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: HICO, TX **COOP ID: 414137**

Climate Division: TX 5 **NWS Call Sign:** **Elevation: 1,025 Feet** **Lat: 31˚59N** **Lon: 98˚02W**

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	56.9	30.1	43.5	91+	1969	8	50.0	1990	-11	1949	31	33.6	1979	667	0	.0	.0	23.1	1.2	16.5	@
Feb	61.7	34.1	47.9	98	1996	22	56.1	1976	-3	1951	2	36.6	1978	482	4	.0	.1	23.4	.8	10.3	@
Mar	68.7	41.6	55.2	99	1974	31	61.0	1974	11	1948	11	50.3	1987	312	6	.0	.3	29.7	@	4.2	.0
Apr	76.3	50.3	63.3	102	1925	18	66.6	1972	25	1973	10	57.5	1973	104	53	.0	1.7	30.0	.0	.6	.0
May	82.2	59.6	70.9	104	1967	11	77.3	1996	38+	1954	4	66.5	1976	23	207	.2	7.3	31.0	.0	.0	.0
Jun	89.1	67.8	78.5	111	1980	27	83.5	1998	41	1919	3	73.8	1973	0	403	1.2	20.0	30.0	.0	.0	.0
Jul	93.8	70.4	82.1	111+	1978	16	88.5	1978	54	1940	5	77.8	1976	0	531	7.4	28.3	31.0	.0	.0	.0
Aug	93.9	69.6	81.8	113	1936	11	86.9	2000	50	1992	28	75.6	1971	0	518	7.8	26.9	31.0	.0	.0	.0
Sep	87.3	62.8	75.1	109+	1953	27	80.8	1977	33	1942	27	67.7	1974	9	310	.9	15.8	30.0	.0	.0	.0
Oct	78.0	52.2	65.1	106	1951	3	70.2	1979	19	1917	30	57.4	1976	78	82	.0	2.8	30.8	.0	.3	.0
Nov	66.3	40.8	53.6	92	1931	5	59.5	1999	9	1950	11	45.8	1972	354	11	.0	.1	27.9	.0	5.6	.0
Dec	58.4	32.3	45.4	90	1951	30	50.2	1984	-7	1989	23	33.5	1983	610	0	.0	.0	24.6	.7	13.7	@
Ann	76.1	51.0	63.5	113	Aug 1936	11	88.5	Jul 1978	-11	Jan 1949	31	33.5	Dec 1983	2639	2125	17.5	103.3	342.5	2.7	51.2	@

\+ 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: 1910-2001

(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	1.68	1.41	3.30	1938	23	3.75	1973	.00	1986
Feb	2.29	2.00	4.63	1948	25	10.07	1997	.00	1999
Mar	2.67	2.42	4.80	1989	27	6.44	1977	.03	1972
Apr	2.99	2.59	6.20	1977	30	11.36	1977	.46	1987
May	4.92	4.56	6.90	1988	31	12.15	1987	1.49	1977
Jun	3.42	2.92	4.00	1995	10	9.66	1989	.12	1971
Jul	2.14	1.54	5.10	1915	4	7.21	1995	.00+	1997
Aug	2.40	1.91	3.60	1912	6	8.02	1996	.00	1973
Sep	3.05	2.64	5.70	1919	22	9.57	1986	.43	1992
Oct	3.51	3.49	4.75	1969	5	8.88	1991	.21	1995
Nov	2.16	1.74	3.80	1918	8	5.51	1994	.38	1999
Dec	2.08	1.52	5.47	1991	20	11.06	1991	.27	1973
Ann	33.31	32.06	6.90	May 1988	31	12.15	May 1987	.00+	Feb 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.5	3.7	1.1	.4
Feb	5.7	3.8	1.4	.6
Mar	6.6	4.2	1.7	.7
Apr	6.1	4.0	2.0	.9
May	8.3	6.4	3.1	1.6
Jun	6.6	5.1	2.3	1.3
Jul	4.7	3.0	1.4	.5
Aug	5.0	3.4	1.6	.8
Sep	6.0	4.4	1.9	.9
Oct	6.6	5.0	2.3	1.2
Nov	6.0	4.0	1.6	.6
Dec	5.6	3.8	1.4	.4
Ann	73.7	50.8	21.8	9.9

