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: BAYFIELD 6 N, WI **COOP ID: 470603**

Climate Division: WI 1 **NWS Call Sign:** **Elevation: 820 Feet** **Lat: 46˚53N** **Lon: 90˚49W**

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	20.9	3.2	12.1	53+	1981	25	21.2	1990	-33	1951	30	2.1	1977	1641	0	.0	.0	.1	25.7	31.0	12.1
Feb	26.9	6.9	16.9	61+	1984	22	31.5	1998	-34	1996	3	4.8	1979	1347	0	.0	.0	.9	18.6	27.7	8.4
Mar	36.7	17.5	27.1	78	1986	31	34.9	2000	-17+	1989	3	19.4	1972	1177	0	.0	.0	3.7	9.7	28.2	2.7
Apr	49.8	29.5	39.7	89	1952	27	46.2	1987	2+	1995	5	34.4	1975	759	0	.0	.0	15.3	1.2	19.5	.0
May	63.6	39.8	51.7	95	1969	28	57.1	1977	20	1966	10	45.5	1997	416	4	.0	.1	28.4	@	4.8	.0
Jun	72.2	48.7	60.5	98	1961	29	64.7	1987	22	1984	6	56.1	1982	156	19	.0	.3	29.8	.0	.3	.0
Jul	77.0	55.6	66.3	101	1988	29	70.8	1988	36+	1972	4	59.8	1992	61	102	@	1.3	31.0	.0	.0	.0
Aug	75.2	55.0	65.1	99	1961	31	70.0	1983	34	1962	9	60.7	1977	76	80	.0	.7	31.0	.0	.0	.0
Sep	66.0	46.3	56.2	99	1976	7	61.1	1998	27+	1967	29	51.1	1993	272	6	.0	.3	29.3	.0	.7	.0
Oct	54.5	36.1	45.3	88	1963	23	51.1	1971	15	1988	30	40.4	1976	611	0	.0	.0	21.2	.2	9.2	.0
Nov	38.3	23.7	31.0	76	1978	3	38.5	1999	-6	1958	29	24.2	1995	1020	0	.0	.0	4.4	8.4	24.9	.4
Dec	25.8	10.6	18.2	61	1982	3	27.1	1997	-24	1996	27	8.3	1976	1451	0	.0	.0	.2	21.4	30.4	5.6
Ann	50.6	31.1	40.8	101	Jul 1988	29	70.8	Jul 1988	-34	Feb 1996	3	2.1	Jan 1977	8987	211	@	2.7	195.3	85.2	176.7	29.2

\+ 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

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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	1.78	1.79	1.26	1982	23	3.00	1982	.52	1981
Feb	.97	.83	1.08	2001	25	3.03	1981	.21	1982
Mar	2.20	2.01	4.09	1977	12	7.05	1977	.42	1999
Apr	2.25	2.27	2.80	2001	23	5.51	1994	.25	1988
May	3.18	2.94	3.20	1964	23	6.56	1985	.49	1990
Jun	3.84	3.94	3.37	1997	25	6.70	1984	1.11	1995
Jul	4.06	3.43	4.40	1987	18	9.90	1991	.74	1988
Aug	3.99	3.64	4.72	1972	16	11.25	1972	1.32	1996
Sep	3.78	3.51	4.60	1955	17	9.03	1985	1.38	1976
Oct	2.82	2.64	1.97	1968	9	5.94	1995	.40	1976
Nov	2.86	2.58	2.81	1991	2	8.12	1991	.57	1984
Dec	1.73	1.65	1.70	1982	28	3.33	1996	.65	1994
Ann	33.46	32.79	4.72	Aug 1972	16	11.25	Aug 1972	.21	Feb 1982

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	16.0	5.6	.6	.1
Feb	10.1	2.9	.3	.1
Mar	11.3	4.6	1.2	.4
Apr	9.9	5.4	1.3	.3
May	11.7	6.2	2.1	.7
Jun	12.7	7.9	2.7	.7
Jul	12.7	7.2	2.6	1.0
Aug	12.8	7.2	2.7	1.0
Sep	14.4	7.4	2.5	.7
Oct	12.2	6.5	1.8	.5
Nov	12.7	5.6	1.8	.6
Dec	16.2	5.7	.4	@
Ann	152.7	72.2	20.0	6.1

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	.65	.82	1.06	1.26	1.45	1.65	1.86	2.11	2.43	2.92	3.37
Feb	.20	.29	.43	.56	.69	.83	.99	1.18	1.43	1.83	2.21
Mar	.63	.83	1.15	1.42	1.69	1.97	2.28	2.65	3.12	3.86	4.55
Apr	.54	.75	1.08	1.37	1.66	1.97	2.31	2.72	3.26	4.11	4.91
May	.88	1.18	1.64	2.04	2.43	2.84	3.29	3.82	4.52	5.61	6.62
Jun	1.53	1.88	2.38	2.80	3.19	3.59	4.03	4.52	5.16	6.13	7.01
Jul	1.03	1.41	2.00	2.52	3.04	3.58	4.19	4.91	5.85	7.33	8.72
Aug	1.47	1.84	2.38	2.83	3.26	3.69	4.17	4.72	5.43	6.52	7.51
Sep	1.44	1.80	2.30	2.72	3.11	3.52	3.95	4.46	5.11	6.10	7.00
Oct	.81	1.07	1.48	1.83	2.17	2.53	2.92	3.39	3.99	4.94	5.82
Nov	.67	.94	1.35	1.73	2.10	2.49	2.94	3.46	4.15	5.25	6.28
Dec	.66	.82	1.05	1.24	1.42	1.61	1.81	2.04	2.33	2.79	3.20
Ann	24.57	26.31	28.53	30.20	31.69	33.11	34.59	36.21	38.17	41.00	43.44

