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: MASON, TX **COOP ID: 415650**

Climate Division: TX 6 **NWS Call Sign:** **Elevation: 1,430 Feet** **Lat: 30˚45N** **Lon: 99˚14W**

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	60.0	30.8	45.4	88+	2000	20	51.7	1998	6	1982	11	36.7	1979	607	0	.0	.0	23.6	.9	18.1	.0
Feb	64.5	34.4	49.5	100	1996	23	56.1	2000	3+	1985	3	39.2	1978	439	3	@	.2	24.1	.7	11.4	.0
Mar	72.6	41.9	57.3	98	1971	29	63.3	1974	11	1980	2	50.5	1987	256	16	.0	.9	29.8	@	4.8	.0
Apr	79.7	50.4	65.1	100+	1996	26	70.1	1972	25	1987	4	59.8	1997	85	87	@	3.2	29.9	.0	.8	.0
May	85.2	59.4	72.3	105	1984	7	77.6+	1998	36	1970	4	69.1	1976	11	237	.4	7.9	31.0	.0	.0	.0
Jun	91.2	66.5	78.9	108+	1969	21	83.9	1998	46	1964	1	74.9	1983	0	417	1.5	19.1	30.0	.0	.0	.0
Jul	94.9	69.1	82.0	107	1998	8	85.8	1998	54+	1985	1	77.6	1976	0	527	3.8	27.2	31.0	.0	.0	.0
Aug	94.4	67.8	81.1	109	1962	12	84.1	1999	51+	1967	14	76.0	1971	0	499	3.4	26.6	31.0	.0	.0	.0
Sep	89.0	62.6	75.8	108+	2000	7	82.1	1977	36	1983	22	68.8	1974	4	329	.9	16.2	30.0	.0	.0	.0
Oct	80.1	51.9	66.0	100	1979	4	70.6	1979	26+	1989	20	57.9	1976	72	102	@	3.8	30.8	.0	.5	.0
Nov	69.5	41.7	55.6	92	1980	8	60.7	1973	14+	1976	29	48.8	1976	298	16	.0	.2	28.3	.1	6.0	.0
Dec	61.4	33.4	47.4	86	1973	13	54.3	1984	3	1983	30	38.2	1983	546	1	.0	.0	25.3	.6	14.9	@
Ann	78.5	50.8	64.7	109	Aug 1962	12	85.8	Jul 1998	3+	Feb 1985	3	36.7	Jan 1979	2318	2234	10.0	105.3	344.8	2.3	56.5	@

\+ 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: 1941-2001

(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	.91	.74	3.00	1968	20	2.64	1992	.00	1986
Feb	1.97	1.83	5.05	1997	20	8.80	1997	.19	1999
Mar	1.74	1.43	2.56	1970	7	4.23	1997	.11	1986
Apr	2.05	1.93	2.80	1981	18	5.90	1977	.26	1984
May	3.31	3.63	4.10	1974	10	7.45	1974	.61	1997
Jun	4.00	3.49	6.11	1942	5	14.11	1997	.07	1990
Jul	2.00	1.14	3.95	1967	20	7.37	1976	.00+	2000
Aug	2.52	1.58	4.45	1978	2	9.50	1971	.00	1985
Sep	3.00	2.83	7.45	1952	10	8.23	1972	.06	1999
Oct	3.01	1.93	7.16	1969	5	10.19	1973	.00	1992
Nov	2.07	1.48	3.40	2000	4	10.19	2000	.06	1999
Dec	1.37	1.19	2.80	1994	28	5.62	1984	.00+	1985
Ann	27.95	28.18	7.45	Sep 1952	10	14.11	Jun 1997	.00+	Jul 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.7	2.2	.4	@
Feb	4.4	3.1	1.1	.4
Mar	4.6	3.1	1.1	.3
Apr	4.6	2.9	1.3	.5
May	6.4	4.7	2.5	1.0
Jun	5.9	4.7	2.5	1.1
Jul	3.8	2.8	1.2	.5
Aug	4.3	3.4	1.6	.7
Sep	5.2	4.1	1.9	1.0
Oct	5.0	3.5	1.7	.9
Nov	4.2	2.8	1.2	.5
Dec	3.7	2.2	.6	.2
Ann	55.8	39.5	17.1	7.1

