

# 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: BREWSTER 4 W, KS

1971-2000

COOP ID: 141029

Climate Division: KS 1

NWS Call Sign:

Elevation: 3,437 Feet Lat: 39° 22N

Lon: 101° 27W

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	39.4	12.2	25.8	77	1982	26	35.1	1986	-22	1974	4	13.2	1979	1216	0	.0	.0	8.5	8.5	30.7	3.8
Feb	45.7	16.3	31.0	82+	1972	29	38.2	1999	-23	1982	5	18.5	1978	952	0	.0	.0	12.7	5.4	26.8	2.4
Mar	54.3	22.9	38.6	90	1967	24	45.5	1986	-15	1965	20	32.9	1996	820	0	.0	.0	20.2	2.2	26.0	.5
Apr	64.4	32.1	48.3	98	1989	23	55.7	1981	0	1989	10	42.6	1983	503	1	.0	.4	26.1	.3	13.6	@
May	73.9	43.2	58.6	104	2000	30	62.9	1974	20	1989	1	51.2	1995	229	27	.1	1.4	30.5	.0	1.8	.0
Jun	86.1	53.9	70.0	106+	1993	30	74.5	1990	31	1969	2	63.7	1982	38	187	1.8	11.9	29.9	.0	@	.0
Jul	91.6	59.2	75.4	108	1969	3	80.0	1980	40	1990	13	71.6	1992	1	323	5.5	20.1	31.0	.0	.0	.0
Aug	88.8	57.3	73.1	107+	2000	9	80.1	1983	38	1964	27	67.7	1992	14	263	2.1	16.4	31.0	.0	.0	.0
Sep	80.4	47.5	64.0	106	1971	7	70.5	1998	27	1995	23	58.4	1993	110	78	.5	7.5	29.6	.0	1.0	.0
Oct	67.7	34.4	51.1	94+	1997	3	54.7	1974	6	1993	31	45.5	1976	433	0	.0	.6	28.8	.2	9.9	.0
Nov	50.4	22.2	36.3	82	1998	23	44.4	1999	-7	1991	2	28.0	1985	862	0	.0	.0	17.3	2.8	25.5	.2
Dec	41.3	13.9	27.6	83	1964	23	35.7	1980	-33+	1989	23	11.7	1983	1160	0	.0	.0	9.0	6.2	30.4	2.7
Ann	65.3	34.6	50.0	108	Jul 1969	3	80.1	Aug 1983	-33+	Dec 1989	23	11.7	Dec 1983	6338	879	10.0	58.3	274.6	25.6	165.7	9.6

+ 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](http://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

010-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: BREWSTER 4 W, KS**

**COOP ID: 141029**

**Climate Division: KS 1**

**NWS Call Sign:**

**Elevation: 3,437 Feet Lat: 39°22N**

**Lon: 101°27W**

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	.33	.30	1.10	1960	14	1.07	1980	.00+	1990	3.0	1.4	.1	.0	.00	.00	.08	.15	.21	.27	.34	.43	.54	.72	.90
Feb	.44	.23	1.44	1950	12	1.57	1978	.00+	1999	3.1	1.6	.2	.0	.00	.00	.04	.10	.18	.27	.38	.53	.74	1.12	1.49
Mar	1.38	.94	1.91	1980	28	4.28	1981	.00+	1997	5.9	3.2	.6	.2	.00	.09	.29	.50	.73	1.00	1.31	1.70	2.25	3.17	4.07
Apr	1.52	1.15	2.60	1981	19	4.59	1981	.07	1992	6.7	3.9	1.0	.2	.29	.43	.65	.86	1.07	1.29	1.55	1.85	2.26	2.91	3.54
May	3.58	3.44	4.05	1961	21	9.23	1981	.37	2000	10.1	6.8	2.5	.9	.74	1.06	1.59	2.07	2.55	3.07	3.65	4.35	5.28	6.76	8.17
Jun	3.43	2.96	4.55	1975	18	8.79	1975	.30	1976	9.1	5.8	1.8	.7	.81	1.13	1.63	2.08	2.52	3.00	3.53	4.16	4.99	6.31	7.54
Jul	3.25	3.02	4.35	1965	24	7.94	1998	.62	1976	7.8	5.3	1.8	.7	.84	1.14	1.61	2.03	2.44	2.87	3.35	3.92	4.67	5.84	6.94
Aug	2.42	1.78	4.08	1999	2	8.15	1999	.42	1971	7.0	4.6	1.6	.6	.39	.60	.96	1.29	1.63	2.01	2.44	2.96	3.66	4.79	5.87
Sep	1.15	.99	2.28	1970	15	5.05	1973	.00+	1979	6.3	3.3	.5	.1	.00	.18	.41	.60	.78	.97	1.19	1.44	1.78	2.33	2.85
Oct	1.27	.88	3.83	2000	29	5.64	2000	.00+	1999	4.3	2.6	1.0	.3	.00	.05	.21	.40	.61	.85	1.16	1.54	2.09	3.02	3.95
Nov	.85	.70	2.30	1975	19	2.64	1975	.00	1989	3.6	1.9	.4	.1	.03	.09	.21	.34	.47	.63	.81	1.04	1.36	1.90	2.42
Dec	.30	.28	.75	1979	28	1.13	1979	.00+	2000	2.4	1.0	.1	.0	.00	.00	.00	.07	.14	.21	.29	.38	.52	.75	.97
Ann	19.92	19.11	4.55	Jun 1975	18	9.23	May 1981	.00+	Dec 2000	69.3	41.4	11.6	3.8	13.30	14.55	16.17	17.42	18.53	19.61	20.74	21.98	23.51	25.73	27.67

