

Climatography of the United States

No. 20

1971-2000

Station: PHILIP 1 S, SD

COOP ID: 396552

Climate Division: SD 5

NWS Call Sign:

Elevation: 2,250 Feet Lat: 44°01N

Lon: 101°40W

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	31.7	6.1	18.9	70	1987	13	31.9	1990	-35	1949	21	3.7	1979	1430	0	.0	.0	3.8	13.9	30.5	9.0
Feb	38.0	11.2	24.6	76	1982	21	37.1	1999	-33	1996	2	8.8	1979	1130	0	.0	.0	7.4	10.3	27.1	5.0
Mar	47.5	20.4	34.0	85	1978	30	42.7	1986	-29	1998	11	24.7	1996	962	0	.0	.0	14.4	5.0	26.8	1.4
Apr	60.0	32.2	46.1	96	1980	21	53.0	1981	5	1970	1	39.6	1995	568	1	.0	.2	23.2	.7	14.7	.0
May	71.0	44.7	57.9	105	1969	27	64.5	1977	16	1950	1	53.1	1996	250	28	.0	1.0	30.0	.0	2.7	.0
Jun	81.4	54.2	67.8	111	1974	20	78.1	1988	32	1998	3	61.2	1998	66	151	.8	6.1	30.0	.0	@	.0
Jul	89.2	59.6	74.4	110+	1974	11	80.2	1974	37	1971	30	66.7	1992	15	305	4.0	15.2	31.0	.0	.0	.0
Aug	89.1	57.6	73.4	113	1970	26	80.6	1983	37+	1992	30	67.2	1992	21	280	3.0	15.2	31.0	.0	.0	.0
Sep	77.9	46.3	62.1	107+	1960	4	68.6	1998	20+	1991	19	56.8	1986	158	71	1.0	5.3	29.5	.0	1.9	.0
Oct	63.7	33.5	48.6	97	1953	1	51.9	1973	-3	1991	30	44.5	1972	508	0	.0	.5	26.3	.3	11.6	.1
Nov	45.4	19.6	32.5	84+	1999	9	44.0	1999	-25	1959	14	18.6	1985	975	0	.0	.0	11.9	5.8	26.6	1.4
Dec	34.9	9.1	22.0	72	1998	2	31.7	1999	-32	1990	30	4.5	1983	1333	0	.0	.0	4.9	11.2	30.5	6.3
Ann	60.8	32.9	46.9	113	Aug 1970	26	80.6	Aug 1983	-35	Jan 1949	21	3.7	Jan 1979	7416	836	8.8	43.5	243.4	47.2	172.4	23.2

+ 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

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1948-2000

(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: PHILIP 1 S, SD

COOP ID: 396552

Climate Division: SD 5

NWS Call Sign:

Elevation: 2,250 Feet Lat: 44°01N

Lon: 101°40W

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	.34	.25	.54+	1992	8	1.12	1975	.03	1978	4.6	1.1	.1	.0	.04	.07	.12	.16	.21	.27	.33	.41	.52	.70	.87
Feb	.46	.38	1.15	1991	18	1.51	1991	.01	1983	3.9	1.4	.1	@	.02	.04	.09	.15	.22	.31	.41	.55	.74	1.08	1.41
Mar	1.15	.97	1.80	1988	12	3.07	1987	.03	1978	5.5	2.8	.7	.2	.13	.22	.38	.54	.71	.90	1.13	1.40	1.78	2.41	3.02
Apr	1.79	1.62	1.60	1986	4	6.44	1986	.28	1987	7.8	4.2	1.4	.3	.36	.52	.79	1.03	1.27	1.53	1.82	2.17	2.64	3.39	4.10
May	3.14	2.64	2.60	1983	1	8.83	1982	.90	1992	9.3	5.6	1.9	.5	.88	1.18	1.63	2.02	2.41	2.81	3.26	3.78	4.47	5.54	6.54
Jun	2.85	2.59	4.00	1988	30	6.26	1988	.66	1987	10.1	5.8	1.6	.5	.83	1.10	1.51	1.86	2.21	2.57	2.96	3.43	4.03	4.97	5.85
Jul	2.26	1.94	2.59	1969	10	5.09	1979	.27	1991	8.2	4.8	1.5	.3	.44	.64	.97	1.28	1.59	1.92	2.29	2.75	3.35	4.31	5.23
Aug	1.68	1.71	2.46	1949	17	4.15	1978	.58	1996	6.5	3.2	.9	.3	.63	.78	1.01	1.20	1.38	1.56	1.76	1.99	2.28	2.73	3.14
Sep	1.16	.80	2.08	1989	21	4.14	1989	.00	1979	5.4	2.5	.6	.2	.03	.11	.27	.43	.62	.83	1.09	1.41	1.87	2.63	3.39
Oct	1.32	1.17	1.70	1982	9	4.12	1998	.05	1992	5.4	2.9	.9	.3	.11	.20	.38	.56	.76	.99	1.26	1.60	2.07	2.86	3.63
Nov	.62	.56	.89	1992	1	2.48	1992	.01	1979	4.5	1.7	.3	.0	.04	.08	.16	.25	.34	.45	.59	.75	.99	1.38	1.78
Dec	.33	.31	.84	1993	17	.98	1993	.00	1986	4.5	1.0	.1	.0	.03	.06	.11	.16	.21	.27	.33	.40	.51	.67	.84
Ann	17.10	17.17	4.00	Jun 1988	30	8.83	May 1982	.00+	Dec 1986	75.7	37.0	10.1	2.6	11.38	12.46	13.85	14.92	15.88	16.80	17.77	18.84	20.15	22.06	23.72

+ 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: 1948-2000

(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

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151 Patton Avenue
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Station: PHILIP 1 S, SD

