

# Climatography of the United States

No. 20

1971-2000

Station: MITCHELL 2 N, SD

COOP ID: 395671

Climate Division: SD 9

NWS Call Sign:

Elevation: 1,250 Feet Lat: 43°44N

Lon: 98°01W

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	25.7	4.4	15.1	67+	1981	25	30.1	1990	-50	1955	25	.1	1978	1549	0	.0	.0	1.2	19.8	30.7	11.7
Feb	32.4	11.3	21.9	73	2000	22	34.2	1987	-40+	1994	10	5.6	1979	1209	0	.0	.0	4.1	13.7	27.4	6.9
Mar	43.9	22.5	33.2	95	1943	30	40.6	2000	-23	1956	12	24.5	1975	986	0	.0	.0	10.9	6.3	25.2	1.6
Apr	58.5	35.1	46.8	97+	1980	22	54.1	1981	1	1924	1	40.7	1975	548	3	.0	.2	22.2	.6	11.4	.0
May	70.9	47.2	59.1	108	1934	30	65.8	1977	18	1967	3	53.9	1997	225	41	.0	.6	30.4	.0	1.0	.0
Jun	80.7	57.0	68.9	111	1936	25	76.0	1988	31+	1946	2	62.9	1982	47	163	.3	5.0	30.0	.0	.0	.0
Jul	86.4	61.9	74.2	116	1940	24	78.7	1974	34	1900	28	66.0	1992	10	293	1.5	11.1	31.0	.0	.0	.0
Aug	84.7	59.3	72.0	115	1934	4	78.8	1983	34	1911	28	66.7	1992	20	236	.9	9.0	31.0	.0	.0	.0
Sep	75.6	48.3	62.0	106	1933	5	68.2	1998	11	1899	29	56.6	1993	147	55	.2	3.5	29.6	.0	1.1	.0
Oct	62.0	35.5	48.8	96+	1997	3	54.4	1973	-8	1925	29	44.1	1976	503	0	.0	.2	25.9	.2	10.3	.0
Nov	42.8	22.0	32.4	81+	1999	9	43.4	1999	-22	1959	14	21.1	1985	977	0	.0	.0	9.9	6.7	25.6	1.0
Dec	30.1	9.5	19.8	70	1998	2	28.7	1999	-34	1917	29	1.1	1983	1401	0	.0	.0	2.4	16.4	30.7	7.2
Ann	57.8	34.5	46.2	116	Jul 1940	24	78.8	Aug 1983	-50	Jan 1955	25	.1	Jan 1978	7622	791	2.9	29.6	228.6	63.7	163.4	28.4

+ 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: 1896-2001

(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: MITCHELL 2 N, SD

COOP ID: 395671

Climate Division: SD 9

NWS Call Sign:

Elevation: 1,250 Feet Lat: 43°44N

Lon: 98°01W

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	.47	.33	2.10	2001	30	1.52	1988	.00+	1995	4.2	1.5	.2	@	.00	.03	.10	.17	.25	.34	.44	.58	.76	1.08	1.38
Feb	.67	.50	1.56+	2001	25	2.01	1984	.00+	1998	4.6	1.8	.3	@	.00	.07	.19	.30	.41	.53	.67	.83	1.07	1.44	1.81
Mar	1.66	1.32	2.21	1987	17	7.49	1987	.10	1997	6.6	4.0	1.1	.2	.22	.35	.59	.82	1.06	1.33	1.64	2.02	2.54	3.39	4.21
Apr	2.71	2.55	3.29	1955	18	7.07	1986	.37	1987	9.1	6.0	1.7	.6	.56	.80	1.20	1.56	1.93	2.32	2.76	3.30	4.00	5.12	6.19
May	3.33	3.05	4.60	1908	13	10.03	1972	.65	1994	10.0	6.4	2.1	.8	.73	1.04	1.52	1.97	2.41	2.88	3.40	4.04	4.87	6.20	7.45
Jun	3.52	2.91	3.70	1923	18	11.11	1984	.41	1988	9.6	6.1	2.2	.9	.77	1.10	1.61	2.08	2.55	3.04	3.60	4.27	5.16	6.56	7.89
Jul	2.64	2.19	4.35	1929	14	9.81	1993	.28	1975	8.1	4.9	2.0	.5	.45	.68	1.07	1.43	1.80	2.21	2.67	3.22	3.97	5.17	6.32
Aug	2.32	1.95	4.66	1953	11	6.62	1977	.26	1983	7.1	4.2	1.5	.6	.44	.65	.99	1.30	1.62	1.96	2.35	2.82	3.45	4.45	5.40
Sep	2.27	2.05	4.35	1950	21	6.83	1986	.11	1974	6.6	4.1	1.5	.6	.32	.51	.84	1.15	1.48	1.84	2.26	2.77	3.46	4.58	5.66
Oct	1.54	1.23	2.98	1911	5	5.72	1998	.00	1988	5.8	3.4	1.0	.3	.06	.18	.39	.62	.86	1.14	1.47	1.89	2.46	3.42	4.37
Nov	1.20	.98	2.27	2000	1	3.90	2000	.00	1980	4.7	2.3	.7	.3	.02	.08	.23	.39	.58	.81	1.08	1.44	1.95	2.82	3.69
Dec	.53	.45	1.50	1981	1	1.99	1987	.00+	1997	4.0	1.7	.2	.1	.00	.00	.11	.19	.29	.39	.51	.66	.87	1.21	1.55
Ann	22.86	23.14	4.66	Aug 1953	11	11.11	Jun 1984	.00+	Feb 1998	80.4	46.4	14.5	4.9	14.16	15.75	17.84	19.45	20.91	22.34	23.83	25.50	27.54	30.56	33.20

