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: TREMPEALEAU DAM 6, WI **COOP ID: 478589**

Climate Division: WI 4 **NWS Call Sign:** **Elevation: 660 Feet** **Lat: 44˚00N** **Lon: 91˚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	24.1	6.0	15.1	56	1981	25	26.7	1990	-44	1951	30	3.0	1979	1549	0	.0	.0	.2	22.0	30.8	11.8
Feb	30.9	12.2	21.6	62+	1981	18	33.0	1998	-41	1996	3	9.7	1978	1216	0	.0	.0	1.1	14.3	27.1	6.7
Mar	42.4	24.4	33.4	83	1986	29	41.6	1973	-32	1962	1	25.5	1975	978	0	.0	.0	8.0	5.5	24.2	1.7
Apr	58.0	37.4	47.7	93	1980	21	55.6	1977	8+	1995	4	41.4	1975	523	4	.0	@	22.7	.3	9.7	.0
May	70.5	49.0	59.8	92	1967	26	67.9	1977	24+	1966	10	53.4	1997	216	52	.0	.1	30.8	.0	.7	.0
Jun	79.1	58.1	68.6	99	1949	30	72.9	1971	38	1972	10	63.6	1982	34	143	.0	2.0	30.0	.0	.0	.0
Jul	83.0	62.5	72.8	103	1995	13	77.7	1999	43	1984	7	67.0	1992	11	251	.1	4.6	31.0	.0	.0	.0
Aug	80.5	60.0	70.3	101+	2001	7	76.2	1995	40+	1976	29	65.8	1992	20	183	.1	2.7	31.0	.0	.0	.0
Sep	71.9	51.5	61.7	98	1978	7	67.4	1978	23+	1984	30	56.1	1993	141	43	.0	.5	29.8	.0	.6	.0
Oct	59.9	39.9	49.9	90	1963	6	56.8	1971	13	1988	30	44.5	1990	472	3	.0	.0	26.2	@	7.3	.0
Nov	42.0	26.8	34.4	75+	1999	8	43.3	1999	-9	1977	26	27.0	1991	919	0	.0	.0	7.9	5.8	21.7	.3
Dec	28.6	13.4	21.0	63+	2001	4	29.1	1998	-33	1950	27	7.7	1983	1364	0	.0	.0	.6	17.9	30.0	5.9
Ann	55.9	36.8	46.4	103	Jul 1995	13	77.7	Jul 1999	-44	Jan 1951	30	3.0	Jan 1979	7443	679	.2	9.9	219.3	65.8	152.1	26.4

\+ 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	1.07	.96	4.10	1952	20	3.74	1996	.10	1981
Feb	.89	.62	1.52	1998	27	3.15	1981	.00	1987
Mar	1.95	2.07	2.10	1966	23	4.00	1976	.26	1994
Apr	3.20	2.81	2.60	1990	24	7.13	1993	.70	1997
May	3.72	3.80	3.75	2000	18	6.17	1983	1.09	1985
Jun	3.81	3.33	4.26	1968	21	7.77	1998	1.00	1989
Jul	4.30	3.58	3.85	1978	1	12.64	1978	1.19	1974
Aug	4.54	4.12	3.79	1960	29	9.31	1980	.77	1976
Sep	3.84	3.18	6.01	1980	21	13.13	1980	.18	1998
Oct	2.36	1.99	2.89	1982	20	5.62	1982	.34	1975
Nov	2.16	1.62	2.31	1975	9	6.73	1991	.00	1976
Dec	1.08	1.06	1.31	1982	28	3.17	1982	.13	1998
Ann	32.92	32.10	6.01	Sep 1980	21	13.13	Sep 1980	.00+	Feb 1987

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.4	3.4	.5	@
Feb	5.2	2.5	.5	.1
Mar	6.9	4.5	1.4	.3
Apr	9.0	6.6	2.2	.5
May	9.9	6.7	2.7	.9
Jun	9.7	7.5	2.6	.9
Jul	9.6	7.0	3.1	1.4
Aug	9.9	7.8	3.6	1.2
Sep	8.7	6.5	2.4	1.0
Oct	7.7	5.1	1.4	.6
Nov	7.1	4.6	1.5	.4
Dec	6.2	3.4	.5	.1
Ann	96.3	65.6	22.4	7.4

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	.23	.33	.49	.63	.77	.92	1.10	1.30	1.57	2.01	2.42
Feb	.03	.10	.23	.36	.50	.66	.85	1.09	1.41	1.96	2.50
Mar	.52	.71	.99	1.24	1.48	1.74	2.02	2.36	2.80	3.48	4.12
Apr	.86	1.16	1.62	2.03	2.42	2.84	3.31	3.86	4.58	5.70	6.75
May	1.33	1.68	2.18	2.61	3.02	3.43	3.89	4.41	5.09	6.13	7.09
Jun	1.17	1.53	2.07	2.54	2.98	3.45	3.96	4.56	5.34	6.55	7.67
Jul	1.28	1.69	2.30	2.83	3.35	3.88	4.47	5.16	6.06	7.46	8.75
Aug	1.39	1.82	2.46	3.02	3.55	4.11	4.72	5.44	6.36	7.81	9.15
Sep	.53	.84	1.39	1.92	2.48	3.10	3.82	4.70	5.88	7.82	9.69
Oct	.38	.58	.92	1.25	1.58	1.95	2.37	2.88	3.56	4.68	5.74
Nov	.17	.40	.75	1.06	1.39	1.75	2.16	2.67	3.34	4.45	5.51
Dec	.24	.34	.50	.64	.78	.94	1.11	1.31	1.59	2.02	2.43
Ann	23.94	25.69	27.93	29.62	31.12	32.57	34.06	35.71	37.70	40.58	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)

