

Climatography of the United States No. 20

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: CARTHAGE, TX

1971-2000

COOP ID: 411500

Climate Division: TX 4

NWS Call Sign:

Elevation: 340 Feet

Lat: 32°08N

Lon: 94°21W

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	56.5	33.9	45.2	84+	1972	24	51.0	1971	5	1982	11	35.2	1978	618	0	.0	.0	21.6	.7	14.7	.0
Feb	62.0	37.5	49.8	90	1986	21	57.0	1976	10+	1996	4	40.2	1978	430	3	.0	@	23.6	.5	9.2	.0
Mar	69.7	45.0	57.4	92	1974	31	63.9	1974	18	1980	2	52.2	1996	253	16	.0	@	29.9	.1	3.4	.0
Apr	76.4	51.5	64.0	93+	1987	21	70.3	1981	28+	1987	5	58.8	1983	100	67	.0	.3	29.9	.0	.4	.0
May	83.1	60.9	72.0	98	1998	31	76.9	1996	40+	1992	8	68.6	1976	10	228	.0	4.0	31.0	.0	.0	.0
Jun	89.7	68.0	78.9	103	1953	21	84.7	1998	45	1984	1	75.9	1989	0	415	.4	17.7	30.0	.0	.0	.0
Jul	93.7	71.5	82.6	106+	1980	18	88.2	1998	55	1967	15	79.7	1972	0	546	3.5	27.0	31.0	.0	.0	.0
Aug	93.7	70.4	82.1	108+	1998	2	85.2	2000	50+	1986	31	78.0	1992	0	528	3.3	26.2	31.0	.0	.0	.0
Sep	87.9	64.4	76.2	109+	2000	5	81.5	1980	38+	1983	22	70.9	1974	3	337	.7	14.4	30.0	.0	.0	.0
Oct	78.7	53.1	65.9	95+	1998	1	70.2	1971	26	1993	31	58.7	1976	72	100	.0	2.3	31.0	.0	.2	.0
Nov	67.1	43.2	55.2	88+	1971	1	61.3	1973	12	1976	29	47.4	1976	313	17	.0	.0	28.2	.0	4.5	.0
Dec	59.1	36.1	47.6	85	1955	24	57.9	1984	1+	1989	24	38.5	1983	544	5	.0	.0	24.9	.6	12.5	.0
Ann	76.5	53.0	64.7	109+	Sep 2000	5	88.2	Jul 1998	1+	Dec 1989	24	35.2	Jan 1978	2343	2262	7.9	91.9	342.1	1.9	44.9	.0

+ 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/normal/usnormals.html

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1908-2001

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

054-A

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NWS Call Sign:

Elevation: 340 Feet Lat: 32°08N

Lon: 94°21W

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med-ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	4.76	4.83	6.31	1999	29	11.04	1999	.37	1971	9.8	7.0	3.0	1.5	.90	1.33	2.03	2.67	3.33	4.03	4.83	5.80	7.08	9.14	11.10
Feb	3.88	3.54	3.95	1952	12	8.45	1983	.46	1996	7.5	5.5	2.6	1.5	.78	1.14	1.71	2.23	2.76	3.32	3.96	4.72	5.74	7.37	8.91
Mar	4.00	3.79	3.61	1965	30	7.72	2000	.47	1986	8.2	6.2	2.8	1.3	1.16	1.54	2.11	2.61	3.09	3.60	4.15	4.81	5.66	7.00	8.24
Apr	4.36	4.04	9.25	1991	14	17.95	1991	.89	1998	7.1	5.2	2.7	1.3	.90	1.30	1.94	2.52	3.11	3.74	4.45	5.30	6.43	8.23	9.93
May	5.05	4.82	4.09	1965	11	10.16	1980	.43	1988	8.3	6.3	3.4	1.7	1.07	1.53	2.27	2.94	3.62	4.35	5.16	6.14	7.44	9.50	11.46
Jun	4.95	4.56	6.72	1993	21	15.47	1986	.63	1974	8.0	5.8	2.9	1.4	.66	1.06	1.77	2.45	3.18	3.98	4.90	6.04	7.59	10.11	12.55
Jul	3.25	2.95	4.85	1973	7	11.82	1973	.00	1993	6.5	4.5	1.9	1.0	.17	.47	.96	1.44	1.95	2.52	3.18	4.01	5.13	6.98	8.79
Aug	2.92	2.17	5.87	1988	12	9.41	1997	.00+	2000	6.3	4.0	1.7	.7	.00	.43	1.00	1.47	1.93	2.43	2.99	3.65	4.54	5.98	7.36
Sep	3.75	2.99	4.50	1968	4	8.77	1979	.89	1988	6.7	5.0	2.5	1.3	1.06	1.41	1.95	2.42	2.88	3.36	3.89	4.52	5.33	6.60	7.79
Oct	4.65	3.90	6.82	1994	17	14.07	1984	.31	1995	7.0	5.2	2.7	1.7	.71	1.10	1.77	2.42	3.09	3.82	4.66	5.68	7.06	9.31	11.46
Nov	4.93	4.71	7.14	1987	16	13.33	2000	.30	1999	8.1	6.3	3.0	1.6	1.12	1.58	2.30	2.95	3.60	4.29	5.06	5.98	7.19	9.12	10.93
Dec	5.01	4.98	4.45	1960	8	10.52	1982	1.08	1980	9.2	6.5	3.4	1.8	1.32	1.80	2.52	3.16	3.79	4.45	5.18	6.05	7.18	8.96	10.62
Ann	51.51	50.69	9.25	Apr 1991	14	17.95	Apr 1991	.00+	Aug 2000	92.7	67.5	32.6	16.8	35.90	38.90	42.76	45.70	48.31	50.84	53.46	56.36	59.89	65.01	69.46

