

Climatology of the United States

No. 20

1971-2000

Station: ROTAN, TX

COOP ID: 417782

Climate Division: TX 2

NWS Call Sign:

Elevation: 1,935 Feet Lat: 32° 51N

Lon: 100° 28W

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	55.4	27.2	41.3	85+	2000	19	47.3	1990	3+	1966	23	31.9	1979	736	0	.0	.0	23.1	1.7	18.9	.0
Feb	61.4	31.0	46.2	92+	1996	22	54.1	1999	-5	1985	2	35.6	1978	529	0	.0	.1	23.6	1.0	12.0	@
Mar	69.1	37.7	53.4	100	1971	27	60.1	1974	7	1980	2	48.8	1987	361	2	@	.9	29.9	.1	4.7	.0
Apr	77.5	46.8	62.2	101	1972	12	67.0	1972	24+	1975	3	55.1	1973	142	57	@	4.9	29.8	.0	.9	.0
May	84.4	57.0	70.7	110	2000	24	78.8	1996	35	1967	2	65.9	1976	43	221	2.2	12.4	31.0	.0	.0	.0
Jun	90.8	64.9	77.9	116	1994	27	84.4	1998	46	1964	1	74.7	1982	2	387	4.9	21.8	30.0	.0	.0	.0
Jul	94.2	69.1	81.7	112+	1989	2	87.7	1998	57+	1971	30	75.7	1976	0	517	9.0	27.8	31.0	.0	.0	.0
Aug	92.9	68.2	80.6	111	1964	6	85.1	1999	54+	1992	28	73.4	1971	0	482	6.6	25.5	31.0	.0	.0	.0
Sep	85.8	61.4	73.6	108	2000	3	80.2	1998	35	1984	30	65.7	1974	14	273	1.6	14.4	30.0	.0	.0	.0
Oct	76.7	49.8	63.3	101+	1979	8	67.5	1998	23	1993	31	55.1	1976	117	62	.1	3.2	30.7	.0	.4	.0
Nov	64.8	37.7	51.3	92	1980	8	56.6	1999	15+	1976	29	43.6	1976	418	7	.0	.1	27.0	.1	6.5	.0
Dec	56.3	29.4	42.9	84	1981	21	47.5	1980	-5	1989	23	31.6	1983	686	0	.0	.0	24.0	1.2	16.0	.1
Ann	75.8	48.4	62.1	116	Jun 1994	27	87.7	Jul 1998	-5+	Dec 1989	23	31.6	Dec 1983	3048	2008	24.4	111.1	341.1	4.1	59.4	.1

+ 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

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1924-2001

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

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1971-2000**

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

Station: ROTAN, TX

COOP ID: 417782

Climate Division: TX 2

NWS Call Sign:

Elevation: 1,935 Feet Lat: 32°51N

Lon: 100°28W

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	.80	.68	1.83	1932	15	2.66	1992	.00+	1988	3.3	2.2	.7	.1	.00	.00	.13	.28	.43	.59	.78	1.01	1.34	1.85	2.37
Feb	1.35	1.01	2.80	1938	15	5.23	1997	.00+	1999	3.8	2.6	.9	.3	.00	.08	.28	.48	.71	.97	1.28	1.66	2.21	3.12	4.03
Mar	1.30	1.07	5.05	2000	23	5.91	2000	.00+	1997	3.5	2.2	.8	.3	.00	.07	.26	.46	.67	.92	1.23	1.60	2.13	3.01	3.89
Apr	1.72	.92	3.43	1990	18	6.44	1990	.00	1984	3.8	3.0	1.2	.5	.02	.11	.30	.54	.81	1.14	1.54	2.07	2.82	4.11	5.41
May	3.68	3.18	4.85	1965	12	15.63	1982	.56	1974	5.9	4.8	2.6	1.2	.59	.90	1.44	1.95	2.47	3.04	3.70	4.50	5.57	7.30	8.97
Jun	2.74	2.32	4.35	1926	18	7.87	1991	.00	1994	4.9	4.2	1.9	.8	.32	.66	1.12	1.51	1.90	2.33	2.80	3.37	4.13	5.34	6.49
Jul	1.92	1.48	3.70	1988	2	5.78	1975	.02	1998	3.8	3.0	1.2	.6	.08	.18	.39	.65	.94	1.29	1.73	2.29	3.10	4.48	5.87
Aug	2.76	1.86	6.85	1972	13	9.89	1972	.00+	2000	4.9	4.0	1.7	.7	.00	.00	.42	.84	1.32	1.88	2.55	3.40	4.58	6.59	8.59
Sep	3.45	3.11	3.70	1966	3	11.07	1980	.00+	2000	5.1	4.1	2.4	1.2	.00	.00	.74	1.32	1.92	2.59	3.37	4.35	5.63	7.80	9.92
Oct	2.30	1.30	6.25	1965	18	7.56	1986	.00+	1992	4.6	3.5	1.8	.6	.00	.00	.45	.83	1.23	1.68	2.21	2.87	3.76	5.27	6.75
Nov	1.13	.69	2.00	1975	2	5.32	1984	.00+	1999	2.9	2.0	.7	.3	.00	.00	.24	.46	.67	.89	1.14	1.45	1.86	2.51	3.15
Dec	1.07	.93	2.20	1926	5	4.13	1991	.00+	1996	3.0	2.3	.8	.2	.00	.00	.07	.21	.39	.61	.90	1.27	1.82	2.76	3.72
Ann	24.22	24.82	6.85	Aug 1972	13	15.63	May 1982	.00+	Sep 2000	49.5	37.9	16.7	6.8	14.50	16.26	18.58	20.39	22.02	23.63	25.31	27.19	29.51	32.94	35.96

