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: CEDAR, MN **COOP ID: 211390**

Climate Division: MN 6 **NWS Call Sign:** **Elevation: 907 Feet** **Lat: 45˚20N** **Lon: 93˚17W**

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	19.9	1.8	10.9	53	1981	24	24.4	1990	-40	1977	9	-.9	1977	1679	0	.0	.0	.1	24.2	30.9	14.5
Feb	27.2	9.0	18.1	60	2000	29	31.7	1998	-39	1996	2	7.7	1979	1314	0	.0	.0	.6	16.2	27.3	8.8
Mar	39.2	21.3	30.3	83	1986	31	39.2	2000	-21	1965	24	21.1	1975	1078	0	.0	.0	6.7	6.8	25.9	2.7
Apr	56.3	33.9	45.1	93	1980	21	52.5	1987	1	1975	4	37.1	1975	598	2	.0	.1	22.2	.3	13.8	.0
May	69.7	46.1	57.9	95	1969	27	65.7	1977	17	1967	3	52.1	1979	262	42	.0	.6	30.6	.0	2.5	.0
Jun	76.6	55.1	65.9	100	1963	30	72.5	1988	31+	1992	21	59.4	1982	78	103	.0	2.1	30.0	.0	@	.0
Jul	80.5	60.2	70.4	103	1988	15	75.6	1988	38	1972	4	64.3	1992	24	190	.2	4.7	31.0	.0	.0	.0
Aug	78.1	58.1	68.1	98+	1988	16	73.2	1983	35	1967	19	64.1	1985	41	137	.0	2.3	31.0	.0	.0	.0
Sep	69.7	48.9	59.3	98	1976	7	65.0	1998	22	1974	22	53.7	1993	196	26	.0	.6	29.7	.0	1.3	.0
Oct	57.3	37.3	47.3	87+	1976	1	52.3	1973	6	1976	27	41.6	1976	548	0	.0	.0	25.2	.1	10.1	.0
Nov	37.8	23.1	30.5	76	1999	8	40.0	1999	-23	1964	30	22.6	1985	1037	0	.0	.0	6.3	8.4	24.7	1.3
Dec	23.8	8.7	16.3	64	1998	1	25.7	1997	-32	1968	25	1.4	1983	1512	0	.0	.0	.3	21.7	30.6	9.2
Ann	53.0	33.6	43.3	103	Jul 1988	15	75.6	Jul 1988	-40	Jan 1977	9	-.9	Jan 1977	8367	500	.2	10.4	213.7	77.7	167.1	36.5

\+ 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: 1962-2001

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

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: CEDAR, MN **COOP ID: 211390**

Climate Division: MN 6 **NWS Call Sign:** **Elevation: 907 Feet** **Lat: 45˚20N** **Lon: 93˚17W**

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	.99	.87	1.23	2001	30	2.73	1975	.14	1990
Feb	.76	.61	.90	1971	2	2.26	1971	.03	1987
Mar	1.84	1.59	1.55	1977	12	4.64	1977	.44	1987
Apr	2.40	2.14	2.14	2001	23	6.03	1994	.07	1987
May	3.43	3.24	2.51	1996	19	8.09	1991	.81	1994
Jun	4.22	3.92	3.47	1997	28	9.10	1990	.12	1988
Jul	4.21	3.91	3.48	1999	26	7.94	1991	1.32	1976
Aug	4.70	4.29	3.07	1993	14	8.17	1980	1.76	2000
Sep	3.29	2.72	2.86	1985	9	10.30	1985	.55	2000
Oct	2.44	2.36	3.68	1971	27	6.77	1971	.17	1976
Nov	2.18	1.77	2.07	1991	1	5.70	1996	.11	1980
Dec	.90	.82	1.25	1984	16	2.56	1996	.05	1979
Ann	31.36	30.57	3.68	Oct 1971	27	10.30	Sep 1985	.03	Feb 1987

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	8.7	3.2	.2	.1
Feb	6.5	2.6	.2	.0
Mar	8.5	4.3	1.1	.2
Apr	9.2	5.6	1.5	.3
May	11.0	7.1	2.1	.8
Jun	10.8	7.6	3.1	1.2
Jul	11.0	7.7	3.1	1.0
Aug	10.6	7.6	3.2	1.5
Sep	9.9	6.2	2.2	.7
Oct	8.2	5.0	1.6	.4
Nov	8.1	4.7	1.4	.5
Dec	8.0	2.9	.4	.1
Ann	110.5	64.5	20.1	6.8

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	.21	.31	.45	.58	.72	.86	1.02	1.21	1.46	1.86	2.24
Feb	.10	.16	.27	.38	.49	.61	.76	.93	1.17	1.57	1.95
Mar	.52	.69	.96	1.19	1.41	1.65	1.91	2.22	2.62	3.25	3.84
Apr	.39	.60	.95	1.28	1.62	1.99	2.41	2.93	3.62	4.74	5.81
May	1.21	1.53	2.00	2.39	2.77	3.16	3.58	4.07	4.70	5.67	6.56
Jun	1.17	1.57	2.18	2.71	3.23	3.77	4.37	5.08	6.01	7.46	8.82
Jul	1.49	1.89	2.46	2.94	3.41	3.88	4.40	5.00	5.76	6.95	8.04
Aug	2.12	2.54	3.12	3.58	4.02	4.46	4.93	5.47	6.14	7.17	8.09
Sep	.71	1.01	1.50	1.93	2.37	2.84	3.36	3.99	4.82	6.15	7.40
Oct	.43	.64	1.00	1.33	1.67	2.05	2.47	2.98	3.66	4.77	5.82
Nov	.27	.44	.75	1.05	1.37	1.73	2.14	2.66	3.35	4.50	5.60
Dec	.15	.23	.36	.49	.62	.75	.91	1.10	1.36	1.77	2.16
Ann	20.23	22.31	25.01	27.09	28.95	30.78	32.67	34.79	37.37	41.16	44.48

