

Climatography of the United States

No. 20

1971-2000

Station: HILL CITY, SD

COOP ID: 393868

Climate Division: SD 4

NWS Call Sign:

Elevation: 4,980 Feet Lat: 43° 56N

Lon: 103° 34W

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	36.1	6.9	21.5	64	1992	31	30.5	1986	-26+	1996	31	10.2	1979	1349	0	.0	.0	5.3	10.4	30.1	7.2
Feb	39.5	11.3	25.4	67+	1995	21	32.9	1999	-38	1996	2	12.6	1989	1110	0	.0	.0	6.5	7.3	27.8	5.7
Mar	45.4	18.1	31.8	76+	1989	10	39.4	1986	-25+	1998	11	25.1	1996	1030	0	.0	.0	12.0	4.3	30.1	1.5
Apr	53.4	25.6	39.5	83+	1989	22	46.2	1981	-9	1997	8	33.6	1997	765	0	.0	.0	18.6	1.2	25.7	.2
May	63.4	35.7	49.6	85+	2001	13	55.0	1977	16	1997	3	45.0	1983	479	1	.0	.0	28.1	.0	16.5	.0
Jun	73.5	43.6	58.6	94	1989	19	66.3	1988	26	1998	5	51.8	1998	217	23	.0	.5	29.7	.0	1.0	.0
Jul	79.9	48.7	64.3	99	1989	8	67.8	1974	30+	1976	27	58.3	1992	88	66	@	4.2	31.0	.0	.2	.0
Aug	79.2	46.5	62.9	94	2000	11	68.0	1983	28+	1978	18	59.2	1992	112	45	.0	1.5	30.9	.0	4.8	.0
Sep	70.4	36.0	53.2	95	1972	19	59.8	1998	12	1972	25	48.6	1974	362	8	.0	.6	29.0	.0	6.7	.0
Oct	58.1	27.1	42.6	85	1992	1	45.6	1978	-9	1991	30	37.5	1976	695	0	.0	.0	24.1	.7	24.5	.2
Nov	43.8	16.3	30.1	76	1999	12	40.0	1999	-13+	1993	24	18.2	1985	1049	0	.0	.0	10.3	5.0	27.1	1.7
Dec	37.4	8.7	23.1	69+	1997	14	30.1	1980	-39	1990	22	7.9	1983	1301	0	.0	.0	5.8	9.9	30.9	6.4
Ann	56.7	27.0	41.9	99	Jul 1989	8	68.0	Aug 1983	-39	Dec 1990	22	7.9	Dec 1983	8557	143	@	6.8	231.3	38.8	225.4	22.9

+ 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: 1955-2001

(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: HILL CITY, SD

COOP ID: 393868

Climate Division: SD 4

NWS Call Sign:

Elevation: 4,980 Feet Lat: 43°56N

Lon: 103°34W

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	.32	.30	.43	1964	23	.86	1996	.00	1995	4.9	1.0	.0	.0	.02	.05	.10	.15	.20	.25	.32	.40	.50	.68	.85
Feb	.53	.48	.74	1987	26	1.90	1987	.10	1996	5.0	2.2	@	.0	.10	.15	.23	.30	.37	.45	.54	.65	.80	1.03	1.25
Mar	1.05	.86	3.25	1973	14	4.18	1973	.25	1981	6.5	3.0	.5	.1	.20	.30	.45	.59	.74	.89	1.06	1.28	1.55	2.00	2.43
Apr	2.35	2.11	3.44	2000	19	5.04	1971	.38	1987	9.5	5.1	1.5	.3	.60	.82	1.16	1.47	1.76	2.08	2.42	2.84	3.38	4.23	5.03
May	3.61	2.81	3.32	1962	22	7.56	1991	.91	1985	12.7	7.4	2.5	.8	1.02	1.36	1.88	2.34	2.78	3.24	3.75	4.35	5.13	6.35	7.49
Jun	3.62	3.77	5.14	1972	10	9.47	1972	.44	1974	12.2	7.5	2.2	.6	.74	1.07	1.60	2.08	2.57	3.09	3.69	4.40	5.34	6.85	8.28
Jul	3.39	3.17	3.35	1974	18	8.85	1979	1.13	1983	12.0	7.5	2.0	.5	1.13	1.46	1.93	2.33	2.71	3.11	3.54	4.05	4.70	5.70	6.63
Aug	2.11	1.72	1.84	1983	5	5.31	1996	.25	1975	9.4	4.8	1.3	.3	.52	.72	1.03	1.30	1.57	1.85	2.17	2.55	3.04	3.82	4.55
Sep	1.47	1.15	1.94	1989	21	6.61	1986	.04	1975	6.8	3.4	.8	.2	.12	.22	.41	.62	.84	1.10	1.40	1.78	2.31	3.20	4.08
Oct	1.51	1.10	1.99	1996	26	4.81	1996	.14	1999	6.2	3.5	.8	.3	.20	.32	.53	.75	.97	1.21	1.50	1.85	2.33	3.11	3.86
Nov	.69	.57	1.16	1956	3	1.75	1985	.04	1981	4.8	2.4	.1	@	.11	.17	.27	.36	.46	.57	.69	.84	1.04	1.36	1.68
Dec	.41	.39	1.72	1964	25	.93	1996	.00+	1991	4.3	1.5	.0	.0	.00	.07	.15	.22	.28	.35	.42	.51	.63	.82	1.00
Ann	21.06	20.51	5.14	Jun 1972	10	9.47	Jun 1972	.00+	Jan 1995	94.3	49.3	11.7	3.1	14.60	15.84	17.43	18.64	19.72	20.77	21.85	23.05	24.51	26.64	28.48

+ 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: 1955-2001

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Complete documentation available from:

www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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1971-2000

