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: PRADE RANCH, TX **COOP ID: 417232**

Climate Division: TX 6 **NWS Call Sign:** **Elevation: 2,052 Feet** **Lat: 29˚55N** **Lon: 99˚46W**

Temperature (˚F)

Month	Mean (1)			Extremes										Degree Days (1) Base Temp 65		Mean Number of Days (3)					
	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	59.8	30.7	45.3	88+	2000	20	51.6	1998	5	1962	12	38.6	1979	612	0	.0	.0	25.6	.3	18.9	.0
Feb	63.8	34.4	49.1	95+	1996	23	56.7	2000	5	1973	10	40.3	1978	446	0	.0	.2	24.9	.4	12.2	.0
Mar	70.8	42.6	56.7	95	1974	31	62.5	1974	12	1980	2	50.9	1996	269	11	@	.4	30.0	.0	5.1	.0
Apr	77.0	50.7	63.9	99	1963	9	68.6	1972	23	1973	9	58.2	1997	97	62	.0	1.4	29.9	.0	1.0	.0
May	82.4	60.1	71.3	101	1998	8	76.0	1996	34	1970	4	66.4	1976	20	214	.1	5.7	31.0	.0	.0	.0
Jun	88.0	66.3	77.2	107+	1980	29	81.9	1990	45	1964	1	73.4	1973	0	364	.4	13.2	30.0	.0	.0	.0
Jul	91.0	68.2	79.6	105+	1980	3	83.2	1980	53	1968	6	75.4	1976	0	452	1.1	22.7	31.0	.0	.0	.0
Aug	90.9	67.1	79.0	104	1969	17	82.5	1977	53	1961	27	74.0	1971	0	433	.2	24.1	31.0	.0	.0	.0
Sep	86.1	61.4	73.8	104	2000	5	79.4	1977	36	2000	26	67.8	1974	6	269	@	10.2	30.0	.0	.0	.0
Oct	77.4	50.9	64.2	98	1979	2	68.8	1979	20	1993	31	55.6	1976	98	72	.0	1.3	30.8	.0	1.0	.0
Nov	67.1	40.6	53.9	90+	1988	9	59.0	1973	0	1976	29	46.8	1976	340	6	.0	.1	28.6	@	6.7	@
Dec	60.3	32.3	46.3	88	1955	25	52.7	1984	3	1989	23	37.8	1989	580	0	.0	.0	26.8	.2	15.7	.0
Ann	76.2	50.4	63.4	107+	Jun 1980	29	83.2	Jul 1980	0	Nov 1976	29	37.8	Dec 1989	2468	1883	1.8	79.3	349.6	.9	60.6	@

\+ 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: 1955-2001

(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: PRADE RANCH, TX **COOP ID: 417232**

Climate Division: TX 6 **NWS Call Sign:** **Elevation: 2,052 Feet** **Lat: 29˚55N** **Lon: 99˚46W**

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	1.08	.73	2.20	1965	21	3.91	1989	.00	1996
Feb	1.44	1.28	3.04	1990	21	4.92	1990	.00	1999
Mar	1.82	1.40	4.25	1994	16	5.22	1994	.19	1971
Apr	2.13	1.64	4.30	1981	18	6.84	1977	.00	1998
May	3.33	3.44	3.40	1972	7	7.22	1972	.76	1973
Jun	3.33	2.35	4.82	1997	22	15.80	1981	.01	1990
Jul	2.10	1.17	8.18	1967	20	8.35	1976	.00+	1998
Aug	2.84	1.99	7.25	1998	23	14.17	1998	.00+	1999
Sep	3.12	2.31	6.00	1991	16	15.92	1991	.00	1999
Oct	3.72	3.19	7.26	1996	28	12.17	2000	.07	1979
Nov	1.96	1.65	4.98	2001	15	8.30	2000	.00+	1999
Dec	1.15	.79	2.84	1991	20	7.89	1991	.05	1995
Ann	28.02	25.82	8.18	Jul 1967	20	15.92	Sep 1991	.00+	Nov 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.6	2.9	.7	.1
Feb	4.9	2.7	1.0	.2
Mar	4.5	2.7	.9	.3
Apr	6.0	3.6	1.3	.6
May	8.2	4.7	2.3	.8
Jun	6.7	4.6	2.6	1.2
Jul	4.4	2.8	1.2	.5
Aug	5.8	3.9	1.9	.8
Sep	6.3	4.3	1.7	.8
Oct	6.4	4.3	1.8	1.1
Nov	5.2	3.3	1.2	.3
Dec	5.6	2.7	.8	.2
Ann	70.6	42.5	17.4	6.9

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	.12	.28	.43	.60	.80	1.03	1.32	1.72	2.39	3.06
Feb	.03	.12	.31	.51	.74	1.01	1.33	1.75	2.33	3.31	4.28
Mar	.25	.40	.66	.91	1.18	1.47	1.81	2.23	2.79	3.71	4.60
Apr	.19	.43	.78	1.09	1.41	1.76	2.15	2.63	3.27	4.30	5.30
May	1.04	1.36	1.83	2.23	2.62	3.02	3.46	3.98	4.65	5.69	6.65
Jun	.20	.39	.80	1.25	1.76	2.36	3.09	4.02	5.33	7.55	9.76
Jul	.00	.08	.35	.65	1.00	1.41	1.91	2.55	3.46	5.02	6.58
Aug	.00	.08	.39	.77	1.23	1.79	2.49	3.40	4.70	6.97	9.26
Sep	.15	.43	.89	1.35	1.84	2.39	3.04	3.84	4.93	6.75	8.52
Oct	.22	.43	.88	1.38	1.96	2.63	3.44	4.49	5.96	8.45	10.94
Nov	.00	.18	.52	.83	1.15	1.51	1.93	2.44	3.13	4.28	5.40
Dec	.05	.10	.23	.37	.55	.76	1.02	1.37	1.86	2.70	3.55
Ann	16.44	18.52	21.26	23.40	25.35	27.26	29.27	31.52	34.29	38.41	42.03