COOP ID: 396552

Climate Division: SD 5

NWS Call Sign:

Elevation: 2,250 Feet

Lat: 44°01N

Lon: 101°40W

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	4.4	4.0	2	1	7.0	1975	7	12.3	1975	10+	1984	2	5	1978	3.2	2.2	.3	.1	.0	17.9	9.6	4.2	.1
Feb	5.5	3.5	2	2	14.0	1991	18	17.0	1991	26	1987	28	11	1978	3.0	2.0	.8	.2	@	12.5	8.7	5.3	.7
Mar	5.9	3.7	1	1	10.0	1986	18	22.1	1975	26	1987	1	6	1987	2.8	1.7	1.0	.3	@	8.9	5.8	2.5	.5
Apr	2.4	.8	#	0	10.0	1986	4	18.0	1986	12	1995	11	1+	1995	1.0	.8	.4	.1	@	1.4	.8	.3	.1
May	.1	.0	#	0	2.0	1979	10	3.0	1979	0	0	0	#	1998	.1	.1	.0	.0	.0	.0	.0	.0	.0
Jun	.0	.0	#	0	.0	0	0	.0	0	0	0	0	#	1972	.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	#	1984	27	#	1984	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.6	.0	#	0	3.0	1971	28	6.0	1971	5	1971	30	#	1991	.3	.2	.1	.0	.0	.4	.2	@	.0
Nov	4.2	3.0	#	0	9.0	1998	7	12.0	1998	5+	1993	27	2	1993	2.3	1.4	.4	.1	.0	5.4	2.4	.2	.0
Dec	3.9	3.2	1	1	7.0	1993	17	9.0	1993	12+	1983	29	9	1983	3.1	1.8	.2	.1	.0	12.5	4.6	2.2	.6
Ann	27.0	18.2	N/A	N/A	14.0	Feb 1991	18	22.1	Mar 1975	26+	Mar 1987	1	11	Feb 1978	15.8	10.2	3.2	.9	@	59.0	32.1	14.7	2.0

+ 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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No. 20
1971-2000**

Station: PHILIP 1 S, SD

COOP ID: 396552

Climate Division: SD 5

NWS Call Sign:

Elevation: 2,250 Feet

Lat: 44° 01N

Lon: 101° 40W

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	6/06	6/01	5/28	5/25	5/22	5/19	5/16	5/12	5/07
32	5/25	5/20	5/17	5/14	5/12	5/09	5/07	5/03	4/29
28	5/12	5/08	5/05	5/02	4/29	4/27	4/24	4/21	4/16
24	5/06	5/01	4/27	4/24	4/21	4/18	4/15	4/12	4/07
20	4/24	4/19	4/15	4/12	4/09	4/05	4/02	3/29	3/24
16	4/15	4/10	4/07	4/04	4/01	3/29	3/26	3/22	3/17
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	9/09	9/12	9/14	9/16	9/18	9/20	9/21	9/24	9/27
32	9/13	9/17	9/19	9/21	9/23	9/25	9/27	9/30	10/03
28	9/19	9/24	9/28	10/02	10/05	10/08	10/11	10/15	10/20
24	9/26	10/02	10/06	10/10	10/13	10/16	10/20	10/24	10/30
20	10/06	10/12	10/16	10/20	10/23	10/26	10/30	11/03	11/09
16	10/14	10/21	10/25	10/30	11/02	11/06	11/10	11/15	11/21
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	137	130	126	122	118	114	110	106	99
32	149	144	140	137	134	131	127	124	118
28	178	171	166	161	158	154	149	144	137
24	194	187	182	178	174	170	166	161	154
20	221	213	207	202	197	192	187	181	172
16	239	231	225	220	215	210	205	199	190

* 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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Station: PHILIP 1 S, SD

COOP ID: 396552

Climate Division: SD 5 NWS Call Sign: Elevation: 2,250 Feet Lat: 44°01N Lon: 101°40W

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	1430	1130	962	568	250	66	15	21	158	508	975	1333	7416
60	1275	990	807	424	142	23	2	5	76	355	825	1178	6102
57	1183	915	714	342	93	11	0	2	43	266	735	1085	5389
55	1123	863	654	291	67	6	0	1	27	210	678	1023	4943
50	978	732	509	181	24	0	0	0	6	98	539	874	3941
32	494	337	123	7	0	0	0	0	0	1	158	395	1515

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	88	131	184	429	800	1075	1313	1282	903	516	173	85	6979
55	3	13	1	24	154	390	600	569	240	12	3	0	2009
57	1	9	0	14	118	336	538	508	196	5	0	0	1725
60	0	0	0	6	75	258	448	419	139	1	0	0	1346
65	0	0	0	1	28	151	305	280	71	0	0	0	836
70	0	0	0	0	7	75	183	165	29	0	0	0	459

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	4	23	76	243	553	839	1068	1038	673	316	63	7	4	27	103	346	899	1738	2806	3844	4517	4833	4896	4903
45	0	3	36	144	403	689	913	883	527	199	22	0	0	3	39	183	586	1275	2188	3071	3598	3797	3819	3819
50	0	0	12	80	266	539	758	729	388	106	8	0	0	0	12	92	358	897	1655	2384	2772	2878	2886	2886
55	0	0	3	38	155	395	603	574	260	48	0	0	0	0	3	41	196	591	1194	1768	2028	2076	2076	2076
60	0	0	0	12	72	254	448	420	163	14	0	0	0	0	0	12	84	338	786	1206	1369	1383	1383	1383
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	10	32	78	182	342	530	681	655	432	229	64	13	10	42	120	302	644	1174	1855	2510	2942	3171	3235	3248

(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