# 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

COOP ID: 417669

Lon: 100°29W

**Station: ROBERT LEE, TX** 

**Climate Division: TX 6** 

**NWS Call Sign:** 

Temperature (°F) Degree Days (1) Mean (1) Mean Number of Days (3) **Extremes** Base Temp 65 Max Max Max Max Min Min Highest Lowest Daily Daily Highest Lowest Month(1) Month(1) Cooling >= >= >= <= <= <= Month Mean Year Day Year Year Day Year Heating Max Min Daily(2) Daily(2) Mean Mean 100 90 50 32 32 0 57.4 29.0 43.2 90 1911 31 49.2 1990 3 1973 12 33.8 1979 676 0 .0 .0 22.5 1.3 20.4 Jan 63.0 33.4 48.2 98 1996 23 55.9 2000 -1+1985 3 39.9 1978 471 1 .0 .2 23.6 .9 13.1 .1 Feb Mar 71.2 41.1 56.2 98 1989 13 63.9 1974 8+ 1980 3 51.4 1987 287 13 .0 .9 29.4 .1 5.2 0. 58.4 1997 Apr 79.8 49.6 64.7 101 1972 14 70.2 1986 26 +1973 10 96 87 .1 5.7 29.9 .0 .9 .0 May 86.9 60.2 73.6 114 2000 25 82.1 2000 37 1909 69.3 1997 25 290 1.9 12.7 31.0 .0 0. .0 1 87.3 1990 49 77.0 Jun 92.7 68.4 80.6 111+1994 29 1964 1997 1 467 4.1 21.8 30.0 .0 .0 .0 Jul 96.4 72.0 84.2 110+ 12 88.4 57+ 1990 15 78.6 1976 595 9.1 28.2 31.0 0. 1998 1980 0 .0 .0 1971 95.3 70.8 83.1 110 1986 21 87.0 1999 52 1989 9 76.3 0 560 8.7 26.4 31.0 .0 .0 .0 Aug 38 Sep 88.6 63.6 76.1 109 2000 6 82.6 1977 1908 28 68.6 1974 6 337 2.1 16.6 30.0 .0 .0 .0 79.5 24 31 57.6 Oct 52.2 65.9 104 2000 3 70.0 1979 1993 1976 70 95 .2 4.1 30.7 .0 .5 .0 67.4 39.9 53.7 92 1980 9 59.1 1973 14 1979 30 46.2 1976 354 14 .0 .2 27.1 .2 7.1 .0 Nov Dec 59.0 31.1 45.1 85 1981 22 48.6 1984 -2+1989 24 35.1 1983 619 0 .0 .0 24.2 1.1 17.8 .1 May Jul Dec Jan 50.9 64.6 114 2000 25 88.4 1980 -2+ 1989 24 33.8 1979 2605 2459 26.2 116.8 340.4 65.0 .2 78.1 3.6 Ann

Complete documentation available from: www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

Issue Date: February 2004 248-A

(1) From the 1971-2000 Monthly Normals

Elevation: 1,780 Feet Lat: 31°54N

- (2) Derived from station's available digital record: 1908-2001
- (3) Derived from 1971-2000 serially complete daily data

<sup>+</sup> Also occurred on an earlier date(s)

