U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

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: SISSETON, SD **COOP ID: 397742**

Climate Division: SD 3 **NWS Call Sign:** **Elevation: 1,220 Feet** **Lat: 45˚40N** **Lon: 97˚03W**

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	20.9	1.9	11.4	65	1981	24	27.8	1990	-34	1951	29	-3.1	1982	1662	0	.0	.0	.4	22.8	30.6	15.4
Feb	27.5	9.3	18.4	68	1958	25	30.0	1987	-33	1994	9	1.8	1979	1305	0	.0	.0	1.5	16.2	27.2	8.4
Mar	39.1	21.3	30.2	82	1963	31	38.2	1973	-29	1962	1	21.7	1996	1079	0	.0	.0	7.0	8.2	26.1	2.6
Apr	56.3	33.6	45.0	99	1980	21	52.4	1977	0+	1975	3	35.2	1975	607	5	.0	.2	21.1	.7	14.2	.1
May	70.2	46.1	58.2	98	1959	1	64.9	1977	21	1959	15	51.5	1979	244	31	.0	.5	30.4	.0	1.9	.0
Jun	78.4	55.0	66.7	104	1988	24	73.3	1988	33	1953	6	61.1	1993	63	114	.1	2.8	30.0	.0	.0	.0
Jul	83.7	60.4	72.1	109	1966	10	77.0+	1983	40	1952	29	64.1	1992	25	243	1.0	7.7	31.0	.0	.0	.0
Aug	82.1	58.2	70.2	105	1976	18	76.8	1983	36	1965	28	65.1	1992	36	197	.6	5.9	31.0	.0	.0	.0
Sep	71.9	48.2	60.1	102	1959	8	66.4	1978	22	1965	26	55.1	1993	186	38	.0	1.7	29.7	.0	.9	.0
Oct	58.9	36.4	47.7	95	1955	10	53.4	1973	7	1967	28	43.4	1976	540	0	.0	.1	24.9	.2	9.8	.0
Nov	38.6	21.2	29.9	79	1965	2	40.5	1999	-18	1964	30	18.4	1985	1054	0	.0	.0	6.7	9.8	25.7	1.5
Dec	25.6	7.5	16.6	61	1969	1	26.9	1997	-30	1983	19	.8	1983	1501	0	.0	.0	1.2	19.5	30.4	10.0
Ann	54.4	33.3	43.9	109	Jul 1966	10	77.0+	Jul 1983	-34	Jan 1951	29	-3.1	Jan 1982	8302	628	1.7	18.9	214.9	77.4	166.8	38.0

\+ 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

(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

Issue Date: February 2004

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Precipitation (inches)

Precipitation Totals

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	.73	.57	2.67	1997	4	3.13	1997	.00	1974
Feb	.64	.48	.98	1958	27	2.03	1998	.09	1985
Mar	1.53	1.30	1.68	2000	8	5.19	1977	.46	1974
Apr	2.04	1.81	2.66	1986	14	7.30	1986	.15	1996
May	2.76	2.71	5.50	1954	27	7.57	1972	.41	1976
Jun	3.30	3.04	3.65	1979	19	7.10	1971	.55	1974
Jul	3.13	2.73	3.22	1993	25	8.25	1993	.32	1975
Aug	2.59	2.42	3.23	1983	29	6.03	1989	.60	1996
Sep	1.95	2.12	2.50	1995	29	4.96	1986	.00	1998
Oct	1.82	1.09	2.07	1998	16	7.95	1998	.15	1978
Nov	1.13	.77	1.89	1977	9	4.77	1977	.00+	1999
Dec	.46	.32	.90	1949	11	1.90	1972	.00+	1989
Ann	22.08	21.35	5.50	May 1954	27	8.25	Jul 1993	.00+	Nov 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	4.6	2.5	.1	@
Feb	4.4	2.6	.2	.0
Mar	5.3	3.8	.9	.3
Apr	6.8	4.5	1.4	.2
May	8.8	6.0	1.5	.6
Jun	8.5	6.2	2.5	.7
Jul	8.2	5.6	2.1	.9
Aug	7.1	5.0	1.8	.6
Sep	6.7	4.0	1.4	.3
Oct	5.3	3.6	1.1	.4
Nov	4.5	2.9	.5	.1
Dec	3.8	1.7	.1	.0
Ann	74.0	48.4	13.6	4.1

Precipitation Probabilities (1)

Probability that the monthly/annual precipitation will be equal to or less than the indicated amount

Monthly/Annual Precipitation vs Probability Levels
These values were determined from the incomplete gamma distribution

Month	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.02	.07	.16	.27	.38	.52	.68	.89	1.18	1.67	2.16
Feb	.11	.16	.26	.34	.43	.53	.64	.78	.96	1.25	1.53
Mar	.37	.51	.74	.94	1.13	1.34	1.58	1.85	2.22	2.79	3.34
Apr	.23	.38	.67	.95	1.25	1.59	1.99	2.49	3.16	4.27	5.35
May	.54	.79	1.19	1.56	1.94	2.35	2.81	3.36	4.10	5.28	6.40
Jun	.55	.84	1.32	1.77	2.24	2.74	3.32	4.03	4.97	6.49	7.94
Jul	.72	1.01	1.47	1.88	2.29	2.72	3.21	3.79	4.55	5.76	6.91
Aug	.73	.97	1.34	1.67	1.99	2.32	2.69	3.12	3.69	4.57	5.40
Sep	.09	.27	.56	.84	1.15	1.49	1.90	2.40	3.08	4.21	5.32
Oct	.14	.26	.50	.75	1.03	1.35	1.73	2.21	2.88	4.00	5.10
Nov	.00	.00	.18	.39	.60	.83	1.09	1.42	1.88	2.61	3.33
Dec	.00	.04	.11	.18	.26	.34	.44	.56	.73	1.01	1.28
Ann	13.07	14.69	16.83	18.50	20.01	21.50	23.06	24.81	26.96	30.15	32.96

