

# Climatology of the United States No. 20

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

Station: PAINT ROCK, TX

1971-2000

COOP ID: 416747

Climate Division: TX 6

NWS Call Sign:

Elevation: 1,625 Feet Lat: 31° 30N Lon: 99° 55W

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	61.3	31.9	46.6	89+	1975	27	52.3	2000	2	1979	2	39.0	1979	572	0	.0	.0	25.2	.8	17.0	.0
Feb	66.7	36.4	51.6	98	1996	22	59.4	1976	-8	1985	2	42.6	1978	382	5	.0	.2	25.3	.5	10.1	@
Mar	74.8	44.0	59.4	98	1974	31	66.6	1974	8	1980	2	52.6	1987	204	30	.0	1.3	30.4	@	4.4	.0
Apr	82.8	51.6	67.2	102	1972	13	72.7	1978	22	1973	9	60.7	1997	61	126	.1	7.0	30.0	.0	.9	.0
May	89.2	61.0	75.1	110	2000	25	83.1	2000	36	1979	12	70.4	1992	13	326	2.5	15.0	31.0	.0	.0	.0
Jun	93.9	67.8	80.9	109+	1994	29	85.9	1990	44	1964	1	76.7	1987	0	476	5.0	23.7	30.0	.0	.0	.0
Jul	97.4	70.7	84.1	111	1978	16	89.4	1978	56	1990	14	78.3	1976	0	590	11.6	28.8	31.0	.0	.0	.0
Aug	96.5	69.8	83.2	110	1984	20	87.5	1985	51	1992	28	76.0	1971	0	562	10.4	27.0	31.0	.0	.0	.0
Sep	89.9	63.2	76.6	110	1977	26	84.7	1977	36	1989	25	68.7	1974	7	354	2.3	17.3	30.0	.0	.0	.0
Oct	81.8	53.1	67.5	103+	1979	1	72.0	1979	23	1993	31	60.1	1976	48	124	.3	5.0	30.8	.0	.5	.0
Nov	70.0	41.8	55.9	92	1980	8	61.0	1973	12	1979	30	48.7	2000	293	19	.0	.1	28.3	.0	6.5	.0
Dec	62.4	33.4	47.9	86+	1978	19	52.9	1984	-4	1989	23	38.9	1983	530	1	.0	.0	26.9	.6	15.4	@
Ann	80.6	52.1	66.3	111	Jul 1978	16	89.4	Jul 1978	-8	Feb 1985	2	38.9	Dec 1983	2110	2613	32.2	125.4	349.9	1.9	54.8	.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](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: 1918-2001

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

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**Climate Division: TX 6**

**NWS Call Sign:**

**Elevation: 1,625 Feet Lat: 31°30N**

**Lon: 99°55W**

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	1.04	.86	1.97	1961	7	3.70	1991	.00+	1988	3.7	2.7	.6	.2	.00	.05	.20	.35	.52	.72	.97	1.27	1.70	2.43	3.16
Feb	1.52	.90	2.30	1992	4	6.49	1992	.12	1972	4.0	3.1	1.1	.3	.12	.23	.43	.63	.87	1.13	1.45	1.84	2.39	3.31	4.22
Mar	1.35	1.25	3.27	1953	9	3.82	1979	.00	1971	3.6	2.6	1.0	.3	.07	.20	.41	.61	.82	1.05	1.33	1.67	2.13	2.89	3.63
Apr	1.56	1.45	3.55	1960	27	5.79	1977	.00+	1998	3.9	3.2	1.1	.3	.00	.16	.44	.69	.95	1.23	1.56	1.95	2.49	3.37	4.22
May	3.31	2.98	3.76	1947	24	7.66	1987	.49	1984	5.9	5.2	2.3	1.0	.72	1.02	1.51	1.95	2.39	2.86	3.39	4.02	4.85	6.18	7.44
Jun	3.77	2.93	4.83	1980	22	11.00	2000	.55	1984	5.0	4.5	2.4	1.3	.68	1.01	1.56	2.08	2.60	3.17	3.81	4.59	5.63	7.31	8.91
Jul	1.84	1.36	3.93	1938	19	7.52	1990	.00+	2000	4.0	3.4	1.2	.5	.00	.16	.46	.75	1.06	1.40	1.80	2.29	2.96	4.08	5.17
Aug	2.05	1.49	3.59	1972	9	6.14	1971	.00	2000	4.0	3.5	1.4	.6	.06	.20	.47	.77	1.09	1.47	1.92	2.50	3.30	4.66	6.00
Sep	3.55	2.56	8.25	1980	9	24.66	1980	.10	1983	5.0	4.2	2.4	1.2	.11	.26	.63	1.07	1.61	2.28	3.11	4.21	5.78	8.53	11.32
Oct	2.81	1.84	8.04	1930	12	7.34	1974	.15	1980	4.8	4.2	1.8	.8	.30	.51	.90	1.29	1.71	2.18	2.74	3.43	4.37	5.92	7.44
Nov	1.41	.97	3.18	1922	16	5.05	2000	.00+	1988	3.0	2.5	1.0	.4	.00	.10	.31	.53	.77	1.04	1.35	1.75	2.29	3.21	4.11
Dec	1.29	.78	3.30	1991	20	7.18	1991	.00+	2000	3.4	2.7	.7	.3	.00	.00	.08	.24	.46	.73	1.07	1.53	2.20	3.35	4.53
Ann	25.50	24.06	8.25	Sep 1980	9	24.66	Sep 1980	.00+	Dec 2000	50.3	41.8	17.0	7.2	15.11	16.98	19.45	21.38	23.13	24.85	26.65	28.67	31.16	34.84	38.09

