

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: ENCINAL, TX

1971-2000

COOP ID: 412906

Climate Division: TX 9

NWS Call Sign:

Elevation: 590 Feet Lat: 28°03N Lon: 99°26W

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	67.3	40.5	53.9	96	1971	4	60.7	2000	8+	1962	13	47.0	1978	366	21	.0	.3	27.8	.2	5.7	.0
Feb	71.7	44.9	58.3	101+	1986	21	67.5	2000	15	1951	2	50.3	1978	225	38	.1	.9	26.2	.1	3.0	.0
Mar	80.6	51.8	66.2	105+	1954	31	71.1	2000	23	1965	4	59.6	1996	66	102	.2	4.7	30.8	.0	.7	.0
Apr	86.8	58.6	72.7	110	1958	24	78.3	1986	29+	1973	10	67.4	1973	13	244	1.0	11.4	30.0	.0	.1	.0
May	92.4	66.5	79.5	115	1925	24	85.0	1989	42	1929	3	74.1	1992	2	449	3.2	19.6	31.0	.0	.0	.0
Jun	97.0	71.4	84.2	116	1998	17	90.6	1998	50	1974	27	79.3	1973	0	576	8.2	26.4	30.0	.0	.0	.0
Jul	99.3	72.4	85.9	114	1939	9	90.6	1980	60+	1974	12	79.6	1976	0	647	14.4	29.8	31.0	.0	.0	.0
Aug	99.4	72.4	85.9	112+	1926	1	89.1	1987	60+	1980	11	80.0	1971	0	648	14.4	30.0	31.0	.0	.0	.0
Sep	94.1	68.7	81.4	110+	2000	6	85.7	1986	44+	1975	27	73.8	1974	0	493	3.6	23.4	30.0	.0	.0	.0
Oct	86.3	59.7	73.0	105	1951	4	76.8	1979	31	1917	30	66.4	1976	9	256	.2	9.6	30.9	.0	.0	.0
Nov	76.6	49.9	63.3	98+	1924	2	68.7	1985	21	1970	24	56.3	1976	136	84	.0	1.2	29.4	.0	1.3	.0
Dec	68.3	42.8	55.6	98+	1921	2	63.4	1984	11	1925	29	46.2	1989	320	26	.0	.1	28.3	.2	4.2	.0
Ann	85.0	58.3	71.7	116	Jun 1998	17	90.6+	Jun 1998	8+	Jan 1962	13	46.2	Dec 1989	1137	3584	45.3	157.4	356.4	.5	15.0	.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/normals/usnormals.html

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1907-2001

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

099-A

**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: ENCINAL, TX

COOP ID: 412906

Climate Division: TX 9

NWS Call Sign:

Elevation: 590 Feet Lat: 28°03N

Lon: 99°26W

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	1.02	.84	2.56	1938	23	4.50	1992	.00+	1999	4.0	2.4	.7	.2	.00	.00	.00	.27	.52	.77	1.03	1.35	1.77	2.47	3.11
Feb	.94	.58	2.25	1949	26	4.79	1973	.00+	2000	3.3	2.0	.7	.2	.00	.00	.00	.21	.41	.63	.88	1.19	1.62	2.35	3.05
Mar	1.33	.83	4.10	2000	14	5.85	1974	.00+	1996	2.3	1.8	.8	.5	.00	.00	.00	.20	.44	.75	1.12	1.61	2.31	3.52	4.73
Apr	1.40	.84	4.00	1915	22	6.05	1976	.00+	1998	3.0	2.2	1.1	.5	.00	.00	.00	.15	.43	.76	1.16	1.70	2.45	3.76	5.06
May	3.00	2.88	4.25	1950	12	7.58	1981	.00+	1998	4.3	3.6	2.1	1.0	.00	.00	1.02	1.55	2.04	2.56	3.14	3.83	4.70	6.12	7.47
Jun	3.03	2.31	5.90	1922	12	10.80	1971	.00+	1998	4.3	3.3	1.6	.8	.00	.00	.77	1.38	1.94	2.51	3.14	3.91	4.93	6.48	8.01
Jul	1.58	.66	7.80	1990	16	9.30	1990	.00+	1998	2.4	1.8	.9	.5	.00	.00	.06	.22	.46	.78	1.21	1.80	2.68	4.25	5.88
Aug	2.28	1.89	5.50+	1999	23	8.38	1980	.00+	2000	3.4	2.6	1.4	.6	.00	.00	.19	.64	1.08	1.58	2.16	2.88	3.88	5.50	7.17
Sep	3.08	2.98	8.25	1919	15	9.90	1971	.00	1992	4.2	3.7	1.7	1.1	.23	.56	1.06	1.51	1.98	2.49	3.08	3.80	4.77	6.34	7.86
Oct	2.57	1.82	9.05	1927	8	10.34	1971	.00+	1991	3.0	2.6	1.8	1.1	.00	.00	.44	.92	1.40	1.92	2.52	3.26	4.27	5.88	7.48
Nov	1.09	.75	3.30	1914	1	3.88	2000	.00+	1999	3.0	2.0	.8	.3	.00	.00	.00	.00	.45	.76	1.08	1.47	1.97	2.76	3.51
Dec	.92	.42	2.70	1986	22	4.25	1986	.00+	1998	3.4	1.7	.6	.2	.00	.00	.00	.11	.34	.58	.85	1.18	1.62	2.37	3.08
Ann	22.24	21.17	9.05	Oct 1927	8	10.80	Jun 1971	.00+	Aug 2000	40.6	29.7	14.2	7.0	12.02	13.79	16.18	18.06	19.78	21.49	23.29	25.33	27.86	31.63	34.99