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	10.4	9.3	8	7	16.0	1971	4	25.0	1971	25+	1996	29	19	1971	4.2	3.4	1.3	.5	.1	-9.9	-9.9	-9.9	-9.9
Feb	7.0	5.1	9	5	10.5	1983	3	20.8	1975	31	1979	21	26	1979	2.8	2.2	.7	.2	@	-9.9	-9.9	-9.9	-9.9
Mar	5.6	5.0	3	1	15.0	1997	14	18.0	1997	21	1975	14	14	1975	1.5	1.5	.9	.3	.1	-9.9	-9.9	-9.9	-9.9
Apr	.9	.0	#	0	8.0	1973	9	12.0	1973	12	1973	11	2	1973	.3	.2	.1	@	.0	.5	.3	.2	.1
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	2.0	.0	1	#	6.0	1988	30	13.0	1977	14	1991	26	6	1985	1.1	1.0	.4	.2	.0	1.5	1.1	.5	.0
Dec	8.3	7.8	3	2	7.0	2000	29	16.0	1972	20	2000	31	14	1985	3.8	3.0	1.2	.4	.0	-9.9	-9.9	-9.9	-9.9
Ann	34.2	27.2	N/A	N/A	16.0	Jan 1971	4	25.0	Jan 1971	31	Feb 1979	21	26	Feb 1979	13.7	11.3	4.6	1.6	.2	-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	5/25	5/19	5/15	5/11	5/08	5/05	5/01	4/27	4/21
32	5/13	5/08	5/04	5/01	4/27	4/24	4/21	4/17	4/12
28	4/30	4/25	4/21	4/18	4/15	4/12	4/09	4/06	3/31
24	4/17	4/13	4/10	4/07	4/05	4/02	3/31	3/28	3/24
20	4/12	4/08	4/05	4/02	3/31	3/28	3/25	3/22	3/18
16	4/05	3/31	3/28	3/25	3/22	3/19	3/16	3/13	3/08

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	9/17	9/21	9/23	9/26	9/28	9/30	10/02	10/05	10/09
32	9/20	9/25	9/28	10/01	10/04	10/06	10/09	10/13	10/17
28	10/01	10/06	10/10	10/13	10/15	10/18	10/21	10/25	10/30
24	10/10	10/16	10/20	10/24	10/27	10/30	11/03	11/07	11/13
20	10/20	10/26	10/30	11/02	11/06	11/09	11/12	11/16	11/22
16	10/29	11/04	11/08	11/12	11/15	11/19	11/22	11/27	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	162	155	150	146	142	138	134	129	123
32	180	173	168	163	159	154	150	144	137
28	203	196	191	187	182	178	174	169	162
24	225	218	213	209	205	201	196	191	184
20	242	234	229	224	219	215	210	204	196
16	260	253	247	242	238	233	228	223	215

***** 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	1549	1216	978	523	216	34	11	20	141	472	919	1364	7443
60	1394	1076	823	384	124	7	0	2	61	329	769	1209	6178
57	1301	992	731	307	83	2	0	0	32	253	679	1116	5496
55	1239	936	670	260	61	1	0	0	19	207	620	1054	5067
50	1084	797	525	160	24	0	0	0	4	114	478	899	4085
32	560	354	133	7	0	0	0	0	0	2	106	408	1570

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	34	62	177	477	859	1099	1264	1186	892	556	177	67	6850
55	0	0	2	41	207	410	551	473	221	48	1	0	1954
57	0	0	0	28	167	351	489	411	174	32	0	0	1652
60	0	0	0	14	115	266	396	320	113	15	0	0	1239
65	0	0	0	4	52	143	251	183	43	3	0	0	679
70	0	0	0	0	18	57	131	82	10	0	0	0	298

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	4	54	266	609	861	1024	946	657	321	54	3	0	4	58	324	933	1794	2818	3764	4421	4742	4796	4799
45	0	1	22	158	455	711	869	791	508	201	23	1	0	1	23	181	636	1347	2216	3007	3515	3716	3739	3740
50	0	1	7	89	310	561	714	636	366	108	4	0	0	1	8	97	407	968	1682	2318	2684	2792	2796	2796
55	0	0	2	38	187	411	559	481	235	50	1	0	0	0	2	40	227	638	1197	1678	1913	1963	1964	1964
60	0	0	0	17	96	269	404	328	132	17	0	0	0	0	0	17	113	382	786	1114	1246	1263	1263	1263
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	1	32	161	369	562	695	628	401	185	27	0	0	1	33	194	563	1125	1820	2448	2849	3034	3061	3061

(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

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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