

# Climatography of the United States No. 20

National Climatic Data Center  
Federal Building  
151 Patton Avenue  
Asheville, North Carolina 28801  
www.ncdc.noaa.gov

Station: GUNFLINT LAKE 10 NW, MN

1971-2000

COOP ID: 213417

Climate Division: MN 3

NWS Call Sign:

Elevation: 1,455 Feet Lat: 48° 10N

Lon: 90° 53W

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	13.7	-9.2	2.3	47+	1981	25	11.1	1990	-44	1982	17	-10.3	1994	1947	0	.0	.0	.0	28.3	30.9	19.9
Feb	22.3	-3.6	9.4	54+	2000	23	23.4	1998	-43	1967	12	-.6	1979	1560	0	.0	.0	.3	20.7	28.0	14.8
Mar	35.1	8.8	22.0	65	2000	7	31.1	1973	-35	1989	2	14.3	1996	1335	0	.0	.0	3.2	11.4	30.1	7.9
Apr	50.2	24.4	37.3	88	1977	30	45.1	1987	-17	1982	6	31.0	1995	830	0	.0	.0	15.6	1.2	25.9	.7
May	65.9	37.9	51.9	91+	1994	20	60.8	1977	14	1966	10	44.7	1979	421	15	.0	.2	29.3	.0	10.1	.0
Jun	71.9	47.6	59.8	94+	1987	17	65.7	1988	27	1964	1	54.7	1985	187	30	.0	.7	29.9	.0	.3	.0
Jul	77.2	53.0	65.1	98+	1975	31	69.8	1983	30	1964	31	59.2	1992	70	73	.0	1.8	31.0	.0	.0	.0
Aug	74.1	51.0	62.6	98+	1983	8	68.1	1983	32	1976	29	56.7	1977	133	57	.0	1.1	31.0	.0	@	.0
Sep	62.4	41.6	52.0	94+	1976	8	58.2	1998	22	1976	25	46.0	1974	393	3	.0	.1	28.6	.0	2.7	.0
Oct	50.0	31.7	40.9	79	1963	1	46.7	1973	5	1976	26	36.1	1976	749	0	.0	.0	17.3	.6	16.3	.0
Nov	32.5	17.3	24.9	68	1978	3	33.0	1981	-26	1985	29	16.5	1995	1202	0	.0	.0	2.3	13.5	28.3	2.1
Dec	18.3	-.8	8.8	52	1998	15	18.9	1997	-40	1983	19	-2.5	1983	1745	0	.0	.0	.1	25.3	31.0	15.0
Ann	47.8	25.0	36.4	98+	Aug 1983	8	69.8	Jul 1983	-44	Jan 1982	17	-10.3	Jan 1994	10572	178	.0	3.9	188.6	101.0	203.6	60.4

