

Climatology of the United States

No. 20

1971-2000

Station: DEADWOOD, SD

COOP ID: 392207

Climate Division: SD 4

NWS Call Sign:

Elevation: 4,670 Feet Lat: 44° 22N

Lon: 103° 44W

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	33.1	11.2	22.2	65	1981	23	30.8	1986	-28	1963	19	9.3	1979	1328	0	.0	.0	3.5	12.7	30.5	6.9
Feb	37.1	14.9	26.0	67+	1996	9	34.6	1992	-29	1989	2	13.5	1989	1093	0	.0	.0	5.7	8.9	27.2	3.7
Mar	43.8	20.6	32.2	74+	1993	27	39.1	1986	-18	1948	11	23.7	1996	1017	0	.0	.0	11.1	5.2	28.3	1.5
Apr	53.0	29.0	41.0	91	1980	22	48.3	1987	-4	1968	4	35.2	1997	720	0	.0	@	18.4	1.8	20.4	.1
May	63.6	38.8	51.2	94+	1948	18	56.2	1987	4	1954	3	44.5	1995	432	3	.0	@	27.8	.0	6.8	.0
Jun	73.6	48.0	60.8	101	1954	24	70.5	1988	23	1979	1	54.5	1998	173	46	.0	1.4	29.6	.0	.5	.0
Jul	80.9	53.8	67.4	103+	1954	10	72.1	1983	32	1950	13	60.3	1992	61	134	.2	5.0	31.0	.0	.0	.0
Aug	79.9	52.2	66.1	103	1949	7	72.8	1983	34+	1992	30	58.9	1974	90	122	.0	3.5	30.9	.0	.0	.0
Sep	69.6	42.4	56.0	101	1954	1	65.1	1998	17	1985	30	50.4	1974	296	26	.0	.8	28.5	.1	3.8	.0
Oct	57.1	32.0	44.6	86+	1997	2	49.2	1973	-7	1991	30	40.2	1976	634	0	.0	.0	22.5	.9	16.1	@
Nov	41.9	20.6	31.3	75+	1999	13	43.2	1999	-19	1985	23	16.3	1985	1014	0	.0	.0	9.1	6.9	27.1	1.1
Dec	34.9	12.9	23.9	64+	1993	12	32.4	1999	-30	1989	22	6.6	1983	1274	0	.0	.0	4.2	11.4	30.4	4.5
Ann	55.7	31.4	43.6	103+	Jul 1954	10	72.8	Aug 1983	-30	Dec 1989	22	6.6	Dec 1983	8132	331	.2	10.7	222.3	47.9	191.1	17.8

