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: ST GERMAIN 2 E, WI **COOP ID: 477480**

Climate Division: WI 2 **NWS Call Sign:** **Elevation: 1,645 Feet** **Lat: 45˚54N** **Lon: 89˚26W**

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	18.2	-3.6	7.3	48+	1990	9	20.1	1990	-40	1982	17	-3.9	1977	1791	0	.0	.0	.0	27.2	30.9	15.7
Feb	24.2	-.2	12.0	55	2000	23	27.6	1998	-43+	1996	4	2.1	1979	1486	0	.0	.0	.4	20.0	28.0	12.1
Mar	34.9	12.1	23.5	72	2000	9	31.2	2000	-25+	1996	8	14.7	1996	1288	0	.0	.0	3.3	11.3	28.9	5.5
Apr	49.3	26.4	37.9	89	1980	23	44.9	1987	-8+	1995	5	31.0	1975	815	0	.0	.0	14.8	1.7	20.8	.2
May	64.3	39.9	52.1	87+	1994	21	60.4	1977	19	1996	2	44.7	1997	419	19	.0	.0	28.1	@	6.8	.0
Jun	71.2	49.7	60.5	93+	1995	19	66.4	1995	32+	1992	21	53.4	1982	173	36	.0	.3	29.9	.0	.2	.0
Jul	74.8	55.0	64.9	97+	1988	8	68.8	1983	35	1988	1	58.8	1992	80	76	.0	.8	31.0	.0	.0	.0
Aug	72.6	52.8	62.7	95	1988	17	67.6	1995	35	1987	24	57.4	1977	126	54	.0	.2	31.0	.0	.0	.0
Sep	63.5	43.7	53.6	92	1998	12	59.5	1998	24	1989	24	47.4	1974	348	5	.0	.1	28.7	.0	1.6	.0
Oct	52.0	32.4	42.2	83	1976	2	48.1	1971	7	1988	30	37.2	1976	706	0	.0	.0	18.6	.6	13.4	.0
Nov	36.0	19.3	27.7	70+	1990	2	35.4	1999	-18	1976	28	18.7	1995	1121	0	.0	.0	4.1	11.1	26.8	1.2
Dec	22.8	4.3	13.6	58	1982	3	23.0	1997	-33	1983	19	2.2	1976	1595	0	.0	.0	.1	25.0	30.8	9.7
Ann	48.7	27.7	38.2	97+	Jul 1988	8	68.8	Jul 1983	-43+	Feb 1996	4	-3.9	Jan 1977	9948	190	.0	1.4	190.0	96.9	188.2	44.4

\+ 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: 1971-2001

(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	1.31	1.11	.97	1996	18	3.12	1997	.22	1981
Feb	.89	.80	1.06	1999	12	2.19	2000	.07	1987
Mar	1.66	1.51	1.80	1973	7	3.71	1973	.20	1978
Apr	2.21	2.20	1.80	1981	4	4.51	1977	.68	1997
May	3.43	3.13	2.37	1999	7	9.68	1999	.21	1986
Jun	3.69	3.63	3.98	1981	14	9.45	1981	1.73	1982
Jul	3.91	4.08	2.65	2000	8	7.74	2000	1.08	1989
Aug	4.33	4.00	3.47	1983	10	8.74	1978	1.42	2000
Sep	4.08	4.04	3.51	1983	20	7.44	1980	.89	1976
Oct	2.65	2.50	1.83	1990	17	4.91	1990	.54	1976
Nov	2.13	1.90	2.45	1996	16	4.76	1975	.26	1981
Dec	1.32	1.28	.88+	1996	31	2.60	1984	.08	1994
Ann	31.61	30.69	3.98	Jun 1981	14	9.68	May 1999	.07	Feb 1987

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.4	4.7	.4	.0
Feb	5.2	3.0	.4	@
Mar	6.9	4.5	.9	.2
Apr	9.0	5.9	1.1	.1
May	9.8	6.6	2.4	.9
Jun	11.6	8.3	2.5	.6
Jul	10.9	8.0	2.7	.8
Aug	10.6	7.8	3.0	1.0
Sep	11.4	7.9	2.7	.9
Oct	10.1	6.7	1.5	.4
Nov	8.6	5.5	1.0	.3
Dec	7.4	4.7	.4	.0
Ann	108.9	73.6	19.0	5.2

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	.31	.43	.62	.79	.96	1.14	1.35	1.59	1.91	2.41	2.89
Feb	.13	.21	.34	.46	.59	.73	.89	1.09	1.35	1.79	2.20
Mar	.30	.44	.69	.91	1.14	1.39	1.68	2.02	2.48	3.22	3.92
Apr	.77	.98	1.28	1.54	1.78	2.04	2.31	2.63	3.04	3.68	4.26
May	.82	1.14	1.64	2.09	2.53	3.00	3.53	4.15	4.97	6.28	7.50
Jun	1.77	2.09	2.52	2.87	3.20	3.52	3.87	4.26	4.75	5.49	6.16
Jul	1.25	1.62	2.17	2.63	3.09	3.56	4.07	4.67	5.45	6.66	7.77
Aug	1.50	1.91	2.51	3.01	3.49	3.98	4.52	5.15	5.96	7.20	8.35
Sep	1.11	1.50	2.09	2.60	3.11	3.64	4.22	4.92	5.82	7.24	8.56
Oct	.92	1.17	1.53	1.84	2.13	2.44	2.77	3.15	3.65	4.41	5.12
Nov	.49	.68	.99	1.27	1.55	1.85	2.18	2.58	3.10	3.93	4.71
Dec	.39	.51	.70	.86	1.02	1.19	1.37	1.59	1.87	2.30	2.71
Ann	22.57	24.32	26.57	28.27	29.78	31.24	32.75	34.41	36.43	39.36	41.89