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	.04	.11	.25	.38	.52	.68	.88	1.11	1.44	1.99	2.53
Feb	.12	.24	.48	.75	1.05	1.40	1.83	2.38	3.15	4.44	5.74
Mar	.17	.30	.54	.78	1.04	1.34	1.69	2.12	2.71	3.70	4.66
Apr	.34	.52	.82	1.10	1.39	1.70	2.06	2.50	3.08	4.03	4.93
May	.74	1.04	1.53	1.96	2.40	2.87	3.39	4.02	4.84	6.16	7.40
Jun	.58	.92	1.50	2.05	2.63	3.26	3.99	4.89	6.10	8.06	9.95
Jul	.00	.09	.35	.64	.97	1.36	1.83	2.43	3.28	4.73	6.17
Aug	.07	.24	.58	.93	1.33	1.80	2.36	3.07	4.06	5.73	7.38
Sep	.28	.49	.89	1.31	1.77	2.28	2.89	3.66	4.72	6.47	8.20
Oct	.23	.54	1.03	1.47	1.93	2.43	3.01	3.72	4.67	6.22	7.71
Nov	.16	.30	.57	.85	1.17	1.53	1.97	2.51	3.27	4.54	5.80
Dec	.00	.00	.21	.42	.66	.93	1.26	1.69	2.28	3.28	4.28
Ann	17.30	19.25	21.81	23.79	25.58	27.33	29.16	31.20	33.71	37.40	40.65

\+ 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: 1941-2001
(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	.3	.0	#	0
Feb	.5	.0	0	0
Mar	#	.0	0	0
Apr	#	.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
Dec	#	.0	#	0
Ann	.8	.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	2.5	1983	21	2.6	1975	4	1985	2	#	1985
Feb	8.0	1973	9	10.8	1973	9	1973	9	1	1973
Mar	#	1982	7	#+	1982	0	0	0	0	0
Apr	#	1980	13	#	1980	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	#	1976	14	#	1976	0	0	0	0	0
Dec	#	1989	22	#+	1989	#	1978	31	#	1978
Ann	8.0	Feb 1973	9	10.8	Feb 1973	9	Feb 1973	9	1	Feb 1973

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.2	.1	.0	.0	.0
Feb	.1	.1	.1	.1	.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	.0	.0	.0	.0	.0
Ann	.3	.2	.1	.1	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.0	.0	.0	.0
Feb	.2	.1	.1	.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	.0
Ann	.2	.1	.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	4/22	4/16	4/13	4/09	4/06	4/03	3/31	3/27	3/22
32	4/14	4/08	4/03	3/30	3/26	3/23	3/19	3/14	3/07
28	3/31	3/23	3/17	3/11	3/07	3/02	2/25	2/19	2/11
24	3/12	3/03	2/24	2/18	2/13	2/07	2/02	1/26	1/16
20	3/07	2/25	2/18	2/12	2/06	1/31	1/24	1/16	1/04
16	2/20	2/07	1/29	1/20	1/11	12/31	12/11	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	10/13	10/19	10/23	10/26	10/30	11/02	11/05	11/09	11/15
32	10/22	10/28	11/02	11/05	11/09	11/12	11/16	11/20	11/26
28	11/02	11/07	11/11	11/15	11/18	11/21	11/25	11/29	12/04
24	11/09	11/16	11/22	11/26	11/30	12/04	12/09	12/14	12/22
20	11/19	11/29	12/07	12/14	12/20	12/26	1/02	1/10	1/23
16	12/06	12/17	12/25	1/01	1/10	1/20	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	229	221	215	210	206	201	196	190	182
32	252	243	237	232	227	222	216	210	201
28	285	275	268	262	256	250	243	236	226
24	325	311	302	295	288	281	274	266	254
20	>365	344	330	321	313	306	298	289	278
16	>365	>365	>365	>365	>365	346	331	319	304

***** 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	607	439	256	85	11	0	0	0	4	72	298	546	2318
60	462	310	140	29	1	0	0	0	0	23	182	400	1547
57	378	240	89	12	0	0	0	0	0	9	127	317	1172
55	325	198	62	6	0	0	0	0	0	5	96	265	957
50	211	114	20	0	0	0	0	0	0	1	41	159	546
32	13	2	0	0	0	0	0	0	0	0	0	4	19

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	429	490	783	992	1249	1407	1550	1522	1315	1053	708	481	11979
55	28	41	133	308	536	717	837	809	625	345	115	29	4523
57	19	27	97	254	474	657	775	747	565	288	85	19	4007
60	10	14	56	181	382	567	682	654	475	209	50	10	3290
65	0	3	16	87	237	417	527	499	329	102	16	1	2234
70	0	0	2	29	119	270	372	344	196	37	3	0	1372

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	245	337	566	755	1004	1164	1290	1279	1065	814	478	277	245	582	1148	1903	2907	4071	5361	6640	7705	8519	8997	9274
45	143	221	418	607	849	1014	1135	1124	915	660	343	164	143	364	782	1389	2238	3252	4387	5511	6426	7086	7429	7593
50	70	130	284	459	694	864	980	969	765	507	223	91	70	200	484	943	1637	2501	3481	4450	5215	5722	5945	6036
55	29	67	172	318	540	714	825	814	617	361	130	37	29	96	268	586	1126	1840	2665	3479	4096	4457	4587	4624
60	3	24	83	196	388	564	670	659	471	225	60	10	3	27	110	306	694	1258	1928	2587	3058	3283	3343	3353
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	194	244	372	494	672	783	849	839	707	531	320	213	194	438	810	1304	1976	2759	3608	4447	5154	5685	6005	6218

(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