

# Climatology of the United States

## No. 20

### 1971-2000

**Station: LA CROSSE MUNICIPAL AP, WI**

**COOP ID: 474370**

**Climate Division: WI 4**

**NWS Call Sign: LSE**

**Elevation: 651 Feet**

**Lat: 43° 53N**

**Lon: 91° 15W**

### 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	25.5	6.3	15.9	57	1981	25	28.9	1990	-37	1951	30	3.7	1977	1536	0	.0	.0	.3	22.0	30.5	11.5
Feb	32.4	12.8	22.6	64+	2000	29	34.1	1998	-36	1971	8	11.7	1978	1202	0	.0	.0	1.3	14.2	26.5	6.7
Mar	44.6	24.5	34.6	84	1986	29	42.5	2000	-28	1962	1	25.4	1975	959	0	.0	.0	8.7	5.5	23.9	1.3
Apr	59.7	37.1	48.4	93	1980	22	55.4	1977	7	1982	6	42.2	1975	521	8	.0	.1	22.6	.3	9.4	.0
May	72.5	48.7	60.6	94+	1998	28	68.0	1977	26+	1989	6	55.0	1997	202	49	.0	1.0	30.7	.0	.6	.0
Jun	81.3	57.9	69.6	102	1988	21	74.9	1991	37	1978	8	64.1	1982	38	162	.1	4.0	30.0	.0	.0	.0
Jul	85.2	62.8	74.0	108	1995	13	78.8	1980	44+	1967	4	68.5	1992	6	272	.4	7.3	31.0	.0	.0	.0
Aug	82.5	60.7	71.6	105	1988	1	77.8	1995	36	1950	20	67.1	1992	17	208	.2	4.1	31.0	.0	.0	.0
Sep	73.7	51.7	62.7	100+	1978	7	68.8	1998	23	1949	29	57.0	1993	152	70	@	1.3	29.9	.0	.4	.0
Oct	61.1	40.1	50.6	93	1963	6	57.6	1973	14	1988	30	45.1	1988	467	6	.0	.1	26.3	.0	6.7	.0
Nov	43.6	27.4	35.5	75+	2000	1	43.0	1999	-10	1950	24	28.0	1991	893	0	.0	.0	8.3	5.5	21.3	.4
Dec	29.9	13.6	21.8	67	1998	5	29.2	1998	-30	1983	19	7.2	1983	1347	0	.0	.0	.9	17.9	29.4	6.1
Ann	57.7	37.0	47.3	108	1995	13	78.8	1980	-37	1951	30	3.7	1977	7340	775	.7	17.9	221.0	65.4	148.7	26.0

+ 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/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

Issue Date: February 2004

(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								Mean Number of Days (3)				Precipitation Probabilities (1)											
														Probability that the monthly/annual precipitation will be equal to or less than the indicated amount											
Means/Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels												
													These values were determined from the incomplete gamma distribution												
Month	Mean	Med-ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95	
Jan	1.19	.91	1.31	1967	24	3.03	1996	.14	1981	9.5	3.7	.4	.0	.27	.38	.55	.71	.87	1.03	1.22	1.44	1.73	2.20	2.63	
Feb	.99	.80	1.29	1983	2	2.71	1998	.15	1995	7.6	2.8	.4	.1	.17	.25	.40	.53	.67	.82	1.00	1.21	1.49	1.94	2.37	
Mar	2.00	2.09	1.58	1992	9	3.69	1973	.30	1978	9.6	4.7	1.3	.3	.56	.75	1.04	1.29	1.53	1.79	2.07	2.41	2.85	3.53	4.17	
Apr	3.38	2.73	3.91	1975	27	7.31	1973	1.40	2000	10.8	6.7	2.3	.7	1.12	1.44	1.91	2.31	2.70	3.09	3.53	4.04	4.69	5.71	6.64	
May	3.38	3.03	2.87	2000	17	6.85	1991	.94	1988	11.0	6.7	2.4	.7	1.08	1.40	1.87	2.28	2.67	3.07	3.52	4.04	4.71	5.75	6.72	
Jun	4.00	3.00	3.93	1967	15	10.79	1993	1.33	1989	11.0	7.2	2.3	1.0	1.06	1.44	2.02	2.53	3.03	3.55	4.14	4.82	5.73	7.14	8.46	
Jul	4.25	3.81	5.24	1987	27	9.35	1987	1.42	1975	10.8	7.0	2.8	1.0	1.36	1.76	2.36	2.86	3.36	3.87	4.42	5.08	5.92	7.23	8.45	
Aug	4.28	3.46	2.84	1973	22	9.84	1980	.54	1976	10.4	7.3	3.1	1.1	1.10	1.51	2.13	2.68	3.22	3.79	4.42	5.18	6.16	7.71	9.16	
Sep	3.40	2.43	3.35	1983	19	8.51	1980	.53	1979	9.6	6.0	2.0	.8	.62	.92	1.42	1.88	2.35	2.86	3.44	4.14	5.07	6.57	8.00	
Oct	2.16	1.95	2.28	1998	17	5.09	1984	.28	1976	8.3	4.5	1.3	.3	.41	.60	.92	1.21	1.51	1.83	2.20	2.64	3.22	4.16	5.06	
Nov	2.10	1.72	2.80	1991	1	6.23	1991	.00	1976	8.9	4.5	1.2	.4	.23	.48	.83	1.14	1.44	1.77	2.14	2.59	3.19	4.14	5.04	
Dec	1.23	.90	1.42	1990	3	2.91	1990	.30	1998	9.3	3.8	.3	.1	.32	.44	.62	.78	.93	1.09	1.27	1.49	1.76	2.20	2.61	
Ann	32.36	32.77	5.24	Jul 1987	27	10.79	Jun 1993	.00	Nov 1976	116.8	64.9	19.8	6.5	23.20	24.98	27.25	28.98	30.51	32.00	33.52	35.21	37.26	40.22	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															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										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	13.0	10.3	5	4	12.0	1996	26	35.0	1996	34	1979	24	18	1979	8.4	4.0	1.5	.6	.1	26.4	19.5	14.7	4.3
Feb	8.0	7.0	5	4	10.0	1983	2	20.4	1971	29+	1979	13	24	1979	6.0	2.5	.7	.3	@	21.6	16.0	12.2	5.4
Mar	7.2	5.9	2	2	14.3	1997	13	20.5	1997	19+	1997	16	10	1975	4.4	2.2	.9	.3	@	10.6	6.8	4.1	1.8
Apr	2.0	.5	#	0	10.3	1973	9	17.0	1973	16	1973	10	2	1973	1.3	.6	.2	.1	@	.9	.2	.2	.1
May	#	.0	#	0	#	1989	30	#+	1989	0	0	0	#	1998	.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	#	1985	24	#	1985	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.2	.0	#	0	1.8	1992	19	1.8	1992	1	1992	19	#	1992	.3	.1	.0	.0	.0	@	.0	.0	.0
Nov	4.4	2.9	1	0	13.0	1991	23	30.3	1991	15+	1991	29	6	1991	3.2	1.3	.3	.1	@	4.2	2.1	1.2	.3
Dec	9.6	8.8	3	1	14.4	1990	3	30.4	1990	17	2000	30	9	1990	7.0	3.1	.9	.3	@	19.9	10.8	5.5	1.6
Ann	44.4	35.4	N/A	N/A	14.4	Dec 1990	3	35.0	Jan 1996	34	Jan 1979	24	24	Feb 1979	30.6	13.8	4.5	1.7	.1	83.6	55.4	37.9	13.5