+ 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: 1951-2001

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

# 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: GUNFLINT LAKE 10 NW, MN**

**COOP ID: 213417**

**Climate Division: MN 3**

**NWS Call Sign:**

**Elevation: 1,455 Feet Lat: 48°10N**

**Lon: 90°53W**

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	1.17	1.00	.88	1982	23	2.72	1975	.00	1999	6.8	3.4	.2	.0	.15	.29	.49	.66	.82	1.00	1.20	1.44	1.75	2.25	2.73
Feb	.93	.88	1.40	1981	22	2.68	1981	.14	1993	5.3	2.9	.2	@	.19	.27	.41	.53	.66	.79	.95	1.13	1.37	1.76	2.13
Mar	1.24	1.05	1.00+	1973	7	3.52	1979	.22	1983	5.7	3.7	.5	@	.24	.35	.53	.70	.87	1.05	1.25	1.50	1.83	2.37	2.87
Apr	1.54	1.36	2.45	1967	17	4.06	1990	.00	1988	6.0	3.8	.8	.1	.20	.40	.66	.88	1.10	1.33	1.59	1.89	2.30	2.95	3.56
May	2.55	2.62	1.65	1964	23	4.25	1999	.26	1976	8.5	5.9	1.3	.3	.90	1.14	1.49	1.78	2.06	2.35	2.66	3.03	3.50	4.22	4.89
Jun	4.04	4.06	2.42	1990	17	7.77	1990	1.57	1972	11.2	8.6	2.7	.6	1.76	2.12	2.62	3.04	3.42	3.81	4.23	4.71	5.32	6.24	7.07
Jul	4.06	3.74	4.60	1987	23	9.43	1987	1.87	1989	9.5	7.5	2.5	.7	1.75	2.12	2.63	3.04	3.43	3.83	4.25	4.74	5.35	6.29	7.13
Aug	4.02	3.36	4.05	1987	1	10.84	1988	.39	1991	9.1	7.3	2.2	.8	1.10	1.48	2.06	2.57	3.07	3.59	4.16	4.84	5.73	7.12	8.41
Sep	3.21	2.92	4.75	1977	9	9.60	1977	1.15	1976	9.5	7.1	2.0	.4	1.33	1.62	2.03	2.37	2.69	3.02	3.37	3.77	4.28	5.06	5.77
Oct	2.30	2.09	1.85	1977	11	5.37	1982	.00	1998	8.5	5.3	1.0	.3	.73	1.06	1.42	1.69	1.94	2.19	2.45	2.76	3.15	3.74	4.28
Nov	1.63	1.27	1.95	1991	1	4.04	1991	.00	1998	6.6	4.3	.8	.1	.18	.38	.65	.89	1.12	1.38	1.67	2.01	2.47	3.21	3.91
Dec	.87	.74	2.57	1984	16	3.05	1984	.00	1998	5.3	3.1	.1	@	.07	.17	.31	.44	.57	.71	.88	1.08	1.35	1.78	2.20
Ann	27.56	27.28	4.75	Sep 1977	9	10.84	Aug 1988	.00+	Jan 1999	92.0	62.9	14.3	3.3	21.91	23.05	24.48	25.55	26.49	27.39	28.31	29.31	30.51	32.24	33.71

+ 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: 1951-2001

(3) Derived from 1971-2000 serially complete 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)

# 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](http://www.ncdc.noaa.gov)

**Station: GUNFLINT LAKE 10 NW, MN**

**COOP ID: 213417**

**Climate Division: MN 3**

**NWS Call Sign:**

**Elevation: 1,455 Feet**

**Lat: 48°10N**

**Lon: 90°53W**

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	15.2	15.4	16	14	12.0	1982	23	29.0+	1989	50	1972	31	35	1972	5.5	4.9	2.0	.6	.1	-9.9	-9.9	-9.9	-9.9
Feb	8.5	7.5	20	19	9.0	1979	23	20.0	1972	70	1972	29	56	1972	4.0	3.6	1.0	.3	.0	-9.9	-9.9	-9.9	-9.9
Mar	10.3	9.8	15	17	9.0	1979	28	27.0	1979	35	1976	15	31	1997	3.6	3.1	1.3	.6	.0	-9.9	-9.9	-9.9	-9.9
Apr	6.1	4.0	5	2	10.5	1974	1	22.8	1974	30	1972	9	28	1979	1.9	1.6	1.0	.4	.1	-9.9	-9.9	-9.9	-9.9
May	.2	.0	#	0	3.0	1989	5	5.0	1989	5	1989	6	#	1989	.1	.1	@	.0	.0	.1	.1	.1	.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	#	1974	30	#	1974	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	1.1	.0	#	0	8.0	1990	18	8.5	1987	15	1990	18	1	1990	.6	.6	.3	.1	.0	.2	.1	.1	.1
Nov	13.0	12.0	3	2	17.0	1991	1	45.0	1991	32	1991	5	18	1991	4.7	4.2	1.6	.7	.1	-9.9	-9.9	-9.9	-9.9
Dec	11.6	11.7	9	8	8.0	1977	5	26.9	1977	30	1985	4	25	1985	3.7	3.1	1.3	.3	.0	-9.9	-9.9	-9.9	-9.9
Ann	66.0	60.4	N/A	N/A	17.0	Nov 1991	1	45.0	Nov 1991	70	Feb 1972	29	56	Feb 1972	24.1	21.2	8.5	3.0	.3	-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/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

