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: VAN HORN, TX **COOP ID: 419295**

Climate Division: TX 5 **NWS Call Sign:** **Elevation: 3,955 Feet** **Lat: 31˚03N** **Lon: 104˚50W**

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	57.6	27.8	42.7	80	1974	21	46.5	1993	-7	1962	11	35.6	1992	692	0	.0	.0	25.3	.8	22.1	.0
Feb	63.1	31.4	47.3	87+	1972	21	53.4	1995	-3	1985	2	42.6	1973	498	0	.0	.0	26.0	.4	14.9	@
Mar	69.9	37.5	53.7	94	1946	31	59.3	1972	9	1948	11	48.6	1987	354	3	.0	.1	30.4	.1	6.5	.0
Apr	77.4	44.1	60.8	100	1954	10	66.7	1989	24	1973	9	52.3	1973	177	49	.0	2.0	29.7	.0	1.5	.0
May	85.4	53.8	69.6	105+	1951	29	77.8	1996	33	1967	2	63.9	1992	47	189	.5	11.4	31.0	.0	.0	.0
Jun	92.5	62.4	77.5	112	1969	25	85.0	1990	45	1964	1	73.0	1979	5	378	7.5	23.9	30.0	.0	.0	.0
Jul	91.7	64.8	78.3	108+	1989	3	83.2	1980	53	1946	10	73.2	1976	0	411	4.3	22.7	31.0	.0	.0	.0
Aug	89.6	63.4	76.5	108+	1980	4	82.0	1994	46	1966	22	72.0	1971	2	358	1.5	20.6	31.0	.0	.0	.0
Sep	84.5	57.1	70.8	104	1948	5	76.5	1977	33	1970	27	64.1	1991	28	202	.1	11.2	29.9	.0	.0	.0
Oct	76.9	46.7	61.8	98	1977	1	65.8	1995	23	1993	30	55.1	1976	143	44	.0	2.1	30.5	.0	1.1	.0
Nov	66.1	35.4	50.8	86+	1988	7	56.2	1983	10+	1948	30	44.0	2000	434	6	.0	.0	28.2	.1	9.5	.0
Dec	58.0	28.4	43.2	82+	1954	4	48.8	1981	0	1953	24	38.4	1997	677	0	.0	.0	25.5	.4	21.2	.0
Ann	76.1	46.1	61.1	112	Jun 1969	25	85.0	Jun 1990	-7	Jan 1962	11	35.6	Jan 1992	3057	1640	13.9	94.0	348.5	1.8	76.8	@

\+ 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: 1939-2001

(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	.39	.20	2.00	1974	24	1.42	1992	.00+	2000
Feb	.33	.13	.92	1997	20	1.32	1992	.00+	1999
Mar	.16	.11	.94	1945	31	.85	1981	.00+	2000
Apr	.24	.13	1.05	1941	28	1.64	1981	.00+	2000
May	.71	.62	1.51	1959	8	2.63	1992	.00+	2000
Jun	1.25	1.09	3.01	1996	28	5.62	1996	.00+	1990
Jul	2.11	1.72	2.22	1990	22	9.02	1990	.17	1980
Aug	2.30	2.07	7.00	1966	22	5.13	1990	.00	1983
Sep	2.23	1.71	3.46	1978	25	9.86	1978	.00	2000
Oct	1.27	.83	2.01	1960	17	4.34	1971	.00+	1991
Nov	.46	.41	2.00	1969	29	1.65	1986	.00+	1999
Dec	.53	.34	1.30	1984	4	2.47	1991	.00+	1996
Ann	11.98	10.90	7.00	Aug 1966	22	9.86	Sep 1978	.00+	Sep 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.6	1.6	.1	.1
Feb	2.2	1.0	.2	.0
Mar	1.6	.6	@	.0
Apr	1.7	.7	@	.0
May	4.1	1.5	.4	.1
Jun	4.9	2.2	.6	.2
Jul	6.6	3.4	1.1	.3
Aug	8.9	4.9	1.2	.3
Sep	6.4	4.0	1.5	.6
Oct	4.5	2.6	.6	.3
Nov	2.7	1.3	.1	@
Dec	2.8	1.5	.3	@
Ann	50.0	25.3	6.1	1.9

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	.02	.07	.13	.19	.27	.36	.47	.63	.91	1.19
Feb	.00	.00	.00	.02	.08	.15	.25	.38	.58	.93	1.28
Mar	.00	.00	.00	.03	.08	.12	.16	.21	.28	.38	.48
Apr	.00	.00	.00	.00	.04	.09	.17	.27	.42	.68	.95
May	.00	.00	.18	.30	.42	.56	.71	.90	1.15	1.56	1.96
Jun	.00	.17	.41	.61	.81	1.03	1.28	1.57	1.96	2.61	3.22
Jul	.34	.52	.83	1.12	1.42	1.74	2.12	2.58	3.19	4.18	5.13
Aug	.50	.83	1.21	1.52	1.81	2.11	2.43	2.81	3.30	4.07	4.77
Sep	.10	.28	.61	.94	1.29	1.69	2.16	2.74	3.55	4.88	6.19
Oct	.00	.04	.19	.37	.58	.83	1.14	1.53	2.10	3.08	4.07
Nov	.00	.00	.00	.10	.21	.32	.45	.60	.80	1.14	1.45
Dec	.00	.00	.05	.12	.21	.31	.45	.63	.89	1.34	1.80
Ann	5.99	7.00	8.37	9.47	10.48	11.49	12.56	13.78	15.31	17.59	19.64