\+ 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: 1955-2001
(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: PRADE RANCH, TX **COOP ID: 417232**

Climate Division: TX 6 **NWS Call Sign:** **Elevation: 2,052 Feet** **Lat: 29°55N** **Lon: 99°46W**

Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	.5	.0	#	0
Feb	.3	.0	0	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
Nov	#	.0	0	0
Dec	#	.0	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	4.0	1973	25	4.0	1973	1	1976	26	#+	1976
Feb	2.0	1973	8	4.0	1973	0	0	0	0	0
Mar	.0	0	0	.0	0	0	0	0	0	0
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	#	1993	30	#	1993	0	0	0	0	0
Nov	#	1976	29	#	1976	0	0	0	0	0
Dec	#	1992	15	#	1992	0	0	0	0	0
Ann	4.0	Jan 1973	25	4.0+	Feb 1973	1	Jan 1976	26	#+	Jan 1976

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.2	.2	.1	.0	.0
Feb	.2	.2	.0	.0	.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	.4	.4	.1	.0	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.1	.0	.0	.0
Feb	.0	.0	.0	.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	.1	.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:
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: PRADE RANCH, TX **COOP ID: 417232**

Climate Division: TX 6 **NWS Call Sign:** **Elevation: 2,052 Feet** **Lat: 29˚55N** **Lon: 99˚46W**

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	4/28	4/22	4/18	4/14	4/11	4/08	4/04	3/31	3/25
32	4/18	4/11	4/06	4/02	3/29	3/25	3/21	3/16	3/10
28	4/10	4/01	3/26	3/21	3/16	3/12	3/07	2/28	2/20
24	3/22	3/14	3/08	3/03	2/27	2/22	2/17	2/12	2/04
20	3/14	3/02	2/22	2/15	2/08	2/01	1/25	1/16	1/04
16	2/21	2/10	2/01	1/25	1/18	1/10	1/01	12/18	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	10/09	10/14	10/19	10/22	10/26	10/29	11/02	11/06	11/12
32	10/17	10/23	10/28	10/31	11/04	11/07	11/11	11/15	11/22
28	10/28	11/03	11/08	11/12	11/16	11/20	11/24	11/29	12/05
24	11/03	11/12	11/19	11/25	12/01	12/06	12/12	12/19	12/28
20	11/15	11/25	12/03	12/10	12/16	12/22	12/29	1/06	1/17
16	12/02	12/11	12/17	12/23	12/29	1/05	1/13	1/27	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	223	214	208	202	197	192	186	180	170
32	243	235	229	224	219	214	209	203	195
28	274	264	256	250	244	238	232	224	214
24	313	300	291	283	276	269	261	252	239
20	351	336	326	317	310	302	295	285	273
16	>365	>365	>365	355	344	334	326	317	305

***** 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: PRADE RANCH, TX **COOP ID: 417232**

Climate Division: TX 6 **NWS Call Sign:** **Elevation: 2,052 Feet** **Lat: 29˚55N** **Lon: 99˚46W**

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	612	446	269	97	20	0	0	0	6	98	340	580	2468
60	465	316	148	32	3	0	0	0	0	35	211	432	1642
57	379	243	94	13	0	0	0	0	0	15	148	345	1237
55	325	199	65	6	0	0	0	0	0	8	112	291	1006
50	208	113	21	0	0	0	0	0	0	1	48	177	568
32	11	1	0	0	0	0	0	0	0	0	0	5	17

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	423	480	765	955	1217	1354	1475	1456	1252	997	656	448	11478
55	24	34	117	271	504	664	762	743	562	292	78	21	4072
57	16	21	83	218	443	604	700	681	502	237	53	13	3571
60	8	10	44	147	353	514	607	588	413	164	27	7	2882
65	0	0	11	62	214	364	452	433	269	72	6	0	1883
70	0	0	1	17	107	221	297	279	145	22	0	0	1089

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	239	326	568	746	1004	1145	1248	1230	1042	781	468	273	239	565	1133	1879	2883	4028	5276	6506	7548	8329	8797	9070
45	135	204	421	596	849	995	1093	1075	892	626	330	161	135	339	760	1356	2205	3200	4293	5368	6260	6886	7216	7377
50	65	113	284	448	694	845	938	920	742	476	212	77	65	178	462	910	1604	2449	3387	4307	5049	5525	5737	5814
55	28	51	167	309	539	695	783	765	592	331	115	30	28	79	246	555	1094	1789	2572	3337	3929	4260	4375	4405
60	6	17	82	182	388	545	628	610	444	195	51	3	6	23	105	287	675	1220	1848	2458	2902	3097	3148	3151
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	205	249	382	492	678	786	845	828	706	519	317	214	205	454	836	1328	2006	2792	3637	4465	5171	5690	6007	6221

(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