251	240
20	332	316	308	302	296	291	285	278	269
16	>365	>365	>365	350	334	324	314	304	291

***** 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	809	574	376	153	30	1	0	0	11	106	430	735	3225
60	655	445	235	72	7	0	0	0	2	40	294	582	2332
57	564	369	164	39	3	0	0	0	0	19	222	493	1873
55	507	321	124	24	1	0	0	0	0	10	180	436	1603
50	365	217	53	5	0	0	0	0	0	2	97	300	1039
32	46	20	0	0	0	0	0	0	0	0	2	27	95

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	259	370	649	890	1218	1433	1629	1581	1285	985	565	314	11178
55	8	27	60	224	506	743	916	868	595	282	54	11	4294
57	3	19	38	179	445	683	854	806	535	229	36	6	3833
60	1	11	16	122	357	593	761	713	447	158	18	1	3198
65	0	0	2	53	224	444	606	558	307	69	3	0	2266
70	0	0	0	17	120	301	451	405	186	22	0	0	1502

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	137	248	469	686	999	1210	1396	1351	1067	769	371	171	137	385	854	1540	2539	3749	5145	6496	7563	8332	8703	8874
45	65	150	331	536	844	1060	1241	1196	917	616	247	85	65	215	546	1082	1926	2986	4227	5423	6340	6956	7203	7288
50	25	81	212	395	689	910	1086	1041	768	465	147	37	25	106	318	713	1402	2312	3398	4439	5207	5672	5819	5856
55	3	34	117	260	535	760	931	886	619	328	78	12	3	37	154	414	949	1709	2640	3526	4145	4473	4551	4563
60	0	10	51	153	383	610	776	731	473	200	29	0	0	10	61	214	597	1207	1983	2714	3187	3387	3416	3416
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	125	190	316	439	650	799	902	878	699	493	250	138	125	315	631	1070	1720	2519	3421	4299	4998	5491	5741	5879

(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