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: MINONG 5 WSW, WI **COOP ID: 475525**

Climate Division: WI 1 **NWS Call Sign:** **Elevation: 1,075 Feet** **Lat: 46˚04N** **Lon: 91˚52W**

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	20.7	-.8	10.0	52	1981	25	22.0	1990	-51	1972	15	-.9	1977	1708	0	.0	.0	.1	25.9	31.0	16.1
Feb	28.4	5.8	17.1	60	2000	29	33.0	1998	-46	1996	1	6.5	1989	1340	0	.0	.0	.5	17.6	27.6	11.0
Mar	39.2	18.3	28.8	74	1986	31	36.9	1973	-31	1967	8	21.6	1996	1124	0	.0	.0	5.1	7.4	27.7	4.5
Apr	55.1	31.0	43.1	90	1980	21	49.9	1987	-7	1975	1	36.4	1995	659	1	.0	@	20.8	.5	17.7	.1
May	69.9	43.5	56.7	92	1969	28	64.9	1977	13	1966	9	50.9	1979	291	33	.0	.2	30.2	.0	5.0	.0
Jun	77.0	52.8	64.9	96	1963	30	70.5	1988	26	1966	10	59.6	1982	87	82	.0	1.0	30.0	.0	.2	.0
Jul	80.1	58.2	69.2	100	1974	8	72.6	1983	34	1967	5	62.6	1992	29	157	@	2.4	31.0	.0	.0	.0
Aug	77.7	56.5	67.1	97	1976	19	71.2	1983	31	1964	14	62.4	1977	53	118	.0	1.0	31.0	.0	.0	.0
Sep	68.3	47.6	58.0	98	1976	7	64.8	1998	21	1965	26	52.8	1993	228	17	.0	.1	29.7	.0	1.8	.0
Oct	56.4	36.6	46.5	84	1963	5	51.9+	1973	6	1962	26	40.4	1976	574	0	.0	.0	23.6	.1	12.0	.0
Nov	38.0	22.9	30.5	73	1978	3	38.7	1999	-28	1976	30	21.9	1995	1037	0	.0	.0	4.7	9.2	25.6	1.5
Dec	24.5	6.6	15.6	57+	2001	5	25.7	1997	-44	1983	19	3.2	1983	1532	0	.0	.0	.2	23.0	30.7	10.8
Ann	52.9	31.6	42.3	100	Jul 1974	8	72.6	Jul 1983	-51	Jan 1972	15	-.9	Jan 1977	8662	408	@	4.7	206.9	83.7	179.3	44.0

\+ 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: 1961-2001

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

Issue Date: February 2004

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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	1.19	1.10	.75+	1976	2	2.79	1975	.05	1995
Feb	.86	.67	1.10	2000	15	2.75	1981	.00	1993
Mar	1.54	1.34	1.75	1998	30	4.03	1977	.00	1997
Apr	1.94	1.90	1.71	1969	27	4.13	1981	.27	1997
May	3.07	2.90	4.90	1982	11	8.48	1982	.44	1976
Jun	3.73	3.80	3.45	1981	13	7.32	1981	.83	1995
Jul	4.34	3.94	5.05	1972	22	9.60	1972	.63	1998
Aug	4.19	4.08	4.06	1978	23	8.42	1973	.78	1976
Sep	3.47	3.05	4.44	1994	15	8.24	1994	.42	1976
Oct	2.50	2.33	2.27	1970	8	5.52	1971	.04	1999
Nov	1.74	1.64	1.70	1974	1	4.71	1975	.27	1981
Dec	1.09	1.15	1.10	1982	28	2.68	1982	.18	1979
Ann	29.66	29.56	5.05	Jul 1972	22	9.60	Jul 1972	.00+	Mar 1997

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	9.0	3.8	.4	.0
Feb	6.9	2.8	.4	@
Mar	8.4	3.9	.7	.2
Apr	8.8	5.4	1.2	.2
May	10.8	6.2	1.8	.5
Jun	11.9	7.6	2.7	.7
Jul	10.8	7.2	2.7	1.1
Aug	11.1	6.4	2.6	1.2
Sep	10.8	6.5	2.5	.7
Oct	9.8	5.9	1.5	.4
Nov	8.6	4.4	1.1	.4
Dec	9.2	3.8	.2	@
Ann	116.1	63.9	17.8	5.4

