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: BAYTOWN, TX **COOP ID: 410586**

Climate Division: TX 8 **NWS Call Sign:** **Elevation: 34 Feet** **Lat: 29˚50N** **Lon: 95˚00W**

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	61.3	41.9	51.6	83	1957	9	58.3	1998	15+	1962	12	42.8	1978	434	10	.0	.0	26.1	.1	4.4	.0
Feb	65.3	45.2	55.3	87+	1957	10	62.4	1999	15	1951	2	45.5	1978	290	17	.0	.0	25.6	.1	2.5	.0
Mar	71.6	52.8	62.2	90	1989	31	67.2	1974	25+	1989	6	56.9	1996	135	49	.0	@	30.5	.0	.6	.0
Apr	77.3	59.5	68.4	93	1987	29	73.0	1981	35	1987	3	63.7	1983	36	137	.0	.2	30.0	.0	.0	.0
May	83.2	67.4	75.3	99	1948	18	79.7	1998	46	1954	4	71.7	1983	2	322	.0	1.9	31.0	.0	.0	.0
Jun	88.7	73.5	81.1	100	1998	15	85.6	1998	58+	1970	3	77.7	1983	0	484	@	15.2	30.0	.0	.0	.0
Jul	91.6	75.6	83.6	103	1954	24	86.9+	2000	62	1967	15	80.3	1976	0	576	.4	24.9	31.0	.0	.0	.0
Aug	92.0	74.5	83.3	106	1962	13	87.5	1999	61+	1992	17	79.3	1992	0	565	.6	25.2	31.0	.0	.0	.0
Sep	88.0	69.5	78.8	109	2000	5	83.0	1998	41	1967	29	75.0	1975	0	412	.3	14.6	30.0	.0	.0	.0
Oct	80.5	59.8	70.2	96+	1982	1	73.8	1984	30	1993	31	62.3	1976	24	183	.0	1.6	31.0	.0	@	.0
Nov	71.0	51.1	61.1	89+	1963	7	66.8	1973	25	1959	18	52.9	1976	185	66	.0	.0	29.0	.0	.8	.0
Dec	63.8	44.0	53.9	85	1951	20	63.5	1984	7	1989	24	43.8	1989	365	20	.0	.0	28.0	.3	3.7	.0
Ann	77.9	59.6	68.7	109	Sep 2000	5	87.5	Aug 1999	7	Dec 1989	24	42.8	Jan 1978	1471	2841	1.3	83.6	353.2	.5	12.0	.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

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1946-2001

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

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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	4.76	4.29	8.29	1998	22	15.60	1998	.53	1971
Feb	3.37	2.87	5.43	1952	1	9.76	1992	.52	1972
Mar	3.21	2.45	6.23	2001	28	7.64	1993	.69	1986
Apr	3.54	2.53	6.33	1997	26	11.77	1997	.34	1987
May	5.45	5.69	4.53	1982	24	14.12	1997	.00	1998
Jun	6.67	4.84	9.50+	1989	27	19.46	1989	.67	1988
Jul	3.76	3.49	3.75	1959	25	10.52	1987	.18	2000
Aug	3.93	3.52	5.34	1955	28	10.57	1996	.61	1993
Sep	5.03	4.92	7.40	1971	10	11.51	1998	1.28	1993
Oct	5.54	3.93	15.74	1994	18	27.72	1994	.05	1987
Nov	4.46	3.79	11.10	1946	5	12.16	2000	1.10	1971
Dec	4.03	3.78	6.20	1964	10	8.31	1982	.62	1989
Ann	53.75	52.84	15.74	Oct 1994	18	27.72	Oct 1994	.00	May 1998

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	12.4	6.8	2.7	1.2
Feb	9.5	5.1	2.1	1.1
Mar	10.3	5.0	2.0	1.1
Apr	8.1	4.4	2.4	1.2
May	9.1	5.6	3.3	1.8
Jun	9.8	6.6	3.6	1.7
Jul	10.9	6.5	2.5	1.2
Aug	11.3	6.8	2.3	.8
Sep	10.1	7.2	3.4	1.7
Oct	8.2	5.5	2.7	1.3
Nov	9.3	5.8	2.7	1.5
Dec	10.8	6.3	2.5	1.2
Ann	119.8	71.6	32.2	15.8