\+ 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: 1962-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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

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: CEDAR, MN **COOP ID: 211390**

Climate Division: MN 6 **NWS Call Sign:** **Elevation: 907 Feet** **Lat: 45°20N** **Lon: 93°17W**

Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	12.2	11.6	10	9
Feb	7.4	6.5	11	11
Mar	8.5	8.0	7	5
Apr	3.0	2.7	#	#
May	.0	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	#	.0	#	0
Oct	.5	.0	#	0
Nov	9.8	7.8	1	1
Dec	9.9	8.9	5	4
Ann	51.3	45.5	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	9.5	1997	5	26.9	1994	27+	1997	29	24	1997
Feb	8.0	1991	23	16.3	1994	25+	1997	16	24	1997
Mar	11.2	1999	9	19.1	1996	30	1989	4	21	1997
Apr	9.0	1994	29	11.2	1994	13	1975	2	5	1975
May	.5	1991	6	.5	1991	#	1997	15	#	1997
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	#	1995	21	#+	1995	#	1995	21	#	1995
Oct	4.0	1991	31	4.0	1991	3	1991	31	#+	1996
Nov	19.6	1991	1	52.2	1991	23	1991	2	10	1991
Dec	14.0	1996	15	33.0	1996	21	1996	24	16	1991
Ann	19.6	Nov 1991	1	52.2	Nov 1991	30	Mar 1989	4	24+	Feb 1997

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	8.2	4.6	1.5	.4	.0
Feb	5.2	2.9	.9	.1	.0
Mar	4.6	2.9	1.3	.5	.1
Apr	1.8	1.1	.3	.1	.0
May	@	.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	.4	.2	@	.0	.0
Nov	4.3	3.0	1.2	.5	.1
Dec	7.0	3.7	.9	.3	.1
Ann	31.5	18.4	6.1	1.9	.3

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	28.3	25.3	21.8	11.4
Feb	24.1	23.3	21.5	14.1
Mar	16.4	13.0	11.1	7.3
Apr	2.7	1.2	.8	.2
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	.1	@	.0	.0
Nov	9.1	4.8	2.6	.6
Dec	27.4	17.2	11.4	4.2
Ann	108.1	84.8	69.2	37.8

+ 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

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: CEDAR, MN **COOP ID: 211390**

Climate Division: MN 6 **NWS Call Sign:** **Elevation: 907 Feet** **Lat: 45˚20N** **Lon: 93˚17W**

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

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	9/16	9/20	9/23	9/25	9/27	9/29	10/01	10/04	10/08
28	9/20	9/25	9/29	10/03	10/06	10/09	10/13	10/17	10/23
24	10/04	10/10	10/14	10/17	10/20	10/24	10/27	10/31	11/06
20	10/15	10/20	10/23	10/27	10/29	11/01	11/05	11/08	11/13
16	10/20	10/26	10/31	11/03	11/07	11/10	11/14	11/19	11/25

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	136	129	123	119	115	111	106	101	94
32	160	153	147	143	139	135	130	125	118
28	184	176	171	166	161	157	152	146	139
24	211	203	197	191	187	182	177	171	162
20	223	217	212	208	205	201	197	192	186
16	246	237	231	226	221	216	211	205	196

***** 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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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: CEDAR, MN **COOP ID: 211390**

Climate Division: MN 6 **NWS Call Sign:** **Elevation: 907 Feet** **Lat: 45˚20N** **Lon: 93˚17W**

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	1679	1314	1078	598	262	78	24	41	196	548	1037	1512	8367
60	1524	1174	923	455	162	27	5	10	97	398	887	1357	7019
57	1431	1090	830	375	114	12	0	2	56	313	797	1264	6284
55	1369	1034	768	325	87	6	0	1	37	261	737	1202	5827
50	1214	894	622	213	38	1	0	0	9	151	590	1047	4779
32	678	439	195	15	0	0	0	0	0	4	168	528	2027

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	23	49	141	409	803	1015	1190	1119	820	480	121	39	6209
55	0	0	1	28	177	331	477	407	166	24	0	0	1611
57	0	0	0	19	141	277	415	346	126	14	0	0	1338
60	0	0	0	9	96	202	327	261	77	5	0	0	977
65	0	0	0	2	42	103	190	137	26	0	0	0	500
70	0	0	0	0	15	38	92	55	5	0	0	0	205

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	1	35	234	585	812	978	908	609	291	38	1	0	1	36	270	855	1667	2645	3553	4162	4453	4491	4492
45	0	1	17	136	435	662	823	753	463	178	15	0	0	1	18	154	589	1251	2074	2827	3290	3468	3483	3483
50	0	0	4	74	295	512	668	598	322	97	4	0	0	0	4	78	373	885	1553	2151	2473	2570	2574	2574
55	0	0	1	35	177	366	513	445	201	42	0	0	0	0	1	36	213	579	1092	1537	1738	1780	1780	1780
60	0	0	0	13	90	228	359	293	109	13	0	0	0	0	0	13	103	331	690	983	1092	1105	1105	1105
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	1	27	157	367	525	652	592	376	174	23	0	0	1	28	185	552	1077	1729	2321	2697	2871	2894	2894

(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.
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