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: LAKEWOOD 3 NE, WI **COOP ID: 474523**

Climate Division: WI 3 **NWS Call Sign:** **Elevation: 1,290 Feet** **Lat: 45˚19N** **Lon: 88˚30W**

Temperature (˚F)

Month	Mean (1) Daily Max	Mean (1) Daily Min	Mean (1) Mean	Extremes Highest Daily(2)	Year	Day	Highest Month(1) Mean	Year	Lowest Daily(2)	Year	Day	Lowest Month(1) Mean	Year	Degree Days (1) Base Temp 65 Heating	Cooling	Mean Number of Days (3) Max >= 100	Max >= 90	Max >= 50	Max <= 32	Min <= 32	Min <= 0
Jan	22.6	1.2	11.9	52	1973	25	22.2	1990	-43	1982	17	3.1	1977	1646	0	.0	.0	.1	25.5	31.0	14.3
Feb	28.6	5.1	16.9	59	1976	24	29.3	1998	-36+	1996	4	7.0	1979	1348	0	.0	.0	.6	17.6	28.0	10.7
Mar	39.5	16.7	28.1	76+	2000	9	36.5	2000	-24	1972	3	21.0	1996	1145	0	.0	.0	5.1	7.0	29.0	4.1
Apr	54.1	29.0	41.6	93	1980	22	47.0	1987	-7	1972	5	36.0	1975	703	0	.0	@	18.8	.7	20.5	.1
May	68.6	40.5	54.6	92	1994	21	62.3	1977	18+	1974	7	47.4	1997	345	22	.0	.2	29.5	.0	7.8	.0
Jun	76.4	49.9	63.2	97	1995	19	68.1	1995	27	1980	10	57.9	1982	114	58	.0	1.3	30.0	.0	.6	.0
Jul	80.3	55.2	67.8	100	1995	15	72.5	1983	30	1972	4	61.3	1992	43	128	@	2.6	31.0	.0	@	.0
Aug	77.5	53.6	65.6	96+	2001	8	70.7	1983	31	1976	29	61.5	1997	76	93	.0	.9	31.0	.0	.2	.0
Sep	68.2	45.1	56.7	94	1998	12	61.8	1998	20	1974	23	51.5	1993	260	8	.0	.2	29.7	.0	3.2	.0
Oct	55.8	34.4	45.1	84+	1992	3	52.8	1971	8+	1976	27	40.5	1988	617	0	.0	.0	22.3	@	16.0	.0
Nov	39.1	22.6	30.9	73	1999	10	38.8	1999	-13+	1976	30	22.8	1995	1024	0	.0	.0	5.3	7.7	26.1	1.0
Dec	26.6	8.6	17.6	61+	1998	4	25.8	1997	-27+	1976	30	6.7	1976	1469	0	.0	.0	.4	21.5	30.6	8.9
Ann	53.1	30.2	41.7	100	Jul 1995	15	72.5	Jul 1983	-43	Jan 1982	17	3.1	Jan 1977	8790	309	@	5.2	203.8	80.0	193.0	39.1

\+ 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: 1968-2001

(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	1.39	1.25	1.27	1996	19	3.51	1996	.33	1991
Feb	1.02	.83	.95	1984	13	2.83	1981	.00	1987
Mar	2.31	2.07	2.22	1973	7	6.75	1977	.15	1978
Apr	3.00	3.15	1.97	1993	16	4.89	1993	.60	1997
May	3.43	3.03	2.57	1978	28	8.80	1973	.82	1986
Jun	3.83	3.44	4.07	1990	13	8.74	1990	1.30	1972
Jul	3.56	2.98	3.06	2000	9	7.49	1999	.15	1998
Aug	3.89	3.45	4.47	1978	16	8.93	1974	1.49	1991
Sep	3.92	3.87	2.62	1993	14	9.82	1994	1.00	1989
Oct	2.68	2.75	1.93	1983	12	5.51	1995	.17	2000
Nov	2.46	2.20	1.86	1985	2	5.87	1992	.07	1976
Dec	1.63	1.65	1.37	1975	14	3.77	1972	.14	1994
Ann	33.12	33.16	4.47	Aug 1978	16	9.82	Sep 1994	.00	Feb 1987

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.4	4.4	.7	.1
Feb	5.4	3.3	.5	.0
Mar	7.5	5.3	1.6	.5
Apr	9.7	6.3	1.9	.5
May	9.9	6.4	1.9	.8
Jun	11.4	7.3	2.5	.9
Jul	10.6	7.2	2.2	.7
Aug	10.4	7.0	2.5	.9
Sep	11.3	7.4	2.5	1.0
Oct	9.0	5.6	1.8	.5
Nov	8.5	5.5	1.5	.5
Dec	7.8	5.2	.8	.1
Ann	108.9	70.9	20.4	6.5

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	.29	.41	.62	.80	.99	1.19	1.42	1.70	2.06	2.64	3.19
Feb	.08	.18	.35	.50	.65	.82	1.02	1.26	1.59	2.12	2.62
Mar	.31	.50	.83	1.15	1.49	1.86	2.29	2.82	3.54	4.71	5.83
Apr	1.07	1.36	1.76	2.11	2.43	2.77	3.13	3.55	4.10	4.93	5.70
May	1.00	1.33	1.82	2.24	2.66	3.09	3.56	4.12	4.85	5.98	7.03
Jun	1.30	1.66	2.19	2.64	3.07	3.51	4.00	4.56	5.29	6.42	7.45
Jul	.89	1.23	1.75	2.20	2.66	3.14	3.67	4.30	5.13	6.44	7.66
Aug	1.47	1.83	2.35	2.78	3.19	3.61	4.07	4.59	5.26	6.29	7.23
Sep	1.43	1.80	2.33	2.77	3.19	3.63	4.10	4.64	5.34	6.42	7.40
Oct	.75	1.01	1.39	1.73	2.06	2.40	2.78	3.23	3.81	4.73	5.58
Nov	.40	.61	.97	1.31	1.66	2.04	2.48	3.01	3.72	4.87	5.98
Dec	.37	.52	.76	.97	1.19	1.41	1.67	1.98	2.38	3.02	3.62
Ann	24.47	26.17	28.33	29.97	31.41	32.80	34.24	35.81	37.72	40.47	42.84

