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: MARLIN 3 NE, TX **COOP ID: 415611**

Climate Division: TX 5 **NWS Call Sign:** **Elevation: 388 Feet** **Lat: 31˚20N** **Lon: 96˚51W**

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	60.6	37.0	48.8	88	1971	30	55.9	1990	-7	1949	31	39.4	1979	511	4	.0	.0	23.8	.4	11.6	@
Feb	65.7	41.1	53.4	98	1996	21	60.9	1976	5	1949	1	44.1	1978	336	10	.0	.2	24.2	.4	6.3	.0
Mar	72.8	48.4	60.6	98	1967	28	66.8	1974	15	1948	11	55.3	1996	172	36	.0	.3	30.1	@	2.3	.0
Apr	78.5	55.7	67.1	102	1963	9	71.6	1999	29	1987	3	62.2	1973	52	115	.0	.9	30.0	.0	.2	.0
May	84.2	64.4	74.3	103	1906	5	80.2	1996	40+	1981	11	69.1	1979	7	295	.0	4.9	31.0	.0	.0	.0
Jun	90.5	70.9	80.7	105	1980	27	85.4	1998	50	1970	3	78.1	1973	0	470	.6	19.5	30.0	.0	.0	.0
Jul	95.0	73.4	84.2	110	1954	12	88.4	1998	56	1967	15	80.9	1976	0	594	4.6	28.4	31.0	.0	.0	.0
Aug	95.7	72.7	84.2	112+	1969	11	87.3	1977	55+	1992	28	80.2	1992	0	596	4.4	27.9	31.0	.0	.0	.0
Sep	90.4	67.5	79.0	109	2000	4	83.5	1977	41+	1994	23	73.9	1974	0	418	.8	16.8	30.0	.0	.0	.0
Oct	81.9	57.4	69.7	100	1904	1	72.2	1971	25	1993	31	61.8	1976	25	169	.0	3.0	30.9	.0	.2	.0
Nov	70.1	47.2	58.7	90+	1950	1	64.9	1973	15	1976	29	51.2	1976	229	38	.0	.0	28.4	.0	3.2	.0
Dec	62.2	39.1	50.7	86	1955	24	58.6	1984	6	1989	23	41.4	1983	453	7	.0	.0	25.8	.5	8.9	.0
Ann	79.0	56.2	67.6	112+	Aug 1969	11	88.4	Jul 1998	-7	Jan 1949	31	39.4	Jan 1979	1785	2752	10.4	101.9	346.2	1.3	32.7	@

+ 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: 1902-2001

(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	2.49	2.17	7.39	1998	5	10.25	1998	.00	1971
Feb	2.60	2.76	2.76	1986	4	6.34	1997	.08	1999
Mar	3.30	2.92	4.08	1990	14	7.55	1990	.13	1971
Apr	3.19	2.88	3.61	1971	18	10.18	1976	.09	1983
May	5.35	4.69	7.86	1979	11	18.38	1979	.61	1998
Jun	3.55	2.82	4.52	1989	11	10.80	1987	.21	1974
Jul	2.09	1.54	11.90	1903	31	7.15	1971	.00+	1993
Aug	1.97	1.31	4.72	1966	12	6.30	1996	.02	1993
Sep	3.08	2.88	4.50	1961	12	8.90	1974	.84	1988
Oct	3.90	3.57	5.55	1957	14	10.16	1981	.71	1996
Nov	3.17	2.49	5.70	1937	9	9.76	2000	.23	1999
Dec	3.30	2.90	6.60	1935	6	10.20	1991	.30	1989
Ann	37.99	38.26	11.90	Jul 1903	31	18.38	May 1979	.00+	Jul 1993

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.6	4.5	1.4	.4
Feb	6.6	4.3	1.8	.8
Mar	8.1	5.0	2.3	1.0
Apr	6.6	4.1	2.3	1.2
May	8.6	5.9	3.8	1.7
Jun	7.2	5.0	2.4	1.1
Jul	4.8	3.1	1.3	.6
Aug	4.7	3.2	1.1	.6
Sep	6.6	4.4	2.0	.9
Oct	7.2	5.1	2.7	1.4
Nov	7.3	4.8	2.1	.9
Dec	7.9	5.0	2.0	1.1
Ann	83.2	54.4	25.2	11.7

