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: GOODMAN, WI **COOP ID: 473174**

Climate Division: WI 3 **NWS Call Sign:** **Elevation: 1,430 Feet** **Lat: 45˚38N** **Lon: 88˚21W**

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	21.0	3.2	12.1	53	1973	26	23.8	1990	-39	1982	17	2.8	1994	1641	0	.0	.0	@	25.9	30.9	14.9
Feb	26.6	6.4	16.5	56+	1984	23	28.3	1998	-35	1996	2	7.5	1979	1359	0	.0	.0	.6	19.3	27.8	11.1
Mar	37.1	16.3	26.7	76	2000	8	36.3	2000	-24	1962	1	19.9	1984	1187	0	.0	.0	4.1	10.0	29.1	4.4
Apr	51.2	28.4	39.8	91	1980	23	46.2	1998	-3	1972	5	33.3	1975	756	0	.0	@	16.3	1.3	20.9	.1
May	65.4	39.8	52.6	90	1969	28	60.7	1977	15	1967	3	45.2	1983	404	19	.0	.0	28.9	.0	7.6	.0
Jun	72.8	49.0	60.9	94+	1971	27	65.8	1995	28+	1986	2	52.3	1982	164	42	.0	.6	30.0	.0	.8	.0
Jul	76.4	54.2	65.3	96	1977	20	69.9	1983	34+	1981	22	59.2	1992	74	84	.0	1.0	31.0	.0	.0	.0
Aug	73.9	52.3	63.1	96	1988	3	67.5	1995	32	1986	29	59.1	1997	118	58	.0	.5	31.0	.0	@	.0
Sep	64.9	43.8	54.4	92+	1998	12	60.3	1998	21	1974	23	49.7	1993	321	3	.0	.1	29.3	.0	3.0	.0
Oct	53.8	33.7	43.8	86	1963	6	51.5	1971	10	1969	23	38.3	1988	660	0	.0	.0	20.8	.1	15.4	.0
Nov	38.3	23.0	30.7	73	1978	4	40.0	1999	-14	1959	20	21.8	1995	1032	0	.0	.0	5.0	8.9	26.8	.9
Dec	25.7	10.0	17.9	60	1998	3	26.2	1994	-28	1983	20	7.3	1983	1462	0	.0	.0	.3	22.8	30.6	9.1
Ann	50.6	30.0	40.3	96+	Aug 1988	3	69.9	Jul 1983	-39	Jan 1982	17	2.8	Jan 1994	9178	206	.0	2.2	197.3	88.3	192.9	40.5

\+ 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: 1959-2001

(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: GOODMAN, WI

COOP ID: 473174

Climate Division: WI 3 **NWS Call Sign:** **Elevation: 1,430 Feet** **Lat: 45˚38N** **Lon: 88˚21W**

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	1.10	1.06	1.15	1971	4	3.46	1971	.00+	2000
Feb	.93	.76	2.00	1998	28	3.20	1971	.00+	1997
Mar	1.91	1.76	2.00	1973	7	6.98	1977	.00	1994
Apr	2.15	2.31	1.50+	1986	6	4.49	1993	.00	1997
May	3.35	3.27	3.35	1962	13	7.69	1991	.53	1986
Jun	3.84	3.43	3.30	1981	14	8.85	1996	1.35	1988
Jul	3.92	3.52	3.50	1982	11	9.66	1999	1.18	1998
Aug	3.64	3.47	3.00	1978	16	7.53	1978	1.01	1991
Sep	4.01	3.91	2.55	2000	11	8.91	1994	.97	1989
Oct	2.65	2.79	2.10	1995	6	5.57	1995	.18	2000
Nov	1.97	1.61	1.85	1985	2	5.90	1985	.00	1999
Dec	1.24	1.30	1.50	1959	28	2.83	1996	.00+	1999
Ann	30.71	30.67	3.50	Jul 1982	11	9.66	Jul 1999	.00+	Jan 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.5	3.9	.4	@
Feb	4.3	2.8	.4	.1
Mar	6.2	4.0	1.3	.4
Apr	8.7	5.6	1.2	.3
May	10.2	6.6	2.1	.8
Jun	9.6	7.4	2.3	.8
Jul	10.0	7.1	2.3	.7
Aug	9.3	7.1	2.6	.6
Sep	9.6	6.6	2.5	.9
Oct	8.0	5.1	1.6	.6
Nov	7.0	4.6	1.0	.3
Dec	7.5	4.5	.5	@
Ann	96.9	65.3	18.2	5.5

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	.00	.22	.45	.62	.79	.96	1.15	1.37	1.67	2.14	2.58
Feb	.00	.00	.22	.38	.54	.72	.92	1.18	1.51	2.06	2.60
Mar	.09	.26	.55	.83	1.13	1.46	1.86	2.35	3.02	4.13	5.21
Apr	.45	.75	1.11	1.40	1.67	1.96	2.26	2.62	3.09	3.81	4.48
May	1.00	1.32	1.80	2.21	2.61	3.03	3.48	4.02	4.72	5.82	6.83
Jun	1.21	1.58	2.12	2.58	3.03	3.49	4.00	4.59	5.36	6.55	7.65
Jul	1.57	1.93	2.45	2.87	3.27	3.67	4.11	4.62	5.26	6.24	7.13
Aug	1.70	2.02	2.46	2.81	3.14	3.47	3.82	4.22	4.72	5.48	6.17
Sep	1.50	1.88	2.42	2.86	3.29	3.72	4.20	4.74	5.44	6.51	7.49
Oct	.57	.81	1.20	1.55	1.90	2.28	2.70	3.21	3.89	4.96	5.98
Nov	.18	.40	.73	1.01	1.31	1.63	2.00	2.44	3.03	3.99	4.91
Dec	.00	.25	.50	.70	.89	1.09	1.30	1.55	1.89	2.42	2.93
Ann	23.18	24.67	26.56	27.99	29.25	30.45	31.70	33.06	34.71	37.08	39.12