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	.18	.28	.45	.61	.78	.97	1.19	1.45	1.81	2.38	2.94
Feb	.06	.15	.28	.41	.54	.69	.86	1.06	1.34	1.80	2.24
Mar	.34	.56	.82	1.02	1.21	1.41	1.63	1.88	2.20	2.70	3.16
Apr	.50	.68	.96	1.21	1.46	1.71	2.00	2.34	2.78	3.48	4.13
May	.71	.99	1.44	1.84	2.24	2.67	3.15	3.72	4.47	5.66	6.78
Jun	1.49	1.84	2.32	2.73	3.11	3.49	3.91	4.39	5.00	5.94	6.79
Jul	1.53	1.94	2.53	3.03	3.51	4.00	4.53	5.15	5.95	7.17	8.30
Aug	1.63	2.02	2.57	3.03	3.47	3.91	4.39	4.94	5.65	6.73	7.72
Sep	.81	1.13	1.64	2.09	2.55	3.03	3.56	4.20	5.04	6.38	7.64
Oct	.52	.74	1.11	1.44	1.78	2.14	2.55	3.04	3.68	4.71	5.69
Nov	.37	.53	.78	1.02	1.25	1.50	1.78	2.11	2.55	3.26	3.93
Dec	.27	.37	.53	.67	.81	.96	1.12	1.31	1.57	1.97	2.34
Ann	19.99	21.82	24.19	26.00	27.61	29.18	30.81	32.62	34.82	38.04	40.84

\+ 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: 1961-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	15.5	15.8	12	11
Feb	12.0	12.0	14	17
Mar	10.5	9.2	9	7
Apr	4.5	3.3	1	#
May	.1	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	#	.0	#	0
Oct	.7	.0	#	0
Nov	7.7	5.5	1	#
Dec	14.9	17.4	6	5
Ann	65.9	63.2	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	1976	2	30.3	1976	29	1982	24	22	1976
Feb	11.0	2000	15	22.3	1971	29	1971	5	24	1979
Mar	15.0	1985	4	25.4	1985	32	1979	4	22	1979
Apr	12.0	1983	14	18.2	1983	22	1975	1	8	1975
May	2.0	1979	5	2.0	1979	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	#	1995	22	#+	1995	#	1995	22	#	1995
Oct	4.0	1982	20	4.0+	1982	2	1992	20	#+	1997
Nov	9.5	1978	17	23.7	1985	16	1985	30	3	1991
Dec	15.0	1982	28	24.7	1982	22	1983	27	17	1983
Ann	15.0+	Mar 1985	4	30.3	Jan 1976	32	Mar 1979	4	24	Feb 1979

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	9.0	4.9	1.7	.8	.1
Feb	6.7	3.7	1.0	.3	.1
Mar	5.0	2.9	1.3	.4	.1
Apr	1.7	1.0	.4	.2	.1
May	@	@	.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	.5	.3	@	.0	.0
Nov	4.5	2.6	.9	.6	.0
Dec	8.3	5.0	1.3	.4	.1
Ann	35.7	20.4	6.6	2.7	.5

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	30.9	29.8	26.9	21.1
Feb	27.8	27.7	26.7	23.4
Mar	24.5	23.1	20.6	17.6
Apr	5.1	4.2	3.2	.9
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	.0
Nov	7.0	3.6	2.3	.2
Dec	27.1	19.5	13.2	6.1
Ann	122.5	107.9	92.9	69.3

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

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	122	114	109	105	100	96	92	86	79
32	149	141	136	131	127	122	118	112	104
28	158	153	149	145	142	139	136	132	127
24	200	192	186	181	176	172	167	161	153
20	219	211	206	201	196	192	187	181	173
16	231	224	220	216	212	208	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

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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	1708	1340	1124	659	291	87	29	53	228	574	1037	1532	8662
60	1553	1200	969	513	183	30	6	13	120	423	887	1377	7274
57	1460	1116	876	429	131	13	0	4	72	338	797	1284	6520
55	1398	1060	814	375	102	7	0	2	49	285	737	1222	6051
50	1243	920	660	254	48	1	0	0	13	171	590	1067	4967
32	701	456	203	20	0	0	0	0	0	6	170	543	2099

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	16	40	103	352	765	985	1151	1088	779	455	123	34	5891
55	0	0	0	17	154	302	438	377	137	21	0	0	1446
57	0	0	0	11	121	249	376	317	101	12	0	0	1187
60	0	0	0	5	80	175	289	234	58	4	0	0	845
65	0	0	0	1	33	82	157	118	17	0	0	0	408
70	0	0	0	0	11	25	68	44	3	0	0	0	151

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	21	166	515	741	910	847	543	239	25	0	0	1	22	188	703	1444	2354	3201	3744	3983	4008	4008
45	0	1	6	88	369	591	755	692	396	134	10	0	0	1	7	95	464	1055	1810	2502	2898	3032	3042	3042
50	0	0	1	44	238	442	600	537	259	64	1	0	0	0	1	45	283	725	1325	1862	2121	2185	2186	2186
55	0	0	0	17	134	298	445	383	148	26	0	0	0	0	0	17	151	449	894	1277	1425	1451	1451	1451
60	0	0	0	6	70	172	293	237	73	6	0	0	0	0	0	6	76	248	541	778	851	857	857	857
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	1	14	127	342	475	597	546	322	139	13	0	0	1	15	142	484	959	1556	2102	2424	2563	2576	2576

(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