U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

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: YOAKUM, TX **COOP ID: 419952**

Climate Division: TX 8 **NWS Call Sign:** **Elevation: 325 Feet** **Lat: 29˚16N** **Lon: 97˚07W**

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	62.2	39.5	50.9	89	1971	30	57.1	1989	11	1982	11	42.4	1978	456	6	.0	.0	26.0	.3	6.7	.0
Feb	66.2	42.8	54.5	93+	1996	22	61.8	2000	10	1951	2	45.4	1978	308	14	.0	.2	25.7	.3	3.5	.0
Mar	73.1	50.1	61.6	99	1971	28	67.4	2000	19	1980	2	56.3	1996	141	36	.0	.4	30.5	.0	1.1	.0
Apr	79.5	56.7	68.1	99	1963	9	72.5	1981	31+	1987	3	62.2	1973	39	132	.0	1.7	30.0	.0	.1	.0
May	85.5	64.3	74.9	105	1955	24	81.0	1996	42	1954	5	70.5	1976	6	313	.0	8.5	31.0	.0	.0	.0
Jun	90.9	69.8	80.4	111	1998	15	85.8	1998	52	1984	1	77.5	1974	0	460	.7	21.2	30.0	.0	.0	.0
Jul	94.2	71.0	82.6	110	1954	26	86.9	1998	58	1967	16	79.0	1972	0	546	3.6	27.7	31.0	.0	.0	.0
Aug	94.9	70.7	82.8	109+	1962	13	85.3	1988	62+	1999	19	79.5	1972	0	552	4.2	28.4	31.0	.0	.0	.0
Sep	90.6	66.8	78.7	111	2000	6	82.1	1977	46+	2000	26	73.1	1974	0	411	1.1	20.1	30.0	.0	.0	.0
Oct	82.8	58.1	70.5	99+	1963	11	72.9	1988	28	1993	30	62.5	1976	20	189	.0	6.2	31.0	.0	@	.0
Nov	71.9	48.9	60.4	94+	1969	9	66.2	1988	20	1976	29	52.9	1976	200	63	.0	.1	29.2	.0	1.4	.0
Dec	64.5	41.5	53.0	88	1954	1	60.2	1984	6	1989	23	43.5	1989	387	15	.0	.0	27.7	.3	5.1	.0
Ann	79.7	56.7	68.2	111+	Sep 2000	6	86.9	Jul 1998	6	Dec 1989	23	42.4	Jan 1978	1557	2737	9.6	114.5	353.1	.9	17.9	.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

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1917-2001

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

Issue Date: February 2004

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Precipitation (inches)

Precipitation Totals

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	2.63	2.17	3.04	1997	21	6.90	1991	.02	1971
Feb	2.29	1.98	4.05	1955	4	7.26	1992	.32	1974
Mar	2.61	2.06	4.50	1997	17	8.50	1997	.57	1971
Apr	3.56	2.98	10.70	1938	25	11.55	1997	.11	1983
May	4.93	4.64	8.12	1920	15	13.75	1972	.11	1996
Jun	4.81	3.95	8.59	1940	30	14.78	1987	.08	1980
Jul	2.62	2.20	6.06	1919	22	8.54	1983	.05	1993
Aug	3.34	2.25	7.60	2001	31	11.40	1998	.27	1985
Sep	3.87	2.98	5.80	1998	11	11.90	1978	.35	1984
Oct	4.61	3.01	8.82	1994	18	18.33	1994	.48	1988
Nov	3.28	2.60	5.13	1982	20	11.88	2000	.24	1988
Dec	2.41	2.14	3.15	1991	22	8.30	1991	.40	1977
Ann	40.96	40.70	10.70	Apr 1938	25	18.33	Oct 1994	.02	Jan 1971

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	8.9	4.9	1.4	.8
Feb	7.6	4.1	1.5	.7
Mar	8.3	4.2	1.5	.8
Apr	6.8	3.7	2.2	1.3
May	8.1	5.5	3.2	1.7
Jun	8.1	5.9	2.9	1.6
Jul	6.4	4.1	1.6	.7
Aug	7.7	5.1	1.9	.9
Sep	8.0	5.1	2.5	1.2
Oct	7.3	5.1	2.5	1.4
Nov	7.3	4.5	1.8	1.0
Dec	8.7	4.7	1.5	.6
Ann	93.2	56.9	24.5	12.7

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

Month	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.15	.30	.62	.97	1.38	1.86	2.43	3.18	4.22	6.00	7.76
Feb	.43	.63	.97	1.28	1.59	1.93	2.32	2.79	3.41	4.41	5.36
Mar	.57	.81	1.19	1.54	1.89	2.26	2.67	3.17	3.83	4.87	5.86
Apr	.19	.38	.81	1.28	1.83	2.48	3.27	4.29	5.72	8.17	10.61
May	.58	.96	1.66	2.34	3.07	3.89	4.84	6.02	7.62	10.26	12.82
Jun	.49	.85	1.51	2.18	2.90	3.72	4.67	5.87	7.50	10.21	12.85
Jul	.11	.25	.54	.88	1.29	1.77	2.36	3.14	4.23	6.11	8.01
Aug	.40	.65	1.12	1.59	2.09	2.64	3.28	4.08	5.17	6.96	8.69
Sep	.42	.71	1.25	1.79	2.37	3.02	3.78	4.73	6.02	8.15	10.24
Oct	.31	.59	1.17	1.80	2.51	3.33	4.32	5.59	7.35	10.34	13.29
Nov	.36	.61	1.07	1.53	2.02	2.57	3.21	4.01	5.09	6.89	8.64
Dec	.43	.64	.99	1.32	1.66	2.02	2.44	2.94	3.61	4.69	5.72
Ann	24.60	27.57	31.47	34.51	37.26	39.96	42.79	45.96	49.86	55.63	60.70