+ 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: 1907-2001

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

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

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: ENCINAL, TX

COOP ID: 412906

Climate Division: TX 9

NWS Call Sign:

Elevation: 590 Feet

Lat: 28°03N

Lon: 99°26W

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	1.0	1981	17	1.0	1981	#	1981	17	#	1981	@	@	.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	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Ann	.0	.0	N/A	N/A	1.0	Jan 1981	17	1.0	Jan 1981	#	Jan 1981	17	#	Jan 1981	@	@	.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

Complete documentation available from:

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

Climatography of the United States

No. 20 1971-2000

Station: ENCINAL, TX

COOP ID: 412906

Climate Division: TX 9

NWS Call Sign:

Elevation: 590 Feet

Lat: 28°03N

Lon: 99°26W

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	3/31	3/22	3/16	3/11	3/06	3/01	2/24	2/18	2/09
32	3/30	3/16	3/05	2/24	2/16	2/07	1/29	1/18	1/01
28	3/02	2/19	2/11	2/04	1/28	1/20	1/09	0/00	0/00
24	2/12	1/31	1/21	1/11	12/29	0/00	0/00	0/00	0/00
20	1/23	1/11	12/30	0/00	0/00	0/00	0/00	0/00	0/00
16	1/02	0/00	0/00	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	11/06	11/13	11/17	11/21	11/24	11/28	12/01	12/06	12/12
32	11/15	11/22	11/28	12/02	12/06	12/11	12/15	12/21	12/30
28	11/28	12/07	12/14	12/20	12/26	1/02	1/13	0/00	0/00
24	12/04	12/17	12/28	1/08	1/24	0/00	0/00	0/00	0/00
20	12/18	12/31	1/14	0/00	0/00	0/00	0/00	0/00	0/00
16	1/02	0/00	0/00	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	297	285	277	269	262	255	248	239	227
32	>365	331	314	302	292	282	271	259	243
28	>365	>365	>365	>365	332	318	307	296	282
24	>365	>365	>365	>365	>365	>365	>365	324	304
20	>365	>365	>365	>365	>365	>365	>365	>365	343
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:

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

**Climatography
of the United States
No. 20
1971-2000**

Station: ENCINAL, TX

COOP ID: 412906

Climate Division: TX 9 NWS Call Sign: Elevation: 590 Feet Lat: 28°03N Lon: 99°26W

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	366	225	66	13	2	0	0	0	0	9	136	320	1137
60	243	137	20	1	0	0	0	0	0	1	67	205	674
57	185	95	8	0	0	0	0	0	0	0	39	151	478
55	151	71	4	0	0	0	0	0	0	0	26	120	372
50	78	30	1	0	0	0	0	0	0	0	8	56	173
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	679	737	1059	1221	1470	1566	1670	1671	1483	1270	939	730	14495
55	117	164	350	531	757	876	957	958	793	557	275	136	6471
57	89	132	292	471	695	816	895	896	733	495	228	106	5848
60	54	90	211	382	602	726	802	803	643	403	166	67	4949
65	21	38	102	244	449	576	647	648	493	256	84	26	3584
70	8	13	33	132	304	426	492	493	345	133	32	9	2420

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	440	530	807	975	1211	1317	1414	1419	1235	1009	680	476	440	970	1777	2752	3963	5280	6694	8113	9348	10357	11037	11513
45	304	395	652	825	1056	1167	1259	1264	1085	854	534	332	304	699	1351	2176	3232	4399	5658	6922	8007	8861	9395	9727
50	190	275	500	675	901	1017	1104	1109	935	699	390	214	190	465	965	1640	2541	3558	4662	5771	6706	7405	7795	8009
55	102	169	356	527	746	867	949	954	785	549	265	119	102	271	627	1154	1900	2767	3716	4670	5455	6004	6269	6388
60	45	89	224	382	591	717	794	799	636	396	159	55	45	134	358	740	1331	2048	2842	3641	4277	4673	4832	4887
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	279	341	523	633	802	861	905	910	820	670	438	304	279	620	1143	1776	2578	3439	4344	5254	6074	6744	7182	7486

(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