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: PORT WING, WI **COOP ID: 476772**

Climate Division: WI 1 **NWS Call Sign:** **Elevation: 651 Feet** **Lat: 46˚47N** **Lon: 91˚23W**

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	18.8	.4	9.6	50	1981	25	21.1	1990	-42	1977	9	-1.7	1977	1718	0	.0	.0	@	26.7	31.0	14.6
Feb	25.5	6.2	15.9	57	1981	17	30.6	1998	-40	1967	12	5.3	1979	1375	0	.0	.0	.8	19.4	27.7	9.2
Mar	35.6	17.6	26.6	70	1967	30	35.3	2000	-27	1962	1	20.1	1996	1190	0	.0	.0	3.2	10.5	29.0	3.7
Apr	48.8	29.2	39.0	89	1952	27	46.0	1987	-4	1971	4	30.0	1975	780	0	.0	.0	14.5	1.2	20.8	.1
May	63.1	38.4	50.8	95	1969	28	55.8	1998	15	1978	1	45.3	1979	443	2	.0	.1	28.9	.0	5.6	.0
Jun	72.5	47.4	60.0	94	2001	26	65.3	1988	29+	1995	9	55.6	1982	174	23	.0	.3	29.9	.0	2.3	.0
Jul	77.7	54.5	66.1	97	1980	10	72.0	1983	36+	1969	6	59.5	1992	81	117	.0	1.7	31.0	.0	.7	.0
Aug	76.0	54.4	65.2	98	1961	30	71.6	1983	32	1977	24	59.8	1977	89	95	.0	1.1	31.0	.0	@	.0
Sep	66.0	46.0	56.0	94	1971	2	61.0	1998	26+	1976	24	50.4	1974	280	9	.0	.3	29.3	.0	1.3	.0
Oct	54.1	35.9	45.0	90	1961	6	51.3	1971	8	1976	27	38.9	1976	619	0	.0	.0	21.1	.1	10.7	.0
Nov	37.1	23.2	30.2	74	1978	3	39.0	1999	-12	1976	30	23.0	1995	1047	0	.0	.0	4.3	9.7	25.6	.5
Dec	23.4	7.6	15.5	61	1962	1	23.4	1999	-30	1976	30	4.3	1976	1534	0	.0	.0	.2	23.4	30.7	8.1
Ann	49.9	30.1	40.0	98	Aug 1961	30	72.0	Jul 1983	-42	Jan 1977	9	-1.7	Jan 1977	9330	246	.0	3.5	194.2	91.0	185.4	36.2

\+ 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	1.15	.99	.89	1982	23	3.17	1996	.20	1981
Feb	.79	.59	1.13	1998	26	2.62	1981	.10	1993
Mar	1.91	1.79	2.40	1977	12	4.21	1977	.31	1999
Apr	2.06	2.05	3.23	2001	23	4.46	1981	.43	1988
May	2.72	2.68	2.97	1951	26	5.57	1985	.39	1976
Jun	3.56	3.65	2.70	1954	16	7.54	1984	1.36	1995
Jul	4.13	3.58	4.28	1999	5	10.39	1982	1.29	1981
Aug	3.60	3.32	4.04	1978	23	7.22	1978	1.10	1997
Sep	3.46	2.87	5.80	1985	3	11.04	1985	.41	1997
Oct	2.38	2.25	3.32	1949	8	5.49	1995	.36	1976
Nov	1.75	1.47	1.61	1960	1	4.42	1983	.27	1997
Dec	1.14	1.22	1.20	1982	25	3.16	1998	.13+	1997
Ann	28.65	29.32	5.80	Sep 1985	3	11.04	Sep 1985	.10	Feb 1993

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.2	3.9	.2	@
Feb	7.3	2.7	.3	.1
Mar	8.6	4.1	1.2	.3
Apr	8.7	4.6	1.5	.3
May	10.8	6.5	2.0	.4
Jun	13.1	8.3	2.3	.7
Jul	11.0	7.7	3.1	1.3
Aug	11.5	7.5	2.5	.7
Sep	11.8	6.9	2.3	.9
Oct	9.9	5.6	1.2	.3
Nov	9.1	5.0	1.3	.3
Dec	12.2	2.8	.3	@
Ann	124.2	65.6	18.2	5.3

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	.33	.44	.61	.75	.89	1.03	1.19	1.38	1.63	2.01	2.36
Feb	.13	.20	.31	.42	.53	.65	.79	.96	1.18	1.55	1.89
Mar	.51	.69	.96	1.21	1.45	1.70	1.98	2.31	2.74	3.42	4.06
Apr	.60	.80	1.09	1.35	1.59	1.85	2.14	2.48	2.91	3.60	4.23
May	.87	1.13	1.51	1.84	2.15	2.48	2.84	3.26	3.80	4.64	5.42
Jun	1.56	1.88	2.32	2.69	3.02	3.37	3.73	4.15	4.68	5.49	6.21
Jul	1.47	1.86	2.42	2.89	3.35	3.81	4.32	4.91	5.66	6.82	7.89
Aug	1.38	1.71	2.19	2.59	2.97	3.35	3.77	4.25	4.86	5.81	6.67
Sep	.72	1.04	1.55	2.01	2.48	2.97	3.54	4.21	5.10	6.52	7.87
Oct	.50	.72	1.07	1.39	1.71	2.05	2.43	2.90	3.51	4.49	5.41
Nov	.34	.50	.76	.99	1.23	1.49	1.78	2.14	2.60	3.35	4.07
Dec	.19	.29	.46	.62	.78	.95	1.15	1.39	1.72	2.24	2.74
Ann	19.38	21.15	23.42	25.16	26.72	28.23	29.80	31.54	33.65	36.74	39.43

