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: MCGREGOR, TX **COOP ID: 415757**

Climate Division: TX 3 **NWS Call Sign:** **Elevation: 723 Feet** **Lat: 31˚26N** **Lon: 97˚24W**

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	56.0	33.9	45.0	87	1971	31	51.8	1990	5+	1982	12	35.5	1979	623	0	.0	.0	20.9	1.2	14.2	.0
Feb	61.1	38.2	49.7	95+	1996	23	56.4	1976	10	1985	3	38.6	1978	437	7	.0	.1	22.4	.9	7.9	.0
Mar	68.9	45.7	57.3	98	1971	29	63.3	1974	14+	1980	3	52.0	1996	256	16	.0	.2	29.4	.1	2.5	.0
Apr	76.5	53.2	64.9	101	1963	9	70.0	1972	29+	1989	11	60.6	1997	82	76	.0	1.2	29.9	.0	.3	.0
May	83.5	61.9	72.7	100+	1985	31	78.8	1996	37	1981	11	68.1	1976	13	251	.1	5.3	31.0	.0	.0	.0
Jun	90.4	69.2	79.8	109	1980	28	84.5	1990	51	1964	1	76.8	1983	0	444	.8	18.0	30.0	.0	.0	.0
Jul	95.5	72.3	83.9	108+	1978	17	87.7	1980	58	1989	24	80.1	1976	0	585	6.3	27.9	31.0	.0	.0	.0
Aug	95.4	72.0	83.7	109+	1969	12	87.2	1985	53	1992	28	79.2	1971	0	580	6.1	27.3	31.0	.0	.0	.0
Sep	88.8	65.8	77.3	108	2000	5	82.1	1977	40	1983	22	69.4	1974	2	371	.7	16.1	30.0	.0	.0	.0
Oct	79.0	55.6	67.3	101	1979	4	70.7	1979	27	1993	31	59.1	1976	50	120	@	3.3	30.9	.0	.1	.0
Nov	66.6	45.1	55.9	89+	1988	8	61.8	1973	19	1976	29	48.3	1976	295	20	.0	.0	27.5	.1	3.1	.0
Dec	58.2	36.6	47.4	83+	1977	5	54.4	1984	-1+	1989	24	37.3	1983	548	2	.0	.0	23.6	.8	10.2	.1
Ann	76.7	54.1	65.4	109+	Jun 1980	28	87.7	Jul 1980	-1+	Dec 1989	24	35.5	Jan 1979	2306	2472	14.0	99.4	337.6	3.1	38.3	.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: 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	2.07	1.68	2.85	1961	7	6.60	1998	.05	1971
Feb	2.54	2.50	2.95	1986	3	6.89	1998	.09+	1999
Mar	2.59	2.73	3.77	1941	6	6.21	1990	.06	1971
Apr	2.97	2.76	7.85	1957	20	7.05	1977	.21	1983
May	4.30	3.69	5.44	1953	12	10.21	1979	.75	1996
Jun	3.56	3.16	13.08	1964	16	7.02	1973	.80	1983
Jul	2.04	1.38	6.53	1933	30	13.32	1971	.00	1993
Aug	2.28	1.34	4.40	1920	6	8.98	1996	.00	2000
Sep	2.68	2.45	6.20	1936	27	6.48	1974	.10	1982
Oct	3.75	3.50	8.72	1974	31	10.33	1984	.36	1995
Nov	2.69	2.46	4.89	1940	23	7.54	2000	.30	1999
Dec	2.77	2.54	6.45	1997	21	8.36	1997	.19	1977
Ann	34.24	32.12	13.08	Jun 1964	16	13.32	Jul 1971	.00+	Aug 2000

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.6	4.3	1.2	.5
Feb	6.2	4.2	1.7	.8
Mar	6.9	4.7	1.7	.7
Apr	6.2	4.6	2.2	.9
May	8.4	6.0	3.3	1.4
Jun	6.6	4.8	2.3	1.1
Jul	4.3	3.0	1.2	.5
Aug	4.9	3.3	1.5	.8
Sep	5.4	4.1	1.8	.8
Oct	6.2	4.8	2.3	1.3
Nov	6.7	4.8	2.1	.6
Dec	6.3	4.0	1.8	.7
Ann	74.7	52.6	23.1	10.1

