

# Climatography of the United States

No. 20

1971-2000

Station: SAM RAYBURN DAM, TX

COOP ID: 417936

Climate Division: TX 4

NWS Call Sign:

Elevation: 189 Feet Lat: 31°04N Lon: 94°06W

## 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	57.5	35.2	46.4	83+	1972	24	53.1	2000	11+	1999	10	37.7	1977	582	0	.0	.0	22.9	.4	13.1	.0
Feb	62.5	38.4	50.5	88+	1996	23	58.2	2000	14	1996	5	39.6	1978	412	5	.0	.0	23.7	.3	8.2	.0
Mar	70.2	46.3	58.3	91	1989	31	64.6	1974	19	1980	3	52.6	1996	234	25	.0	.1	29.9	.0	2.7	.0
Apr	76.9	52.6	64.8	93+	1987	21	71.0	1981	24	1999	17	59.2	1993	93	85	.0	.3	30.0	.0	.4	.0
May	84.5	61.6	73.1	101	1998	31	76.9	1996	38+	1992	8	68.5	1993	8	258	@	4.8	31.0	.0	.0	.0
Jun	91.0	67.9	79.5	103+	1998	21	82.5	1980	50+	1997	1	76.7	1997	0	434	.4	18.9	30.0	.0	.0	.0
Jul	94.5	70.1	82.3	107	2000	17	85.7	1980	59+	1994	28	80.0	1999	0	537	2.2	26.1	31.0	.0	.0	.0
Aug	94.6	69.0	81.8	107	1998	3	85.0	1980	52	1992	17	76.6	1992	0	520	2.2	25.5	31.0	.0	.0	.0
Sep	89.3	64.6	77.0	109	2000	5	82.7	1980	39+	1999	23	73.0	1994	1	359	.5	15.3	30.0	.0	.0	.0
Oct	79.7	53.6	66.7	95+	2000	6	70.7	1971	20	1993	31	59.4	1976	64	114	.0	2.0	31.0	.0	.3	.0
Nov	68.1	45.0	56.6	87+	1989	9	64.0	1973	18+	1992	28	49.2	1976	277	24	.0	.0	28.9	.0	3.5	.0
Dec	60.3	37.6	49.0	85	1970	2	59.9	1984	7	1989	23	40.6	1989	502	5	.0	.0	26.1	.3	10.8	.0
Ann	77.4	53.5	65.5	109	Sep 2000	5	85.7	Jul 1980	7	Dec 1989	23	37.7	Jan 1977	2173	2366	5.3	93.0	345.5	1.0	39.0	.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: 1968-2001

(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: SAM RAYBURN DAM, TX**

**COOP ID: 417936**

**Climate Division: TX 4**

**NWS Call Sign:**

**Elevation: 189 Feet Lat: 31°04N**

**Lon: 94°06W**

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	5.94	5.13	4.32	1998	7	14.48	1990	.77	1971	11.1	7.2	4.1	2.1	1.07	1.60	2.47	3.28	4.10	5.00	6.02	7.25	8.89	11.53	14.05
Feb	4.55	3.89	7.85	1984	12	10.92	1984	1.40	1995	8.7	5.6	2.7	1.4	1.12	1.55	2.21	2.80	3.39	4.00	4.69	5.51	6.58	8.27	9.86
Mar	5.29	5.30	9.04	1999	13	11.76	1999	.86	1996	9.4	6.6	3.5	1.7	1.54	2.04	2.80	3.45	4.09	4.76	5.49	6.35	7.47	9.23	10.86
Apr	4.51	4.33	4.26	1999	4	9.89	1973	.28	1987	7.0	5.0	2.8	1.6	.69	1.07	1.72	2.34	2.99	3.70	4.51	5.51	6.85	9.02	11.10
May	5.53	6.05	4.45	1969	6	11.83	1983	.00	1998	8.5	6.6	3.5	2.2	1.15	1.93	2.86	3.60	4.31	5.03	5.83	6.76	7.96	9.83	11.56
Jun	5.81	4.61	6.38	2001	8	16.20	1989	1.03	1988	9.1	6.6	3.9	2.1	1.11	1.64	2.49	3.27	4.07	4.93	5.91	7.08	8.64	11.15	13.53
Jul	4.24	4.13	3.47	1975	11	8.87	1988	.01	1993	8.8	6.6	3.0	1.3	.44	.75	1.34	1.93	2.57	3.28	4.12	5.17	6.61	8.98	11.30
Aug	3.92	3.39	6.02	1977	19	8.52	1977	.00	1999	8.2	5.8	2.6	1.2	.48	.96	1.63	2.19	2.75	3.35	4.03	4.84	5.91	7.62	9.24
Sep	3.97	3.57	5.97	1979	20	8.25	1998	.24	1982	7.1	5.4	2.5	1.3	1.03	1.40	1.98	2.49	2.99	3.51	4.10	4.79	5.70	7.12	8.46
Oct	4.84	3.57	5.25	1974	29	13.93	1994	.43	1983	6.9	4.9	2.6	1.6	.63	1.02	1.71	2.38	3.09	3.88	4.79	5.91	7.44	9.93	12.34
Nov	5.88	4.50	7.36	1986	24	16.58	2000	.79	1999	8.6	6.3	3.6	1.9	1.35	1.89	2.75	3.52	4.30	5.11	6.03	7.13	8.57	10.86	13.01
Dec	6.09	6.21	5.62	1995	18	12.78	1982	1.04	1980	10.0	7.2	3.9	1.8	2.31	2.88	3.69	4.37	5.01	5.66	6.37	7.19	8.23	9.84	11.31
Ann	60.57	59.58	9.04	Mar 1999	13	16.58	Nov 2000	.00+	Aug 1999	103.4	73.8	38.7	20.2	44.24	47.44	51.51	54.59	57.32	59.95	62.66	65.64	69.26	74.49	78.99

