

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: CHARLOTTE 5 NNW, TX

1971-2000

COOP ID: 411663

Climate Division: TX 9

NWS Call Sign:

Elevation: 441 Feet

Lat: 28°56N

Lon: 98°45W

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	67.0	41.3	54.2	93+	1971	4	60.7	1971	14	1963	24	46.9	1985	357	21	.0	.2	27.9	@	6.3	.0
Feb	71.7	44.7	58.2	99+	1996	21	66.0	2000	16	1985	2	50.2	1978	216	25	.0	.6	26.8	.2	3.6	.0
Mar	79.1	52.0	65.6	100+	1971	29	70.4	2000	19+	1989	7	59.0	1987	84	102	.1	2.5	30.8	.0	1.1	.0
Apr	84.7	58.5	71.6	107	1984	20	75.7	1972	28	1987	3	66.5	1987	13	212	.4	7.3	30.0	.0	.1	.0
May	89.4	66.7	78.1	105+	1967	13	83.5	1996	43	1970	4	73.7	1976	1	405	.9	15.6	31.0	.0	.0	.0
Jun	94.0	71.4	82.7	109	1998	16	88.4	1998	54	1985	29	79.3	1973	0	530	3.5	25.2	30.0	.0	.0	.0
Jul	96.9	72.6	84.8	106	2000	15	88.6	1998	59	1985	1	80.9	1976	0	612	9.2	29.5	31.0	.0	.0	.0
Aug	97.0	72.2	84.6	107	1962	13	86.4	1977	58	1967	13	80.7	1971	0	607	8.4	29.5	31.0	.0	.0	.0
Sep	92.6	68.6	80.6	110+	2000	6	85.7	1977	44	1975	26	74.1	1974	0	468	2.4	22.4	30.0	.0	.0	.0
Oct	85.4	60.2	72.8	102	1977	1	76.2	1979	27	1993	31	65.0	1976	8	249	.1	9.5	31.0	.0	.1	.0
Nov	75.5	51.0	63.3	97	1988	4	69.1	1973	20	1970	24	56.3	1976	130	78	.0	.8	29.7	.0	1.6	.0
Dec	68.2	43.2	55.7	90	1977	5	62.9	1984	6	1983	30	46.8	1989	310	22	.0	@	29.2	.1	5.4	.0
Ann	83.5	58.5	71.0	110+	Sep 2000	6	88.6	Jul 1998	6	Dec 1983	30	46.8	Dec 1989	1119	3331	25.0	143.1	358.4	.3	18.2	.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: 1962-2001

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

061-A

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Elevation: 441 Feet Lat: 28°56N

Lon: 98°45W

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	1.24	1.00	4.05	1968	18	4.64	1992	.00	1996	5.8	2.8	.6	.2	.04	.13	.29	.47	.67	.90	1.17	1.51	1.99	2.79	3.59
Feb	1.59	.95	4.48	1991	4	6.49	1991	.00+	1999	4.8	2.7	1.0	.3	.00	.00	.26	.51	.79	1.10	1.49	1.97	2.63	3.76	4.88
Mar	1.31	1.20	2.43	1999	28	4.37	1999	.00	1971	5.3	2.7	.9	.3	.06	.17	.36	.55	.76	1.00	1.27	1.61	2.09	2.87	3.64
Apr	2.29	1.60	3.52	1990	26	7.56	1976	.00	1983	5.4	3.4	1.4	.8	.05	.19	.48	.80	1.17	1.60	2.11	2.78	3.71	5.29	6.87
May	3.46	2.31	6.70	1980	15	10.82	1980	.07	1998	6.3	4.2	2.2	1.1	.26	.49	.94	1.41	1.94	2.55	3.28	4.20	5.48	7.63	9.75
Jun	3.32	3.15	4.15	1997	21	10.03	1987	.00	1980	5.7	4.5	2.1	1.0	.17	.47	.98	1.46	1.98	2.57	3.25	4.09	5.24	7.15	9.00
Jul	1.24	.82	3.01	1990	16	6.24	1990	.00+	1993	3.8	2.4	.8	.2	.00	.03	.15	.31	.51	.76	1.07	1.48	2.07	3.11	4.16
Aug	2.60	1.59	4.60	1980	11	8.76	1998	.00	1985	4.5	3.4	1.5	.8	.04	.16	.46	.81	1.23	1.72	2.33	3.13	4.26	6.21	8.17
Sep	2.82	2.21	5.23	1967	22	7.25	1986	.08	1999	5.6	4.0	1.7	.8	.26	.46	.84	1.24	1.66	2.15	2.72	3.44	4.42	6.06	7.67
Oct	3.26	2.86	4.31	1993	20	9.07	1986	.00	1979	5.7	3.9	2.0	1.2	.15	.44	.93	1.41	1.92	2.49	3.17	4.01	5.16	7.06	8.92
Nov	1.80	1.46	5.35	1992	19	5.73	2000	.00+	1988	4.9	2.9	1.2	.5	.00	.12	.39	.67	.97	1.31	1.72	2.22	2.92	4.10	5.26
Dec	1.44	.92	4.27	1986	22	8.65	1991	.00	1973	5.7	3.0	.8	.2	.03	.11	.29	.49	.72	.99	1.32	1.74	2.34	3.36	4.38
Ann	26.37	26.88	6.70	May 1980	15	10.82	May 1980	.00+	Feb 1999	63.5	39.9	16.2	7.4	14.43	16.51	19.31	21.51	23.52	25.52	27.62	30.00	32.94	37.33	41.23