+ 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: 1924-2001

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

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Station: ROTAN, TX

COOP ID: 417782

Climate Division: TX 2

NWS Call Sign:

Elevation: 1,935 Feet

Lat: 32° 51N

Lon: 100° 28W

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	1.3	.0	#	0	5.5	1983	21	7.7	1983	3	1975	12	#+	1982	.5	.4	.1	.1	.0	.0	.0	.0	.0
Feb	.6	.0	#	0	5.0	1997	13	5.0	1997	3	1975	23	#	1975	.2	.1	.1	.1	.0	.1	.1	.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	.3	.0	0	0	6.0	1996	5	6.0	1996	0	0	0	0	0	.1	.1	.1	.1	.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	.7	.0	#	0	6.0	2000	8	6.0	2000	#	1979	10	#	1979	.2	.2	.1	.1	.0	.0	.0	.0	.0
Dec	1.1	.0	#	0	5.0	1997	26	8.0	1983	2	1987	14	#+	2000	.7	.6	.1	.1	.0	.2	.0	.0	.0
Ann	4.0	.0	N/A	N/A	6.0+	Nov 2000	8	8.0	Dec 1983	3+	Feb 1975	23	#+	Dec 2000	1.7	1.4	.5	.5	.0	.3	.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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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	4/13	4/10	4/07	4/04	4/01	3/28	3/23
32	4/14	4/08	4/04	4/01	3/29	3/25	3/22	3/18	3/12
28	4/07	3/29	3/23	3/18	3/14	3/09	3/04	2/26	2/18
24	3/28	3/18	3/11	3/04	2/26	2/20	2/14	2/06	1/27
20	3/17	3/06	2/25	2/18	2/11	2/04	1/28	1/20	1/08
16	2/22	2/13	2/07	2/01	1/27	1/21	1/15	1/07	12/23
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	10/27	10/31	11/04	11/08	11/14
32	10/23	10/29	11/02	11/05	11/09	11/12	11/16	11/20	11/25
28	11/02	11/07	11/11	11/14	11/17	11/20	11/23	11/27	12/03
24	11/08	11/16	11/21	11/26	12/01	12/05	12/10	12/15	12/23
20	11/12	11/22	11/30	12/07	12/13	12/19	12/26	1/03	1/14
16	11/28	12/08	12/16	12/22	12/29	1/05	1/12	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	223	216	211	207	203	199	194	189	182
32	249	241	235	229	225	220	214	208	200
28	275	266	259	253	248	242	237	230	220
24	312	300	291	284	277	270	262	253	241
20	>365	334	320	310	301	292	283	273	259
16	>365	>365	363	348	337	328	320	310	297

* 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

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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	736	529	361	142	43	2	0	0	14	117	418	686	3048
60	583	399	222	62	14	0	0	0	2	47	286	533	2148
57	495	325	153	32	6	0	0	0	0	23	218	445	1697
55	438	279	115	18	3	0	0	0	0	13	178	388	1432
50	303	183	47	3	0	0	0	0	0	3	98	256	893
32	28	12	0	0	0	0	0	0	0	0	2	16	58

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	315	410	664	905	1201	1374	1540	1505	1249	969	581	352	11065
55	12	32	66	234	491	684	827	792	559	269	67	12	4045
57	7	22	42	187	432	624	765	730	499	217	47	7	3579
60	2	13	18	127	347	534	672	637	411	148	25	2	2936
65	0	0	2	57	221	387	517	482	273	62	7	0	2008
70	0	0	0	18	125	249	363	333	157	18	0	0	1263

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	204	307	531	749	1041	1205	1353	1306	1059	793	422	229	204	511	1042	1791	2832	4037	5390	6696	7755	8548	8970	9199
45	111	201	383	601	886	1055	1198	1151	909	639	293	131	111	312	695	1296	2182	3237	4435	5586	6495	7134	7427	7558
50	48	114	251	456	731	905	1043	996	759	489	179	63	48	162	413	869	1600	2505	3548	4544	5303	5792	5971	6034
55	17	55	145	320	577	755	888	841	610	344	96	22	17	72	217	537	1114	1869	2757	3598	4208	4552	4648	4670
60	0	19	64	198	424	605	733	686	465	213	40	3	0	19	83	281	705	1310	2043	2729	3194	3407	3447	3450
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	162	227	360	490	676	793	883	856	700	513	277	172	162	389	749	1239	1915	2708	3591	4447	5147	5660	5937	6109

(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.
Complete documentation for the 1971-2000 Normals is available on the internet from:
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">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. Freeze Data Table
1971-2000 serially complete daily data |
|---|---|

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/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