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: HIBBING CHISHOLM AP, MN **COOP ID: 213730**

Climate Division: MN 3 **NWS Call Sign: HIB** **Elevation: 1,347 Feet** **Lat: 47˚23N** **Lon: 92˚50W**

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	15.9	-5.3	5.3	48	1973	25	15.1	1998	-50	1996	20	-5.4	1982	1853	0	.0	.0	.0	28.6	31.0	19.8
Feb	23.6	1.8	12.7	57	1976	24	28.3	1998	-44	1996	2	.6	1989	1465	0	.0	.0	.2	20.9	28.0	13.4
Mar	35.1	14.7	24.9	71	1963	31	33.9	1973	-37	1989	2	16.5	1996	1244	0	.0	.0	3.1	12.2	29.0	5.6
Apr	50.8	28.0	39.4	89	1980	21	47.0	1987	-4	1975	4	33.4	1996	768	0	.0	.0	15.9	1.5	22.1	.2
May	65.5	39.9	52.7	93	1964	22	60.0	1977	14	1967	3	46.5	1979	395	14	.0	.1	28.4	.0	7.4	.0
Jun	72.9	49.3	61.1	97	1995	17	66.6	1995	25	1964	1	55.5	1982	154	36	.0	.5	29.9	.0	.4	.0
Jul	77.1	54.7	65.9	100	1999	29	69.9	1975	32	2001	5	60.0	1992	61	89	@	1.2	31.0	.0	.0	.0
Aug	74.9	52.2	63.6	95	1976	19	68.5	1983	29	1986	28	58.4	1977	110	65	.0	.5	31.0	.0	.1	.0
Sep	64.5	42.7	53.6	94	1976	7	58.6	1998	20+	1984	29	47.8	1974	348	4	.0	.1	28.4	.0	4.9	.0
Oct	51.9	32.1	42.0	87	1963	5	47.5	1994	0	1976	27	36.0	1976	714	0	.0	.0	17.3	1.0	17.4	@
Nov	33.3	17.7	25.5	72	1975	5	34.2	1999	-27	1985	29	17.6	1985	1185	0	.0	.0	2.7	14.7	28.2	2.7
Dec	20.0	1.6	10.8	60	1962	1	22.0	1997	-38	1983	19	-2.4	1983	1681	0	.0	.0	.1	26.8	30.8	15.0
Ann	48.8	27.5	38.1	100	Jul 1999	29	69.9	Jul 1975	-50	Jan 1996	20	-5.4	Jan 1982	9978	208	@	2.4	188.0	105.7	199.3	56.7

\+ 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

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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	.79	.66	.87	1997	4	2.19	1975	.30	1979
Feb	.60	.52	.67	1979	22	1.62	1971	.00	1993
Mar	1.02	1.04	.86	1987	23	2.34	1979	.23	1973
Apr	1.54	1.10	1.57	2001	7	3.83	1986	.24	1987
May	2.60	2.47	1.78	2000	8	5.54	1985	.41	1980
Jun	4.34	4.15	3.30	1996	26	8.92	1994	.80	1987
Jul	4.71	4.41	4.50	1999	5	13.51	1999	1.78+	1984
Aug	3.51	3.25	5.75	1988	13	10.32	1988	.88	1990
Sep	3.19	3.11	3.21	1995	30	6.08	1986	.52	1974
Oct	2.46	2.47	3.68	1973	9	5.40	1971	.42	1976
Nov	1.35	1.24	1.30	1977	9	3.58	1977	.09	1999
Dec	.73	.66	.93	1984	16	1.67	1995	.15	1997
Ann	26.84	27.41	5.75	Aug 1988	13	13.51	Jul 1999	.00	Feb 1993

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.2	2.3	.1	.0
Feb	7.8	1.9	.1	.0
Mar	8.5	3.2	.3	.0
Apr	8.0	4.0	.9	.1
May	10.4	6.0	1.9	.3
Jun	12.9	8.8	3.1	.8
Jul	11.5	7.9	3.5	1.1
Aug	10.9	6.6	2.5	.8
Sep	11.6	6.5	1.8	.7
Oct	10.1	5.0	1.5	.5
Nov	9.0	3.7	.6	.1
Dec	9.9	2.4	.1	.0
Ann	120.8	58.3	16.4	4.4