+ 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

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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	1.30	1.19	1.99	1949	4	3.40	1994	.21	1981	8.7	4.6	.4	.1	.34	.46	.65	.82	.98	1.15	1.34	1.57	1.86	2.32	2.76
Feb	1.19	1.28	1.74	1958	26	2.38	1971	.09	1981	7.4	4.0	.4	.1	.28	.39	.56	.72	.87	1.04	1.22	1.44	1.72	2.18	2.60
Mar	2.36	2.25	4.44	1973	14	6.22	1973	.03	1981	8.9	5.6	1.3	.3	.39	.59	.94	1.26	1.59	1.96	2.38	2.88	3.56	4.66	5.72
Apr	3.62	3.98	2.78	1976	16	7.48	1984	.22	1981	10.2	7.1	2.4	1.1	.83	1.16	1.69	2.17	2.64	3.15	3.71	4.39	5.28	6.69	8.02
May	4.51	3.57	4.80	1995	9	15.99	1982	1.22	1994	12.0	8.0	2.6	1.0	1.02	1.44	2.10	2.70	3.29	3.92	4.62	5.47	6.58	8.35	10.01
Jun	3.95	3.33	4.37	1976	14	12.43	1976	.64	1987	12.3	7.8	2.6	.9	.87	1.24	1.82	2.34	2.86	3.42	4.05	4.80	5.78	7.36	8.84
Jul	2.69	2.33	4.10	1958	2	6.49	1997	.45	1971	9.7	5.9	1.7	.5	.60	.85	1.24	1.60	1.95	2.33	2.76	3.27	3.94	5.01	6.01
Aug	2.03	1.74	2.64	1979	8	4.71	1987	.00	2000	7.5	4.4	1.4	.4	.15	.37	.69	.99	1.30	1.64	2.03	2.51	3.15	4.20	5.21
Sep	1.79	1.43	2.99	1971	5	5.52	1971	.20	1975	6.8	3.9	1.1	.3	.30	.45	.71	.96	1.21	1.49	1.80	2.19	2.70	3.53	4.33
Oct	2.18	1.67	2.91	1995	5	10.78	1994	.62	2000	6.7	4.7	1.2	.4	.39	.58	.90	1.20	1.50	1.83	2.21	2.66	3.27	4.25	5.18
Nov	1.42	1.30	2.30+	2000	1	3.30	2000	.34	1997	7.0	4.0	.8	.1	.49	.62	.82	.98	1.14	1.31	1.48	1.69	1.96	2.38	2.76
Dec	1.39	1.44	1.18	1951	7	3.17	1985	.00	1986	8.7	4.9	.5	@	.32	.52	.75	.93	1.10	1.27	1.47	1.69	1.97	2.42	2.83
Ann	28.43	28.67	4.80	May 1995	9	15.99	May 1982	.00+	Aug 2000	105.9	64.9	16.4	5.2	19.53	21.23	23.42	25.09	26.58	28.03	29.53	31.19	33.21	36.15	38.71

+ 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

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Lat: 44° 22N

Lon: 103° 44W

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	13.8	10.0	3	0	11.0	1986	21	35.0	1994	22	1975	28	14	1975	6.9	5.3	1.5	.7	@	-9.9	-9.9	-9.9	-9.9	
Feb	16.3	17.3	3	0	17.5	1975	21	30.0	1971	34	1975	22	20	1975	5.8	4.5	1.7	.6	.2	-9.9	-9.9	-9.9	-9.9	
Mar	20.5	18.5	2	0	23.5	1977	30	69.3	1977	24	1975	11	18	1975	6.2	4.9	2.2	1.3	.3	-9.9	-9.9	-9.9	-9.9	
Apr	13.2	13.4	0	0	20.0	2000	19	34.0	1986	19	1975	2	6	1975	3.6	3.2	1.4	.7	.2	-9.9	-9.9	-9.9	-9.9	
May	2.0	.0	#	0	10.0	1972	1	16.5	1978	2	1983	12	#	1983	.5	.4	.3	.2	.1	-9.9	-9.9	-9.9	-9.9	
Jun	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	-9.9	-9.9	-9.9	-9.9
Jul	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	-9.9	-9.9	-9.9	-9.9
Aug	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	-9.9	-9.9	-9.9	-9.9
Sep	.6	.0	0	0	2.0	1984	27	9.0	2000	0	0	0	0	0	.2	.2	.0	.0	.0	.0	-9.9	-9.9	-9.9	-9.9
Oct	7.0	3.7	0	0	28.0	1996	29	30.5	1971	11	1975	24	1	1975	1.8	1.5	.7	.5	.2	-9.9	-9.9	-9.9	-9.9	
Nov	13.2	9.5	1	0	18.0	1976	26	30.5	1993	10	1975	27	8	1975	4.5	3.2	1.2	.7	.3	-9.9	-9.9	-9.9	-9.9	
Dec	16.3	14.5	1	0	12.0	1975	31	41.5	1985	15	1975	31	5	1974	6.1	4.3	1.8	.7	.2	-9.9	-9.9	-9.9	-9.9	
Ann	102.9	86.9	N/A	N/A	28.0	Oct 1996	29	69.3	Mar 1977	34	Feb 1975	22	20	Feb 1975	35.6	27.5	10.8	5.4	1.5	-9.9	-9.9	-9.9	-9.9	