\+ 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: 1917-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	#	.0	#	0
Feb	#	.0	0	0
Mar	.0	.0	0	0
Apr	.0	.0	0	0
May	.0	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.0	.0	0	0
Nov	#	.0	0	0
Dec	#	.0	#	0
Ann	#	.0	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	#	1997	13	#+	1997	#	1997	13	#	1997
Feb	#	1988	7	#+	1988	0	0	0	0	0
Mar	.0	0	0	.0	0	0	0	0	0	0
Apr	.0	0	0	.0	0	0	0	0	0	0
May	.0	0	0	.0	0	0	0	0	0	0
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	.0	0	0	.0	0	0	0	0	0	0
Nov	#	1979	22	#	1979	0	0	0	0	0
Dec	#	1996	16	#	1996	#	1996	16	#	1996
Ann	#+	Jan 1997	13	#+	Jan 1997	#+	Jan 1997	13	#+	Jan 1997

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.0	.0	.0	.0	.0
Feb	.0	.0	.0	.0	.0
Mar	.0	.0	.0	.0	.0
Apr	.0	.0	.0	.0	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.0	.0	.0	.0	.0
Nov	.0	.0	.0	.0	.0
Dec	.0	.0	.0	.0	.0
Ann	.0	.0	.0	.0	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.0	.0	.0	.0
Feb	.0	.0	.0	.0
Mar	.0	.0	.0	.0
Apr	.0	.0	.0	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.0	.0	.0	.0
Nov	.0	.0	.0	.0
Dec	.0	.0	.0	.0
Ann	.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	4/03	3/26	3/20	3/15	3/10	3/05	2/28	2/22	2/14
32	3/25	3/16	3/10	3/04	2/27	2/22	2/16	2/10	2/01
28	3/07	2/25	2/17	2/11	2/05	1/29	1/23	1/14	1/02
24	2/22	2/11	2/03	1/26	1/19	1/12	1/02	12/16	0/00
20	2/07	1/26	1/16	1/06	12/23	0/00	0/00	0/00	0/00
16	1/12	12/26	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	10/29	11/05	11/10	11/14	11/18	11/22	11/26	12/01	12/08
32	11/08	11/17	11/23	11/28	12/02	12/07	12/12	12/18	12/26
28	11/17	11/25	12/02	12/07	12/13	12/18	12/23	12/30	1/10
24	12/07	12/16	12/23	12/29	1/04	1/10	1/19	0/00	0/00
20	12/13	12/27	1/07	1/19	2/03	0/00	0/00	0/00	0/00
16	1/03	1/19	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	287	275	266	259	252	245	238	230	218
32	309	299	291	284	278	272	265	257	246
28	364	341	329	320	311	303	294	284	271
24	>365	>365	>365	365	347	337	329	320	309
20	>365	>365	>365	>365	>365	>365	>365	343	326
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

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Degree Days to Selected Base Temperatures (˚F)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	456	308	141	39	6	0	0	0	0	20	200	387	1557
60	325	195	58	8	0	0	0	0	0	4	116	258	964
57	257	142	28	2	0	0	0	0	0	1	78	195	703
55	218	113	16	0	0	0	0	0	0	1	57	159	564
50	136	53	3	0	0	0	0	0	0	0	23	84	299
32	7	0	0	0	0	0	0	0	0	0	0	0	7

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	591	630	918	1083	1330	1450	1569	1575	1401	1192	853	651	13243
55	89	99	221	393	617	760	856	862	711	479	220	98	5405
57	66	72	171	335	555	700	794	800	651	418	181	72	4815
60	40	41	107	252	462	610	701	707	561	328	129	42	3980
65	6	14	36	132	313	460	546	552	411	189	63	15	2737
70	6	4	7	53	180	311	391	397	265	80	24	3	1721

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	388	475	717	873	1113	1239	1353	1358	1190	971	647	450	388	863	1580	2453	3566	4805	6158	7516	8706	9677	10324	10774
45	266	341	564	723	958	1089	1198	1203	1040	817	503	317	266	607	1171	1894	2852	3941	5139	6342	7382	8199	8702	9019
50	162	225	416	573	803	939	1043	1048	890	663	366	201	162	387	803	1376	2179	3118	4161	5209	6099	6762	7128	7329
55	88	134	280	426	648	789	888	893	740	510	247	114	88	222	502	928	1576	2365	3253	4146	4886	5396	5643	5757
60	41	64	163	288	494	639	733	738	590	365	144	59	41	105	268	556	1050	1689	2422	3160	3750	4115	4259	4318
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	245	292	455	582	772	857	905	899	803	650	411	280	245	537	992	1574	2346	3203	4108	5007	5810	6460	6871	7151

(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.
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

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

c. Snow Tables
   1. Snow Climatology
   2. Cooperative Summary of the Day

d. Freeze Data Table
   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