\+ 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: 1968-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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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	15.9	11.3	13	13
Feb	9.2	7.8	16	14
Mar	11.4	9.0	12	10
Apr	4.5	3.6	2	#
May	.5	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	#	.0	#	0
Oct	.3	#	#	0
Nov	5.0	3.5	1	1
Dec	16.4	16.0	6	6
Ann	63.2	51.2	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	44.8	1971	31+	1979	24	23	1982
Feb	9.0	1974	3	23.3	1971	36	1971	5	30	1971
Mar	12.5	1989	4	30.5	1972	40	1972	6	29	1972
Apr	12.0	1977	5	21.0	1977	26	1972	2	13	1972
May	6.0	1990	11	8.0	1990	4	1990	11	#+	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	#	1995	23	#+	1995	#	1995	23	#	1995
Oct	2.0	1979	23	3.0	1992	3	1987	23	#+	1999
Nov	8.0	1992	26	18.0	1991	11	1991	29	4	1991
Dec	11.0	1985	2	33.5	1972	21	1985	2	18	1985
Ann	13.0	Jan 1971	4	44.8	Jan 1971	40	Mar 1972	6	30	Feb 1971

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	6.9	5.3	2.0	.9	.1
Feb	4.5	3.3	1.2	.4	.0
Mar	4.3	3.4	1.5	.7	.2
Apr	1.4	1.3	.5	.3	.1
May	.1	.1	.1	@	.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	.2	.0	.0	.0
Nov	2.7	2.4	1.0	.3	.0
Dec	6.4	5.2	2.1	.6	@
Ann	26.5	21.2	8.4	3.2	.4

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	29.8	28.3	27.7	18.4
Feb	27.9	27.9	26.9	22.2
Mar	24.1	22.1	20.4	14.9
Apr	5.4	4.4	3.6	2.5
May	.1	.1	.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	.0
Nov	7.5	3.8	1.3	.1
Dec	27.1	22.4	17.5	7.1
Ann	122.0	109.0	97.4	65.2

+ 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	7/05	6/28	6/23	6/18	6/14	6/10	6/06	6/01	5/25
32	6/17	6/11	6/06	6/02	5/30	5/26	5/23	5/18	5/12
28	5/31	5/26	5/22	5/19	5/16	5/13	5/10	5/07	5/02
24	5/11	5/07	5/03	4/30	4/28	4/25	4/22	4/19	4/14
20	4/27	4/23	4/20	4/17	4/15	4/13	4/10	4/07	4/03
16	4/21	4/16	4/13	4/10	4/07	4/05	4/02	3/29	3/25

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	8/17	8/23	8/28	9/01	9/05	9/09	9/13	9/17	9/24
32	9/03	9/08	9/12	9/15	9/18	9/21	9/24	9/28	10/03
28	9/14	9/19	9/22	9/25	9/28	10/01	10/04	10/07	10/12
24	9/27	10/03	10/07	10/10	10/14	10/17	10/21	10/25	10/30
20	10/09	10/15	10/20	10/24	10/28	10/31	11/05	11/09	11/16
16	10/27	11/01	11/04	11/07	11/09	11/12	11/14	11/17	11/22

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	112	101	94	88	82	76	69	62	52
32	134	126	120	115	111	106	101	95	87
28	155	148	142	138	134	130	125	120	113
24	192	184	178	173	168	164	159	153	145
20	220	212	205	200	195	190	185	178	170
16	236	229	224	219	215	211	206	201	194

***** 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	1646	1348	1145	703	345	114	43	76	260	617	1024	1469	8790
60	1491	1208	990	556	227	45	9	22	141	465	874	1314	7342
57	1398	1124	897	470	169	21	2	9	86	378	784	1221	6559
55	1336	1068	835	415	135	12	0	4	59	322	724	1159	6069
50	1181	928	681	287	69	2	0	0	17	201	575	1004	4945
32	634	447	206	26	0	0	0	0	0	8	145	481	1947

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	11	23	84	313	701	934	1107	1041	739	414	112	34	5513
55	0	0	0	12	122	256	394	331	108	15	0	0	1238
57	0	0	0	7	94	206	334	274	75	8	0	0	998
60	0	0	0	3	59	139	249	195	39	3	0	0	687
65	0	0	0	0	22	58	128	93	8	0	0	0	309
70	0	0	0	0	7	15	49	31	1	0	0	0	103

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	17	142	458	689	847	782	494	198	27	1	0	0	17	159	617	1306	2153	2935	3429	3627	3654	3655
45	0	0	4	76	312	539	692	627	349	105	10	0	0	0	4	80	392	931	1623	2250	2599	2704	2714	2714
50	0	0	0	36	191	391	537	472	217	44	1	0	0	0	0	36	227	618	1155	1627	1844	1888	1889	1889
55	0	0	0	18	107	252	383	319	116	14	0	0	0	0	0	18	125	377	760	1079	1195	1209	1209	1209
60	0	0	0	4	49	137	238	186	51	3	0	0	0	0	0	4	53	190	428	614	665	668	668	668
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	0	16	122	313	438	550	498	305	126	15	0	0	0	16	138	451	889	1439	1937	2242	2368	2383	2383

(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