

# Climatography of the United States

No. 20

1971-2000

Station: ANDREWS, TX

COOP ID: 410248

Climate Division: TX 4

NWS Call Sign:

Elevation: 3,172 Feet Lat: 32° 21N

Lon: 102° 33W

## 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	58.1	30.4	44.3	85	1974	17	50.0	1998	0	1963	12	38.0	1979	642	0	.0	.0	24.2	1.2	18.8	.0
Feb	64.5	34.8	49.7	89+	1989	27	56.7	1999	-1	1985	2	43.7	1978	431	1	.0	.0	24.9	.6	11.6	@
Mar	72.5	41.1	56.8	97	1989	12	62.4	1974	8	1989	5	51.0	1987	265	10	.0	.4	30.0	@	5.3	.0
Apr	80.8	48.6	64.7	99	1996	27	69.9	1972	23+	1994	6	58.8	1973	94	86	.0	3.5	29.8	.0	1.1	.0
May	88.0	58.2	73.1	107	2000	24	80.9	1996	33	1970	1	68.2	1976	20	270	1.4	13.1	31.0	.0	.0	.0
Jun	93.7	65.6	79.7	113	1994	27	85.8	1998	41	1973	5	76.0	1979	0	439	5.2	23.0	30.0	.0	.0	.0
Jul	94.5	68.2	81.4	111	1989	2	86.3	1998	57	1978	27	75.2	1976	0	506	4.1	25.9	31.0	.0	.0	.0
Aug	92.8	67.1	80.0	106+	1969	18	83.8	1999	54+	1978	4	74.9	1971	0	463	2.2	23.4	31.0	.0	.0	.0
Sep	87.1	61.2	74.2	104	2000	6	80.3	1977	38	2000	25	65.9	1974	11	285	.6	12.6	29.9	.0	.0	.0
Oct	79.1	51.3	65.2	101+	2000	3	68.6	1998	22+	1993	31	58.7	1976	74	81	.1	2.8	30.7	.0	.3	.0
Nov	66.9	39.4	53.2	93	1973	1	59.4	1999	11+	1976	29	46.5	1976	365	10	.0	@	27.5	.1	6.8	.0
Dec	59.5	32.0	45.8	81	1995	13	49.9	1981	1	1989	23	38.1	1983	596	0	.0	.0	25.4	.8	15.9	.0
Ann	78.1	49.8	64.0	113	Jun 1994	27	86.3	Jul 1998	-1	Feb 1985	2	38.0	Jan 1979	2498	2151	13.6	104.7	345.4	2.7	59.8	@

+ 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

009-A

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1914-2001

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

# 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: ANDREWS, TX**

**COOP ID: 410248**

**Climate Division: TX 4**

**NWS Call Sign:**

**Elevation: 3,172 Feet Lat: 32°21N**

**Lon: 102°33W**

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	.48	.26	.70+	1991	18	1.81	1983	.00+	1998	2.5	1.7	.3	.0	.00	.00	.04	.12	.20	.30	.43	.59	.81	1.19	1.57
Feb	.51	.33	1.00	1981	28	1.85	1992	.00+	1999	2.2	1.7	.3	@	.00	.00	.06	.14	.23	.34	.47	.64	.87	1.26	1.65
Mar	.52	.32	1.85	1970	6	2.47	1990	.00+	1995	1.9	1.4	.3	.1	.00	.00	.00	.13	.24	.36	.50	.67	.89	1.28	1.65
Apr	.85	.48	2.48	1915	28	3.52	1976	.00+	2000	2.4	1.8	.5	.3	.00	.00	.04	.15	.29	.46	.69	.99	1.44	2.22	3.02
May	1.78	1.51	3.00	1995	5	5.87	1992	.00	1996	4.3	3.4	1.2	.4	.08	.24	.51	.77	1.05	1.36	1.73	2.19	2.82	3.86	4.87
Jun	2.12	1.80	3.70	1967	25	7.11	2000	.00	1990	4.4	3.3	1.6	.6	.10	.28	.60	.91	1.24	1.62	2.06	2.61	3.36	4.61	5.83
Jul	2.25	1.52	7.60	1914	2	9.65	1988	.00+	1987	4.5	3.4	1.3	.6	.00	.20	.58	.94	1.31	1.72	2.21	2.80	3.61	4.95	6.26
Aug	1.77	1.21	2.40	1950	26	5.51	1974	.14	1973	4.8	3.8	1.3	.4	.17	.30	.54	.79	1.06	1.36	1.72	2.16	2.78	3.79	4.79
Sep	2.21	1.53	3.50	1949	13	7.94	1980	.00	2000	4.9	3.8	1.5	.6	.04	.17	.45	.76	1.11	1.53	2.03	2.68	3.59	5.15	6.70
Oct	1.43	.91	2.05	1983	19	3.97	1986	.00+	1992	3.8	2.8	1.0	.3	.00	.00	.17	.42	.68	.98	1.33	1.78	2.41	3.45	4.48
Nov	.64	.43	2.10	1986	3	2.10	1986	.00+	1995	2.0	1.3	.5	.1	.00	.00	.00	.10	.22	.37	.55	.78	1.11	1.67	2.23
Dec	.59	.23	1.55	1986	22	3.07	1991	.00+	1996	2.0	1.6	.3	.1	.00	.00	.00	.05	.13	.26	.43	.66	1.01	1.64	2.30
Ann	15.15	14.53	7.60	Jul 1914	2	9.65	Jul 1988	.00+	Sep 2000	39.7	30.0	10.1	3.5	8.59	9.76	11.30	12.52	13.62	14.71	15.86	17.15	18.75	21.12	23.22

