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: ADA, MN **COOP ID: 210018**

Climate Division: MN 1 **NWS Call Sign:** **Elevation: 910 Feet** **Lat: 47˚18N** **Lon: 96˚31W**

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	14.3	-5.4	4.5	53	1981	24	18.3	1990	-43	1994	18	-8.1	1979	1879	0	.0	.0	@	26.8	31.0	18.8
Feb	21.4	2.3	11.9	65	1958	25	26.4	1998	-43+	1996	2	-2.5	1979	1488	0	.0	.0	.3	19.0	27.8	12.1
Mar	34.0	16.3	25.2	78	1967	30	36.3	1973	-30	1980	1	15.5	1996	1237	0	.0	.0	4.4	9.9	27.5	4.5
Apr	53.1	31.3	42.2	100	1980	21	50.0	1987	-8	1979	6	33.3	1979	686	1	@	.1	20.2	1.0	16.5	.2
May	68.5	44.7	56.6	97	1964	21	65.9	1977	12	1967	3	48.5	1979	296	34	.0	.9	30.0	.0	3.8	.0
Jun	76.3	55.0	65.7	98+	1988	19	72.7	1988	31	1964	1	59.8	1982	84	103	.0	2.3	30.0	.0	.0	.0
Jul	80.7	58.9	69.8	105	1988	27	74.1	1989	37	1967	3	63.6	1992	29	178	.3	5.2	31.0	.0	.0	.0
Aug	80.1	56.7	68.4	104	1976	18	75.7	1983	33+	1982	27	62.7	1977	57	163	.4	5.2	31.0	.0	.0	.0
Sep	69.2	45.5	57.4	100+	1978	6	62.6	1978	20+	1974	22	50.7	1993	251	22	.1	1.2	29.5	.0	2.1	.0
Oct	55.4	33.3	44.4	93	1963	5	50.9	1973	7	1951	31	40.2	1993	641	0	.0	@	23.7	.6	12.8	.0
Nov	34.2	17.8	26.0	74	1953	17	35.9	1999	-28+	1996	26	15.0	1985	1170	0	.0	.0	4.5	12.2	26.8	2.7
Dec	20.0	2.7	11.4	56	1962	1	23.8	1997	-37	1967	31	-2.4	1983	1664	0	.0	.0	.2	23.9	30.9	13.6
Ann	50.6	29.9	40.3	105	Jul 1988	27	75.7	Aug 1983	-43+	Feb 1996	2	-8.1	Jan 1979	9482	501	.8	14.9	204.8	93.4	179.2	51.9

\+ 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

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: ADA, MN **COOP ID: 210018**

Climate Division: MN 1 **NWS Call Sign:** **Elevation: 910 Feet** **Lat: 47˚18N** **Lon: 96˚31W**

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	.83	.84	.66	1982	22	1.89	1982	.14	1991
Feb	.59	.61	.77	1955	20	1.42	1998	.04	1988
Mar	1.03	.86	1.24	1970	3	2.37	1995	.00	1986
Apr	1.69	1.37	2.41	1964	21	6.01	1986	.00+	1988
May	3.05	3.00	4.51	1981	22	9.19	1985	.32	1980
Jun	4.32	4.48	3.31	1964	18	8.17	1975	.66	1972
Jul	3.40	3.35	3.80	1952	20	7.53	1995	.26	1989
Aug	2.84	2.46	2.35	1960	25	7.15	1974	.98	1975
Sep	2.37	2.03	2.98	1973	24	8.06	1973	.04	1974
Oct	2.03	1.64	2.65	1971	17	7.49	1971	.03	1992
Nov	1.08	.98	1.58	1974	1	3.14	2000	.00+	1999
Dec	.70	.60	1.36	1982	2	1.64	1982	.19	1989
Ann	23.93	24.78	4.51	May 1981	22	9.19	May 1985	.00+	Nov 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.4	3.0	.2	.0
Feb	4.2	2.4	.1	.0
Mar	4.8	3.1	.5	@
Apr	5.7	3.7	1.0	.3
May	7.7	5.7	1.6	.6
Jun	9.5	7.3	3.0	1.2
Jul	7.8	6.3	2.0	.8
Aug	7.2	5.4	1.9	.7
Sep	6.4	4.7	1.5	.5
Oct	5.7	4.0	1.4	.6
Nov	4.4	3.3	.5	.1
Dec	4.9	2.6	.1	.1
Ann	73.7	51.5	13.8	4.9

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	.20	.28	.40	.51	.61	.73	.85	1.00	1.20	1.50	1.79
Feb	.10	.15	.24	.32	.40	.49	.59	.72	.88	1.15	1.41
Mar	.26	.41	.57	.71	.83	.95	1.09	1.25	1.45	1.76	2.05
Apr	.00	.16	.46	.72	1.00	1.31	1.67	2.10	2.70	3.68	4.63
May	.74	1.03	1.47	1.87	2.26	2.68	3.14	3.69	4.42	5.56	6.64
Jun	1.38	1.79	2.39	2.91	3.41	3.93	4.49	5.16	6.02	7.35	8.58
Jul	.69	1.00	1.50	1.95	2.42	2.91	3.47	4.14	5.03	6.45	7.80
Aug	.91	1.18	1.58	1.92	2.24	2.58	2.95	3.39	3.95	4.83	5.63
Sep	.33	.53	.87	1.19	1.54	1.92	2.36	2.90	3.62	4.81	5.95
Oct	.10	.21	.45	.72	1.04	1.41	1.86	2.45	3.27	4.68	6.09
Nov	.00	.23	.45	.62	.78	.95	1.13	1.34	1.63	2.08	2.50
Dec	.20	.27	.37	.46	.54	.63	.73	.85	1.00	1.23	1.45
Ann	16.75	18.13	19.90	21.25	22.45	23.61	24.81	26.14	27.76	30.10	32.14

