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: FORT HANCOCK 8 SSE, TX **COOP ID: 413266**

Climate Division: TX 5 **NWS Call Sign:** **Elevation: 3,905 Feet** **Lat: 31˚11N** **Lon: 105˚44W**

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	59.8	24.2	42.0	83	2000	27	47.2	2000	6	1971	7	38.8	1992	714	0	.0	.0	26.9	.1	26.0	.0
Feb	65.8	27.9	46.9	86	2000	10	52.7	2000	9	1985	2	41.6	1973	509	0	.0	.0	26.7	.3	17.9	.0
Mar	72.4	34.8	53.6	95	1967	28	58.0	1972	14	1977	1	48.9	1977	355	2	.0	.1	30.9	.0	9.3	.0
Apr	80.1	41.5	60.8	98+	2000	27	66.7	2000	23	1980	13	54.9	1983	163	37	.0	4.0	29.8	.0	2.3	.0
May	88.9	51.6	70.3	106+	2000	25	76.0	2000	26	1967	2	66.1	1975	27	188	1.7	17.9	31.0	.0	.0	.0
Jun	96.0	61.9	79.0	113	1994	27	84.0	1994	42	1982	4	74.6	1983	0	418	11.9	27.1	30.0	.0	.0	.0
Jul	94.7	65.4	80.1	111	1994	1	83.0	1979	53	1983	4	76.2	1991	0	466	9.4	27.3	31.0	.0	.0	.0
Aug	91.8	63.7	77.8	108+	1977	6	81.7	1977	46	1966	22	74.1	1971	0	395	3.7	24.9	31.0	.0	.0	.0
Sep	87.8	56.8	72.3	104	1982	2	77.8	1977	30	1970	30	68.3	1984	11	231	1.0	16.7	30.0	.0	.1	.0
Oct	80.4	44.7	62.6	100	2000	5	65.9	1998	8	1970	28	56.5	1984	132	55	@	3.8	30.8	.0	1.5	.0
Nov	68.7	31.2	50.0	89	2001	1	54.7	1999	5	1976	29	43.8	1976	453	1	.0	.0	29.0	@	15.4	.0
Dec	59.8	24.8	42.3	81+	2001	5	47.0	1977	-1	1987	16	37.4	1976	705	0	.0	.0	27.2	.2	25.0	.1
Ann	78.9	44.0	61.5	113	Jun 1994	27	84.0	Jun 1994	-1	Dec 1987	16	37.4	Dec 1976	3069	1793	27.7	121.8	354.3	.6	97.5	.1

\+ 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: 1966-2001

(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	.55	.28	2.01	1991	20	2.96	1991	.00+	2000
Feb	.30	.20	.70	1978	7	1.24	1978	.00+	1999
Mar	.23	.10	.70	1985	13	1.60	1983	.00+	2000
Apr	.24	.10	.83	1982	22	1.30	1983	.00+	1998
May	.47	.26	1.27	1992	22	3.54	1992	.00+	2000
Jun	.91	.51	1.31	1967	29	3.51	1986	.00+	1994
Jul	1.55	1.28	4.04	1973	15	6.13	1973	.10+	1995
Aug	1.50	1.20	5.64	1970	5	4.61	1979	.00	1997
Sep	2.08	1.11	4.50	1974	23	8.36	1974	.00+	2000
Oct	.93	.72	1.10	1990	1	2.82	1984	.00+	1996
Nov	.41	.40	1.35	1968	27	1.25	2000	.00+	1999
Dec	.62	.38	1.10	1975	23	3.14	1991	.00+	1998
Ann	9.79	10.61	5.64	Aug 1970	5	8.36	Sep 1974	.00+	Sep 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	2.1	1.3	.2	.1
Feb	2.2	1.2	.1	.0
Mar	1.4	.6	.1	.0
Apr	1.2	.7	.2	.0
May	2.0	1.3	.2	@
Jun	2.5	1.9	.4	.1
Jul	5.3	3.5	.7	.3
Aug	5.7	4.0	.7	.1
Sep	5.1	3.2	1.2	.6
Oct	3.8	2.5	.6	.1
Nov	2.0	1.2	.3	.0
Dec	2.9	1.6	.4	.1
Ann	36.2	23.0	5.1	1.4

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	.02	.10	.20	.32	.47	.67	.95	1.44	1.95
Feb	.00	.00	.00	.00	.09	.18	.27	.38	.54	.79	1.03
Mar	.00	.00	.00	.01	.05	.11	.18	.27	.40	.62	.85
Apr	.00	.00	.00	.00	.05	.11	.19	.29	.43	.67	.91
May	.00	.00	.01	.07	.15	.26	.39	.56	.81	1.25	1.70
Jun	.00	.00	.13	.29	.46	.65	.87	1.15	1.53	2.15	2.77
Jul	.14	.26	.46	.68	.92	1.18	1.50	1.89	2.44	3.34	4.23
Aug	.23	.43	.68	.89	1.10	1.31	1.55	1.84	2.21	2.80	3.35
Sep	.00	.05	.27	.54	.88	1.29	1.81	2.48	3.45	5.15	6.86
Oct	.00	.00	.23	.39	.55	.73	.93	1.18	1.51	2.05	2.58
Nov	.00	.00	.00	.08	.16	.25	.37	.51	.71	1.05	1.38
Dec	.00	.00	.02	.10	.21	.35	.52	.74	1.06	1.62	2.20
Ann	4.28	5.16	6.38	7.38	8.31	9.26	10.27	11.43	12.89	15.12	17.13

