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: MAUSTON 1 SE, WI **COOP ID: 475178**

Climate Division: WI 5 **NWS Call Sign:** **Elevation: 865 Feet** **Lat: 43˚47N** **Lon: 90˚04W**

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	24.9	3.8	14.4	56+	1981	25	28.3	1990	-36	1963	15	-.5	1977	1571	0	.0	.0	.5	22.2	30.8	12.4
Feb	31.1	8.8	20.0	64	1984	22	31.9	1998	-34	1996	3	7.1	1978	1262	0	.0	.0	1.5	14.2	27.3	7.8
Mar	42.5	20.9	31.7	84	1986	29	40.6	2000	-35	1962	1	23.4	1975	1032	0	.0	.0	8.2	4.9	26.4	1.9
Apr	57.0	33.4	45.2	91	1980	22	51.6	1985	5	1977	6	37.7	1975	594	1	.0	.1	21.7	.3	13.5	.0
May	69.5	44.4	57.0	94	1972	20	62.0	1998	18	1978	1	50.5	1983	279	30	.0	.4	30.5	.0	2.7	.0
Jun	78.4	53.8	66.1	100	1988	20	70.7	1984	32+	1977	9	59.8	1982	75	107	@	2.4	30.0	.0	.1	.0
Jul	82.1	58.7	70.4	103	1995	14	74.6	1999	41+	1972	5	65.2	1992	17	185	@	4.6	31.0	.0	.0	.0
Aug	79.4	56.1	67.8	102+	1988	17	73.8	1995	33+	1965	29	62.3	1977	53	138	.1	1.9	31.0	.0	.0	.0
Sep	71.0	47.2	59.1	99	1955	9	65.3	1998	20+	1974	23	53.0	1974	209	31	.0	.6	29.8	.0	1.6	.0
Oct	59.9	35.8	47.9	90+	1976	1	55.3	1971	9	1976	27	40.1	1976	533	1	.0	@	26.3	@	11.3	.0
Nov	43.1	24.0	33.6	76	1964	3	42.2	1999	-18	1977	26	23.5	1976	944	0	.0	.0	8.6	4.5	23.3	.6
Dec	29.8	11.2	20.5	63+	2001	6	29.5	1998	-30	1983	19	7.8	1983	1380	0	.0	.0	1.2	17.3	30.0	6.7
Ann	55.7	33.2	44.5	103	Jul 1995	14	74.6	Jul 1999	-36	Jan 1963	15	-.5	Jan 1977	7949	493	.1	10.0	220.3	63.4	167.0	29.4

\+ 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

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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	1.02	1.15	1980	16	3.10	1996	.13	1981
Feb	.94	.81	1.85	1959	23	3.38	1971	.00+	1995
Mar	2.03	2.04	2.22	1998	31	4.87	1998	.24	1978
Apr	3.45	3.18	3.70	1981	4	8.23	1981	.60	1997
May	3.57	3.38	3.86	2000	18	8.29	1973	.62	1981
Jun	3.99	3.72	3.82	1984	17	9.33	1998	1.05	1992
Jul	3.98	3.87	3.40	1978	1	8.42	1999	1.28	1973
Aug	4.32	3.92	3.78	1953	1	10.58	1980	1.22	1976
Sep	3.95	3.42	3.83	1986	11	10.60	1992	.74	1979
Oct	2.30	2.01	3.05	1959	24	6.31	1984	.46	1975
Nov	2.34	1.93	2.15	1965	7	5.51	1982	.03	1976
Dec	1.26	1.13	1.18	1967	7	2.37	1990	.19	1989
Ann	33.28	35.02	3.86	May 2000	18	10.60	Sep 1992	.00+	Feb 1995

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.3	3.5	.3	.1
Feb	5.7	2.7	.5	@
Mar	7.7	4.8	1.3	.3
Apr	9.9	6.7	2.3	.7
May	10.6	6.7	2.3	.8
Jun	9.9	7.0	2.7	.9
Jul	10.0	7.1	2.9	1.0
Aug	10.0	7.6	3.0	1.1
Sep	9.2	6.4	2.6	1.3
Oct	8.4	5.0	1.8	.3
Nov	8.3	5.4	1.5	.3
Dec	7.8	3.8	.7	@
Ann	104.8	66.7	21.9	6.8

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	.22	.32	.49	.65	.80	.97	1.17	1.40	1.71	2.21	2.69
Feb	.00	.00	.24	.41	.57	.74	.94	1.19	1.51	2.03	2.54
Mar	.34	.51	.81	1.09	1.38	1.69	2.05	2.48	3.06	4.01	4.91
Apr	.90	1.23	1.73	2.17	2.60	3.06	3.56	4.16	4.94	6.17	7.32
May	1.08	1.42	1.93	2.36	2.79	3.23	3.71	4.28	5.02	6.17	7.23
Jun	1.13	1.51	2.09	2.58	3.07	3.58	4.14	4.81	5.67	7.02	8.27
Jul	1.63	1.99	2.51	2.93	3.33	3.73	4.17	4.67	5.31	6.28	7.17
Aug	1.34	1.75	2.36	2.88	3.39	3.92	4.50	5.18	6.06	7.43	8.70
Sep	.51	.83	1.39	1.94	2.52	3.16	3.91	4.83	6.07	8.12	10.09
Oct	.64	.86	1.19	1.48	1.76	2.06	2.39	2.78	3.28	4.07	4.81
Nov	.34	.53	.87	1.20	1.53	1.91	2.34	2.86	3.57	4.72	5.84
Dec	.26	.38	.56	.73	.90	1.08	1.29	1.53	1.86	2.38	2.87
Ann	24.60	26.31	28.48	30.12	31.58	32.98	34.42	36.00	37.92	40.69	43.07