\+ 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: 1971-2001
(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	16.5	15.8	16	16	10.0	1980	7	32.5	1976	36	1997	31	26	1997	6.7	5.9	2.3	.6	@	-9.9	-9.9	-9.9	-9.9
Feb	9.3	9.5	18	18	8.0	1992	25	18.0	2000	36	1997	1	31	1979	4.0	3.6	1.0	.3	.0	-9.9	-9.9	-9.9	-9.9
Mar	11.7	13.0	15	14	12.0	1976	2	24.2	1972	36	1979	5	31	1979	3.6	3.3	1.6	.6	.1	-9.9	-9.9	-9.9	-9.9
Apr	3.4	.0	2	#	10.0	1993	12	19.5	1993	33	1996	5	19	1996	1.4	1.2	.4	.2	@	1.8	.6	.4	.3
May	.4	.0	#	0	6.0	1979	5	6.0	1979	3	1996	1	#+	1997	.1	.1	.1	@	.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	#	1995	24	#	1995	#	1991	26	#	1991	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	1.0	.0	#	0	6.0	1979	23	6.0	1979	6	1979	23	#+	2000	.4	.3	.1	.1	.0	.2	.1	@	.0
Nov	7.5	5.0	1	1	7.0	1991	24	23.5	1985	16	1985	30	5	1995	3.7	3.4	1.0	.3	.0	8.8	4.7	2.7	.6
Dec	13.9	14.0	8	9	7.0	1979	7	26.0	1984	24	1996	30	17	1985	5.9	5.5	2.1	.5	.0	-9.9	-9.9	-9.9	-9.9
Ann	63.7	57.3	N/A	N/A	12.0	Mar 1976	2	32.5	Jan 1976	36+	Feb 1997	1	31+	Mar 1979	25.8	23.3	8.6	2.6	.1	-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	6/25	6/18	6/13	6/09	6/05	6/01	5/28	5/24	5/17
32	6/05	5/31	5/27	5/25	5/22	5/19	5/16	5/13	5/08
28	5/23	5/18	5/15	5/12	5/09	5/07	5/04	4/30	4/25
24	5/10	5/05	5/01	4/28	4/26	4/23	4/20	4/17	4/12
20	4/30	4/25	4/22	4/19	4/17	4/14	4/11	4/08	4/03
16	4/17	4/14	4/11	4/09	4/07	4/05	4/03	3/31	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	9/04	9/08	9/10	9/13	9/15	9/17	9/20	9/23	9/27
32	9/16	9/20	9/22	9/24	9/26	9/28	9/30	10/03	10/06
28	9/25	9/29	10/02	10/05	10/07	10/10	10/12	10/15	10/19
24	10/08	10/13	10/17	10/21	10/24	10/28	10/31	11/04	11/10
20	10/17	10/22	10/26	10/29	11/01	11/04	11/07	11/11	11/16
16	10/26	10/30	11/02	11/05	11/07	11/10	11/12	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	122	115	110	105	101	97	92	87	80
32	146	139	135	130	127	123	119	114	108
28	168	162	157	154	150	147	143	138	132
24	205	197	191	186	181	176	171	165	157
20	221	213	207	202	198	193	188	183	175
16	231	225	221	217	214	210	207	202	196

***** 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	1791	1486	1288	815	419	173	80	126	348	706	1121	1595	9948
60	1636	1346	1133	667	293	87	21	50	218	552	971	1440	8414
57	1543	1262	1040	580	229	50	8	23	153	462	881	1347	7578
55	1481	1206	978	523	191	32	3	13	116	403	821	1285	7052
50	1326	1066	823	388	112	9	0	2	49	269	671	1130	5845
32	779	579	314	65	4	0	0	0	0	18	211	594	2564

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	11	18	49	240	628	853	1019	951	647	335	81	22	4854
55	0	0	0	8	102	195	309	252	73	7	0	0	946
57	0	0	0	5	77	153	252	200	50	4	0	0	741
60	0	0	0	2	48	99	172	133	25	1	0	0	480
65	0	0	0	0	19	36	76	54	5	0	0	0	190
70	0	0	0	0	6	9	19	14	0	0	0	0	48

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	14	116	419	645	798	737	458	178	23	0	0	0	14	130	549	1194	1992	2729	3187	3365	3388	3388
45	0	0	2	68	285	496	643	582	319	92	7	0	0	0	2	70	355	851	1494	2076	2395	2487	2494	2494
50	0	0	0	28	176	351	488	428	194	41	1	0	0	0	0	28	204	555	1043	1471	1665	1706	1707	1707
55	0	0	0	12	94	218	336	277	99	15	0	0	0	0	0	12	106	324	660	937	1036	1051	1051	1051
60	0	0	0	2	44	116	193	148	43	1	0	0	0	0	0	2	46	162	355	503	546	547	547	547
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	0	10	88	259	387	495	444	248	98	11	0	0	0	10	98	357	744	1239	1683	1931	2029	2040	2040

(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