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: FAULKTON 1 NW, SD **COOP ID: 392927**

Climate Division: SD 2 **NWS Call Sign:** **Elevation: 1,570 Feet** **Lat: 45˚02N** **Lon: 99˚08W**

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	23.0	1.8	12.4	66+	1987	13	27.5	1990	-41	1912	12	-2.3	1979	1631	0	.0	.0	.8	21.1	30.6	14.1
Feb	29.7	8.8	19.3	71	1958	25	32.5	1999	-39	1905	3	1.1	1979	1281	0	.0	.0	3.5	14.7	27.1	7.7
Mar	41.2	20.4	30.8	86+	1946	31	41.1	2000	-28	1962	1	22.7	1996	1059	0	.0	.0	9.3	7.0	26.2	2.3
Apr	57.6	33.1	45.4	98	1980	21	52.3	1987	-7	1975	1	38.7	1975	592	1	.0	.3	22.6	.9	15.1	.1
May	70.3	45.0	57.7	109	1934	30	64.2	1977	14	1981	10	52.6	1996	257	29	.0	.9	30.3	.0	2.9	.0
Jun	79.4	54.4	66.9	111	1988	25	75.4	1988	29	1901	7	61.8	1985	66	122	.2	3.9	30.0	.0	.0	.0
Jul	86.1	59.1	72.6	114+	1936	9	78.0	1974	35	1971	30	63.9	1992	22	258	2.0	11.3	31.0	.0	.0	.0
Aug	84.8	57.4	71.1	113	1965	13	75.6	1983	33	1935	28	65.3	1992	28	215	1.8	10.2	31.0	.0	.0	.0
Sep	74.8	47.1	61.0	106+	1983	2	67.2	1998	15	1951	28	55.5	1993	175	54	.3	3.5	29.6	.0	1.8	.0
Oct	60.9	34.5	47.7	96	1963	5	52.9	2000	-8	1919	26	42.8	1976	537	0	.0	.3	25.6	.2	11.5	.0
Nov	40.0	19.4	29.7	82	1990	1	42.8	1999	-25	1896	28	17.6	1985	1059	0	.0	.0	8.5	8.6	26.9	1.5
Dec	26.9	6.9	16.9	68	1939	6	29.5	1997	-35	1990	30	-.7	1983	1490	0	.0	.0	1.7	18.2	30.5	8.9
Ann	56.2	32.3	44.3	114+	Jul 1936	9	78.0	Jul 1974	-41	Jan 1912	12	-2.3	Jan 1979	8197	679	4.3	30.4	223.9	70.7	172.6	34.6

\+ 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: 1896-2001

(3) Derived from 1971-2000 serially complete daily data

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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	.49	.33	1.52	1939	9	3.81	1997	.00+	1981
Feb	.57	.46	1.45	1917	4	1.57	1987	.00	1985
Mar	1.49	1.00	2.42	1920	18	4.75	1977	.04	1971
Apr	2.01	2.04	2.85	1921	5	5.58	1986	.10	1981
May	3.00	2.44	3.13	1904	16	9.31	1972	.41	1994
Jun	2.85	2.56	3.90	1969	25	7.00	1984	.83	1989
Jul	2.58	2.24	6.70	1994	7	9.53	1994	.58	1975
Aug	2.68	2.15	5.55	2000	5	6.64	2000	.85	1984
Sep	1.73	1.33	3.67	1996	20	7.56	1996	.00+	1979
Oct	1.66	1.21	3.00	1998	17	7.47	1998	.05	1978
Nov	.84	.70	1.61	1977	8	3.19	2000	.00	1999
Dec	.41	.25	1.00	1902	20	1.63	1996	.00+	1987
Ann	20.31	20.23	6.70	Jul 1994	7	9.53	Jul 1994	.00+	Nov 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	4.5	1.6	.1	.1
Feb	4.3	1.5	.2	.0
Mar	6.0	3.3	.8	.3
Apr	7.7	4.4	1.5	.2
May	9.5	5.9	1.8	.6
Jun	9.0	6.0	1.7	.6
Jul	8.8	5.3	1.3	.6
Aug	7.1	4.2	1.7	.6
Sep	5.6	3.3	1.0	.3
Oct	5.4	3.2	1.0	.3
Nov	5.2	2.2	.4	.1
Dec	4.0	1.3	.1	.0
Ann	77.1	42.2	11.6	3.7

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	.00	.01	.07	.14	.22	.31	.43	.59	.82	1.21	1.61
Feb	.02	.07	.15	.23	.32	.42	.54	.69	.90	1.25	1.58
Mar	.14	.24	.45	.65	.88	1.14	1.44	1.82	2.34	3.21	4.06
Apr	.27	.43	.72	1.00	1.29	1.62	1.99	2.46	3.09	4.11	5.10
May	.50	.76	1.20	1.61	2.03	2.49	3.02	3.66	4.52	5.91	7.23
Jun	.77	1.04	1.45	1.81	2.16	2.53	2.94	3.43	4.07	5.06	6.00
Jul	.53	.77	1.15	1.49	1.84	2.21	2.63	3.14	3.81	4.87	5.89
Aug	.75	1.01	1.39	1.73	2.05	2.40	2.77	3.22	3.80	4.71	5.56
Sep	.00	.08	.32	.57	.86	1.19	1.60	2.12	2.85	4.08	5.31
Oct	.10	.19	.39	.62	.87	1.17	1.54	2.00	2.66	3.77	4.87
Nov	.01	.05	.15	.26	.39	.55	.75	1.01	1.38	2.02	2.66
Dec	.00	.01	.06	.12	.18	.26	.36	.49	.67	.98	1.30
Ann	12.63	14.04	15.89	17.32	18.61	19.87	21.19	22.66	24.47	27.13	29.46

