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: NEILLSVILLE 3 SW, WI **COOP ID: 475808**

Climate Division: WI 2 **NWS Call Sign:** **Elevation: 1,035 Feet** **Lat: 44˚32N** **Lon: 90˚38W**

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	22.0	.1	11.1	57	1981	25	22.7	1990	-48	1951	30	-.8	1977	1673	0	.0	.0	.1	23.9	30.9	13.7
Feb	28.6	6.1	17.4	59	1981	17	28.4	1998	-40	1951	2	8.2	1989	1335	0	.0	.0	.9	16.0	27.8	8.3
Mar	40.4	18.1	29.3	83	1986	29	37.8	2000	-39	1962	1	22.0	1975	1109	0	.0	.0	6.7	6.5	27.4	2.7
Apr	55.5	31.1	43.3	90	1952	30	50.0	1977	3+	1995	4	36.6	1975	651	0	.0	.0	21.5	.5	16.9	.0
May	68.4	42.1	55.3	92	1959	2	63.7	1977	15	1976	4	49.4	1997	324	21	.0	@	30.6	.0	3.9	.0
Jun	77.1	51.7	64.4	99+	1988	21	69.3+	1995	22	1998	4	59.4	1982	96	79	.0	1.6	30.0	.0	.4	.0
Jul	81.0	56.1	68.6	102	1995	13	72.7	1988	35+	1998	25	62.8	1992	35	146	@	2.9	31.0	.0	.0	.0
Aug	78.7	54.5	66.6	103	1948	25	72.4	1995	33	1965	29	62.0	1992	63	112	.1	1.6	31.0	.0	.0	.0
Sep	69.9	44.7	57.3	96	1948	5	62.3	1978	21+	1998	24	50.5	1993	242	12	.0	.2	29.7	.0	2.8	.0
Oct	58.4	33.9	46.2	92	1976	1	53.4	1971	8	1988	30	40.0	1988	585	0	.0	@	24.9	@	12.7	.0
Nov	40.5	20.7	30.6	81	1950	1	39.3	1999	-16+	1976	29	23.4	1976	1032	0	.0	.0	6.6	6.8	25.7	1.0
Dec	26.4	7.0	16.7	64	2001	6	24.1+	1982	-36	1951	24	5.1	1985	1498	0	.0	.0	.6	20.3	30.7	8.8
Ann	53.9	30.5	42.2	103	Aug 1948	25	72.7	Jul 1988	-48	Jan 1951	30	-.8	Jan 1977	8643	370	.1	6.3	213.6	74.0	179.2	34.5

\+ 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: 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	.91	.77	1.03	1967	25	2.76	1996	.00	1981
Feb	.82	.61	.85	1953	19	3.92	1971	.00	1987
Mar	1.67	1.60	1.43	1990	14	3.27	1976	.25	1978
Apr	2.77	2.47	2.35	1975	28	5.18	1975	.68	1989
May	3.38	3.39	3.07	1955	29	9.40	1973	1.14	1986
Jun	4.37	4.06	4.83	1986	27	10.57	1993	.55	1983
Jul	4.54	3.98	4.38	1978	1	11.85	1999	.68	1998
Aug	4.63	4.18	5.00	1980	8	12.62	1980	.81	1976
Sep	3.94	2.99	3.45	1978	12	10.47	1986	.60	1976
Oct	2.29	2.14	2.56	1966	15	5.30	1995	.33	1976
Nov	2.05	1.78	2.27	1975	10	5.39	1991	.00	1976
Dec	1.03	.91	1.28+	1972	30	2.68+	1984	.20	1989
Ann	32.40	32.70	5.00	Aug 1980	8	12.62	Aug 1980	.00+	Feb 1987

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.4	3.1	.3	.0
Feb	5.2	2.9	.3	.0
Mar	6.8	4.5	.9	.1
Apr	9.1	6.3	1.8	.4
May	9.0	7.0	2.2	.7
Jun	10.2	7.5	2.6	1.2
Jul	9.6	6.9	3.2	1.1
Aug	9.1	7.4	3.1	1.3
Sep	9.5	6.8	2.5	.9
Oct	7.2	4.9	1.3	.5
Nov	6.8	4.6	1.4	.3
Dec	6.4	3.5	.3	.1
Ann	95.3	65.4	19.9	6.6

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	.11	.22	.38	.51	.64	.78	.94	1.12	1.37	1.77	2.15
Feb	.07	.17	.30	.42	.55	.68	.83	1.02	1.27	1.67	2.05
Mar	.46	.61	.85	1.06	1.27	1.49	1.73	2.01	2.38	2.95	3.49
Apr	.95	1.21	1.59	1.91	2.22	2.54	2.89	3.30	3.82	4.62	5.37
May	1.12	1.44	1.91	2.31	2.69	3.09	3.52	4.03	4.68	5.70	6.63
Jun	.98	1.38	2.02	2.60	3.17	3.79	4.47	5.30	6.38	8.11	9.73
Jul	1.24	1.67	2.33	2.90	3.46	4.05	4.70	5.47	6.47	8.04	9.51
Aug	1.45	1.89	2.54	3.10	3.64	4.20	4.82	5.54	6.47	7.92	9.26
Sep	.77	1.13	1.71	2.24	2.77	3.35	4.00	4.79	5.83	7.50	9.09
Oct	.56	.78	1.11	1.41	1.70	2.01	2.36	2.78	3.32	4.18	4.98
Nov	.20	.44	.78	1.08	1.39	1.71	2.09	2.54	3.13	4.10	5.02
Dec	.22	.32	.47	.60	.74	.89	1.05	1.25	1.51	1.92	2.31
Ann	23.24	25.02	27.29	29.01	30.54	32.02	33.55	35.23	37.27	40.23	42.78