+ 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: 1908-2001

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

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Station: CARTHAGE, TX

COOP ID: 411500

Climate Division: TX 4

NWS Call Sign:

Elevation: 340 Feet

Lat: 32°08N

Lon: 94°21W

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										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	.5	.0	#	0	6.5	1982	14	6.5	1982	3+	2000	29	#+	2000	.3	.2	@	@	.0	.3	.1	.0	.0
Feb	.4	.0	#	0	2.0	1978	9	2.5	1985	3	1985	3	#+	1996	.4	.2	.0	.0	.0	.3	.1	.0	.0
Mar	.1	.0	#	0	2.0	1978	4	2.0	1978	2	1978	4	#	1978	.1	@	.0	.0	.0	@	.0	.0	.0
Apr	#	.0	0	0	#	1987	3	#	1987	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	0	.5	1976	28	.5	1976	0	0	0	0	0	@	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.2	.0	0	0	4.0	1983	17	4.8	1983	0	0	0	0	0	.1	@	@	.0	.0	.0	.0	.0	.0
Ann	1.2	.0	N/A	N/A	6.5	Jan 1982	14	6.5	Jan 1982	3+	Jan 2000	29	#+	Jan 2000	.9	.4	@	@	.0	.6	.2	.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

Complete documentation available from:

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Climate Division: TX 4

NWS Call Sign:

Elevation: 340 Feet

Lat: 32°08N

Lon: 94°21W

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	4/13	4/09	4/06	4/04	4/01	3/29	3/26	3/21
32	4/05	3/30	3/25	3/21	3/17	3/13	3/09	3/04	2/25
28	3/21	3/13	3/08	3/03	2/27	2/23	2/18	2/13	2/05
24	3/12	3/02	2/24	2/18	2/13	2/07	2/01	1/25	1/14
20	2/22	2/12	2/05	1/30	1/24	1/17	1/10	12/29	0/00
16	2/04	1/24	1/15	1/05	12/20	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	10/14	10/20	10/25	10/28	11/01	11/04	11/08	11/12	11/18
32	10/27	11/03	11/07	11/11	11/14	11/18	11/21	11/26	12/02
28	11/06	11/13	11/18	11/22	11/26	11/30	12/05	12/10	12/17
24	11/19	11/28	12/04	12/09	12/14	12/19	12/25	1/01	1/11
20	12/05	12/14	12/20	12/26	12/31	1/06	1/14	1/28	0/00
16	12/20	12/31	1/09	1/19	2/04	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	232	225	219	215	210	206	201	196	188
32	267	258	252	247	242	237	231	225	216
28	302	291	284	278	272	266	260	252	242
24	347	329	319	311	304	297	290	281	270
20	>365	>365	>365	>365	349	334	323	312	300
16	>365	>365	>365	>365	>365	>365	>365	361	334

* 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:

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Climate Division: TX 4 NWS Call Sign: Elevation: 340 Feet Lat: 32°08N Lon: 94°21W

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	618	430	253	100	10	0	0	0	3	72	313	544	2343
60	473	301	139	36	1	0	0	0	0	24	197	401	1572
57	391	231	88	15	0	0	0	0	0	10	142	322	1199
55	339	190	61	8	0	0	0	0	0	5	110	274	987
50	229	108	19	1	0	0	0	0	0	1	52	174	584
32	20	2	0	0	0	0	0	0	0	0	0	9	31

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	430	499	786	958	1240	1405	1569	1551	1324	1051	694	493	12000
55	36	43	134	276	527	715	856	838	634	343	115	45	4562
57	26	28	99	223	465	655	794	776	574	286	86	31	4043
60	15	14	57	153	373	565	701	683	484	207	51	17	3320
65	0	3	16	67	228	415	546	528	337	100	17	5	2262
70	0	0	2	19	109	267	391	373	202	35	4	0	1402

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	244	336	566	739	1006	1175	1324	1306	1084	808	476	289	244	580	1146	1885	2891	4066	5390	6696	7780	8588	9064	9353
45	149	227	416	590	851	1025	1169	1151	934	654	337	180	149	376	792	1382	2233	3258	4427	5578	6512	7166	7503	7683
50	80	136	283	444	696	875	1014	996	784	502	220	103	80	216	499	943	1639	2514	3528	4524	5308	5810	6030	6133
55	40	71	170	302	541	725	859	841	634	352	129	55	40	111	281	583	1124	1849	2708	3549	4183	4535	4664	4719
60	17	33	89	179	386	575	704	686	486	224	63	24	17	50	139	318	704	1279	1983	2669	3155	3379	3442	3466
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	162	222	361	480	683	807	893	866	732	533	305	192	162	384	745	1225	1908	2715	3608	4474	5206	5739	6044	6236

(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.
Complete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normal/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 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.

- | | |
|---|---|
| <ol style="list-style-type: none">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. Freeze Data Table
1971-2000 serially complete daily data |
|---|---|

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/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