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	.22	.51	.92	1.28	1.65	2.06	2.52	3.08	3.83	5.04	6.20
Feb	.35	.57	.94	1.30	1.68	2.10	2.58	3.17	3.98	5.29	6.55
Mar	.66	.96	1.45	1.89	2.34	2.82	3.36	4.02	4.88	6.27	7.58
Apr	.47	.74	1.20	1.64	2.10	2.61	3.19	3.90	4.86	6.43	7.93
May	1.60	2.11	2.87	3.53	4.16	4.83	5.56	6.42	7.53	9.27	10.89
Jun	.45	.74	1.24	1.73	2.26	2.84	3.51	4.34	5.46	7.31	9.09
Jul	.00	.00	.18	.49	.86	1.30	1.84	2.54	3.54	5.23	6.95
Aug	.06	.15	.35	.60	.90	1.27	1.73	2.34	3.20	4.71	6.24
Sep	.86	1.15	1.60	1.98	2.36	2.75	3.19	3.71	4.38	5.43	6.40
Oct	.88	1.24	1.81	2.32	2.84	3.39	4.00	4.74	5.70	7.24	8.69
Nov	.52	.79	1.25	1.69	2.13	2.62	3.18	3.87	4.78	6.26	7.68
Dec	.56	.85	1.33	1.79	2.25	2.76	3.33	4.03	4.97	6.48	7.92
Ann	25.77	28.09	31.09	33.38	35.43	37.42	39.48	41.77	44.56	48.62	52.16

\+ 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: 1902-2001
(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	4.0	1973	11	4.0	1973	3	1982	13	#	1982	.1	.1	.1	.0	.0	.0	.0	.0	.0
Feb	.2	.0	0	0	1.5	1978	9	1.5+	1988	0	0	0	0	0	.1	.1	.0	.0	.0	.0	.0	.0	.0
Mar	#	.0	0	0	#	1989	5	#+	1989	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	#	.0	0	0	#	1980	26	#	1980	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Dec	#	.0	#	0	#	1990	22	#+	1990	#	1990	23	#	1990	.0	.0	.0	.0	.0	.0	.0	.0	.0
Ann	.5	.0	N/A	N/A	4.0	Jan 1973	11	4.0	Jan 1973	3	Jan 1982	13	#+	Dec 1990	.2	.2	.1	.0	.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	4/17	4/09	4/04	3/31	3/27	3/23	3/18	3/13	3/06
32	4/05	3/27	3/21	3/15	3/10	3/05	2/28	2/22	2/13
28	3/20	3/12	3/07	3/02	2/25	2/21	2/16	2/11	2/03
24	3/08	2/26	2/19	2/12	2/06	1/31	1/25	1/17	1/04
20	2/25	2/14	2/06	1/29	1/22	1/15	1/06	12/24	0/00
16	2/04	1/24	1/14	1/03	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	10/22	10/28	11/01	11/04	11/08	11/11	11/14	11/19	11/24
32	10/28	11/04	11/09	11/13	11/17	11/21	11/25	11/30	12/07
28	11/07	11/14	11/19	11/24	11/28	12/02	12/06	12/12	12/19
24	11/22	11/30	12/06	12/11	12/15	12/20	12/25	1/01	1/11
20	12/04	12/13	12/20	12/26	1/01	1/08	1/16	1/31	0/00
16	12/12	12/28	1/10	1/28	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	253	243	237	231	225	220	214	207	197
32	280	270	263	257	251	245	239	232	222
28	304	294	287	281	275	269	263	255	245
24	>365	340	326	317	309	302	295	287	275
20	>365	>365	>365	>365	348	334	323	313	299
16	>365	>365	>365	>365	>365	>365	>365	>365	337

***** 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	511	336	172	52	7	0	0	0	0	25	229	453	1785
60	371	217	82	13	1	0	0	0	0	5	134	312	1135
57	295	159	45	4	0	0	0	0	0	2	90	238	833
55	250	127	28	1	0	0	0	0	0	1	67	196	670
50	159	62	7	0	0	0	0	0	0	0	26	110	364
32	8	0	0	0	0	0	0	0	0	0	0	1	9

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	530	598	887	1053	1311	1460	1617	1619	1408	1167	799	578	13027
55	59	81	203	365	598	770	904	906	718	455	175	60	5294
57	42	58	158	307	536	710	842	844	658	394	139	41	4729
60	24	31	101	226	443	620	749	751	568	305	92	22	3932
65	4	10	36	115	295	470	594	596	418	169	38	7	2752
70	0	0	9	43	165	321	439	441	272	68	12	0	1770

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	295	398	631	810	1066	1222	1367	1360	1153	900	544	340	295	693	1324	2134	3200	4422	5789	7149	8302	9202	9746	10086
45	187	277	480	660	911	1072	1212	1205	1003	745	403	217	187	464	944	1604	2515	3587	4799	6004	7007	7752	8155	8372
50	103	171	339	510	756	922	1057	1050	853	590	278	122	103	274	613	1123	1879	2801	3858	4908	5761	6351	6629	6751
55	50	96	214	369	601	772	902	895	703	439	175	63	50	146	360	729	1330	2102	3004	3899	4602	5041	5216	5279
60	22	46	115	232	447	622	747	740	554	298	93	28	22	68	183	415	862	1484	2231	2971	3525	3823	3916	3944
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	192	253	404	536	736	846	915	907	780	596	337	212	192	445	849	1385	2121	2967	3882	4789	5569	6165	6502	6714

(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