<sup>@</sup> Denotes mean number of days greater than 0 but less than .05

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										Pı	recipi	tation	(incl	hes)												
	Me	ans/	P	recip	itatio	on Total	S			M	ean N	Numbo Pays (3		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												
		ans(1)				Extremes	3			D	aily Pre	cipitatio	n													
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	.81	.53	1.95	1984	9	2.89	1991	.00+	1986	2.8	2.0	.5	.1	.00	.00	.07	.19	.33	.50	.71	.98	1.37	2.03	2.70		
Feb	1.22	.56	3.35	1911	18	4.73	1992	.00+	1999	3.1	2.5	.8	.2	.00	.05	.20	.37	.57	.81	1.10	1.48	2.01	2.93	3.85		
Mar	1.05	.82	1.68	1977	27	3.99	1979	.00+	1994	3.4	2.5	.8	.2	.00	.10	.28	.45	.62	.81	1.03	1.30	1.67	2.29	2.88		
Apr	1.72	1.43	4.70	1954	11	4.96	1981	.00+	1998	3.5	2.9	1.1	.6	.00	.09	.34	.60	.89	1.22	1.62	2.11	2.82	4.00	5.17		
May	3.24	2.56	4.00	1982	22	8.91	1982	.22	1984	5.4	4.7	2.2	1.0	.48	.76	1.23	1.67	2.14	2.65	3.24	3.96	4.93	6.51	8.02		
Jun	2.90	2.65	4.09	1971	22	7.75	1989	.00	1984	4.4	4.0	1.9	1.0	.29	.63	1.11	1.53	1.96	2.42	2.95	3.58	4.43	5.79	7.09		
Jul	1.44	1.01	4.05	1961	4	6.63	1976	.06	1987	3.5	3.0	1.0	.3	.07	.14	.31	.50	.72	.99	1.31	1.73	2.32	3.34	4.36		
Aug	2.28	1.69	3.90	1987	13	6.97	1996	.00+	2000	4.4	3.8	1.6	.7	.00	.00	.23	.54	.92	1.38	1.96	2.73	3.82	5.72	7.64		
Sep	3.46	2.93	5.45	1972	21	12.62	1974	.00+	2000	4.9	4.4	2.1	1.2	.00	.17	.65	1.17	1.74	2.41	3.22	4.23	5.66	8.08	10.48		
Oct	2.73	1.72	8.40	1957	13	9.57	1981	.00+	1992	4.2	3.7	1.8	.7	.00	.18	.61	1.03	1.48	2.00	2.61	3.37	4.42	6.19	7.93		
Nov	1.15	.99	3.08	1975	2	3.53	1975	.00+	1999	2.9	2.4	.9	.3	.00	.00	.27	.50	.71	.94	1.18	1.48	1.89	2.51	3.12		
Dec	1.00	.69	2.45	1987	19	4.85	1991	.00+	1996	2.8	2.2	.6	.2	.00	.00	.00	.16	.35	.58	.86	1.22	1.74	2.63	3.51		
Ann	23.00	22.76	8.40	Oct 1957	13	12.62	Sep 1974	.00+	Sep 2000	45.3	38.1	15.3	6.5	12.42	14.26	16.73	18.67	20.46	22.23	24.09	26.20	28.82	32.73	36.20		

<sup>+</sup> Also occurred on an earlier date(s)

Complete documentation available from:

www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

<sup>#</sup> Denotes amounts of a trace

<sup>@</sup> Denotes mean number of days greater than 0 but less than .05

<sup>\*\*</sup> Statistics not computed because less than six years out of thirty had measurable precipitation

<sup>(1)</sup> From the 1971-2000 Monthly Normals

<sup>(2)</sup> Derived from station's available digital record: 1908-2001

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**Station: ROBERT LEE, TX** 

Climate Division: TX 6 NWS Call Sign: Elevation: 1,780 Feet Lat: 31°54N Lon: 100°29W

										Snov	w (inc	hes)												
						Sn	ow To	tals									Mea	n Nu	mber	of Day	<b>VS</b> (1)			
	Mean	s/Medi	ans (1)	)					Extre	mes (2)							ow Fa					Depth resholds		
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	0	4.0	1982	14	4.0	1982	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0	
Feb	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0	
Mar	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0	
Apr	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0	
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0	
Jun	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0	
Jul	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0	
Aug	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0	
Sep	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0	
Oct	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0	
Nov	.3	.0	0	0	3.0	1976	14	3.0	1976	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0	
Dec	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0	
Ann	.8	.0	N/A	N/A	4.0	Jan 1982	14	4.0	Jan 1982	0	0	0	0	0	-9.9	-9.9	-9.9	-9.9	-9.9	.0	.0	.0	.0	

<sup>+</sup> Also occurred on an earlier date(s) #Denotes trace amounts

Complete documentation available from: www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

<sup>@</sup> Denotes mean number of days greater than 0 but less than .05

<sup>-9/-9.9</sup> represents missing values Annual statistics for Mean/Median snow depths are not appropriate

<sup>(1)</sup> Derived from Snow Climatology and 1971-2000 daily data

<sup>(2)</sup> Derived from 1971-2000 daily data

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**COOP ID: 417669** 

Lon: 100°29W

Lat: 31°54N

**Station: ROBERT LEE, TX** 

Climate Division: TX 6 NWS Call Sign:

