

# Climatology of the United States

No. 20

1971-2000

Station: RED ROCK, TX

COOP ID: 417497

Climate Division: TX 7

NWS Call Sign:

Elevation: 520 Feet Lat: 29° 58N Lon: 97° 27W

## 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	60.2	34.7	47.5	88	1975	27	55.6	1998	8	1982	11	38.5	1979	555	4	.0	.0	24.2	.4	12.6	.0
Feb	64.7	38.5	51.6	100	1986	20	60.7	2000	9	1994	2	41.8	1978	386	11	@	.3	24.1	.5	7.0	.0
Mar	72.5	46.4	59.5	97	1971	29	65.2	2000	18+	1989	7	54.4	1996	199	27	.0	.5	30.1	.0	2.8	.0
Apr	79.4	53.6	66.5	97	1996	25	71.1	1972	22	1987	3	61.8	1997	60	105	.0	1.3	29.9	.0	.5	.0
May	85.3	62.5	73.9	102	1998	31	80.3	1996	34	1992	7	69.1	1976	11	286	.1	6.6	31.0	.0	.0	.0
Jun	91.3	68.6	80.0	109	1998	14	86.3	1998	50+	1989	17	77.5	1995	0	448	1.3	20.4	30.0	.0	.0	.0
Jul	95.3	70.5	82.9	106+	1986	30	87.4	1998	55	1967	16	79.0	1976	0	556	7.2	28.9	31.0	.0	.0	.0
Aug	95.8	69.7	82.8	107+	1990	28	86.3	1999	50+	1992	29	79.0	1971	0	549	7.7	29.0	31.0	.0	.0	.0
Sep	90.4	64.2	77.3	110	2000	6	82.2	1977	36	1989	25	70.7	1974	1	370	1.7	19.7	30.0	.0	.0	.0
Oct	81.7	55.1	68.4	99+	1991	14	71.5	1979	19	1993	31	60.2	1976	39	143	.0	5.7	30.9	.0	.3	.0
Nov	70.4	45.2	57.8	92+	1989	9	63.7	1973	10	1992	28	49.9	1976	253	38	.0	.1	28.7	.0	3.8	.0
Dec	62.4	37.0	49.7	88	1987	6	58.2	1984	-3	1989	23	40.9	1989	482	7	.0	.0	26.0	.3	10.4	@
Ann	79.1	53.8	66.5	110	Sep 2000	6	87.4	Jul 1998	-3	Dec 1989	23	38.5	Jan 1979	1986	2544	18.0	112.5	346.9	1.2	37.4	@

+ 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](http://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: 1965-2000

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

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## No. 20

### 1971-2000

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

Station: RED ROCK, TX

COOP ID: 417497

Climate Division: TX 7

NWS Call Sign:

Elevation: 520 Feet Lat: 29°58N

Lon: 97°27W

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	2.39	1.75	2.23	1991	18	8.12	1991	.00	1971	6.2	4.4	1.6	.8	.19	.45	.83	1.19	1.55	1.95	2.40	2.96	3.70	4.91	6.08
Feb	2.37	1.99	2.83	1991	4	9.11	1992	.06	1999	5.8	4.3	1.8	.7	.18	.33	.64	.97	1.33	1.75	2.24	2.87	3.75	5.22	6.67
Mar	2.18	2.02	2.50	1973	24	5.30	1983	.00	1972	6.0	4.4	1.6	.7	.45	.76	1.12	1.42	1.70	1.99	2.30	2.67	3.15	3.89	4.58
Apr	3.31	2.51	4.10	1976	5	13.71	1977	.00	1983	5.1	4.2	1.9	.9	.10	.33	.78	1.25	1.78	2.39	3.12	4.04	5.33	7.49	9.64
May	5.00	5.31	5.90	1975	24	13.10	1975	.40	1996	6.9	6.0	3.1	1.8	.91	1.36	2.09	2.77	3.46	4.21	5.06	6.09	7.46	9.66	11.77
Jun	3.66	3.02	6.81	1987	13	19.31	1987	.20	1980	6.2	5.1	2.3	1.1	.44	.73	1.24	1.75	2.29	2.89	3.60	4.47	5.65	7.59	9.48
Jul	1.68	1.04	6.14	1991	5	9.60	1991	.00+	1994	3.4	3.0	1.1	.4	.00	.00	.06	.31	.61	.98	1.44	2.04	2.89	4.35	5.86
Aug	2.30	1.43	3.05	1981	31	8.05	1974	.00+	1993	4.6	3.6	1.6	.8	.00	.09	.38	.71	1.09	1.54	2.09	2.79	3.79	5.50	7.20
Sep	3.27	2.43	4.55	1967	21	7.54+	1998	.06	1999	5.9	5.0	2.4	1.0	.37	.62	1.08	1.54	2.02	2.57	3.21	4.00	5.07	6.85	8.57
Oct	4.38	2.79	8.06	1998	18	20.01	1998	.57	1987	5.6	4.6	2.6	1.6	.39	.70	1.29	1.89	2.56	3.31	4.21	5.33	6.88	9.46	11.99
Nov	3.34	2.74	4.34	1985	23	11.04	2000	.25	1999	5.9	4.9	2.2	1.2	.50	.78	1.26	1.72	2.20	2.73	3.34	4.08	5.08	6.71	8.27
Dec	2.58	2.06	4.25	1991	21	13.10	1991	.25	1989	5.9	4.4	1.6	.7	.23	.42	.76	1.12	1.51	1.95	2.48	3.14	4.04	5.56	7.04
Ann	36.46	36.36	8.06	Oct 1998	18	20.01	Oct 1998	.00+	Jul 1994	67.5	53.9	23.8	11.7	20.81	23.59	27.28	30.18	32.81	35.41	38.14	41.22	45.02	50.66	55.65