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Station: HILL CITY, SD

COOP ID: 393868

Climate Division: SD 4

NWS Call Sign:

Elevation: 4,980 Feet

Lat: 43°56N

Lon: 103°34W

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	4.9	4.0	2	2	8.0	1999	6	16.5	1975	11	1976	2	6+	1993	4.5	2.3	.5	.1	.0	16.6	6.9	2.6	.4
Feb	7.9	7.5	2	1	9.0	1987	26	26.0	1987	12	1987	27	7	1978	4.7	2.8	.9	.2	.0	13.0	5.8	3.7	.1
Mar	12.6	10.0	2	1	27.0	1973	14	36.0	1973	27	1973	14	7	1973	5.2	3.5	1.5	.7	.1	11.0	5.7	3.1	.9
Apr	11.6	12.0	1	1	23.7	2000	19	29.6	2000	24	2000	19	5	1984	4.3	3.4	1.4	.7	.2	4.9	2.8	1.7	.6
May	1.8	.0	#	0	8.0	1978	7	12.0	1978	8	1978	7	1	1984	.8	.7	.2	.1	.0	.9	.3	.1	.0
Jun	.3	.0	#	0	5.0	1995	9	5.0	1995	2	1995	9	#	1995	.1	.1	.1	@	.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	.7	.0	#	0	4.5	1996	25	4.5	1996	4+	2000	23	#+	2000	.5	.3	.1	.0	.0	.3	.1	.0	.0
Oct	4.8	2.8	#	#	12.0	1996	26	19.8	1995	12	1996	26	2	1996	2.1	1.7	.6	.2	@	2.2	1.0	.4	.1
Nov	8.8	7.6	1	1	11.0	1986	6	30.5	1985	14	1985	30	8	1985	3.7	2.8	1.1	.3	@	10.0	5.4	2.9	.3
Dec	6.4	7.0	2	2	6.4	1996	21	12.0+	1981	15	1996	25	8	1985	3.8	2.5	.7	.2	.0	16.9	8.9	4.8	.8
Ann	59.8	50.9	N/A	N/A	27.0	Mar 1973	14	36.0	Mar 1973	27	Mar 1973	14	8+	Dec 1985	29.7	20.1	7.1	2.5	.3	75.8	36.9	19.3	3.2

+ 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: SD 4

NWS Call Sign:

Elevation: 4,980 Feet

Lat: 43° 56N

Lon: 103° 34W

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	7/18	7/09	7/03	6/28	6/23	6/18	6/13	6/06	5/29
32	7/05	6/26	6/19	6/14	6/09	6/03	5/29	5/22	5/13
28	6/10	6/05	6/02	5/30	5/27	5/24	5/21	5/17	5/12
24	5/24	5/20	5/17	5/15	5/13	5/10	5/08	5/05	5/01
20	5/18	5/13	5/09	5/05	5/02	4/29	4/25	4/21	4/16
16	5/04	4/30	4/27	4/24	4/21	4/19	4/16	4/13	4/08
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	7/29	8/04	8/09	8/14	8/18	8/22	8/27	9/01	9/09
32	7/31	8/07	8/14	8/19	8/24	8/29	9/03	9/10	9/18
28	8/04	8/14	8/22	8/28	9/02	9/08	9/14	9/22	10/02
24	8/19	8/28	9/04	9/10	9/16	9/21	9/27	10/04	10/14
20	8/28	9/07	9/14	9/20	9/26	10/01	10/07	10/14	10/24
16	9/23	9/29	10/04	10/08	10/11	10/15	10/19	10/23	10/30
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	84	75	67	61	56	50	44	37	27
32	108	97	89	82	76	69	63	55	44
28	129	118	111	104	98	92	85	77	67
24	158	147	139	132	125	119	112	104	93
20	176	166	158	152	146	140	134	126	116
16	192	185	180	176	172	168	164	159	153

* 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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Climate Division: SD 4 NWS Call Sign: Elevation: 4,980 Feet Lat: 43° 56N Lon: 103° 34W

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	1349	1110	1030	765	479	217	88	112	362	695	1049	1301	8557
60	1194	970	875	615	330	115	25	40	232	540	899	1146	6981
57	1101	886	782	525	248	70	10	18	167	447	809	1053	6116
55	1039	830	720	466	198	47	4	9	129	386	749	991	5568
50	884	690	565	324	99	13	0	2	58	238	599	836	4308
32	373	243	109	22	0	0	0	0	0	4	165	334	1250

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	47	58	102	247	545	797	1001	956	636	332	106	56	4883
55	0	0	0	1	30	154	293	252	75	1	0	0	806
57	0	0	0	0	18	117	236	199	53	0	0	0	623
60	0	0	0	0	7	72	159	128	28	0	0	0	394
65	0	0	0	0	1	23	66	45	8	0	0	0	143
70	0	0	0	0	0	5	15	9	1	0	0	0	30

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	10	2	32	96	265	561	767	649	453	152	44	1	10	12	44	140	405	966	1733	2382	2835	2987	3031	3032
45	1	0	9	43	149	414	612	494	313	74	16	0	1	1	10	53	202	616	1228	1722	2035	2109	2125	2125
50	0	0	0	18	67	274	458	341	188	27	3	0	0	0	0	18	85	359	817	1158	1346	1373	1376	1376
55	0	0	0	5	19	143	309	203	94	7	0	0	0	0	0	5	24	167	476	679	773	780	780	780
60	0	0	0	0	3	55	170	93	36	0	0	0	0	0	0	0	3	58	228	321	357	357	357	357
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	17	21	42	107	222	364	485	461	320	167	51	16	17	38	80	187	409	773	1258	1719	2039	2206	2257	2273

(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