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	.24	.32	.43	.53	.62	.72	.82	.95	1.11	1.36	1.59
Feb	.07	.15	.25	.33	.42	.51	.62	.74	.90	1.17	1.41
Mar	.36	.45	.59	.71	.83	.94	1.07	1.22	1.41	1.70	1.97
Apr	.35	.50	.72	.92	1.12	1.34	1.58	1.86	2.24	2.84	3.40
May	.72	.97	1.34	1.67	1.99	2.32	2.70	3.13	3.70	4.60	5.43
Jun	1.65	2.06	2.64	3.12	3.57	4.04	4.55	5.13	5.88	7.02	8.07
Jul	1.54	1.98	2.64	3.20	3.74	4.30	4.91	5.63	6.55	7.98	9.30
Aug	.90	1.24	1.75	2.20	2.64	3.11	3.63	4.24	5.05	6.32	7.51
Sep	1.08	1.38	1.82	2.20	2.55	2.92	3.32	3.79	4.40	5.33	6.19
Oct	.44	.65	1.01	1.35	1.69	2.06	2.48	2.99	3.68	4.77	5.82
Nov	.17	.27	.46	.65	.85	1.07	1.33	1.65	2.08	2.79	3.48
Dec	.17	.24	.34	.44	.53	.64	.75	.89	1.06	1.35	1.61
Ann	19.51	20.94	22.77	24.15	25.38	26.56	27.78	29.13	30.76	33.11	35.15

\+ 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

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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	13.9	12.8	15	13	14.6	1997	4	32.7	1997	50	1996	29	34+	1997	10.4	4.2	1.4	.6	.1	30.9	29.9	28.2	20.6
Feb	8.4	7.7	16	14	11.0	1971	27	30.5	1971	46	1996	1	41	1996	7.7	2.9	.5	.2	@	27.7	27.5	26.7	19.5
Mar	9.5	7.6	12	8	15.4	1985	4	23.7	1976	40+	1996	3	31	1997	6.7	3.4	.9	.3	@	24.3	21.4	19.1	14.7
Apr	3.4	2.2	2	5	7.3	1994	28	12.9	1994	31+	1975	2	11	1996	2.6	1.1	.4	.2	.0	6.0	4.3	3.4	2.1
May	.3	.0	#	0	7.0	1971	19	7.0	1971	2+	1971	20	#	2000	.2	.1	@	@	.0	.1	.0	.0	.0
Jun	.0	.0	#	0	.0	0	0	.0	0	0	0	0	#	1974	.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	.3	1985	30	.3	1985	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	1.0	.3	#	0	3.6	1990	17	5.5	1995	3	1995	24	#	1997	1.2	.4	.1	.0	.0	.5	@	.0	.0
Nov	10.0	8.0	2	1	18.6	1991	1	33.1	1991	25	1991	2	10	1991	6.7	3.1	1.2	.4	.1	13.8	8.4	5.0	1.8
Dec	10.4	8.9	7	6	12.8	1995	13	30.4	1995	34	1995	14	24	1995	9.1	3.6	.8	.2	.1	28.0	21.6	16.6	9.5
Ann	56.9	47.5	N/A	N/A	18.6	Nov 1991	1	33.1	Nov 1991	50	Jan 1996	29	41	Feb 1996	44.6	18.8	5.3	1.9	.3	131.3	113.1	99.0	68.2

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

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	108	99	92	87	82	77	71	65	56
32	129	122	117	113	109	106	101	97	90
28	158	151	147	143	139	135	131	126	119
24	181	175	171	167	164	160	156	152	146
20	208	200	195	190	185	180	176	170	162
16	223	216	212	208	204	201	197	192	186

***** 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	1853	1465	1244	768	395	154	61	110	348	714	1185	1681	9978
60	1698	1325	1089	619	267	70	13	41	216	559	1035	1526	8458
57	1605	1241	996	531	202	38	5	18	149	468	945	1433	7631
55	1543	1185	934	474	164	23	1	10	112	409	885	1371	7111
50	1388	1045	779	339	88	5	0	1	45	273	735	1216	5914
32	838	562	292	41	1	0	0	0	0	19	260	681	2694

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	8	21	71	263	643	872	1051	977	647	329	65	23	4970
55	0	0	0	6	93	205	338	274	68	6	0	0	990
57	0	0	0	3	68	160	280	221	46	3	0	0	781
60	0	0	0	1	40	103	196	150	22	0	0	0	512
65	0	0	0	0	14	36	89	65	4	0	0	0	208
70	0	0	0	0	3	8	24	17	0	0	0	0	52

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	7	98	397	627	799	723	407	139	8	0	0	0	7	105	502	1129	1928	2651	3058	3197	3205	3205
45	0	0	0	45	261	477	644	568	271	67	2	0	0	0	0	45	306	783	1427	1995	2266	2333	2335	2335
50	0	0	0	15	150	331	489	413	156	24	0	0	0	0	0	15	165	496	985	1398	1554	1578	1578	1578
55	0	0	0	2	75	199	336	265	77	5	0	0	0	0	0	2	77	276	612	877	954	959	959	959
60	0	0	0	0	32	102	191	144	31	0	0	0	0	0	0	0	32	134	325	469	500	500	500	500
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	0	6	86	262	384	498	449	244	89	9	0	0	0	6	92	354	738	1236	1685	1929	2018	2027	2027

(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