+ 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: 1914-2001

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

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

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Station: ANDREWS, TX

COOP ID: 410248

Climate Division: TX 4

NWS Call Sign:

Elevation: 3,172 Feet

Lat: 32° 21N

Lon: 102° 33W

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	1.9	1.0	#	0	7.0	1983	1	10.0	1983	4	1982	12	#+	1997	1.0	.7	.2	@	.0	.3	.0	.0	.0
Feb	.7	.0	#	0	4.5	1973	22	7.0	1973	4	1975	22	#+	1979	.3	.3	.1	.0	.0	.1	.1	.0	.0
Mar	.0	.0	#	0	1.0	1978	3	1.0	1978	2	1983	19	#+	1987	@	@	.0	.0	.0	.0	.0	.0	.0
Apr	.1	.0	0	0	2.5	1983	7	2.5	1983	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	1.0	1976	28	1.0	1976	#	1993	30	#	1993	@	@	.0	.0	.0	.0	.0	.0	.0
Nov	.9	.0	0	0	8.0	1980	25	14.0	1980	0	0	0	0	0	.2	.2	.1	.1	.0	.0	.0	.0	.0
Dec	1.0	.0	#	0	3.5	1982	26	5.5	1982	2	2000	26	#+	2000	.5	.4	.1	.0	.0	.1	.0	.0	.0
Ann	4.6	1.0	N/A	N/A	8.0	Nov 1980	25	14.0	Nov 1980	4+	Jan 1982	12	#+	Dec 2000	2.0	1.6	.5	.1	.0	.5	.1	.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:

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**Lat: 32° 21N**

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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	4/21	4/17	4/14	4/11	4/08	4/06	4/03	3/31	3/27
32	4/17	4/10	4/06	4/02	3/29	3/25	3/21	3/16	3/09
28	4/09	3/31	3/25	3/20	3/15	3/10	3/05	2/27	2/19
24	4/01	3/22	3/15	3/09	3/03	2/26	2/20	2/13	2/03
20	3/12	3/01	2/21	2/15	2/08	2/02	1/26	1/19	1/08
16	2/23	2/14	2/07	2/01	1/27	1/21	1/14	1/04	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	10/20	10/24	10/28	10/31	11/03	11/06	11/10	11/15
32	10/25	10/30	11/03	11/07	11/10	11/14	11/17	11/21	11/27
28	11/03	11/08	11/12	11/15	11/18	11/22	11/25	11/29	12/04
24	11/05	11/15	11/22	11/28	12/04	12/09	12/15	12/22	1/01
20	11/17	11/26	12/03	12/09	12/15	12/21	12/27	1/03	1/12
16	12/01	12/11	12/18	12/25	12/31	1/06	1/13	1/23	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	221	215	211	208	204	201	197	193	188
32	251	242	236	231	226	221	216	209	201
28	276	266	259	253	248	242	236	229	219
24	310	298	289	282	275	267	260	251	239
20	360	337	325	315	306	298	289	279	265
16	>365	>365	>365	350	340	331	323	315	303

\* 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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**Climate Division: TX 4      NWS Call Sign:      Elevation: 3,172 Feet    Lat: 32°21N      Lon: 102°33W**

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	642	431	265	94	20	0	0	0	11	74	365	596	2498
60	489	301	142	34	4	0	0	0	1	24	239	443	1677
57	402	229	88	15	1	0	0	0	0	9	176	354	1274
55	345	186	60	8	0	0	0	0	0	5	140	298	1042
50	216	101	17	0	0	0	0	0	0	1	70	173	578
32	8	1	0	0	0	0	0	0	0	0	0	1	10

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	389	494	768	982	1274	1429	1529	1486	1264	1030	635	428	11708
55	13	36	115	300	561	739	816	773	574	322	85	12	4346
57	8	22	81	247	500	679	754	711	514	264	61	6	3847
60	2	11	42	176	410	589	661	618	425	185	34	2	3155
65	0	1	10	86	270	439	506	463	285	81	10	0	2151
70	0	0	1	32	156	293	353	311	165	24	1	0	1336

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	200	313	521	743	1025	1192	1289	1248	1027	785	407	228	200	513	1034	1777	2802	3994	5283	6531	7558	8343	8750	8978
45	101	198	377	595	870	1042	1134	1093	877	631	278	127	101	299	676	1271	2141	3183	4317	5410	6287	6918	7196	7323
50	44	108	245	447	715	892	979	938	728	480	165	57	44	152	397	844	1559	2451	3430	4368	5096	5576	5741	5798
55	8	50	132	309	561	742	824	783	579	333	82	13	8	58	190	499	1060	1802	2626	3409	3988	4321	4403	4416
60	0	15	59	187	407	592	669	628	435	200	27	0	0	15	74	261	668	1260	1929	2557	2992	3192	3219	3219
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	161	228	358	494	665	773	844	826	679	502	269	175	161	389	747	1241	1906	2679	3523	4349	5028	5530	5799	5974

(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/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/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.

- |   |   |
|---|---|
| <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)