\+ 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

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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	18.9	17.0	15	14
Feb	10.0	9.0	17	16
Mar	8.3	8.2	13	10
Apr	3.4	2.1	2	#
May	.1	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	#	.0	0	0
Oct	1.0	.0	#	0
Nov	5.2	4.5	1	1
Dec	13.5	13.8	6	4
Ann	60.4	54.6	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	9.0	1973	22	30.8	1971	54	1997	31	39	1997
Feb	9.0	2000	16	18.0	1972	57	1997	16	54	1997
Mar	20.0	1985	5	21.0	1995	57	1997	16	56	1997
Apr	12.0	1984	30	12.0	1984	27	1972	9	12	1972
May	1.3	1984	8	1.3	1984	11	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	22	#	1995	0	0	0	0	0
Oct	7.0	1982	7	8.0	1982	7	1982	7	#+	1997
Nov	16.0	1994	29	18.0	1983	16	1985	30	3	1985
Dec	13.0	1983	15	35.3	1983	35	1983	24	23	1983
Ann	20.0	Mar 1985	5	35.3	Dec 1983	57+	Mar 1997	16	56	Mar 1997

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	9.4	5.4	2.3	.8	.0
Feb	5.2	3.0	.9	.6	.0
Mar	3.3	2.3	.9	.5	.1
Apr	1.2	.9	.4	.3	.1
May	.1	.1	.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	.4	.3	.1	.1	.0
Nov	3.2	1.8	.8	.3	.1
Dec	7.4	4.9	1.2	.4	.1
Ann	30.2	18.7	6.6	3.0	.4

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	-9.9	-9.9	-9.9	-9.9
May	.3	.2	.2	.1
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.6	.1	.1	.0
Nov	7.8	5.5	2.2	.4
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

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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	7/19	7/09	7/02	6/26	6/21	6/15	6/09	6/02	5/23
32	7/05	6/25	6/18	6/11	6/05	5/30	5/24	5/17	5/06
28	6/18	6/07	5/31	5/24	5/18	5/11	5/05	4/27	4/16
24	5/22	5/14	5/08	5/03	4/28	4/24	4/18	4/12	4/04
20	4/23	4/18	4/15	4/12	4/09	4/06	4/03	3/30	3/25
16	4/18	4/13	4/09	4/06	4/03	3/30	3/27	3/23	3/18

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	9/02	9/07	9/10	9/14	9/17	9/19	9/23	9/26	10/01
32	9/13	9/17	9/21	9/24	9/27	9/29	10/02	10/06	10/10
28	9/28	10/04	10/08	10/12	10/15	10/19	10/23	10/27	11/02
24	10/16	10/20	10/23	10/25	10/28	10/30	11/02	11/05	11/09
20	10/21	10/26	10/30	11/02	11/04	11/07	11/10	11/14	11/18
16	10/29	11/04	11/08	11/12	11/15	11/19	11/22	11/26	12/02

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	117	107	99	93	87	81	75	67	57
32	146	135	126	119	113	106	99	90	79
28	188	175	165	157	150	142	134	125	112
24	210	200	193	187	182	176	170	164	154
20	230	223	218	213	209	205	200	195	187
16	251	242	236	231	226	221	216	210	201

***** 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)

Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1718	1375	1190	780	443	174	81	89	280	619	1047	1534	9330
60	1563	1235	1035	630	301	78	27	30	159	467	897	1379	7801
57	1470	1151	942	543	225	40	12	13	103	379	807	1286	6971
55	1408	1095	880	486	181	23	7	7	73	324	747	1224	6455
50	1253	955	725	350	94	4	0	0	24	202	600	1069	5276
32	708	486	236	44	1	0	0	0	0	9	170	536	2190

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	13	34	69	254	583	839	1058	1029	719	413	114	25	5150
55	0	0	0	6	50	172	352	323	102	14	0	0	1019
57	0	0	0	3	32	129	295	267	72	8	0	0	806
60	0	0	0	1	15	76	217	191	39	2	0	0	541
65	0	0	0	0	2	23	117	95	9	0	0	0	246
70	0	0	0	0	0	4	47	34	1	0	0	0	86

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	11	98	370	566	757	800	503	201	27	0	0	0	11	109	479	1045	1802	2602	3105	3306	3333	3333
45	0	0	1	46	234	419	603	645	356	104	11	0	0	0	1	47	281	700	1303	1948	2304	2408	2419	2419
50	0	0	0	17	124	277	448	490	223	43	1	0	0	0	0	17	141	418	866	1356	1579	1622	1623	1623
55	0	0	0	6	59	155	300	338	116	14	0	0	0	0	0	6	65	220	520	858	974	988	988	988
60	0	0	0	1	22	70	173	198	52	1	0	0	0	0	0	1	23	93	266	464	516	517	517	517
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	0	7	71	240	369	500	499	284	105	12	0	0	0	7	78	318	687	1187	1686	1970	2075	2087	2087

(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