+ 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

# 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](http://www.ncdc.noaa.gov)

**Station: BREWSTER 4 W, KS**

**COOP ID: 141029**

**Climate Division: KS 1**

**NWS Call Sign:**

**Elevation: 3,437 Feet**

**Lat: 39°22N**

**Lon: 101°27W**

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	4.5	3.8	#	#	10.0	1994	27	13.5	1980	12	1990	20	1	1990	1.5	1.1	.6	.2	.1	-9.9	-9.9	-9.9	-9.9
Feb	2.7	1.0	#	0	12.0	1997	24	12.0	1997	12	1997	24	2	1997	1.3	1.1	.4	.1	.1	.9	.6	.4	.1
Mar	5.1	1.0	1	0	10.0	1980	28	20.3	1980	12	1981	8	8	1981	1.2	1.0	.6	.4	.1	.5	.2	.1	.0
Apr	1.4	.0	#	0	5.0	1973	8	8.0	1980	8	1989	9	#+	1999	.4	.4	.2	.1	.0	.3	.1	.1	.0
May	.1	.0	0	0	1.0	1978	6	1.0+	1990	0	0	0	0	0	.1	.1	.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	.2	.0	#	0	4.0	1995	21	4.0	1995	4	1995	21	#+	2000	.1	@	@	.0	.0	.1	.1	.0	.0
Oct	.5	.0	#	0	4.0	1976	27	5.0	1979	5	1991	31	#+	1995	.1	.1	.1	.0	.0	.0	.0	.0	.0
Nov	3.7	2.3	#	#	10.0	1975	19	11.0	1994	12	1994	22	1+	2000	.6	.4	.3	.2	@	.3	.1	.0	.0
Dec	3.2	1.3	#	#	7.0	1972	12	9.0+	1973	4	1997	25	#+	2000	1.0	.8	.3	.1	.0	.4	.0	.0	.0
Ann	21.4	9.4	N/A	N/A	12.0	Feb 1997	24	20.3	Mar 1980	12+	Feb 1997	24	8	Mar 1981	6.3	5.0	2.5	1.1	.3	-9.9	-9.9	-9.9	-9.9

+ 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/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

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

**Station: BREWSTER 4 W, KS**

**COOP ID: 141029**

**Climate Division: KS 1**

**NWS Call Sign:**

**Elevation: 3,437 Feet**

**Lat: 39° 22N**

**Lon: 101° 27W**

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	5/29	5/24	5/20	5/17	5/14	5/11	5/08	5/04	4/29
32	5/21	5/16	5/12	5/09	5/07	5/04	5/01	4/27	4/23
28	5/11	5/05	5/01	4/28	4/25	4/21	4/18	4/14	4/08
24	4/30	4/24	4/20	4/17	4/14	4/11	4/07	4/03	3/29
20	4/18	4/12	4/08	4/04	4/01	3/29	3/25	3/21	3/15
16	4/07	4/01	3/28	3/24	3/21	3/17	3/13	3/09	3/03
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	9/12	9/17	9/19	9/22	9/24	9/27	9/29	10/02	10/06
32	9/21	9/25	9/28	10/01	10/04	10/06	10/09	10/12	10/17
28	9/27	10/02	10/06	10/09	10/12	10/15	10/19	10/22	10/28
24	10/05	10/11	10/16	10/19	10/23	10/26	10/29	11/03	11/09
20	10/17	10/22	10/26	10/29	11/01	11/04	11/07	11/11	11/16
16	10/29	11/03	11/07	11/10	11/14	11/17	11/20	11/24	11/29
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	152	146	141	137	133	129	125	120	113
32	168	162	157	153	149	146	142	137	131
28	193	185	179	175	170	166	161	155	148
24	215	207	201	196	191	186	181	175	167
20	235	228	222	218	213	209	204	199	191
16	262	254	247	242	237	232	227	221	212

\* 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](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

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

**Station: BREWSTER 4 W, KS**

**COOP ID: 141029**

**Climate Division: KS 1      NWS Call Sign:      Elevation: 3,437 Feet    Lat: 39°22N      Lon: 101°27W**

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	1216	952	820	503	229	38	1	14	110	433	862	1160	6338
60	1061	812	665	360	123	10	0	2	43	283	712	1005	5076
57	968	728	572	280	76	4	0	0	20	201	622	912	4383
55	906	672	510	231	53	2	0	0	11	153	562	850	3950
50	752	541	362	130	16	0	0	0	1	65	424	699	2990
32	273	161	31	1	0	0	0	0	0	0	80	239	785

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	80	133	234	489	822	1139	1345	1272	959	591	209	102	7375
55	0	0	0	29	162	451	632	559	279	31	1	0	2144
57	0	0	0	18	123	393	570	497	228	17	0	0	1846
60	0	0	0	8	76	309	477	406	161	5	0	0	1442
65	0	0	0	1	27	187	323	263	78	0	0	0	879
70	0	0	0	0	6	94	182	143	30	0	0	0	455

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	14	49	131	319	613	914	1128	1061	753	399	93	23	14	63	194	513	1126	2040	3168	4229	4982	5381	5474	5497
45	0	16	63	202	464	764	973	906	607	270	39	5	0	16	79	281	745	1509	2482	3388	3995	4265	4304	4309
50	0	1	21	114	317	614	818	751	463	159	11	0	0	1	22	136	453	1067	1885	2636	3099	3258	3269	3269
55	0	0	4	52	193	465	663	596	328	74	0	0	0	0	4	56	249	714	1377	1973	2301	2375	2375	2375
60	0	0	0	20	102	324	509	441	210	24	0	0	0	0	0	20	122	446	955	1396	1606	1630	1630	1630
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	28	74	141	248	394	572	717	675	479	301	104	39	28	102	243	491	885	1457	2174	2849	3328	3629	3733	3772

(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/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/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](http://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"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
|---|---|

## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)