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	.94	1.37	2.07	2.71	3.36	4.06	4.85	5.80	7.06	9.07	10.99
Feb	.64	.94	1.43	1.89	2.36	2.86	3.42	4.11	5.02	6.48	7.88
Mar	.71	1.00	1.47	1.90	2.32	2.78	3.29	3.90	4.70	5.98	7.19
Apr	.46	.74	1.25	1.74	2.26	2.84	3.51	4.33	5.45	7.28	9.05
May	.64	1.32	2.24	3.02	3.81	4.65	5.59	6.73	8.23	10.63	12.91
Jun	1.08	1.66	2.63	3.55	4.50	5.53	6.71	8.15	10.07	13.20	16.18
Jul	.72	1.06	1.61	2.11	2.63	3.19	3.82	4.58	5.58	7.20	8.74
Aug	1.15	1.52	2.08	2.57	3.04	3.53	4.07	4.71	5.54	6.84	8.04
Sep	1.29	1.76	2.49	3.14	3.78	4.45	5.20	6.08	7.24	9.07	10.79
Oct	.28	.57	1.22	1.96	2.81	3.82	5.06	6.67	8.93	12.80	16.68
Nov	.92	1.33	1.98	2.58	3.18	3.82	4.55	5.42	6.57	8.42	10.17
Dec	1.28	1.67	2.23	2.72	3.18	3.67	4.20	4.82	5.63	6.87	8.03
Ann	34.87	38.40	42.99	46.52	49.69	52.79	56.00	59.59	63.97	70.39	76.00

\+ 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: 1946-2001
(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	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	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	.0	0	0	.0	0	0	0	0	0	0
Feb	.0	0	0	.0	0	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	.0	0	0	.0	0	0	0	0	0	0
Dec	.0	0	0	.0	0	0	0	0	0	0
Ann	.0	0	0	.0	0	0	0	0	0	0

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	3/23	3/15	3/09	3/04	2/27	2/23	2/18	2/12	2/04
32	3/14	3/03	2/24	2/17	2/10	2/04	1/28	1/19	1/06
28	2/28	2/17	2/09	2/01	1/25	1/17	1/07	12/20	0/00
24	2/07	1/25	1/15	1/04	12/22	0/00	0/00	0/00	0/00
20	1/17	12/30	0/00	0/00	0/00	0/00	0/00	0/00	0/00
16	0/00	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	11/18	11/23	11/27	12/01	12/05	12/10	12/17
32	11/19	11/26	12/01	12/06	12/10	12/14	12/18	12/24	1/01
28	11/21	12/03	12/13	12/21	12/29	1/07	1/18	2/08	0/00
24	12/09	12/22	1/01	1/11	1/23	2/12	0/00	0/00	0/00
20	1/03	1/20	0/00	0/00	0/00	0/00	0/00	0/00	0/00
16	0/00	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	305	293	285	278	272	265	258	250	239
32	>365	333	319	310	301	293	284	275	261
28	>365	>365	>365	357	335	323	312	301	287
24	>365	>365	>365	>365	>365	>365	355	340	326
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)

Base — Heating Degree Days (1)

Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	434	290	135	36	2	0	0	0	0	24	185	365	1471
60	305	182	57	7	0	0	0	0	0	5	105	242	903
57	239	132	28	2	0	0	0	0	0	2	68	182	653
55	202	103	17	0	0	0	0	0	0	1	48	148	519
50	122	47	3	0	0	0	0	0	0	0	18	76	266
32	4	0	0	0	0	0	0	0	0	0	0	0	4

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	611	651	937	1091	1343	1474	1599	1588	1402	1182	871	678	13427
55	96	110	241	401	630	784	886	875	712	470	229	113	5547
57	71	83	190	343	568	724	824	813	652	409	189	85	4951
60	44	49	126	258	475	634	731	720	562	320	135	52	4106
65	10	17	49	137	322	484	576	565	412	183	66	20	2841
70	7	5	12	55	182	334	421	410	266	79	25	7	1803

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	408	465	688	863	1108	1240	1359	1348	1173	946	637	453	408	873	1561	2424	3532	4772	6131	7479	8652	9598	10235	10688
45	278	335	537	713	953	1090	1204	1193	1023	791	491	318	278	613	1150	1863	2816	3906	5110	6303	7326	8117	8608	8926
50	166	214	387	563	798	940	1049	1038	873	637	354	201	166	380	767	1330	2128	3068	4117	5155	6028	6665	7019	7220
55	88	122	253	413	643	790	894	883	723	484	232	109	88	210	463	876	1519	2309	3203	4086	4809	5293	5525	5634
60	39	56	136	274	488	640	739	728	573	339	134	55	39	95	231	505	993	1633	2372	3100	3673	4012	4146	4201
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	230	272	422	568	793	884	955	936	819	640	391	272	230	502	924	1492	2285	3169	4124	5060	5879	6519	6910	7182

(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