+ 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: 1896-2001

(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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**Station: MITCHELL 2 N, SD**

**COOP ID: 395671**

**Climate Division: SD 9**

**NWS Call Sign:**

**Elevation: 1,250 Feet**

**Lat: 43°44N**

**Lon: 98°01W**

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	5.4	3.5	2	0	10.0	1996	25	24.0	1979	18+	1988	25	16	1988	3.1	1.8	.6	.1	@	13.1	6.0	4.2	2.0
Feb	7.3	7.4	1	0	11.0	1997	4	15.3	1971	12	1972	10	4	1971	3.1	2.3	.8	.3	.1	@	@	@	@
Mar	5.2	3.0	1	1	9.0	1972	28	18.0	1989	12+	1989	7	4	1989	2.1	1.8	.8	.2	.0	5.6	3.4	1.4	.6
Apr	2.1	.0	#	0	11.0	1995	10	17.0	1995	10	1982	8	1	1982	.7	.6	.2	.1	.1	.4	.2	.1	@
May	.0	.0	#	0	.0	0	0	.0	0	0	0	0	#	2000	.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	#	1984	25	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.3	.0	#	0	6.0	1995	24	6.0	1995	4	1980	27	#	1982	.2	.1	@	@	.0	.2	.1	.0	.0
Nov	3.0	2.0	#	0	9.0	1993	25	12.0	1993	15	1985	30	5	1985	1.9	1.5	.4	.2	.0	2.5	1.3	1.1	.3
Dec	5.0	4.0	1	0	10.0	1987	24	12.0+	1973	19+	1985	6	15	1985	2.5	2.1	.5	.3	@	5.9	3.7	2.7	2.4
Ann	28.3	19.9	N/A	N/A	11.0+	Feb 1997	4	24.0	Jan 1979	19+	Dec 1985	6	16	Jan 1988	13.6	10.2	3.3	1.2	.2	27.7	14.7	9.5	5.3

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

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**NWS Call Sign:**

**Elevation: 1,250 Feet**

**Lat: 43° 44N**

**Lon: 98° 01W**

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	5/25	5/20	5/17	5/13	5/11	5/08	5/05	5/01	4/26
32	5/17	5/11	5/07	5/04	5/01	4/28	4/25	4/21	4/15
28	5/06	5/01	4/28	4/25	4/22	4/19	4/16	4/12	4/08
24	4/18	4/14	4/12	4/10	4/08	4/06	4/04	4/02	3/29
20	4/12	4/08	4/05	4/03	3/31	3/29	3/26	3/23	3/19
16	4/05	3/31	3/28	3/25	3/23	3/20	3/17	3/14	3/09
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	9/13	9/16	9/19	9/21	9/23	9/25	9/27	9/30	10/03
32	9/17	9/22	9/26	9/29	10/01	10/04	10/07	10/11	10/15
28	9/25	10/02	10/06	10/10	10/13	10/17	10/21	10/25	10/31
24	10/11	10/16	10/19	10/22	10/24	10/27	10/30	11/02	11/07
20	10/17	10/21	10/25	10/28	10/30	11/02	11/05	11/08	11/13
16	10/26	11/01	11/06	11/09	11/13	11/16	11/20	11/24	11/30
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	155	148	143	139	135	131	126	121	115
32	175	167	162	157	153	148	144	138	131
28	194	187	182	178	174	170	165	160	153
24	214	209	205	202	199	196	193	189	184
20	231	225	220	216	212	209	205	200	194
16	255	248	243	239	234	230	226	221	214

\* 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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**No. 20**  
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**Climate Division: SD 9      NWS Call Sign:      Elevation: 1,250 Feet    Lat: 43° 44N      Lon: 98° 01W**

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	1549	1209	986	548	225	47	10	20	147	503	977	1401	7622
60	1394	1069	831	407	127	14	0	4	65	351	827	1246	6335
57	1301	985	738	329	83	5	0	1	34	265	737	1153	5631
55	1239	936	677	280	60	2	0	0	20	213	678	1091	5196
50	1089	806	532	176	22	0	0	0	3	108	540	938	4214
32	588	389	135	8	0	0	0	0	0	2	155	447	1724

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	63	104	172	452	839	1106	1306	1239	898	522	167	69	6937
55	0	7	1	35	186	419	593	526	228	20	1	0	2016
57	0	0	0	23	147	362	531	465	182	10	0	0	1720
60	0	0	0	12	98	280	439	375	123	3	0	0	1330
65	0	0	0	3	41	163	293	236	55	0	0	0	791
70	0	0	0	0	13	79	167	126	18	0	0	0	403

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	1	14	66	264	611	885	1081	1021	682	321	54	2	1	15	81	345	956	1841	2922	3943	4625	4946	5000	5002
45	0	1	31	159	460	735	926	866	533	197	21	0	0	1	32	191	651	1386	2312	3178	3711	3908	3929	3929
50	0	0	6	91	315	586	771	711	389	107	6	0	0	0	6	97	412	998	1769	2480	2869	2976	2982	2982
55	0	0	0	44	197	438	616	556	265	47	0	0	0	0	0	44	241	679	1295	1851	2116	2163	2163	2163
60	0	0	0	20	103	297	461	401	160	12	0	0	0	0	0	20	123	420	881	1282	1442	1454	1454	1454
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	18	56	170	366	570	716	672	427	210	44	3	0	18	74	244	610	1180	1896	2568	2995	3205	3249	3252

(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> |
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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)