\+ 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:
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: ADA, MN **COOP ID: 210018**

Climate Division: MN 1 **NWS Call Sign:** **Elevation: 910 Feet** **Lat: 47°18N** **Lon: 96°31W**

Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	13.8	12.0	9	10
Feb	5.7	3.7	10	9
Mar	6.9	5.9	4	2
Apr	.8	.0	#	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	.7	.0	#	0
Nov	7.3	5.0	2	#
Dec	7.5	6.0	5	2
Ann	42.7	32.6	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	10.0	1982	22	29.0	1989	32	1982	24	24	1997
Feb	7.0	1991	23	14.0	1991	29	1997	12	27	1997
Mar	10.0	1997	4	23.2	1997	36	1997	4	27	1997
Apr	6.3	1997	6	6.3	1997	15	1996	4	4	1979
May	.3	1997	12	.3	1997	0	0	0	0	0
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	.0	0	0	.0	0	0	0	0	0	0
Oct	6.0	1972	30	6.0	1972	6	1972	30	#+	2000
Nov	8.0	1998	19	21.0	1985	33	1977	20	17	1977
Dec	12.0	1972	30	21.0	1988	26	1977	11	19	1977
Ann	12.0	Dec 1972	30	29.0	Jan 1989	36	Mar 1997	4	27+	Mar 1997

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	4.6	3.8	1.4	.6	.1
Feb	3.0	2.4	.6	.1	.0
Mar	2.7	2.2	.8	.3	.1
Apr	.4	.3	.1	.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	.2	.2	.1	@	.0
Nov	2.2	1.8	1.0	.3	.0
Dec	4.2	3.7	1.0	.3	@
Ann	17.3	14.4	5.0	1.7	.2

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	-9.9	-9.9	-9.9	-9.9
Feb	-9.9	-9.9	-9.9	-9.9
Mar	-9.9	-9.9	-9.9	-9.9
Apr	1.3	.8	.3	.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	.1	.1	.1	.0
Nov	-9.9	-9.9	-9.9	-9.9
Dec	-9.9	-9.9	-9.9	-9.9
Ann	-9.9	-9.9	-9.9	-9.9

+ 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: ADA, MN **COOP ID: 210018**

Climate Division: MN 1 **NWS Call Sign:** **Elevation: 910 Feet** **Lat: 47˚18N** **Lon: 96˚31W**

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

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	9/06	9/09	9/12	9/14	9/16	9/19	9/21	9/24	9/27
32	9/14	9/18	9/20	9/23	9/25	9/27	9/30	10/02	10/06
28	9/20	9/25	9/28	10/01	10/04	10/07	10/10	10/13	10/18
24	9/27	10/02	10/06	10/10	10/13	10/16	10/20	10/24	10/29
20	10/06	10/12	10/17	10/20	10/24	10/27	10/31	11/05	11/11
16	10/17	10/23	10/26	10/29	11/01	11/04	11/07	11/11	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	136	130	126	123	120	116	113	109	104
32	152	147	143	139	136	133	130	126	120
28	174	168	163	159	156	152	148	143	137
24	200	192	186	182	177	172	167	162	154
20	223	214	208	202	197	192	186	180	171
16	232	225	220	216	212	209	204	200	193

***** 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: ADA, MN **COOP ID: 210018**

Climate Division: MN 1 **NWS Call Sign:** **Elevation: 910 Feet** **Lat: 47˚18N** **Lon: 96˚31W**

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	1879	1488	1237	686	296	84	29	57	251	641	1170	1664	9482
60	1724	1348	1082	541	188	30	7	19	142	487	1020	1509	8097
57	1631	1264	989	457	136	14	0	8	90	397	930	1416	7332
55	1569	1208	927	404	106	8	0	4	64	338	870	1354	6852
50	1414	1068	773	283	51	1	0	0	20	210	722	1199	5741
32	874	602	303	35	0	0	0	0	0	11	271	673	2769

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	17	39	89	340	762	1010	1172	1129	761	393	91	33	5836
55	0	0	0	19	155	327	459	420	135	7	0	0	1522
57	0	0	0	12	123	274	397	362	101	3	0	0	1272
60	0	0	0	6	82	200	311	279	63	1	0	0	942
65	0	0	0	1	34	103	178	163	22	0	0	0	501
70	0	0	0	0	12	39	85	80	6	0	0	0	222

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	17	188	560	790	955	907	567	230	24	0	0	1	18	206	766	1556	2511	3418	3985	4215	4239	4239
45	0	0	3	112	418	640	800	752	419	126	9	0	0	0	3	115	533	1173	1973	2725	3144	3270	3279	3279
50	0	0	0	59	285	490	645	597	285	63	1	0	0	0	0	59	344	834	1479	2076	2361	2424	2425	2425
55	0	0	0	25	174	344	490	443	169	21	0	0	0	0	0	25	199	543	1033	1476	1645	1666	1666	1666
60	0	0	0	9	87	207	339	295	90	6	0	0	0	0	0	9	96	303	642	937	1027	1033	1033	1033
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	0	11	139	359	500	626	589	353	149	15	0	0	0	11	150	509	1009	1635	2224	2577	2726	2741	2741

(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