

Climatography of the United States

No. 20

1971-2000

Station: BRAVO, TX

COOP ID: 411033

Climate Division: TX 1

NWS Call Sign:

Elevation: 4,160 Feet Lat: 35° 37N

Lon: 103° 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	50.6	18.9	34.8	78	1970	24	40.9	1986	-12	1979	2	25.5	1979	939	0	.0	.0	18.9	3.3	28.8	.9
Feb	55.6	22.9	39.3	82+	1979	14	45.5	2000	-11	1986	11	30.8	1978	720	0	.0	.0	20.7	2.0	23.2	.4
Mar	63.5	29.0	46.3	92	1989	12	51.4	1974	2	1965	19	42.6	1996	581	0	.0	.1	27.2	.5	18.2	.0
Apr	71.2	37.4	54.3	97	1989	23	61.3	1981	17	1973	10	47.5	1997	333	11	.0	.4	28.7	.0	8.0	.0
May	79.0	47.2	63.1	100	2000	24	69.1	1996	26	1970	1	59.2	1983	118	59	@	3.4	30.8	.0	.6	.0
Jun	87.6	56.7	72.2	109+	1990	26	78.2	1990	39	1975	11	67.5	1989	15	230	1.7	13.5	30.0	.0	.0	.0
Jul	91.2	61.5	76.4	103+	1995	28	81.3	1980	48	1990	14	72.8	1975	0	352	1.3	20.8	31.0	.0	.0	.0
Aug	89.4	60.5	75.0	103+	1994	18	79.2	2000	44+	1988	30	71.2	1971	2	310	.4	16.9	31.0	.0	.0	.0
Sep	82.3	52.1	67.2	101	1995	6	72.9	1998	25	1983	21	62.0	1974	52	118	.2	6.8	29.9	.0	.3	.0
Oct	73.4	40.1	56.8	93+	2000	4	59.9	1979	10	1993	30	51.9	1976	260	5	.0	.7	30.1	@	4.6	.0
Nov	60.2	28.1	44.2	90	1980	8	50.0	1999	-3	1976	28	36.9	1972	626	0	.0	@	23.8	.6	19.6	.1
Dec	51.4	19.9	35.7	79+	1995	3	42.7	1980	-12	1990	23	25.8	1983	910	0	.0	.0	19.0	2.8	28.4	1.0
Ann	71.3	39.5	55.4	109+	Jun 1990	26	81.3	Jul 1980	-12+	Dec 1990	23	25.5	Jan 1979	4556	1085	3.6	62.6	321.1	9.2	131.7	2.4

+ 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: 1948-2001

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

038-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: BRAVO, TX

COOP ID: 411033

Climate Division: TX 1

NWS Call Sign:

Elevation: 4,160 Feet Lat: 35°37N

Lon: 103°00W

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	.40	.31	1.00	1948	29	1.54	1983	.00+	1998	2.4	1.6	.2	@	.00	.00	.06	.13	.20	.28	.38	.50	.67	.94	1.22
Feb	.39	.27	1.12	1966	27	1.78	1987	.00+	2000	2.2	1.4	.1	.0	.00	.00	.00	.09	.18	.27	.37	.50	.68	.97	1.26
Mar	.79	.60	1.79	1958	6	3.31	2000	.00+	1997	3.2	2.1	.6	.1	.00	.00	.12	.25	.38	.54	.73	.97	1.31	1.87	2.43
Apr	1.06	.82	3.25	1955	29	4.38	1997	.00+	1996	3.8	2.6	.7	.2	.00	.00	.21	.38	.57	.77	1.02	1.32	1.73	2.42	3.09
May	2.50	2.11	4.59	1999	2	7.44	1999	.15	1998	5.3	4.2	1.7	.6	.43	.65	1.01	1.35	1.70	2.08	2.52	3.05	3.75	4.89	5.98
Jun	2.65	2.32	4.68	1965	25	7.00	1993	.00	1990	5.6	4.5	1.9	.6	.28	.59	1.03	1.42	1.81	2.22	2.70	3.27	4.03	5.24	6.41
Jul	2.48	2.15	2.65	1973	23	8.32	1982	.29	1987	5.5	4.7	1.4	.6	.38	.59	.95	1.29	1.65	2.03	2.48	3.03	3.76	4.94	6.08
Aug	3.22	2.98	3.50	1974	11	9.74	1981	.35	2000	7.6	5.9	2.2	.8	.63	.92	1.39	1.83	2.27	2.74	3.28	3.92	4.78	6.16	7.46
Sep	1.88	1.41	3.30	1964	14	5.41	1976	.03	2000	4.6	3.7	1.2	.4	.13	.25	.49	.74	1.03	1.36	1.76	2.27	2.98	4.18	5.37
Oct	1.23	.59	3.45	2000	24	4.89	2000	.00	1975	3.2	2.4	.8	.2	.01	.05	.16	.31	.50	.73	1.04	1.44	2.03	3.06	4.12
Nov	.66	.31	2.57	1978	4	3.63	1978	.00+	1999	2.2	1.5	.4	.1	.00	.00	.05	.14	.24	.37	.55	.77	1.10	1.69	2.28
Dec	.42	.28	2.42	1959	15	1.78	1991	.00+	1985	2.2	1.3	.2	.0	.00	.00	.03	.10	.18	.28	.39	.53	.73	1.05	1.39
Ann	17.68	16.65	4.68	Jun 1965	25	9.74	Aug 1981	.00+	Feb 2000	47.8	35.9	11.4	3.6	11.86	12.96	14.38	15.47	16.44	17.38	18.36	19.45	20.78	22.71	24.40

