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: MC KINNEY 3 S, TX **COOP ID: 415766**

Climate Division: TX 3 **NWS Call Sign:** **Elevation: 595 Feet** **Lat: 33˚10N** **Lon: 96˚37W**

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	52.5	31.1	41.8	87	1943	23	48.9	1990	-7	1930	18	31.7+	1979	720	0	.0	.0	20.9	1.4	15.1	.0
Feb	58.1	34.9	46.5	95	1918	25	55.4	1976	-5	1951	2	34.6	1978	524	0	.0	.0	22.6	.8	9.3	.0
Mar	65.6	42.2	53.9	97	1929	24	59.3	1974	7	1943	3	49.8	1975	347	3	.0	.1	29.8	.1	3.2	.0
Apr	73.3	51.2	62.3	99	1930	7	67.0	1981	25	1920	5	56.9	1983	125	43	.0	.7	30.0	.0	.4	.0
May	80.2	60.8	70.5	105	1927	28	77.2	1996	27	1903	1	66.1	1976	23	193	.0	3.8	31.0	.0	.0	.0
Jun	87.7	68.5	78.1	108+	1980	26	83.2	1998	44	1903	1	74.7	1989	0	394	.7	18.3	30.0	.0	.0	.0
Jul	92.7	72.0	82.4	112+	1954	25	88.5	1998	50	1924	5	78.4	1976	0	539	5.9	27.7	31.0	.0	.0	.0
Aug	92.6	70.6	81.6	118	1936	10	85.6	1999	53	1915	31	76.5	1992	0	513	6.5	26.9	31.0	.0	.0	.0
Sep	85.4	64.2	74.8	110	1939	2	80.7	1998	39+	1983	22	67.4	1974	8	303	1.0	14.7	30.0	.0	.0	.0
Oct	75.7	53.0	64.4	99+	1963	4	67.0	1971	15	1917	30	57.2	1976	86	64	.0	2.2	30.8	.0	.2	.0
Nov	63.2	42.4	52.8	93	1943	10	58.6	1999	11	1950	11	45.8	1972	374	8	.0	.0	27.7	.0	4.9	.0
Dec	54.8	34.1	44.5	89	1955	24	51.4	1984	-4	1989	23	32.6	1983	636	0	.0	.0	23.3	.9	12.5	@
Ann	73.5	52.1	62.8	118	Aug 1936	10	88.5	Jul 1998	-7	Jan 1930	18	31.7+	Jan 1979	2843	2060	14.1	94.4	338.1	3.2	45.6	@

\+ 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: 1903-2001

(3) Derived from 1971-2000 serially complete daily data

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: MC KINNEY 3 S, TX **COOP ID: 415766**

Climate Division: TX 3 **NWS Call Sign:** **Elevation: 595 Feet** **Lat: 33˚10N** **Lon: 96˚37W**

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	2.43	2.25	4.17	1932	22	7.17	1998	.00	1986
Feb	2.91	2.50	3.93	1990	1	9.31	1997	.33	1972
Mar	3.37	2.96	4.29	1977	27	8.38	1995	.53	1971
Apr	3.65	2.90	5.68	1974	22	8.09	1990	.09	1987
May	5.68	6.29	7.75	1982	13	16.70	1982	.39	1988
Jun	4.11	3.17	4.75	1935	15	12.09	1989	.67	1971
Jul	2.36	1.95	7.55	1960	15	7.79	1989	.00	1993
Aug	2.16	1.70	5.50	1932	18	6.17	1996	.00	2000
Sep	3.15	2.67	12.10	1964	21	8.91	1974	.29	1975
Oct	4.24	3.34	4.70	1996	28	12.96	1981	.09	1978
Nov	3.71	3.31	4.35	1946	3	9.10	1994	.48	1989
Dec	3.24	2.66	5.12	2000	26	9.08	1971	.20	1981
Ann	41.01	42.07	12.10	Sep 1964	21	16.70	May 1982	.00+	Aug 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.3	4.4	1.4	.5
Feb	6.3	4.3	1.8	.9
Mar	7.6	5.3	1.9	1.0
Apr	7.1	5.1	2.6	1.0
May	8.9	6.3	3.7	2.0
Jun	7.0	5.4	2.7	1.3
Jul	4.5	3.1	1.4	.7
Aug	4.1	3.0	1.5	.8
Sep	5.9	4.2	2.1	1.0
Oct	6.3	4.4	2.3	1.4
Nov	6.6	4.6	2.6	1.1
Dec	6.6	4.2	2.1	.9
Ann	78.2	54.3	26.1	12.6

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	.26	.56	.96	1.31	1.67	2.05	2.48	3.00	3.68	4.79	5.84
Feb	.44	.69	1.11	1.51	1.93	2.38	2.91	3.55	4.41	5.80	7.14
Mar	.80	1.12	1.61	2.05	2.48	2.95	3.46	4.08	4.89	6.17	7.38
Apr	.60	.92	1.45	1.95	2.47	3.03	3.67	4.46	5.50	7.20	8.82
May	1.06	1.56	2.39	3.17	3.95	4.80	5.76	6.92	8.46	10.94	13.31
Jun	.90	1.28	1.89	2.43	2.97	3.55	4.21	4.99	6.01	7.65	9.20
Jul	.03	.14	.41	.72	1.09	1.54	2.10	2.83	3.86	5.65	7.45
Aug	.03	.15	.41	.70	1.04	1.45	1.95	2.60	3.52	5.09	6.67
Sep	.45	.72	1.17	1.61	2.06	2.56	3.14	3.85	4.80	6.35	7.85
Oct	.18	.40	.87	1.43	2.08	2.86	3.83	5.08	6.86	9.93	13.00
Nov	.63	.96	1.50	2.01	2.53	3.10	3.74	4.53	5.58	7.27	8.89
Dec	.38	.63	1.08	1.53	2.01	2.55	3.18	3.96	5.02	6.76	8.46
Ann	26.96	29.60	33.02	35.64	38.00	40.29	42.67	45.32	48.56	53.29	57.42