+ 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: 1962-2001

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

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Station: CHARLOTTE 5 NNW, TX

COOP ID: 411663

Climate Division: TX 9

NWS Call Sign:

Elevation: 441 Feet

Lat: 28° 56N

Lon: 98° 45W

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	.0	.0	#	0	.0	0	0	.0	0	7	1985	12	#	1985	.0	.0	.0	.0	.0	.0	.0	.0	.0
Feb	.1	.0	#	0	2.0	1973	9	2.0	1973	2	1973	9	#	1973	@	@	.0	.0	.0	@	.0	.0	.0
Mar	.0	.0	0	0	.0	0	0	.0	0	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	#	1993	30	#	1993	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Ann	.1	.0	N/A	N/A	2.0	Feb 1973	9	2.0	Feb 1973	7	Jan 1985	12	#+	Jan 1985	@	@	.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

Complete documentation available from:

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Climate Division: TX 9

NWS Call Sign:

Elevation: 441 Feet

Lat: 28° 56N

Lon: 98° 45W

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	4/03	3/28	3/22	3/17	3/12	3/07	2/28	2/20
32	3/29	3/20	3/13	3/07	3/02	2/24	2/18	2/11	2/02
28	3/15	3/03	2/22	2/14	2/07	1/31	1/24	1/15	1/03
24	2/25	2/13	2/05	1/28	1/20	1/12	1/01	12/13	0/00
20	2/15	2/02	1/23	1/14	1/04	12/23	0/00	0/00	0/00
16	1/08	12/21	0/00	0/00	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	10/26	11/01	11/06	11/10	11/14	11/18	11/22	11/27	12/04
32	11/06	11/12	11/17	11/21	11/24	11/28	12/02	12/07	12/13
28	11/17	11/26	12/02	12/07	12/12	12/16	12/21	12/27	1/05
24	11/30	12/09	12/17	12/23	12/29	1/05	1/15	0/00	0/00
20	12/11	12/24	1/02	1/12	1/21	2/03	0/00	0/00	0/00
16	1/01	1/15	0/00	0/00	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	273	262	254	247	241	235	228	220	210
32	301	289	281	274	267	260	253	245	233
28	345	330	321	313	306	298	291	282	270
24	>365	>365	>365	363	343	331	321	310	297
20	>365	>365	>365	>365	>365	>365	349	333	317
16	>365	>365	>365	>365	>365	>365	>365	>365	>365

* 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 9 NWS Call Sign: Elevation: 441 Feet Lat: 28° 56N Lon: 98° 45W

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	357	216	84	13	1	0	0	0	0	8	130	310	1119
60	235	123	29	1	0	0	0	0	0	1	62	193	644
57	177	80	13	0	0	0	0	0	0	0	35	139	444
55	144	57	7	0	0	0	0	0	0	0	22	108	338
50	72	20	1	0	0	0	0	0	0	0	6	46	145
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	687	733	1040	1189	1427	1520	1635	1630	1458	1264	938	735	14256
55	118	146	334	499	714	830	922	917	768	551	270	130	6199
57	90	114	279	439	652	770	860	855	708	489	223	99	5578
60	54	72	202	350	559	680	767	762	618	397	160	60	4681
65	21	25	102	212	405	530	612	607	468	249	78	22	3331
70	8	7	37	103	260	380	457	452	319	124	28	7	2182

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	459	547	802	959	1188	1290	1398	1391	1226	1023	707	506	459	1006	1808	2767	3955	5245	6643	8034	9260	10283	10990	11496
45	323	408	647	809	1033	1140	1243	1236	1076	868	560	359	323	731	1378	2187	3220	4360	5603	6839	7915	8783	9343	9702
50	206	286	497	659	878	990	1088	1081	926	714	413	232	206	492	989	1648	2526	3516	4604	5685	6611	7325	7738	7970
55	114	176	354	509	723	840	933	926	776	560	285	134	114	290	644	1153	1876	2716	3649	4575	5351	5911	6196	6330
60	54	99	225	365	568	690	778	771	626	412	179	71	54	153	378	743	1311	2001	2779	3550	4176	4588	4767	4838
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	302	358	532	641	814	867	917	909	822	689	467	325	302	660	1192	1833	2647	3514	4431	5340	6162	6851	7318	7643

(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