+ 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

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

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No. 20

1971-2000

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Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: BRAVO, TX

COOP ID: 411033

Climate Division: TX 1

NWS Call Sign:

Elevation: 4,160 Feet

Lat: 35°37N

Lon: 103°00W

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	1.1	.3	#	0	8.0	1983	21	8.0	1983	2	1974	2	#+	2000	.5	.3	.1	.1	.0	.2	.0	.0	.0
Feb	1.1	.0	#	0	2.5	1973	23	3.4	1973	3	1973	23	#+	1973	.4	.2	.0	.0	.0	.3	@	.0	.0
Mar	#	.0	0	0	#	1990	25	#+	1990	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Apr	.9	.0	#	0	11.0	1973	3	13.0	1973	4	1973	3	#	1973	.1	.1	.1	.1	.1	.1	@	.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	#	1993	31	#	1993	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	1.1	.0	#	0	4.3	1972	19	10.2	1972	7	1972	21	1	1972	.4	.2	.2	.0	.0	.3	.2	.1	.0
Dec	1.3	.0	#	0	6.0	1971	2	6.0	1971	6	1971	2	#+	1990	.2	.2	.1	.1	.0	.2	.1	@	.0
Ann	5.5	.3	N/A	N/A	11.0	Apr 1973	3	13.0	Apr 1973	7	Nov 1972	21	1	Nov 1972	1.6	1.0	.5	.3	.1	1.1	.3	.1	.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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Climate Division: TX 1

NWS Call Sign:

Elevation: 4,160 Feet

Lat: 35° 37N

Lon: 103° 00W

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	5/18	5/13	5/10	5/07	5/04	5/02	4/29	4/25	4/21
32	5/09	5/04	5/01	4/28	4/26	4/23	4/20	4/17	4/12
28	4/25	4/20	4/17	4/14	4/12	4/10	4/07	4/04	3/30
24	4/17	4/12	4/08	4/04	4/01	3/29	3/26	3/21	3/16
20	4/09	4/03	3/29	3/24	3/20	3/16	3/12	3/07	3/01
16	3/28	3/20	3/15	3/10	3/05	3/01	2/24	2/19	2/11
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	9/24	9/28	9/30	10/03	10/05	10/08	10/10	10/13	10/17
32	9/30	10/05	10/08	10/11	10/13	10/16	10/18	10/22	10/26
28	10/09	10/14	10/18	10/21	10/24	10/27	10/31	11/03	11/09
24	10/22	10/27	10/30	11/02	11/04	11/07	11/10	11/13	11/18
20	10/26	11/02	11/06	11/10	11/14	11/17	11/21	11/26	12/02
16	11/04	11/11	11/16	11/20	11/24	11/28	12/02	12/07	12/14
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	173	166	161	157	153	150	145	141	134
32	188	182	177	174	170	166	163	158	152
28	216	208	203	199	195	190	186	181	174
24	240	232	226	221	217	212	207	202	194
20	267	257	250	243	238	232	226	219	209
16	291	282	275	269	263	257	251	244	235

* 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:
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Climate Division: TX 1 NWS Call Sign: Elevation: 4,160 Feet Lat: 35°37N Lon: 103°00W

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	939	720	581	333	118	15	0	2	52	260	626	910	4556
60	784	580	427	210	47	2	0	0	12	132	478	755	3427
57	691	496	336	149	23	0	0	0	4	75	393	662	2829
55	629	442	280	115	13	0	0	0	1	48	338	600	2466
50	476	312	153	50	2	0	0	0	0	13	216	451	1673
32	71	29	1	0	0	0	0	0	0	0	12	68	181

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	155	232	443	668	964	1205	1375	1331	1056	768	376	181	8754
55	0	2	9	93	264	515	662	618	367	103	12	0	2645
57	0	0	3	68	212	455	600	556	310	68	6	0	2278
60	0	0	1	38	143	367	507	463	228	31	1	0	1779
65	0	0	0	11	59	230	352	310	118	5	0	0	1085
70	0	0	0	2	16	120	202	170	47	0	0	0	557

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	67	136	274	470	747	992	1141	1094	844	549	209	79	67	203	477	947	1694	2686	3827	4921	5765	6314	6523	6602
45	26	61	162	331	592	842	986	939	694	402	117	32	26	87	249	580	1172	2014	3000	3939	4633	5035	5152	5184
50	0	20	81	206	439	692	831	784	546	266	52	5	0	20	101	307	746	1438	2269	3053	3599	3865	3917	3922
55	0	1	27	109	294	542	676	629	402	146	12	0	0	1	28	137	431	973	1649	2278	2680	2826	2838	2838
60	0	0	3	40	166	393	521	474	268	63	0	0	0	0	3	43	209	602	1123	1597	1865	1928	1928	1928
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	97	150	249	342	482	633	739	717	546	382	185	100	97	247	496	838	1320	1953	2692	3409	3955	4337	4522	4622

(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