+ 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: 1968-2001

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Complete documentation available from:  
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**Climate Division: TX 4**

**NWS Call Sign:**

**Elevation: 189 Feet**

**Lat: 31°04N**

**Lon: 94°06W**

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	.3	1997	13	.3	1997	1	1982	14	#+	1997	.1	.0	.0	.0	.0	.0	.0	.0	.0
Feb	.0	.0	0	0	.0	0	0	.0	0	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	#	1990	23	#	1990	#	1990	23	#	1990	.0	.0	.0	.0	.0	.0	.0	.0	.0
Ann	#	.0	N/A	N/A	.3	Jan 1997	13	.3	Jan 1997	1	Jan 1982	14	#+	Jan 1997	.1	.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	4/20	4/14	4/09	4/05	4/01	3/29	3/25	3/20	3/14
32	4/11	4/02	3/27	3/22	3/17	3/12	3/07	3/01	2/20
28	3/26	3/17	3/10	3/05	2/28	2/22	2/17	2/10	2/01
24	3/18	3/06	2/25	2/17	2/10	2/02	1/26	1/17	1/04
20	2/20	2/09	1/31	1/23	1/16	1/07	12/24	0/00	0/00
16	1/21	1/10	12/30	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	10/15	10/21	10/26	10/30	11/02	11/06	11/10	11/15	11/21
32	10/26	11/02	11/06	11/10	11/14	11/18	11/22	11/27	12/03
28	11/08	11/15	11/20	11/24	11/28	12/02	12/06	12/11	12/18
24	11/19	11/28	12/04	12/10	12/15	12/20	12/26	1/02	1/13
20	11/30	12/11	12/20	12/28	1/05	1/14	1/27	0/00	0/00
16	12/27	1/07	1/19	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	244	234	226	220	214	209	202	195	185
32	274	263	255	248	241	235	228	220	209
28	308	296	287	280	273	266	258	250	237
24	>365	336	323	313	304	296	288	278	264
20	>365	>365	>365	>365	>365	>365	337	319	299
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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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	582	412	234	93	8	0	0	0	1	64	277	502	2173
60	438	285	130	34	1	0	0	0	0	21	169	361	1439
57	356	217	82	15	0	0	0	0	0	9	119	284	1082
55	306	178	57	8	0	0	0	0	0	5	91	237	882
50	200	99	19	1	0	0	0	0	0	1	39	144	503
32	13	1	0	0	0	0	0	0	0	0	0	4	18

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	459	518	814	982	1273	1424	1560	1543	1348	1073	737	529	12260
55	38	50	158	301	560	734	847	830	658	364	137	50	4727
57	27	33	122	248	498	674	785	768	598	307	105	34	4199
60	15	17	76	176	406	584	692	675	508	226	66	18	3459
65	0	5	25	85	258	434	537	520	359	114	24	5	2366
70	0	0	6	29	133	284	382	365	219	42	7	0	1467

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	266	345	584	753	1028	1181	1303	1287	1105	832	524	324	266	611	1195	1948	2976	4157	5460	6747	7852	8684	9208	9532
45	165	231	432	603	873	1031	1148	1132	955	677	382	208	165	396	828	1431	2304	3335	4483	5615	6570	7247	7629	7837
50	92	144	298	455	718	881	993	977	805	523	254	124	92	236	534	989	1707	2588	3581	4558	5363	5886	6140	6264
55	45	77	183	314	564	731	838	822	655	376	157	66	45	122	305	619	1183	1914	2752	3574	4229	4605	4762	4828
60	18	35	93	194	410	581	683	667	505	242	83	32	18	53	146	340	750	1331	2014	2681	3186	3428	3511	3543
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	170	221	365	490	701	812	870	861	746	551	324	206	170	391	756	1246	1947	2759	3629	4490	5236	5787	6111	6317

(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> |
|---|---|

## 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)