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: BEAUMONT RESEARCH CTR, TX **COOP ID: 410613**

Climate Division: TX 8 **NWS Call Sign:** **Elevation: 27 Feet** **Lat: 30˚04N** **Lon: 94˚17W**

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	61.1	41.1	51.1	86	1957	5	57.4	1999	9	1949	31	42.4	1977	447	5	.0	.0	26.0	.1	7.0	.0
Feb	64.9	44.0	54.5	86	1954	28	61.4	2000	19	1981	11	44.7	1978	309	13	.0	.0	25.7	.1	4.0	.0
Mar	71.8	51.2	61.5	87	1948	31	67.1	2000	23+	1996	9	55.8	1996	154	44	.0	.0	30.5	.0	1.2	.0
Apr	77.9	57.6	67.8	94	1987	29	72.6	1981	30	1987	3	63.2	1983	40	123	.0	.4	30.0	.0	.1	.0
May	84.9	65.8	75.4	98	1998	31	78.4	1998	43	1954	4	72.1	1976	1	322	.0	4.2	31.0	.0	.0	.0
Jun	90.1	71.8	81.0	99+	1998	1	85.2	1998	52	1984	1	78.5	1983	0	477	.0	17.4	30.0	.0	.0	.0
Jul	92.7	73.5	83.1	103	1980	18	85.8	1980	60+	1956	4	81.4	1976	0	562	.2	26.4	31.0	.0	.0	.0
Aug	92.8	72.5	82.7	106	1962	11	86.3	1999	58	1992	17	78.9	1992	0	547	.6	25.0	31.0	.0	.0	.0
Sep	88.7	67.9	78.3	107	2000	5	82.1	1998	48+	1983	22	75.1	1974	0	398	.3	14.2	30.0	.0	.0	.0
Oct	81.1	57.8	69.5	97+	1953	2	73.1	1984	27	1993	31	61.9	1976	32	171	.0	1.6	31.0	.0	@	.0
Nov	71.2	49.9	60.6	90	1948	1	66.0	1973	25	1950	25	52.6	1976	193	58	.0	.0	29.2	.0	1.4	.0
Dec	63.8	43.1	53.5	88	1954	4	62.9	1984	8	1989	23	44.4	1989	372	14	.0	.0	27.9	.2	4.9	.0
Ann	78.4	58.0	68.3	107	Sep 2000	5	86.3	Aug 1999	8	Dec 1989	23	42.4	Jan 1977	1548	2734	1.1	89.2	353.3	.4	18.6	.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: 1948-2001

(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	4.89	4.33	4.13	1959	30	12.96	1991	.87	1986
Feb	3.60	3.51	6.56	1983	1	10.28	1983	.68	1989
Mar	4.21	4.46	3.90	1957	18	8.60	1980	.86	1996
Apr	3.14	2.12	8.83	1979	20	14.45	1979	.16	1987
May	5.71	6.40	5.01	1984	20	10.51	1975	.06	1998
Jun	6.95	5.48	15.21	2001	7	20.17	1987	.33	1980
Jul	4.45	4.09	7.96	1979	25	15.50	1979	.84	2000
Aug	4.15	3.75	4.76	1996	13	12.71	1996	.36	1990
Sep	5.83	4.61	11.55	1963	18	17.17	1998	1.76	1982
Oct	5.03	4.22	9.15	1983	18	22.17	1994	.02	1978
Nov	4.42	4.28	4.05	1978	27	9.60	2000	.74	1988
Dec	5.00	4.65	6.14	1991	13	11.89	1982	1.65	1984
Ann	57.38	55.54	15.21	Jun 2001	7	22.17	Oct 1994	.02	Oct 1978

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	12.6	7.1	3.3	1.6
Feb	10.2	5.0	2.0	.9
Mar	10.3	5.7	2.5	1.2
Apr	7.5	4.2	2.0	1.2
May	8.7	5.6	3.5	2.1
Jun	10.6	7.5	3.7	1.8
Jul	12.2	7.4	2.5	1.0
Aug	11.9	7.0	2.3	1.1
Sep	11.1	6.9	3.0	1.5
Oct	7.7	4.9	2.4	1.3
Nov	10.0	5.8	3.0	1.6
Dec	11.2	6.3	2.6	1.2
Ann	124.0	73.4	32.8	16.5