+ Also occurred on an earlier date(s) #Denotes trace amounts

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-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

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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	7/01	6/23	6/18	6/13	6/09	6/04	5/30	5/25	5/17
32	6/13	6/08	6/04	5/31	5/28	5/25	5/21	5/17	5/12
28	6/02	5/27	5/22	5/18	5/14	5/10	5/06	5/01	4/24
24	5/19	5/13	5/08	5/05	5/01	4/28	4/24	4/19	4/13
20	5/06	5/01	4/27	4/24	4/21	4/19	4/15	4/12	4/07
16	4/28	4/20	4/15	4/11	4/07	4/03	3/29	3/24	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	8/25	8/31	9/04	9/07	9/11	9/14	9/17	9/21	9/27
32	9/08	9/12	9/14	9/16	9/19	9/21	9/23	9/26	9/29
28	9/15	9/20	9/24	9/27	9/30	10/03	10/07	10/10	10/16
24	9/19	9/26	10/01	10/05	10/09	10/13	10/17	10/22	10/29
20	10/02	10/08	10/12	10/16	10/19	10/23	10/27	10/31	11/06
16	10/15	10/21	10/25	10/28	10/31	11/03	11/06	11/10	11/16
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	122	112	105	99	93	88	81	74	64
32	137	129	123	118	113	108	103	97	89
28	163	155	149	144	139	134	129	123	114
24	186	177	171	165	160	155	149	143	134
20	206	197	191	185	180	175	170	163	154
16	233	224	217	212	206	201	196	189	180

* 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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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
65	1328	1093	1017	720	432	173	61	90	296	634	1014	1274	8132
60	1173	953	862	570	290	87	18	35	185	480	864	1119	6636
57	1080	869	769	482	215	51	8	18	130	388	774	1026	5810
55	1018	813	707	424	172	33	3	11	99	328	714	964	5286
50	863	673	552	288	85	9	0	2	42	192	575	812	4093
32	366	242	114	18	0	0	0	0	0	5	174	330	1249

Base	Cooling Degree Days (1)												
	Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
32	61	73	120	288	595	864	1095	1055	720	393	150	79	5493
55	0	0	0	4	53	207	385	352	129	3	0	0	1133
57	0	0	0	2	35	164	328	298	100	2	0	0	929
60	0	0	0	0	17	111	245	222	64	0	0	0	659
65	0	0	0	0	3	46	134	122	26	0	0	0	331
70	0	0	0	0	0	14	57	52	8	0	0	0	131

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	2	12	40	140	370	633	859	825	506	209	41	5	2	14	54	194	564	1197	2056	2881	3387	3596	3637	3642
45	0	0	11	69	237	484	704	671	364	115	14	0	0	0	11	80	317	801	1505	2176	2540	2655	2669	2669
50	0	0	1	28	133	343	549	516	239	50	1	0	0	0	1	29	162	505	1054	1570	1809	1859	1860	1860
55	0	0	0	9	63	212	394	365	136	13	0	0	0	0	0	9	72	284	678	1043	1179	1192	1192	1192
60	0	0	0	1	21	112	250	220	63	2	0	0	0	0	0	1	22	134	384	604	667	669	669	669
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	4	19	47	113	233	391	543	521	324	156	40	8	4	23	70	183	416	807	1350	1871	2195	2351	2391	2399

(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

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 are 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.

- a. Temperature/ Precipitation Tables
 1. 1971-2000 Monthly Normals
 2. Cooperative Summary of the Day
 3. National Weather Service station records
 4. 1971-2000 serially complete daily data
- b. Degree Day Table
 1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals
 2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data
- c. Snow Tables
 1. Snow Climatology
 2. Cooperative Summary of the Day
- d. 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