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	.24	.40	.68	.97	1.28	1.62	2.02	2.52	3.20	4.32	5.40
Feb	.21	.38	.71	1.06	1.45	1.89	2.42	3.09	4.01	5.55	7.07
Mar	.36	.57	.94	1.30	1.68	2.09	2.57	3.16	3.95	5.24	6.49
Apr	.57	.83	1.27	1.67	2.08	2.52	3.02	3.62	4.42	5.70	6.92
May	1.34	1.74	2.35	2.87	3.38	3.90	4.48	5.15	6.02	7.38	8.64
Jun	.71	1.03	1.55	2.03	2.51	3.03	3.62	4.33	5.27	6.77	8.20
Jul	.03	.12	.35	.62	.95	1.33	1.82	2.44	3.34	4.88	6.44
Aug	.02	.10	.33	.61	.97	1.40	1.96	2.70	3.76	5.62	7.52
Sep	.31	.52	.90	1.27	1.67	2.11	2.63	3.27	4.15	5.59	6.99
Oct	.45	.75	1.28	1.80	2.35	2.97	3.69	4.58	5.79	7.77	9.70
Nov	.50	.74	1.14	1.50	1.87	2.27	2.73	3.28	4.01	5.18	6.30
Dec	.42	.65	1.05	1.43	1.83	2.27	2.77	3.38	4.20	5.55	6.83
Ann	23.73	25.74	28.33	30.30	32.06	33.76	35.52	37.47	39.85	43.30	46.29

\+ 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	.6	.0	#	0
Feb	.2	.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
Dec	.1	.0	#	0
Ann	.9	.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	6.0+	1982	2	1977	31	#	1977
Feb	1.5	1975	23	1.5	1975	2	1975	23	#	1975
Mar	.0	0	0	.0	0	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	#	1980	26	#+	1980	2	1976	14	#	1976
Dec	1.0	1972	12	1.0	1972	1	1972	12	#	1972
Ann	6.0	Jan 1982	14	6.0+	Jan 1982	2+	Jan 1977	31	#+	Jan 1977

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.3	.3	.1	.1	.0
Feb	.2	.1	.0	.0	.0
Mar	.0	.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	.0	.0	.0	.0	.0
Dec	.1	.1	.0	.0	.0
Ann	.6	.5	.1	.1	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	@	.0	.0	.0
Feb	@	.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	@	.0	.0	.0
Ann	@	.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	4/12	4/07	4/03	3/30	3/27	3/24	3/20	3/16	3/11
32	4/03	3/26	3/21	3/16	3/11	3/07	3/02	2/24	2/16
28	3/19	3/10	3/04	2/26	2/21	2/16	2/10	2/04	1/26
24	3/07	2/25	2/17	2/11	2/04	1/29	1/22	1/13	12/27
20	2/27	2/15	2/06	1/29	1/21	1/12	12/31	0/00	0/00
16	2/08	1/29	1/21	1/12	12/28	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	10/27	10/31	11/04	11/07	11/10	11/13	11/16	11/19	11/24
32	11/02	11/08	11/12	11/16	11/19	11/22	11/26	11/30	12/06
28	11/10	11/18	11/23	11/28	12/03	12/07	12/12	12/18	12/26
24	11/19	11/30	12/07	12/14	12/21	12/27	1/04	1/13	1/31
20	12/08	12/17	12/24	12/30	1/06	1/13	1/24	0/00	0/00
16	12/26	1/08	1/18	1/30	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	246	239	235	231	227	223	219	215	208
32	281	271	264	258	252	246	240	233	223
28	315	304	297	290	284	278	272	264	254
24	>365	>365	340	325	316	307	299	290	278
20	>365	>365	>365	>365	364	340	326	313	297
16	>365	>365	>365	>365	>365	>365	>365	352	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)

Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	623	437	256	82	13	0	0	0	2	50	295	548	2306
60	479	310	143	26	2	0	0	0	0	14	183	403	1560
57	396	243	92	10	0	0	0	0	0	5	130	321	1197
55	343	203	66	4	0	0	0	0	0	2	101	271	990
50	229	122	23	0	0	0	0	0	0	0	46	167	587
32	18	4	0	0	0	0	0	0	0	0	0	6	28

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	420	498	783	984	1260	1434	1608	1603	1359	1093	715	483	12240
55	31	52	136	298	547	744	895	890	669	383	126	35	4806
57	22	36	100	244	485	684	833	828	609	323	95	23	4282
60	13	20	58	170	394	594	740	735	519	239	58	12	3552
65	0	7	16	76	251	444	585	580	371	120	20	2	2472
70	0	0	2	23	134	296	430	425	234	43	5	0	1592

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	231	331	548	755	1023	1200	1370	1366	1129	855	493	280	231	562	1110	1865	2888	4088	5458	6824	7953	8808	9301	9581
45	140	218	406	606	868	1050	1215	1211	979	701	352	174	140	358	764	1370	2238	3288	4503	5714	6693	7394	7746	7920
50	68	128	277	460	713	900	1060	1056	829	548	239	90	68	196	473	933	1646	2546	3606	4662	5491	6039	6278	6368
55	30	61	162	317	559	750	905	901	679	402	140	39	30	91	253	570	1129	1879	2784	3685	4364	4766	4906	4945
60	6	27	82	194	404	600	750	746	530	262	71	15	6	33	115	309	713	1313	2063	2809	3339	3601	3672	3687
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	152	204	341	482	696	825	913	904	761	556	292	176	152	356	697	1179	1875	2700	3613	4517	5278	5834	6126	6302

(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