

# Climatography of the United States

No. 20

1971-2000

Station: BRITTON, SD

COOP ID: 391049

Climate Division: SD 3

NWS Call Sign:

Elevation: 1,340 Feet Lat: 45°47N

Lon: 97°45W

## 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	20.6	-1.0	9.8	71	1913	16	24.1	1990	-44	1916	13	-3.8	1982	1712	0	.0	.0	.3	23.7	31.0	15.6
Feb	28.2	6.7	17.5	67	1958	25	30.5	1987	-42	1936	16	2.2	1979	1332	0	.0	.0	1.6	16.3	27.6	9.4
Mar	40.5	19.1	29.8	84	1946	28	39.7	2000	-28	1948	10	21.0	1996	1092	0	.0	.0	7.4	7.5	26.7	2.9
Apr	57.8	31.9	44.9	100	1980	21	52.9	1987	-3	1936	7	35.9	1975	608	3	@	.2	22.2	.6	15.1	.1
May	71.2	44.5	57.9	109	1934	30	66.3	1977	17+	1961	1	51.7	1979	260	37	.0	.7	30.4	.0	2.8	.0
Jun	78.9	53.7	66.3	108+	1988	25	76.3	1988	30+	1946	1	60.9	1982	79	118	.2	3.3	30.0	.0	.0	.0
Jul	84.3	58.8	71.6	114	1936	6	76.6	1974	37+	1975	12	63.3	1992	31	233	1.2	9.5	31.0	.0	.0	.0
Aug	83.2	57.4	70.3	114	1938	13	77.3	1983	31	1934	25	64.6	1977	40	205	.9	7.2	31.0	.0	@	.0
Sep	73.8	47.0	60.4	107	1931	10	66.2	1998	16	1974	30	55.3	1984	184	45	.1	2.2	29.7	.0	1.9	.0
Oct	59.9	35.0	47.5	94	1963	5	52.4	1973	-4	1925	29	42.2	1976	545	0	.0	@	25.2	.2	12.0	.0
Nov	38.2	19.4	28.8	79	1924	1	40.3	1999	-24+	1996	26	15.9	1985	1086	0	.0	.0	6.8	10.2	26.8	1.9
Dec	25.1	5.4	15.3	65	1939	6	26.2	1999	-40	1916	20	-1.5	1983	1543	0	.0	.0	.7	20.3	30.9	10.4
Ann	55.1	31.5	43.3	114+	Aug 1938	13	77.3	Aug 1983	-44	Jan 1916	13	-3.8	Jan 1982	8512	641	2.4	23.1	216.3	78.8	174.8	40.3

+ 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: 1913-2001

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

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**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: BRITTON, SD**

**COOP ID: 391049**

**Climate Division: SD 3**

**NWS Call Sign:**

**Elevation: 1,340 Feet Lat: 45°47N**

**Lon: 97°45W**

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	.63	.60	.95	1989	7	1.70	1989	.00	1974	5.1	2.2	.1	.0	.06	.14	.24	.33	.42	.52	.64	.77	.95	1.25	1.53
Feb	.51	.42	1.45	1915	13	1.46	1987	.09	1985	4.7	1.9	.1	.0	.10	.14	.22	.29	.36	.44	.52	.63	.77	.99	1.20
Mar	1.03	.84	1.24	1935	4	2.95	1995	.17	1971	5.6	2.7	.6	@	.24	.34	.49	.62	.76	.90	1.05	1.24	1.49	1.88	2.24
Apr	1.72	1.41	2.13	1986	14	7.27	1986	.14	1985	7.1	4.2	.9	.2	.18	.31	.55	.79	1.04	1.33	1.67	2.10	2.68	3.64	4.57
May	2.87	2.43	3.40	1927	8	7.37	1991	.36	1976	8.4	5.6	1.9	.6	.70	.97	1.39	1.76	2.13	2.52	2.95	3.47	4.15	5.22	6.23
Jun	3.44	2.71	3.54	1978	30	7.39	1984	.58	1972	9.1	6.3	2.5	.8	.77	1.09	1.59	2.05	2.50	2.98	3.53	4.17	5.03	6.39	7.67
Jul	3.33	2.37	3.90	1993	25	10.70	1993	.00	1975	8.7	5.4	2.0	.9	.43	.85	1.41	1.88	2.36	2.86	3.43	4.10	4.99	6.41	7.75
Aug	2.28	2.00	3.95	1942	29	5.10	1999	.52	1976	7.1	4.7	1.5	.4	.69	.90	1.23	1.51	1.78	2.06	2.37	2.73	3.20	3.94	4.62
Sep	2.08	1.79	3.48	1988	19	6.55	1999	.14	1979	5.7	3.8	1.4	.3	.21	.36	.64	.93	1.24	1.60	2.01	2.54	3.25	4.44	5.60
Oct	1.60	1.20	2.70	1915	3	5.84	1998	.18	1976	5.9	3.3	1.0	.3	.14	.25	.46	.68	.92	1.20	1.53	1.94	2.51	3.47	4.41
Nov	.82	.66	1.84	1919	10	3.14	2000	.00+	1999	5.2	2.4	.4	.0	.00	.05	.17	.29	.43	.59	.77	1.01	1.34	1.90	2.45
Dec	.37	.31	.69	1972	30	1.44	1972	.00+	1986	4.4	1.4	@	.0	.00	.02	.08	.13	.20	.27	.35	.46	.60	.85	1.09
Ann	20.68	19.44	3.95	Aug 1942	29	10.70	Jul 1993	.00+	Nov 1999	77.0	43.9	12.4	3.5	11.86	13.43	15.51	17.14	18.62	20.08	21.62	23.35	25.48	28.65	31.45