+ 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: 1965-2000

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

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**Station: RED ROCK, TX**

**COOP ID: 417497**

**Climate Division: TX 7**

**NWS Call Sign:**

**Elevation: 520 Feet**

**Lat: 29°58N**

**Lon: 97°27W**

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	#	1997	12	#	1997	.0	.0	.0	.0	.0	.0	.0	.0	.0
Feb	#	.0	0	0	#	1989	7	#+	1989	0	0	0	0	0	.0	.0	.0	.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	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	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Dec	#	.0	#	0	#	1996	16	#+	1996	#	1996	16	#	1996	.0	.0	.0	.0	.0	.0	.0	.0	.0
Ann	#	.0	N/A	N/A	#+	Dec 1996	16	#+	Dec 1996	#+	Jan 1997	12	#+	Jan 1997	.0	.0	.0	.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

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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	4/26	4/18	4/12	4/07	4/03	3/29	3/24	3/18	3/10
32	4/13	4/05	3/31	3/26	3/21	3/17	3/12	3/06	2/26
28	3/24	3/16	3/10	3/05	3/01	2/24	2/19	2/13	2/05
24	3/15	3/06	2/27	2/21	2/15	2/10	2/04	1/28	1/19
20	2/24	2/14	2/06	1/30	1/24	1/17	1/08	12/27	0/00
16	2/05	1/26	1/18	1/10	1/02	12/21	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	10/11	10/18	10/23	10/27	10/31	11/04	11/09	11/14	11/21
32	10/23	10/31	11/05	11/10	11/15	11/19	11/24	11/30	12/07
28	10/31	11/07	11/13	11/18	11/22	11/26	12/01	12/07	12/14
24	11/10	11/19	11/25	12/01	12/06	12/11	12/17	12/23	1/01
20	11/21	12/01	12/08	12/14	12/20	12/26	1/02	1/12	0/00
16	12/07	12/18	12/26	1/03	1/12	1/24	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	245	233	225	218	211	204	197	189	177
32	270	259	251	244	238	231	224	216	205
28	299	288	279	272	266	259	252	244	232
24	332	317	307	299	292	284	277	268	255
20	>365	>365	360	342	332	323	316	307	296
16	>365	>365	>365	>365	>365	>365	>365	340	321

\* 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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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	555	386	199	60	11	0	0	0	1	39	253	482	1986
60	414	265	101	15	2	0	0	0	0	10	156	340	1303
57	337	204	60	5	0	0	0	0	0	4	109	264	983
55	290	169	40	2	0	0	0	0	0	2	84	220	807
50	193	96	11	0	0	0	0	0	0	0	37	129	466
32	15	2	0	0	0	0	0	0	0	0	0	2	19

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	493	550	851	1035	1298	1438	1579	1572	1359	1127	775	550	12627
55	55	73	178	347	585	748	866	859	669	416	168	55	5019
57	40	52	136	290	523	688	804	797	609	356	134	37	4466
60	24	29	84	210	431	598	711	704	519	269	90	20	3689
65	4	11	27	105	286	448	556	549	370	143	38	7	2544
70	0	0	6	38	163	300	401	394	232	55	13	0	1602

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	302	398	648	809	1060	1210	1359	1355	1145	899	564	354	302	700	1348	2157	3217	4427	5786	7141	8286	9185	9749	10103
45	196	281	495	660	905	1060	1204	1200	995	745	423	234	196	477	972	1632	2537	3597	4801	6001	6996	7741	8164	8398
50	113	180	355	513	750	910	1049	1045	845	592	301	139	113	293	648	1161	1911	2821	3870	4915	5760	6352	6653	6792
55	58	104	229	369	595	760	894	890	695	445	193	72	58	162	391	760	1355	2115	3009	3899	4594	5039	5232	5304
60	22	50	123	239	441	610	739	735	546	303	107	34	22	72	195	434	875	1485	2224	2959	3505	3808	3915	3949
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	209	260	416	535	726	824	898	884	761	601	369	235	209	469	885	1420	2146	2970	3868	4752	5513	6114	6483	6718

(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](http://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](http://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.

- 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/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)