\+ 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	11.9	10.4	7	6
Feb	8.5	9.1	7	6
Mar	7.7	7.0	2	1
Apr	2.8	1.0	#	#
May	#	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.4	.0	#	0
Nov	4.8	2.9	1	#
Dec	10.2	8.5	3	3
Ann	46.3	38.9	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	13.0	1971	4	32.4	1999	27	1982	31	20	1982
Feb	8.0	1971	5	20.5	1975	28	1982	12	21	1971
Mar	12.0	1997	14	20.0	1998	17	1997	14	9	1971
Apr	9.0	1973	9	18.5	1993	13	1973	10	2	1973
May	#	1997	1	#+	1997	#	1997	1	#	1997
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	5.0	1990	11	5.0	1990	3	1992	20	#+	1995
Nov	9.0	1992	26	23.5	1985	13	1977	28	3	1985
Dec	11.0	1971	30	29.0	1990	15+	2000	24	9+	2000
Ann	13.0	Jan 1971	4	32.4	Jan 1999	28	Feb 1982	12	21	Feb 1971

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	5.9	4.1	1.3	.5	.1
Feb	3.7	2.9	.9	.3	.0
Mar	3.2	2.4	1.0	.4	.1
Apr	1.1	.7	.3	.2	.0
May	.0	.0	.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	.2	.1	.1	@	.0
Nov	2.3	1.7	.7	.2	.0
Dec	5.0	3.6	1.1	.3	@
Ann	21.4	15.5	5.4	1.9	.2

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	22.2	16.2	10.6	2.5
Feb	21.0	17.5	13.1	5.7
Mar	10.4	7.8	6.1	2.1
Apr	1.0	.7	.5	@
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
Nov	3.9	2.4	1.3	.1
Dec	16.8	10.9	4.7	.5
Ann	75.4	55.5	36.3	10.9

+ 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	6/10	6/04	5/30	5/27	5/23	5/20	5/16	5/12	5/06
32	5/28	5/22	5/17	5/14	5/10	5/07	5/03	4/28	4/22
28	5/14	5/07	5/03	4/28	4/25	4/21	4/16	4/12	4/05
24	4/27	4/23	4/20	4/17	4/14	4/12	4/09	4/06	4/01
20	4/18	4/13	4/10	4/07	4/04	4/01	3/29	3/26	3/21
16	4/11	4/06	4/03	3/31	3/28	3/26	3/23	3/19	3/14

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	9/05	9/09	9/13	9/16	9/18	9/21	9/24	9/27	10/02
32	9/16	9/21	9/24	9/26	9/29	10/01	10/04	10/07	10/12
28	9/20	9/26	9/30	10/03	10/07	10/10	10/13	10/17	10/23
24	10/03	10/09	10/14	10/19	10/22	10/26	10/30	11/04	11/11
20	10/13	10/19	10/23	10/26	10/30	11/02	11/05	11/10	11/15
16	10/22	10/30	11/04	11/08	11/12	11/16	11/21	11/26	12/03

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	141	133	127	122	117	112	107	102	93
32	165	157	151	146	141	136	131	125	117
28	194	184	177	170	164	159	152	145	135
24	218	209	202	196	190	185	179	172	162
20	229	222	217	212	208	204	199	194	186
16	258	248	240	234	228	222	216	209	199

***** 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	1571	1262	1032	594	279	75	17	53	209	533	944	1380	7949
60	1416	1122	877	449	171	26	1	15	111	385	794	1225	6592
57	1323	1038	784	367	119	11	0	6	69	304	704	1132	5857
55	1261	982	723	316	91	6	0	3	47	254	645	1070	5398
50	1106	842	575	202	39	1	0	0	14	149	504	915	4347
32	584	386	160	11	0	0	0	0	0	4	122	420	1687

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	36	48	151	408	774	1023	1191	1108	813	496	168	63	6279
55	0	0	1	23	152	339	478	398	170	33	1	0	1595
57	0	0	0	14	118	284	416	339	132	21	0	0	1324
60	0	0	0	6	77	208	324	255	84	9	0	0	963
65	0	0	0	1	30	107	185	138	31	1	0	0	493
70	0	0	0	0	9	41	83	58	8	0	0	0	199

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	2	52	228	554	800	968	882	600	291	57	4	0	2	54	282	836	1636	2604	3486	4086	4377	4434	4438
45	0	0	20	135	404	650	813	727	452	176	26	1	0	0	20	155	559	1209	2022	2749	3201	3377	3403	3404
50	0	0	9	71	268	500	658	572	311	94	7	0	0	0	9	80	348	848	1506	2078	2389	2483	2490	2490
55	0	0	4	31	153	353	503	417	192	42	1	0	0	0	4	35	188	541	1044	1461	1653	1695	1696	1696
60	0	0	0	13	76	218	350	269	102	8	0	0	0	0	0	13	89	307	657	926	1028	1036	1036	1036
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	0	40	161	350	517	639	576	374	187	38	1	0	0	40	201	551	1068	1707	2283	2657	2844	2882	2883

(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