\+ 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: 1939-2001
(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	1.2	.0	#	0
Feb	.2	.0	0	0
Mar	.1	.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	.1	.0	0	0
Dec	.5	.0	#	0
Ann	2.1	.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	4.0	1981	18	5.0	1991	5	1985	13	#+	1997
Feb	3.0	1980	9	3.0	1980	0	0	0	0	0
Mar	1.0	1989	5	1.0	1989	#	1987	30	#	1987
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	.2	1993	30	.2	1993	0	0	0	0	0
Nov	1.5	1992	4	1.5	1992	0	0	0	0	0
Dec	5.0	1998	11	5.0	1998	5	1998	11	#+	1998
Ann	5.0	Dec 1998	11	5.0+	Dec 1998	5+	Dec 1998	11	#+	Dec 1998

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.7	.6	.2	.0	.0
Feb	.1	.1	.1	.0	.0
Mar	.1	.1	.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	.1	.0	.0	.0	.0
Nov	.1	.1	.0	.0	.0
Dec	.3	.2	.1	.1	.0
Ann	1.4	1.1	.4	.1	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.2	.1	.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	.1	.1	.1	.0
Ann	.3	.2	.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	4/27	4/23	4/20	4/18	4/15	4/13	4/10	4/07	4/03
32	4/18	4/13	4/10	4/06	4/04	4/01	3/29	3/25	3/20
28	4/11	4/04	3/30	3/26	3/23	3/19	3/15	3/10	3/03
24	3/28	3/19	3/13	3/08	3/03	2/26	2/20	2/14	2/05
20	3/14	3/04	2/24	2/18	2/12	2/06	1/30	1/23	1/12
16	2/28	2/17	2/09	2/02	1/26	1/19	1/10	12/28	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	10/15	10/20	10/24	10/27	10/30	11/02	11/06	11/10	11/15
32	10/19	10/25	10/29	11/02	11/05	11/09	11/12	11/17	11/22
28	10/27	11/02	11/07	11/11	11/14	11/18	11/22	11/26	12/02
24	11/10	11/17	11/21	11/25	11/29	12/03	12/07	12/12	12/18
20	11/17	11/24	11/29	12/04	12/08	12/12	12/16	12/21	12/28
16	12/02	12/10	12/16	12/21	12/27	1/01	1/08	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	215	209	205	201	197	194	190	186	179
32	238	230	224	219	215	210	206	200	192
28	265	255	248	242	236	230	224	217	207
24	304	293	284	277	271	264	257	249	237
20	333	319	311	303	297	290	283	275	264
16	>365	>365	>365	356	340	329	319	309	296

***** 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	692	498	354	177	47	5	0	2	28	143	434	677	3057
60	537	359	215	91	15	0	0	0	7	61	300	523	2108
57	444	280	146	53	6	0	0	0	2	32	229	432	1624
55	383	230	107	35	3	0	0	0	0	19	188	373	1338
50	240	124	38	10	0	0	0	0	0	4	104	235	755
32	5	0	0	0	0	0	0	0	0	0	1	6	12

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	336	426	673	862	1165	1363	1434	1378	1164	924	563	352	10640
55	1	12	67	207	455	673	721	665	474	230	60	5	3570
57	0	6	43	166	396	613	659	603	415	181	41	2	3125
60	0	1	19	113	312	523	566	510	330	117	22	1	2514
65	0	0	3	49	189	378	411	358	202	44	6	0	1640
70	0	0	0	16	98	243	262	216	106	10	0	0	951

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	173	263	470	674	968	1167	1218	1177	974	727	365	185	173	436	906	1580	2548	3715	4933	6110	7084	7811	8176	8361
45	76	144	326	524	813	1017	1063	1022	824	574	237	91	76	220	546	1070	1883	2900	3963	4985	5809	6383	6620	6711
50	25	69	196	381	658	867	908	867	675	423	128	31	25	94	290	671	1329	2196	3104	3971	4646	5069	5197	5228
55	0	23	96	246	503	717	753	712	527	284	53	2	0	23	119	365	868	1585	2338	3050	3577	3861	3914	3916
60	0	1	35	133	353	567	598	557	381	156	13	0	0	1	36	169	522	1089	1687	2244	2625	2781	2794	2794
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	166	220	342	453	617	735	789	776	631	468	270	172	166	386	728	1181	1798	2533	3322	4098	4729	5197	5467	5639

(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