\+ 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: 1959-2001
(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: GOODMAN, WI **COOP ID: 473174**

Climate Division: WI 3 **NWS Call Sign:** **Elevation: 1,430 Feet** **Lat: 45°38N** **Lon: 88°21W**

Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	12.3	9.7	14	15
Feb	8.6	7.0	16	15
Mar	10.2	9.5	12	8
Apr	4.0	4.0	2	1
May	.6	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.9	.0	#	#
Nov	4.1	3.6	1	1
Dec	11.1	11.0	6	6
Ann	51.8	44.8	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	12.0	1971	4	36.5	1971	33	1971	31	26+	1982
Feb	8.5	1975	25	22.5	1971	40	1971	23	37	1971
Mar	9.0	1989	15	28.0	1972	42	1972	11	33	1972
Apr	7.0	1972	22	9.5	1972	26	1972	1	13	1972
May	5.0	1990	12	7.0	1990	7	1990	12	#+	1990
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	4.0	1972	23	4.1	1979	4	1992	16	1	1979
Nov	6.0	2000	13	9.5+	1989	11	1985	30	3	1985
Dec	6.5	1981	31	23.0	1972	26	1996	30	19	1985
Ann	12.0	Jan 1971	4	36.5	Jan 1971	42	Mar 1972	11	37	Feb 1971

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	4.9	4.3	1.7	.4	.1
Feb	3.4	2.8	1.0	.1	.0
Mar	2.9	2.3	1.1	.5	.0
Apr	1.5	1.1	.4	.1	.0
May	.2	.2	.1	@	.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	.6	.4	.1	.0	.0
Nov	1.9	1.7	.6	.1	.0
Dec	4.8	3.7	1.6	.3	.0
Ann	20.2	16.5	6.6	1.5	.1

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	5.9	4.3	3.2	1.8
May	.2	.1	.1	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.5	.2	.0	.0
Nov	3.5	1.9	1.1	.0
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: GOODMAN, WI **COOP ID: 473174**

Climate Division: WI 3 **NWS Call Sign:** **Elevation: 1,430 Feet** **Lat: 45˚38N** **Lon: 88˚21W**

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	7/06	6/28	6/23	6/19	6/15	6/11	6/06	6/01	5/25
32	6/14	6/09	6/06	6/02	5/30	5/28	5/24	5/21	5/16
28	6/03	5/28	5/23	5/19	5/15	5/11	5/07	5/02	4/25
24	5/16	5/11	5/08	5/05	5/02	4/29	4/26	4/23	4/18
20	5/06	5/01	4/26	4/23	4/20	4/16	4/13	4/09	4/03
16	4/21	4/16	4/14	4/11	4/09	4/06	4/04	4/01	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	8/22	8/27	8/31	9/04	9/07	9/10	9/14	9/18	9/24
32	9/09	9/13	9/15	9/18	9/20	9/23	9/25	9/28	10/02
28	9/20	9/24	9/27	9/30	10/02	10/04	10/07	10/10	10/14
24	9/23	9/30	10/05	10/09	10/13	10/17	10/21	10/26	11/02
20	10/10	10/17	10/21	10/25	10/28	11/01	11/05	11/09	11/15
16	10/21	10/26	10/30	11/02	11/05	11/08	11/11	11/15	11/20

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	115	104	97	90	84	77	71	63	52
32	130	124	119	116	112	109	105	100	94
28	162	154	148	144	139	135	130	125	117
24	189	180	174	168	163	158	152	146	137
20	218	209	202	196	191	185	180	173	163
16	231	224	218	214	210	206	201	196	189

***** 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: GOODMAN, WI **COOP ID: 473174**

Climate Division: WI 3 **NWS Call Sign:** **Elevation: 1,430 Feet** **Lat: 45˚38N** **Lon: 88˚21W**

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	1641	1359	1187	756	404	164	74	118	321	660	1032	1462	9178
60	1486	1219	1032	608	278	81	19	44	189	508	882	1307	7653
57	1393	1135	939	522	215	46	7	19	125	420	792	1214	6827
55	1331	1079	877	466	178	30	2	10	90	364	732	1152	6311
50	1176	939	722	334	101	8	0	1	32	239	584	997	5133
32	630	456	240	42	3	0	0	0	0	16	153	471	2011

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	13	21	76	276	640	867	1033	963	672	379	111	32	5083
55	0	0	0	9	102	207	322	261	72	14	0	0	987
57	0	0	0	6	77	163	265	207	47	8	0	0	773
60	0	0	0	2	48	108	184	139	21	3	0	0	505
65	0	0	0	0	19	42	84	58	3	0	0	0	206
70	0	0	0	0	6	11	23	15	0	0	0	0	55

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	18	125	412	636	801	739	453	184	23	1	0	0	18	143	555	1191	1992	2731	3184	3368	3391	3392
45	0	0	4	69	279	486	646	584	311	96	6	0	0	0	4	73	352	838	1484	2068	2379	2475	2481	2481
50	0	0	0	32	172	344	491	429	189	42	0	0	0	0	0	32	204	548	1039	1468	1657	1699	1699	1699
55	0	0	0	14	94	217	341	280	97	13	0	0	0	0	0	14	108	325	666	946	1043	1056	1056	1056
60	0	0	0	5	43	112	201	150	39	3	0	0	0	0	0	5	48	160	361	511	550	553	553	553
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	0	18	100	276	396	511	457	267	113	15	0	0	0	18	118	394	790	1301	1758	2025	2138	2153	2153

(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