\+ 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)

Extremes (2)

Mean Number of Days (1)

Snow Fall >= Thresholds

Snow Depth >= Thresholds

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year	0.1	1.0	3.0	5.0	10.0	1	3	5	10
Jan	10.9	11.0	8	8	10.5	1993	13	24.0	1971	32	1971	31	23	1971	4.9	4.7	1.5	.6	.1	27.5	23.9	19.6	11.1
Feb	7.2	7.0	10	9	8.0	1983	3	14.0	1975	44	1971	10	33	1971	3.6	3.5	.9	.2	.0	24.6	22.7	20.5	12.3
Mar	8.9	7.0	5	3	12.0	1997	14	25.0	1989	29	1972	10	16	1972	3.0	2.9	1.4	.3	@	15.9	13.4	9.6	4.9
Apr	2.1	.1	#	#	10.0	1973	11	18.0	1973	7	1985	1	2	1975	.8	.8	.3	.1	@	1.7	.7	.3	.0
May	#	.0	#	0	#	1997	1	#	1997	#	1997	1	#	1997	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jun	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jul	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Aug	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Sep	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.4	.0	#	0	5.0	1992	20	5.0	1992	5	1992	20	#+	1997	.2	.2	@	@	.0	.2	.1	@	.0
Nov	4.8	3.0	1	#	7.0	1994	28	17.5	1991	13	1991	28	4	1991	2.1	2.0	.8	.1	.0	4.9	2.8	1.7	.4
Dec	8.7	7.0	5	4	8.0	1990	18	19.5	1984	18	1985	3	15	1985	4.5	4.4	1.2	.2	.0	23.0	17.1	11.6	5.5
Ann	43.0	35.1	N/A	N/A	12.0	Mar 1997	14	25.0	Mar 1989	44	Feb 1971	10	33	Feb 1971	19.1	18.5	6.1	1.5	.1	97.8	80.7	63.3	34.2

+ 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	6/24	6/17	6/11	6/06	6/02	5/29	5/24	5/19	5/11
32	6/06	5/31	5/26	5/23	5/19	5/15	5/12	5/07	5/01
28	5/24	5/17	5/13	5/09	5/05	5/01	4/27	4/23	4/16
24	5/11	5/04	4/29	4/25	4/21	4/17	4/13	4/08	4/02
20	4/22	4/18	4/16	4/13	4/11	4/09	4/07	4/04	3/31
16	4/19	4/14	4/11	4/08	4/05	4/03	3/31	3/27	3/23

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	127	118	111	105	100	95	89	82	73
32	146	138	133	128	124	119	114	109	101
28	172	165	159	154	150	145	140	135	127
24	199	190	183	178	173	167	162	155	146
20	217	210	204	200	195	191	187	181	174
16	233	226	220	216	212	207	203	197	190

***** 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	1673	1335	1109	651	324	96	35	63	242	585	1032	1498	8643
60	1518	1195	954	505	206	36	8	17	128	434	882	1343	7226
57	1425	1111	861	420	149	17	1	6	77	349	792	1250	6458
55	1363	1055	799	366	117	9	0	2	52	295	732	1188	5978
50	1208	915	646	244	55	1	0	0	14	181	586	1033	4883
32	666	439	196	18	0	0	0	0	0	8	165	510	2002

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	16	28	110	357	721	972	1133	1072	760	446	122	35	5772
55	0	0	0	15	125	291	420	362	122	21	0	0	1356
57	0	0	0	9	95	239	359	304	87	12	0	0	1105
60	0	0	0	4	59	168	273	222	48	4	0	0	778
65	0	0	0	0	21	79	146	112	12	0	0	0	370
70	0	0	0	0	6	24	61	42	2	0	0	0	135

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	40	195	515	743	901	842	552	254	34	2	0	0	40	235	750	1493	2394	3236	3788	4042	4076	4078
45	0	0	16	110	367	593	746	687	405	146	16	0	0	0	16	126	493	1086	1832	2519	2924	3070	3086	3086
50	0	0	6	55	234	444	591	532	270	73	3	0	0	0	6	61	295	739	1330	1862	2132	2205	2208	2208
55	0	0	0	25	129	301	437	377	156	26	0	0	0	0	0	25	154	455	892	1269	1425	1451	1451	1451
60	0	0	0	8	63	173	285	230	79	6	0	0	0	0	0	8	71	244	529	759	838	844	844	844
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	0	29	142	332	475	589	541	345	160	23	0	0	0	29	171	503	978	1567	2108	2453	2613	2636	2636

(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