+ 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: 1913-2001

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

Complete documentation available from:  
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Station: BRITTON, SD

COOP ID: 391049

Climate Division: SD 3

NWS Call Sign:

Elevation: 1,340 Feet

Lat: 45° 47N

Lon: 97° 45W

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	11.6	12.5	11	9	22.0	1997	4	22.0	1997	43	1994	20	39	1994	4.2	3.9	2.0	.7	.1	24.2	20.6	18.5	12.4
Feb	8.2	6.5	11	5	7.0	1996	27	15.3	1994	45	1994	12	37	1994	2.9	2.5	.8	.2	.0	22.7	18.3	15.0	8.5
Mar	6.1	5.0	5	3	10.0	1995	4	14.0	1984	43	1972	5	19	1979	2.5	2.3	1.0	.4	.1	9.5	7.3	5.8	2.3
Apr	1.9	.0	#	0	8.0	1998	1	8.5	1995	18	1975	1	2+	1997	.5	.4	.2	.1	.0	.1	.0	.0	.0
May	#	.0	0	0	#	1976	2	#	1976	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	.3	.0	#	0	4.0	1990	17	4.0	1990	1+	1995	31	#+	1995	.1	.1	@	.0	.0	@	.0	.0	.0
Nov	3.9	3.0	2	#	12.0	1993	24	12.0	1993	29	1985	30	11	1985	2.4	2.2	1.0	.4	.1	5.6	3.4	2.2	1.1
Dec	6.4	5.0	6	2	7.0	1972	30	20.5	1972	40	1985	21	35	1985	3.2	2.8	.8	.2	.0	11.8	11.2	11.2	8.3
Ann	38.4	32.0	N/A	N/A	22.0	Jan 1997	4	22.0	Jan 1997	45	Feb 1994	12	39	Jan 1994	15.8	14.2	5.8	2.0	.3	73.9	60.8	52.7	32.6

+ 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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**Elevation: 1,340 Feet**

**Lat: 45° 47N**

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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	6/04	5/30	5/26	5/23	5/21	5/18	5/15	5/11	5/07
32	5/24	5/20	5/16	5/13	5/11	5/08	5/05	5/02	4/27
28	5/18	5/13	5/09	5/06	5/03	4/30	4/27	4/23	4/18
24	5/10	5/04	4/30	4/26	4/23	4/20	4/16	4/12	4/06
20	4/24	4/18	4/14	4/11	4/08	4/05	4/01	3/28	3/22
16	4/12	4/07	4/03	3/31	3/28	3/25	3/22	3/18	3/13
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	9/02	9/06	9/09	9/11	9/14	9/16	9/18	9/21	9/25
32	9/11	9/15	9/18	9/20	9/23	9/25	9/27	9/30	10/04
28	9/20	9/24	9/28	9/30	10/03	10/05	10/08	10/11	10/15
24	9/26	10/01	10/04	10/07	10/10	10/13	10/16	10/19	10/24
20	10/05	10/10	10/14	10/18	10/21	10/24	10/28	11/01	11/06
16	10/14	10/20	10/25	10/29	11/01	11/05	11/09	11/13	11/19
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	136	129	124	119	115	111	107	102	95
32	152	146	141	138	134	131	127	123	117
28	171	164	160	156	152	148	145	140	134
24	188	182	177	173	169	166	162	157	151
20	219	211	205	200	196	191	186	180	172
16	242	233	227	222	217	213	207	201	193

\* 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: SD 3      NWS Call Sign:      Elevation: 1,340 Feet    Lat: 45° 47N      Lon: 97° 45W**

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	1712	1332	1092	608	260	79	31	40	184	545	1086	1543	8512
60	1557	1192	937	466	157	28	10	12	92	392	936	1388	7167
57	1464	1108	844	386	109	13	3	4	54	305	846	1295	6431
55	1402	1052	782	336	82	7	0	2	35	251	786	1233	5968
50	1247	923	638	226	36	1	0	0	9	139	645	1079	4943
32	727	482	211	20	0	0	0	0	0	4	221	576	2241

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	38	73	142	405	800	1029	1225	1188	852	483	125	56	6416
55	0	0	1	32	170	347	512	476	197	17	0	0	1752
57	0	0	0	21	134	293	453	417	156	8	0	0	1482
60	0	0	0	11	89	217	366	332	104	3	0	0	1122
65	0	0	0	3	37	118	233	205	45	0	0	0	641
70	0	0	0	0	12	50	133	111	15	0	0	0	321

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	0	1	37	220	582	827	1015	970	629	282	33	0	0	1	38	258	840	1667	2682	3652	4281	4563	4596	4596
45	0	0	10	132	430	677	860	815	484	172	13	0	0	0	10	142	572	1249	2109	2924	3408	3580	3593	3593
50	0	0	2	71	298	527	705	660	345	94	2	0	0	0	2	73	371	898	1603	2263	2608	2702	2704	2704
55	0	0	0	36	178	381	550	505	224	38	0	0	0	0	0	36	214	595	1145	1650	1874	1912	1912	1912
60	0	0	0	13	91	244	399	355	132	12	0	0	0	0	0	13	104	348	747	1102	1234	1246	1246	1246
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	1	32	158	374	532	667	636	405	194	25	0	0	1	33	191	565	1097	1764	2400	2805	2999	3024	3024

(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](http://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](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> |
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## 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)