# Climatography of the United States

## No. 20 1971-2000

**Station: GUNFLINT LAKE 10 NW, MN**

**COOP ID: 213417**

**Climate Division: MN 3**

**NWS Call Sign:**

**Elevation: 1,455 Feet**

**Lat: 48° 10N**

**Lon: 90° 53W**

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	6/30	6/23	6/18	6/13	6/09	6/05	6/01	5/27	5/19
32	6/12	6/06	6/02	5/29	5/26	5/23	5/19	5/15	5/09
28	5/25	5/21	5/18	5/16	5/13	5/11	5/09	5/06	5/02
24	5/15	5/10	5/07	5/05	5/02	4/30	4/27	4/24	4/20
20	5/05	4/30	4/27	4/25	4/22	4/20	4/17	4/14	4/10
16	4/25	4/21	4/18	4/16	4/13	4/11	4/08	4/05	4/01
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	9/10	9/13	9/16	9/20	9/24	9/29
32	9/09	9/14	9/17	9/20	9/23	9/25	9/28	10/02	10/06
28	9/19	9/25	9/29	10/02	10/05	10/08	10/11	10/15	10/21
24	10/04	10/10	10/14	10/17	10/21	10/24	10/28	11/01	11/07
20	10/13	10/18	10/21	10/24	10/27	10/30	11/02	11/06	11/11
16	10/25	10/29	11/01	11/03	11/05	11/08	11/10	11/13	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	126	115	107	101	95	89	82	74	64
32	142	134	128	124	119	114	110	104	96
28	166	159	153	148	144	139	135	129	121
24	195	187	181	176	171	166	161	155	147
20	210	202	197	192	187	183	178	172	164
16	221	216	212	209	206	202	199	195	190

\* 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/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

**Climatography  
of the United States  
No. 20  
1971-2000**

**Station: GUNFLINT LAKE 10 NW, MN**

**COOP ID: 213417**

**Climate Division: MN 3**

**NWS Call Sign:**

**Elevation: 1,455 Feet    Lat: 48°10N    Lon: 90°53W**

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	1947	1560	1335	830	421	187	70	133	393	749	1202	1745	10572
60	1792	1420	1180	681	292	95	16	56	256	594	1052	1590	9024
57	1699	1336	1087	593	227	56	5	29	186	502	962	1497	8179
55	1637	1280	1025	535	188	37	1	17	144	442	902	1435	7643
50	1482	1140	870	397	108	11	0	3	66	300	752	1280	6409
32	925	650	354	64	3	0	0	0	0	22	274	739	3031

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	1	13	42	224	620	833	1026	948	601	296	61	17	4682
55	0	0	0	5	92	180	314	252	55	3	0	0	901
57	0	0	0	3	69	139	256	201	36	1	0	0	705
60	0	0	0	1	42	88	174	136	17	0	0	0	458
65	0	0	0	0	15	30	73	57	3	0	0	0	178
70	0	0	0	0	4	7	16	16	0	0	0	0	43

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	0	3	76	386	609	797	742	418	136	9	0	0	0	3	79	465	1074	1871	2613	3031	3167	3176	3176
45	0	0	0	36	250	461	642	587	278	59	0	0	0	0	0	36	286	747	1389	1976	2254	2313	2313	2313
50	0	0	0	13	146	312	487	433	160	22	0	0	0	0	0	13	159	471	958	1391	1551	1573	1573	1573
55	0	0	0	6	78	178	334	280	74	2	0	0	0	0	0	6	84	262	596	876	950	952	952	952
60	0	0	0	0	37	84	193	151	26	0	0	0	0	0	0	0	37	121	314	465	491	491	491	491
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	0	6	82	270	372	498	451	236	77	5	0	0	0	6	88	358	730	1228	1679	1915	1992	1997	1997

(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](http://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.  
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.

- 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/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)