Freeze Data Spring Freeze Dates (Month/Day) Probability of later date in spring (thru Jul 31) than indicated(\*) Temp (F) .10 .20 .30 .40 .70 .80 .90 36 4/18 4/14 4/11 4/08 4/06 4/04 4/01 3/29 3/25 32 4/04 4/10 4/01 3/29 3/26 3/23 3/20 3/16 3/11 28 4/06 3/28 3/22 3/17 3/13 3/08 3/03 2/25 2/17 3/05 2/25 24 3/18 3/11 3/01 2/20 2/16 2/11 2/03 20 3/05 2/23 2/16 2/09 2/03 1/28 1/22 1/14 1/01 1/22 16 2/19 2/10 2/04 1/28 1/15 1/04 0/00 0/00 Fall Freeze Dates (Month/Day) Probability of earlier date in fall (beginning Aug 1) than indicated(\*) Temp (F) .20 .30 .40 .50 .70 .10 .60 .80 .90 36 10/18 10/23 10/26 10/29 11/01 11/03 11/06 11/09 11/14 32 10/26 11/01 11/05 11/08 11/11 11/15 11/18 11/22 11/28 28 11/04 11/09 11/13 11/16 11/19 11/22 11/25 11/28 12/03 24 11/09 11/15 11/20 11/24 11/28 12/02 12/06 12/10 12/17 20 11/16 11/29 12/08 12/16 12/23 12/31 1/09 1/20 2/09 12/23 12/31 1/08 16 12/03 12/15 1/18 2/04 0/00 0/00 Freeze Free Period **Probability of longer than indicated freeze free period (Days)** Temp (F) .10 .20 .30 .40 .50 .60 .70 .80 .90 224 219 215 211 208 205 201 197 192 36 32 253 245 239 235 230 225 221 215 207 28 277 268 261 256 251 245 240 233 224 24 304 294 287 281 275 270 264 256 246 341 330 321 312 279 20 >365 358 303 293

>365

0/00 Indicates that the probability of occurrence of threshold temperature is less than the indicated probability.

>365

Derived from 1971-2000 serially complete daily data

>365

>365

16

Complete documentation available from:

337

360

Elevation: 1,780 Feet

322

307

>365

<sup>\*</sup> Probability of observing a temperature as cold, or colder, later in the spring or earlier in the fall than the indicated date.

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				Deg	ree Days t	o Selected	Base Tem	peratures	(°F)				
Base						Heatin	g Degree l	Days (1)					
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	676	471	287	96	25	1	0	0	6	70	354	619	2605
60	525	341	166	35	7	0	0	0	0	23	232	466	1795
57	439	267	111	16	2	0	0	0	0	10	172	377	1394
55	383	223	81	9	0	0	0	0	0	5	137	320	1158
50	255	132	30	1	0	0	0	0	0	1	69	193	681
32	19	3	0	0	0	0	0	0	0	0	0	3	25

Base						Coolin	g Degree l	Days (1)					
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	366	457	749	981	1288	1456	1618	1583	1322	1049	650	407	11926
55	17	32	117	300	575	766	905	870	632	341	96	11	4662
57	11	21	85	247	515	706	843	808	572	283	71	5	4167
60	5	11	47	176	427	616	750	715	482	203	42	1	3475
65	0	1	13	87	290	467	595	560	337	95	14	0	2459
70	0	0	1	33	177	322	440	406	208	32	3	0	1622

										Gro	wing	Degre	e Uni	ts (2)													
Base	ase Growing Degree Units (Monthly)														Growing Degree Units (Accumulated Monthly)												
	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec													Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
40	200	299	531	753	1048	1215	1365	1329	1082	813	434	232	200	499	1030	1783	2831	4046	5411	6740	7822	8635	9069	9301			
45	108	191	384	605	893	1065	1210	1174	932	658	306	134	108	299	683	1288	2181	3246	4456	5630	6562	7220	7526	7660			
50	46	107	257	458	738	915	1055	1019	782	508	196	63	46	153	410	868	1606	2521	3576	4595	5377	5885	6081	6144			
55	16	53	149	324	585	765	900	864	633	360	108	25	16	69	218	542	1127	1892	2792	3656	4289	4649	4757	4782			
60	0	20	75	199	434	615	745	709	488	225	51	1	0	20	95	294	728	1343	2088	2797	3285	3510	3561	3562			
Base	Growing Degree Units for Corn (Monthly)														Gr	owing D	egree Ur	its for C	orn (Acc	umulate	d Month	ly)	•				
50/86	171 229 359 489 681 806 894 869 712 528 294 185												171	400	759	1248	1929	2735	3629	4498	5210	5738	6032	6217			

(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

#### 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

- c. Snow Tables
  - 1. Snow Climatology
  - 2. Cooperative Summary of the Day
- d. Freeze Data Table

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

#### 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