\+ 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: 1903-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Services

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: MC KINNEY 3 S, TX **COOP ID: 415766**

Climate Division: TX 3 **NWS Call Sign:** **Elevation: 595 Feet** **Lat: 33°10N** **Lon: 96°37W**

Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	.8	.0	#	0
Feb	1.0	.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	.2	.0	#	0
Dec	.2	.0	#	0
Ann	2.3	.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	3.8	1977	31	6.2	1977	4	1977	31	1	1978
Feb	4.2	1978	18	12.1	1978	6	1978	18	1	1978
Mar	1.5	1971	3	1.5	1971	3	1989	6	#+	1989
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	3.0	1976	14	4.0	1976	3	1976	14	#+	1996
Dec	4.2	1983	16	4.3	1983	4	1983	16	1	1983
Ann	4.2+	Dec 1983	16	12.1	Feb 1978	6	Feb 1978	18	1+	Dec 1983

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.8	.3	.1	.0	.0
Feb	1.0	.4	.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	.0	.0	.0	.0	.0
Nov	.1	.1	@	.0	.0
Dec	.2	@	@	.0	.0
Ann	2.2	.9	.2	.0	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.9	.1	.0	.0
Feb	.8	.3	.1	.0
Mar	@	.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	.5	.1	.0	.0
Ann	2.4	.5	.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

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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: MC KINNEY 3 S, TX **COOP ID: 415766**

Climate Division: TX 3 **NWS Call Sign:** **Elevation: 595 Feet** **Lat: 33˚10N** **Lon: 96˚37W**

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	4/14	4/11	4/08	4/05	4/03	4/01	3/30	3/27	3/23
32	4/08	4/02	3/29	3/25	3/21	3/17	3/13	3/09	3/03
28	4/01	3/23	3/17	3/11	3/06	3/01	2/23	2/17	2/08
24	3/12	3/04	2/26	2/21	2/16	2/12	2/07	2/01	1/24
20	2/28	2/19	2/13	2/07	2/01	1/26	1/19	1/08	0/00
16	2/16	2/07	1/31	1/25	1/19	1/12	1/03	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	10/14	10/20	10/24	10/27	10/31	11/03	11/06	11/11	11/16
32	10/27	11/02	11/05	11/08	11/11	11/14	11/18	11/21	11/26
28	11/03	11/11	11/16	11/21	11/25	11/30	12/04	12/10	12/18
24	11/14	11/23	11/29	12/04	12/09	12/14	12/19	12/25	1/03
20	11/30	12/08	12/14	12/20	12/25	12/31	1/07	1/17	0/00
16	12/07	12/16	12/22	12/29	1/04	1/11	1/22	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	229	223	218	214	210	206	202	197	190
32	256	249	244	239	235	230	226	220	213
28	292	282	275	269	264	258	252	245	236
24	323	314	306	300	295	289	283	276	266
20	>365	>365	>365	343	328	317	308	298	285
16	>365	>365	>365	>365	358	340	329	319	307

***** 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

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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: MC KINNEY 3 S, TX **COOP ID: 415766**

Climate Division: TX 3 **NWS Call Sign:** **Elevation: 595 Feet** **Lat: 33˚10N** **Lon: 96˚37W**

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	720	524	347	125	23	0	0	0	8	86	374	636	2843
60	572	394	209	48	4	0	0	0	0	28	245	487	1987
57	486	321	143	21	1	0	0	0	0	11	181	402	1566
55	429	276	107	11	0	0	0	0	0	6	145	347	1321
50	301	183	43	1	0	0	0	0	0	1	74	225	828
32	35	14	0	0	0	0	0	0	0	0	0	14	63

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	338	420	680	908	1193	1384	1562	1536	1284	1002	624	401	11332
55	19	38	74	229	480	694	849	823	594	294	79	20	4193
57	14	27	48	179	419	634	787	761	534	238	55	13	3709
60	7	16	21	115	329	544	694	668	444	161	29	6	3034
65	0	0	3	43	193	394	539	513	303	64	8	0	2060
70	0	0	0	10	91	249	384	361	179	17	0	0	1291

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	213	319	548	740	1006	1196	1364	1344	1100	832	467	254	213	532	1080	1820	2826	4022	5386	6730	7830	8662	9129	9383
45	123	211	399	590	851	1046	1209	1189	950	677	327	149	123	334	733	1323	2174	3220	4429	5618	6568	7245	7572	7721
50	59	120	265	442	696	896	1054	1034	800	524	217	78	59	179	444	886	1582	2478	3532	4566	5366	5890	6107	6185
55	26	64	158	307	541	746	899	879	650	378	127	37	26	90	248	555	1096	1842	2741	3620	4270	4648	4775	4812
60	3	25	78	180	387	596	744	724	504	241	58	15	3	28	106	286	673	1269	2013	2737	3241	3482	3540	3555
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	138	209	342	477	681	824	911	889	744	541	284	160	138	347	689	1166	1847	2671	3582	4471	5215	5756	6040	6200

(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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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