+ 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: 1918-2001

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

Complete documentation available from:  
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**COOP ID: 416747**

**Climate Division: TX 6**

**NWS Call Sign:**

**Elevation: 1,625 Feet**

**Lat: 31°30N**

**Lon: 99°55W**

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	2.5	.0	#	0	8.0	1978	21	11.0	1978	5	1975	12	#+	1977	.8	.8	.3	.2	.0	.2	.1	.1	.0
Feb	.7	.0	#	0	4.0	1973	8	10.0	1973	4	1988	5	#+	1994	.3	.3	.2	.0	.0	.1	.1	.0	.0
Mar	.1	.0	#	0	2.0	1984	5	2.0	1984	3	1989	4	#+	1989	.1	.1	.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	.3	.0	0	0	3.5	1976	13	3.5+	1980	0	0	0	0	0	.1	.1	.1	.0	.0	.0	.0	.0	.0
Dec	.4	.0	#	0	4.0	1986	11	7.0	1986	1	1983	28	#+	1989	.2	.2	.1	.0	.0	.0	.0	.0	.0
Ann	4.0	.0	N/A	N/A	8.0	Jan 1978	21	11.0	Jan 1978	5	Jan 1975	12	#+	Feb 1994	1.5	1.5	.7	.2	.0	.3	.2	.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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**Elevation: 1,625 Feet**

**Lat: 31°30N**

**Lon: 99°55W**

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	4/17	4/14	4/11	4/08	4/05	4/02	3/30	3/25
32	4/16	4/11	4/07	4/03	3/31	3/28	3/25	3/21	3/15
28	4/07	3/31	3/25	3/21	3/16	3/12	3/07	3/02	2/23
24	3/27	3/18	3/11	3/05	2/27	2/22	2/16	2/09	1/30
20	3/07	2/25	2/18	2/12	2/06	1/31	1/25	1/16	12/31
16	2/22	2/12	2/04	1/28	1/22	1/14	1/05	12/19	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	10/10	10/16	10/20	10/24	10/28	10/31	11/04	11/08	11/14
32	10/21	10/27	10/31	11/03	11/06	11/09	11/13	11/17	11/22
28	10/29	11/04	11/08	11/12	11/15	11/18	11/22	11/26	12/02
24	11/07	11/13	11/18	11/22	11/25	11/29	12/03	12/08	12/14
20	11/19	11/27	12/02	12/07	12/11	12/16	12/21	12/29	0/00
16	11/30	12/10	12/17	12/24	12/30	1/06	1/16	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	225	217	212	207	202	197	192	187	179
32	239	232	227	223	219	215	211	206	199
28	269	260	254	248	243	238	233	226	217
24	307	295	285	278	270	263	255	246	234
20	>365	349	329	318	310	302	294	284	272
16	>365	>365	>365	>365	347	334	324	314	301

\* 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	572	382	204	61	13	0	0	0	7	48	293	530	2110
60	427	256	106	18	3	0	0	0	0	12	180	383	1385
57	343	191	63	7	0	0	0	0	0	5	127	299	1035
55	292	154	42	3	0	0	0	0	0	2	97	248	838
50	183	80	12	0	0	0	0	0	0	0	43	143	461
32	8	0	0	0	0	0	0	0	0	0	0	1	9

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	460	547	849	1055	1336	1466	1613	1585	1338	1099	716	495	12559
55	30	57	178	368	623	776	900	872	648	388	124	28	4992
57	20	38	137	312	561	716	838	810	588	328	93	18	4459
60	11	20	86	233	471	626	745	717	498	243	57	9	3716
65	0	5	30	126	326	476	590	562	354	124	19	1	2613
70	0	0	7	54	201	328	435	409	224	47	5	0	1710

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	263	370	613	823	1098	1236	1376	1345	1108	860	489	289	263	633	1246	2069	3167	4403	5779	7124	8232	9092	9581	9870
45	155	251	465	674	943	1086	1221	1190	958	706	355	173	155	406	871	1545	2488	3574	4795	5985	6943	7649	8004	8177
50	80	145	328	525	788	936	1066	1035	808	553	234	93	80	225	553	1078	1866	2802	3868	4903	5711	6264	6498	6591
55	32	76	204	383	633	786	911	880	659	402	135	35	32	108	312	695	1328	2114	3025	3905	4564	4966	5101	5136
60	6	32	111	250	479	636	756	725	511	263	66	13	6	38	149	399	878	1514	2270	2995	3506	3769	3835	3848
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	212	272	413	544	722	811	889	869	729	569	334	223	212	484	897	1441	2163	2974	3863	4732	5461	6030	6364	6587

(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.  
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.

- |   |   |
|---|---|
| <ol style="list-style-type: none"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
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## 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)