\+ 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

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	3.9	3.0	3	1	10.0	1997	4	12.0	1992	21	1982	31	13	1982	3.4	2.3	.6	.2	@	15.6	10.9	8.1	1.6
Feb	6.3	5.0	3	1	12.0	1997	4	17.0	1989	20	1982	13	14	1982	2.9	2.2	1.0	.3	@	14.1	11.6	7.8	3.7
Mar	7.2	4.0	1	#	14.0	1985	2	29.5	1985	28	1975	28	6	1975	2.1	1.8	1.0	.5	.1	6.6	4.2	2.5	.9
Apr	3.4	.0	#	0	14.0	1995	18	38.0	1995	8	2000	16	1	1979	.9	.8	.5	.3	@	.2	.1	.0	.0
May	#	.0	#	0	#	1979	10	#	1979	#	1979	10	#	1979	.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	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	1.0	.0	#	0	4.0	1971	29	7.0	1971	4	1971	29	#+	1995	.5	.5	.2	.0	.0	.5	.1	.0	.0
Nov	6.9	6.5	#	#	8.0	1993	24	22.0	1985	10	2000	30	3+	2000	2.4	2.1	.9	.3	.0	4.5	2.5	1.2	.0
Dec	3.9	2.3	1	#	9.0	1984	1	18.0	1988	18	1996	15	9	1971	2.6	2.2	.4	.2	.0	10.2	6.0	3.4	1.2
Ann	32.6	20.8	N/A	N/A	14.0+	Apr 1995	18	38.0	Apr 1995	28	Mar 1975	28	14	Feb 1982	14.8	11.9	4.6	1.8	.1	51.7	35.4	23.0	7.4

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

(1) Derived from Snow Climatology and 1971-2000 daily data

@ Denotes mean number of days greater than 0 but less than .05

(2) Derived from 1971-2000 daily data

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

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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	6/14	6/06	5/31	5/26	5/22	5/17	5/12	5/06	4/29
32	5/24	5/19	5/15	5/12	5/09	5/06	5/03	4/29	4/24
28	5/16	5/11	5/07	5/04	5/01	4/28	4/25	4/21	4/16
24	5/06	5/01	4/28	4/24	4/22	4/19	4/16	4/12	4/07
20	4/29	4/22	4/18	4/14	4/10	4/06	4/02	3/29	3/22
16	4/18	4/11	4/06	4/03	3/30	3/26	3/22	3/18	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	8/27	9/02	9/06	9/09	9/12	9/15	9/19	9/23	9/28
32	9/13	9/17	9/19	9/22	9/24	9/26	9/28	10/01	10/04
28	9/16	9/21	9/24	9/27	9/30	10/03	10/06	10/10	10/15
24	9/26	10/01	10/05	10/09	10/12	10/15	10/18	10/22	10/28
20	10/01	10/08	10/13	10/17	10/21	10/25	10/29	11/03	11/10
16	10/12	10/18	10/23	10/27	10/30	11/03	11/07	11/11	11/17

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	135	127	119	113	106	99	91	79
32	158	150	145	141	137	133	128	123	116
28	173	166	160	156	151	147	142	137	129
24	194	187	181	177	173	168	164	159	151
20	219	210	204	198	193	188	182	176	167
16	243	233	226	219	214	208	202	194	184

***** 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)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1631	1281	1059	592	257	66	22	28	175	537	1059	1490	8197
60	1476	1141	904	448	151	21	6	6	88	385	909	1335	6870
57	1383	1062	811	366	102	9	0	2	52	297	819	1242	6145
55	1321	1011	750	315	75	4	0	1	34	243	759	1180	5693
50	1169	880	604	204	30	0	0	0	9	129	619	1033	4677
32	663	457	184	12	0	0	0	0	0	3	203	539	2061

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	55	100	148	411	796	1046	1259	1211	869	488	134	71	6588
55	0	10	1	25	158	360	546	498	212	15	0	0	1825
57	0	5	0	16	122	305	484	438	170	8	0	0	1548
60	0	0	0	8	78	227	397	349	117	2	0	0	1178
65	0	0	0	1	29	122	258	215	54	0	0	0	679
70	0	0	0	0	8	51	148	113	19	0	0	0	339

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	9	44	235	565	820	1025	982	643	301	38	1	0	9	53	288	853	1673	2698	3680	4323	4624	4662	4663
45	0	0	15	138	417	670	870	827	497	188	16	0	0	0	15	153	570	1240	2110	2937	3434	3622	3638	3638
50	0	0	3	73	280	520	715	672	359	101	6	0	0	0	3	76	356	876	1591	2263	2622	2723	2729	2729
55	0	0	0	37	165	375	561	519	236	46	1	0	0	0	0	37	202	577	1138	1657	1893	1939	1940	1940
60	0	0	0	15	84	238	409	368	144	12	0	0	0	0	0	15	99	337	746	1114	1258	1270	1270	1270
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	10	42	170	357	523	662	633	412	207	34	0	0	10	52	222	579	1102	1764	2397	2809	3016	3050	3050

(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