\+ 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:
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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	25.9	24.1	16	16
Feb	11.1	10.0	18	17
Mar	14.2	12.9	13	13
Apr	5.6	4.0	3	2
May	.6	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	#	.0	#	0
Oct	.6	.0	#	0
Nov	13.5	10.5	2	1
Dec	24.0	23.4	8	7
Ann	95.5	84.9	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	13.5	1982	23	45.8	1997	33+	1996	30	26	1997
Feb	8.9	1972	3	24.4	1972	35	1972	3	27+	1996
Mar	15.0	1985	4	37.5	1985	33	1979	4	24	1972
Apr	14.2	1984	30	16.9	1983	22	1972	9	12	1972
May	6.0	1997	12	8.7	1997	12	1984	1	1	1984
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	23	#+	1995	#	1995	23	#	1995
Oct	5.1	1979	23	5.1	1979	5	1995	21	#+	2000
Nov	12.5	1991	30	53.9	1991	22	1991	30	9	1991
Dec	18.2	1982	28	58.3	1996	28	1985	2	19	1985
Ann	18.2	Dec 1982	28	58.3	Dec 1996	35	Feb 1972	3	27+	Feb 1996

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	17.1	8.3	2.8	1.0	.2
Feb	10.3	3.8	.9	.4	.0
Mar	7.9	3.4	1.5	1.0	.1
Apr	3.2	1.5	.7	.3	.1
May	.4	.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	.2	.1	.1	.0
Nov	8.2	3.5	1.6	.8	.1
Dec	15.9	8.2	2.6	.9	.1
Ann	63.6	29.1	10.3	4.5	.6

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	30.0	30.0	28.6	25.5
Feb	27.9	27.8	27.8	24.8
Mar	25.9	23.6	21.2	15.3
Apr	6.3	4.8	3.4	1.8
May	.2	.1	.1	@
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.2	@	@	.0
Nov	10.0	6.0	3.7	1.0
Dec	27.3	23.9	19.2	9.4
Ann	127.8	116.2	104.0	77.8

+ 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	6/22	6/17	6/13	6/10	6/07	6/04	6/01	5/29	5/24
32	6/07	6/02	5/29	5/25	5/22	5/19	5/15	5/11	5/06
28	5/20	5/15	5/12	5/09	5/06	5/04	5/01	4/27	4/23
24	5/08	5/02	4/27	4/23	4/19	4/16	4/12	4/07	4/01
20	4/20	4/16	4/13	4/10	4/07	4/05	4/02	3/30	3/26
16	4/14	4/09	4/05	4/02	3/30	3/27	3/24	3/20	3/15

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	9/09	9/13	9/16	9/19	9/21	9/24	9/26	9/29	10/03
32	9/20	9/25	9/28	9/30	10/03	10/05	10/08	10/11	10/15
28	9/28	10/04	10/09	10/12	10/16	10/19	10/23	10/27	11/02
24	10/20	10/24	10/27	10/30	11/01	11/04	11/06	11/09	11/13
20	10/26	10/30	11/02	11/05	11/07	11/10	11/12	11/15	11/20
16	11/01	11/05	11/08	11/11	11/13	11/16	11/18	11/21	11/26

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	124	117	113	109	105	102	98	93	87
32	152	145	141	137	133	129	126	121	114
28	180	174	169	165	162	158	154	149	143
24	221	212	206	200	195	190	184	178	169
20	231	225	221	217	213	210	206	201	195
16	248	241	236	231	227	223	219	214	207

***** 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	1641	1347	1177	759	416	156	61	76	272	611	1020	1451	8987
60	1486	1207	1022	610	277	63	14	21	149	459	870	1296	7474
57	1393	1123	929	521	205	29	5	8	92	371	780	1203	6659
55	1331	1067	867	463	163	16	1	3	63	315	720	1141	6150
50	1176	927	712	325	82	2	0	0	18	193	572	986	4993
32	633	456	226	29	0	0	0	0	0	7	141	459	1951

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	14	33	73	260	611	853	1064	1027	724	418	110	31	5218
55	0	0	0	3	61	179	351	316	97	13	0	0	1020
57	0	0	0	2	40	133	294	259	66	7	0	0	801
60	0	0	0	0	20	76	210	179	33	2	0	0	520
65	0	0	0	0	4	19	102	80	6	0	0	0	211
70	0	0	0	0	0	2	33	23	0	0	0	0	58

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	13	112	386	629	831	798	511	219	28	0	0	0	13	125	511	1140	1971	2769	3280	3499	3527	3527
45	0	0	2	53	252	479	676	643	365	120	11	0	0	0	2	55	307	786	1462	2105	2470	2590	2601	2601
50	0	0	0	23	146	334	521	488	232	53	1	0	0	0	0	23	169	503	1024	1512	1744	1797	1798	1798
55	0	0	0	8	74	203	366	334	128	20	0	0	0	0	0	8	82	285	651	985	1113	1133	1133	1133
60	0	0	0	1	30	103	221	194	55	3	0	0	0	0	0	1	31	134	355	549	604	607	607	607
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	0	9	79	242	382	523	493	281	116	15	0	0	0	9	88	330	712	1235	1728	2009	2125	2140	2140

(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