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	1.32	1.78	2.49	3.11	3.72	4.35	5.06	5.90	6.99	8.70	10.29
Feb	1.01	1.35	1.87	2.32	2.76	3.22	3.74	4.34	5.12	6.35	7.50
Mar	1.21	1.61	2.22	2.74	3.25	3.78	4.37	5.06	5.95	7.36	8.67
Apr	.26	.47	.88	1.31	1.79	2.34	2.99	3.82	4.96	6.86	8.74
May	.77	1.23	2.04	2.84	3.67	4.59	5.66	6.97	8.75	11.65	14.45
Jun	1.07	1.66	2.67	3.63	4.62	5.71	6.96	8.49	10.54	13.87	17.06
Jul	1.40	1.83	2.45	2.99	3.51	4.04	4.63	5.32	6.21	7.60	8.88
Aug	.91	1.29	1.90	2.45	3.01	3.59	4.25	5.04	6.08	7.75	9.31
Sep	1.37	1.92	2.77	3.53	4.29	5.09	5.99	7.06	8.47	10.70	12.80
Oct	.48	.84	1.52	2.22	2.98	3.84	4.85	6.13	7.88	10.78	13.63
Nov	1.20	1.62	2.26	2.82	3.36	3.94	4.57	5.32	6.30	7.83	9.27
Dec	1.43	1.90	2.62	3.24	3.85	4.48	5.18	6.01	7.08	8.76	10.33
Ann	40.30	43.59	47.81	51.02	53.88	56.64	59.50	62.66	66.50	72.07	76.90

\+ 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: 1948-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	.0	#	0	.8	1985	3	.8	1985	#	1982	15	#	1982	.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	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Ann	.1	.0	N/A	N/A	.8	Jan 1985	3	.8	Jan 1985	#	Jan 1982	15	#	Jan 1982	.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	3/29	3/23	3/18	3/14	3/11	3/07	3/03	2/26	2/20
32	3/24	3/15	3/08	3/03	2/25	2/20	2/15	2/08	1/30
28	3/12	2/28	2/19	2/11	2/04	1/28	1/20	1/09	12/20
24	2/27	2/14	2/03	1/25	1/15	1/03	12/12	0/00	0/00
20	1/22	1/11	12/31	0/00	0/00	0/00	0/00	0/00	0/00
16	12/31	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	10/29	11/05	11/09	11/13	11/17	11/20	11/24	11/29	12/05
32	11/11	11/18	11/23	11/28	12/02	12/06	12/10	12/15	12/22
28	11/21	12/01	12/08	12/14	12/20	12/25	1/01	1/09	1/25
24	12/05	12/19	12/30	1/09	1/19	2/02	0/00	0/00	0/00
20	12/27	1/07	1/17	0/00	0/00	0/00	0/00	0/00	0/00
16	1/06	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	278	268	262	256	250	245	239	232	223
32	311	300	292	285	279	272	266	258	247
28	>365	364	341	328	318	309	299	289	274
24	>365	>365	>365	>365	363	341	327	315	300
20	>365	>365	>365	>365	>365	>365	>365	>365	>365
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	447	309	154	40	1	0	0	0	0	32	193	372	1548
60	315	195	70	8	0	0	0	0	0	8	109	244	949
57	248	142	37	2	0	0	0	0	0	3	70	181	683
55	209	112	23	1	0	0	0	0	0	2	50	146	543
50	127	51	5	0	0	0	0	0	0	0	18	73	274
32	5	0	0	0	0	0	0	0	0	0	0	0	5

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	597	627	913	1073	1343	1467	1585	1570	1388	1162	855	665	13245
55	88	95	223	383	630	777	872	857	698	450	215	97	5385
57	65	69	175	325	568	717	810	795	638	390	176	71	4799
60	39	39	115	241	475	627	717	702	548	302	124	40	3969
65	5	13	44	123	322	477	562	547	398	171	58	14	2734
70	5	1	11	44	178	327	407	392	252	73	21	2	1713

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	367	431	666	830	1084	1218	1329	1309	1137	904	613	424	367	798	1464	2294	3378	4596	5925	7234	8371	9275	9888	10312
45	242	299	514	680	929	1068	1174	1154	987	749	468	290	242	541	1055	1735	2664	3732	4906	6060	7047	7796	8264	8554
50	144	189	368	530	774	918	1019	999	837	596	331	179	144	333	701	1231	2005	2923	3942	4941	5778	6374	6705	6884
55	77	98	234	385	619	768	864	844	687	443	212	97	77	175	409	794	1413	2181	3045	3889	4576	5019	5231	5328
60	33	47	123	246	465	618	709	689	537	300	120	49	33	80	203	449	914	1532	2241	2930	3467	3767	3887	3936
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	219	259	410	543	760	857	925	898	787	602	381	258	219	478	888	1431	2191	3048	3973	4871	5658	6260	6641	6899

(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.
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