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	.13	.31	.58	.83	1.09	1.36	1.68	2.07	2.59	3.44	4.26
Feb	.16	.40	.76	1.10	1.45	1.84	2.28	2.83	3.56	4.76	5.92
Mar	.26	.45	.81	1.19	1.59	2.05	2.59	3.26	4.19	5.73	7.23
Apr	.49	.75	1.18	1.59	2.02	2.48	3.00	3.65	4.51	5.90	7.23
May	1.36	1.83	2.54	3.15	3.76	4.39	5.10	5.93	7.00	8.70	10.28
Jun	.41	.68	1.16	1.64	2.15	2.71	3.37	4.18	5.28	7.10	8.85
Jul	.00	.12	.43	.75	1.10	1.52	2.01	2.63	3.50	4.97	6.42
Aug	.09	.27	.61	.96	1.34	1.77	2.29	2.94	3.83	5.33	6.80
Sep	.50	.76	1.21	1.63	2.06	2.53	3.07	3.73	4.61	6.03	7.39
Oct	.42	.69	1.18	1.67	2.19	2.77	3.45	4.28	5.42	7.29	9.11
Nov	.50	.70	1.02	1.30	1.58	1.88	2.22	2.62	3.14	3.97	4.75
Dec	.21	.36	.64	.93	1.24	1.60	2.01	2.53	3.24	4.43	5.58
Ann	22.21	24.31	27.02	29.10	30.95	32.76	34.64	36.72	39.27	42.98	46.22

\+ 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: 1910-2001
(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	.5	.0	#	0
Feb	.5	.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	.2	.0	#	0
Dec	.3	.0	#	0
Ann	1.5	.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	1982	14	6.3	1973	6	1982	14	#+	1985
Feb	2.0	1973	17	2.0+	1979	2	1980	9	#+	1985
Mar	.1	1978	4	.1	1978	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	5.0	1976	13	5.0	1976	5	1976	13	#	1976
Dec	4.0	1983	15	4.0	1983	4	2000	27	#+	2000
Ann	6.0	Jan 1982	14	6.3	Jan 1973	6	Jan 1982	14	#+	Dec 2000

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.6	.3	.1	.1	.0
Feb	.6	.3	.0	.0	.0
Mar	@	.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	.1	.1	.1	.1	.0
Dec	.3	.1	.1	.0	.0
Ann	1.6	.8	.3	.2	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.3	@	@	.0
Feb	.4	.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	.1	.1	@	.0
Dec	.1	@	.0	.0
Ann	.9	.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	4/20	4/16	4/12	4/09	4/06	4/04	4/01	3/28	3/23
32	4/15	4/08	4/03	3/29	3/25	3/21	3/17	3/12	3/05
28	4/04	3/26	3/20	3/14	3/09	3/04	2/27	2/21	2/12
24	3/12	3/04	2/27	2/22	2/18	2/14	2/10	2/04	1/28
20	3/03	2/22	2/16	2/10	2/05	1/31	1/26	1/19	1/08
16	2/22	2/12	2/04	1/28	1/22	1/14	1/04	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	10/18	10/22	10/26	10/28	10/31	11/03	11/06	11/09	11/13
32	10/26	10/31	11/04	11/07	11/10	11/13	11/16	11/20	11/25
28	11/01	11/07	11/11	11/15	11/18	11/22	11/25	11/30	12/05
24	11/07	11/14	11/19	11/24	11/28	12/03	12/07	12/13	12/20
20	11/23	11/30	12/06	12/11	12/15	12/20	12/25	12/31	1/10
16	12/06	12/15	12/21	12/27	1/02	1/09	1/19	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	226	220	215	211	207	203	199	194	188
32	253	245	239	234	229	224	219	213	205
28	283	273	265	259	253	247	241	233	223
24	310	301	294	288	282	277	271	264	254
20	>365	334	325	317	311	305	299	292	282
16	>365	>365	>365	>365	>365	342	326	313	298

***** 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	667	482	312	104	23	0	0	0	9	78	354	610	2639
60	522	352	180	35	4	0	0	0	0	26	229	463	1811
57	437	280	119	14	1	0	0	0	0	10	168	377	1406
55	382	236	87	6	0	0	0	0	0	5	133	322	1171
50	262	147	32	0	0	0	0	0	0	1	66	205	713
32	26	7	0	0	0	0	0	0	0	0	0	10	43

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	382	452	718	939	1207	1393	1554	1541	1291	1026	647	423	11573
55	26	38	91	255	494	703	841	828	601	319	90	22	4308
57	18	26	62	202	433	643	779	766	541	262	65	14	3811
60	11	14	30	133	343	553	686	673	451	184	36	7	3121
65	0	4	6	53	207	403	531	518	310	82	11	0	2125
70	0	0	0	13	103	258	376	367	186	25	1	0	1329

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	239	338	556	759	1026	1186	1361	1335	1095	833	468	267	239	577	1133	1892	2918	4104	5465	6800	7895	8728	9196	9463
45	141	220	414	609	871	1036	1206	1180	945	680	336	159	141	361	775	1384	2255	3291	4497	5677	6622	7302	7638	7797
50	70	130	278	463	716	886	1051	1025	795	527	217	83	70	200	478	941	1657	2543	3594	4619	5414	5941	6158	6241
55	31	66	167	324	561	736	896	870	645	378	128	36	31	97	264	588	1149	1885	2781	3651	4296	4674	4802	4838
60	4	24	84	198	410	586	741	715	498	244	58	11	4	28	112	310	720	1306	2047	2762	3260	3504	3562	3573
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	180	230	364	499	695	805	897	874	730	547	302	189	180	410	774	1273	1968	2773	3670	4544	5274	5821	6123	6312

(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