\+ 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

Complete documentation available from:
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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	7.8	5.0	5	3
Feb	7.3	7.0	5	3
Mar	7.6	6.5	2	2
Apr	2.4	.0	#	0
May	#	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	#	.0	0	0
Oct	.8	.0	#	0
Nov	7.1	3.3	1	0
Dec	5.5	4.6	3	1
Ann	38.5	26.4	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	24.2	1997	4	24.8	1994	22+	1982	26	15	1978
Feb	8.0	1990	15	16.3	1994	27+	1979	26	24	1979
Mar	11.0	1975	24	22.5	1989	25	1979	1	10	1978
Apr	7.5	1997	6	10.5	1992	6+	1993	10	#	1993
May	#	1997	12	#+	1997	#+	1997	17	#	2000
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	#	1985	30	#+	1985	0	0	0	0	0
Oct	5.0	1990	17	6.0	1995	3	1984	30	#	1990
Nov	10.0	1977	9	27.5	1977	19+	1977	28	10	1977
Dec	7.0	2000	28	19.0	1972	24+	1985	20	20	1985
Ann	24.2	Jan 1997	4	27.5	Nov 1977	27+	Feb 1979	26	24	Feb 1979

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	4.0	3.0	1.0	.5	.1
Feb	4.0	2.8	.9	.2	.0
Mar	2.7	2.2	1.1	.5	.1
Apr	.8	.7	.5	.3	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.3	.3	.1	@	.0
Nov	2.9	2.3	1.0	.5	@
Dec	3.2	2.6	.6	.1	.0
Ann	17.9	13.9	5.2	2.1	.2

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	22.5	16.9	13.5	5.8
Feb	16.9	13.5	10.0	5.7
Mar	8.4	7.2	5.1	2.8
Apr	.7	.3	.1	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.2	@	.0	.0
Nov	7.4	5.1	3.4	1.3
Dec	16.2	11.9	9.7	4.7
Ann	72.3	54.9	41.8	20.3

+ 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

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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	5/29	5/24	5/21	5/18	5/15	5/13	5/10	5/07	5/02
32	5/17	5/13	5/10	5/07	5/05	5/03	4/30	4/28	4/24
28	5/09	5/04	4/30	4/27	4/25	4/22	4/19	4/15	4/10
24	4/27	4/22	4/19	4/16	4/13	4/10	4/07	4/04	3/30
20	4/16	4/12	4/09	4/06	4/04	4/01	3/29	3/26	3/22
16	4/11	4/06	4/02	3/30	3/27	3/23	3/20	3/16	3/11

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	9/12	9/15	9/18	9/20	9/21	9/23	9/25	9/27	10/01
32	9/16	9/21	9/24	9/27	9/29	10/02	10/05	10/08	10/12
28	9/27	10/01	10/04	10/07	10/09	10/12	10/15	10/18	10/22
24	10/05	10/10	10/13	10/16	10/19	10/22	10/25	10/28	11/02
20	10/14	10/20	10/24	10/28	10/31	11/03	11/07	11/11	11/17
16	10/20	10/26	10/30	11/02	11/05	11/08	11/12	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	146	140	135	132	128	125	121	117	111
32	164	158	154	150	147	143	139	135	129
28	188	181	176	171	167	163	159	153	146
24	208	201	196	192	188	184	180	175	168
20	231	223	218	214	210	205	201	196	189
16	245	237	232	227	223	218	214	208	201

***** 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	Ann
65	1662	1305	1079	607	244	63	25	36	186	540	1054	1501	8302
60	1507	1165	924	467	142	18	7	10	92	387	904	1346	6969
57	1414	1081	831	389	95	7	0	3	53	299	814	1253	6239
55	1352	1025	770	340	71	3	0	1	34	246	754	1191	5787
50	1198	894	622	232	29	0	0	0	8	134	612	1037	4766
32	684	452	192	24	0	0	0	0	0	3	197	537	2089

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	44	72	136	411	810	1041	1241	1183	842	487	132	58	6457
55	0	0	1	38	168	354	528	471	186	16	0	0	1762
57	0	0	0	26	131	299	466	411	145	8	0	0	1486
60	0	0	0	15	84	220	380	325	94	2	0	0	1120
65	0	0	0	5	31	114	243	197	38	0	0	0	628
70	0	0	0	0	9	45	137	102	11	0	0	0	304

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	2	36	223	591	821	1013	959	630	291	36	0	0	2	38	261	852	1673	2686	3645	4275	4566	4602	4602
45	0	0	11	131	440	671	858	804	483	177	15	0	0	0	11	142	582	1253	2111	2915	3398	3575	3590	3590
50	0	0	3	72	299	521	703	649	341	90	4	0	0	0	3	75	374	895	1598	2247	2588	2678	2682	2682
55	0	0	0	37	179	374	548	495	215	44	0	0	0	0	0	37	216	590	1138	1633	1848	1892	1892	1892
60	0	0	0	14	94	238	394	341	123	16	0	0	0	0	0	14	108	346	740	1081	1204	1220	1220	1220
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	1	29	152	366	528	668	628	386	180	27	0	0	1	30	182	548	1076	1744	2372	2758	2938	2965	2965

(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:
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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.
Compete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normals/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/normals.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normals/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