\+ 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: 1966-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

Snow Fall >= Thresholds

Snow Depth >= Thresholds

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year	0.1	1.0	3.0	5.0	10.0	1	3	5	10
Jan	.3	.0	0	0	2.5	1973	2	2.5+	1992	0	0	0	0	0	.1	.1	.0	.0	.0	.0	.0	.0	.0
Feb	.3	.0	0	0	3.0	1973	22	5.5	1973	0	0	0	0	0	.1	.1	.1	.0	.0	.0	.0	.0	.0
Mar	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Apr	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jun	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jul	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Aug	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Sep	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.6	.0	0	0	6.0	1976	13	12.0	1976	0	0	0	0	0	.1	.1	.1	.1	.0	.0	.0	.0	.0
Dec	.4	.0	#	0	9.0	1987	14	9.0	1987	3	1997	25	#	1997	.1	.1	.1	.1	.0	.0	.0	.0	.0
Ann	1.6	.0	N/A	N/A	9.0	Dec 1987	14	12.0	Nov 1976	3	Dec 1997	25	#	Dec 1997	.4	.4	.3	.2	.0	.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	5/07	5/02	4/28	4/25	4/22	4/19	4/16	4/13	4/07
32	4/24	4/18	4/13	4/09	4/06	4/02	3/29	3/24	3/18
28	4/11	4/05	4/01	3/28	3/25	3/21	3/17	3/13	3/07
24	4/02	3/25	3/19	3/14	3/10	3/05	2/28	2/22	2/14
20	3/13	3/05	2/27	2/22	2/17	2/13	2/08	2/02	1/25
16	2/26	2/15	2/07	1/31	1/25	1/18	1/11	1/03	12/23

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	10/04	10/10	10/14	10/17	10/21	10/24	10/27	10/31	11/06
32	10/10	10/16	10/20	10/24	10/27	10/30	11/03	11/07	11/13
28	10/25	10/30	11/03	11/06	11/09	11/11	11/15	11/18	11/23
24	11/07	11/12	11/15	11/18	11/20	11/23	11/26	11/29	12/04
20	11/12	11/17	11/21	11/25	11/28	12/01	12/04	12/08	12/14
16	11/18	11/27	12/04	12/09	12/14	12/20	12/25	1/01	1/10

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	203	195	190	185	181	176	172	166	159
32	226	218	213	208	204	199	195	189	182
28	250	242	237	232	228	224	220	214	207
24	286	275	268	261	255	249	243	235	225
20	311	301	294	288	283	277	271	264	254
16	>365	346	335	327	320	313	307	299	288

***** 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	714	509	355	163	27	0	0	0	11	132	453	705	3069
60	559	370	214	76	5	0	0	0	1	55	310	550	2140
57	466	290	143	40	2	0	0	0	0	28	232	457	1658
55	404	239	104	24	0	0	0	0	0	16	185	395	1367
50	254	130	36	5	0	0	0	0	0	3	90	245	763
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	309	415	670	864	1185	1408	1489	1418	1209	946	538	319	10770
55	0	10	60	198	472	718	776	705	519	250	33	0	3741
57	0	5	37	154	411	658	714	643	459	200	20	0	3301
60	0	1	15	99	322	568	621	550	371	134	8	0	2689
65	0	0	2	37	188	418	466	395	231	55	1	0	1793
70	0	0	0	9	87	273	311	244	117	15	0	0	1056

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	143	264	477	677	977	1203	1280	1207	988	727	347	152	143	407	884	1561	2538	3741	5021	6228	7216	7943	8290	8442
45	59	147	329	528	822	1053	1125	1052	838	573	216	65	59	206	535	1063	1885	2938	4063	5115	5953	6526	6742	6807
50	10	64	191	380	667	903	970	897	688	419	111	17	10	74	265	645	1312	2215	3185	4082	4770	5189	5300	5317
55	1	19	89	240	512	753	815	742	538	276	40	0	1	20	109	349	861	1614	2429	3171	3709	3985	4025	4025
60	0	0	26	125	358	603	660	587	392	148	9	0	0	0	26	151	509	1112	1772	2359	2751	2899	2908	2908
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	182	252	377	471	607	723	806	774	630	493	296	180	182	434	811	1282	1889	2612	3418	4192	4822	5315	5611	5791

(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