+ 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

Complete documentation available from:

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<b>Freeze Data</b>									
<b>Spring Freeze Dates (Month/Day)</b>									
<b>Temp (F)</b>	<b>Probability of later date in spring (thru Jul 31) than indicated(*)</b>								
	<b>.10</b>	<b>.20</b>	<b>.30</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>	<b>.70</b>	<b>.80</b>	<b>.90</b>
<b>36</b>	5/24	5/19	5/16	5/13	5/10	5/07	5/04	5/01	4/26
<b>32</b>	5/14	5/08	5/04	4/30	4/27	4/24	4/20	4/16	4/10
<b>28</b>	4/29	4/24	4/21	4/18	4/15	4/12	4/09	4/06	4/01
<b>24</b>	4/16	4/12	4/10	4/07	4/05	4/03	4/01	3/30	3/26
<b>20</b>	4/13	4/08	4/05	4/02	3/30	3/27	3/24	3/21	3/16
<b>16</b>	4/05	3/30	3/27	3/23	3/20	3/17	3/13	3/10	3/04
<b>Fall Freeze Dates (Month/Day)</b>									
<b>Temp (F)</b>	<b>Probability of earlier date in fall (beginning Aug 1) than indicated(*)</b>								
	<b>.10</b>	<b>.20</b>	<b>.30</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>	<b>.70</b>	<b>.80</b>	<b>.90</b>
<b>36</b>	9/20	9/23	9/26	9/28	9/30	10/02	10/04	10/07	10/11
<b>32</b>	9/24	9/29	10/03	10/06	10/09	10/11	10/14	10/18	10/23
<b>28</b>	10/05	10/10	10/14	10/17	10/20	10/23	10/27	10/30	11/05
<b>24</b>	10/13	10/19	10/23	10/26	10/29	11/01	11/05	11/09	11/14
<b>20</b>	10/20	10/27	10/31	11/04	11/08	11/11	11/15	11/20	11/26
<b>16</b>	11/02	11/08	11/12	11/16	11/19	11/23	11/26	12/01	12/06
<b>Freeze Free Period</b>									
<b>Temp (F)</b>	<b>Probability of longer than indicated freeze free period (Days)</b>								
	<b>.10</b>	<b>.20</b>	<b>.30</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>	<b>.70</b>	<b>.80</b>	<b>.90</b>
<b>36</b>	159	153	149	146	142	139	136	132	126
<b>32</b>	184	177	172	168	164	160	156	151	144
<b>28</b>	210	202	197	192	188	183	179	173	166
<b>24</b>	226	219	214	210	206	202	198	193	186
<b>20</b>	246	238	232	227	222	218	213	207	199
<b>16</b>	269	261	254	249	243	238	233	226	217

\* 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

Complete documentation available from:

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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
65	1536	1202	959	521	202	38	6	17	152	467	893	1347	7340
60	1367	1048	790	363	116	8	0	4	58	309	735	1187	5985
57	1274	964	697	287	76	3	0	1	30	235	646	1094	5307
55	1212	908	636	241	56	1	0	0	18	191	588	1032	4883
50	1057	771	493	143	21	0	0	0	4	103	449	881	3922
32	540	335	116	4	0	0	0	0	0	2	96	398	1491

### Cooling Degree Days (1)

Base	Cooling Degree Days (1)												
	Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
32	10	35	165	479	870	1113	1288	1214	908	566	173	25	6846
55	0	0	6	43	199	425	575	501	246	55	3	0	2053
57	0	0	4	32	158	367	513	440	201	39	2	0	1756
60	0	0	2	19	108	282	421	348	142	21	1	0	1344
65	0	0	0	8	49	162	272	208	70	6	0	0	775
70	0	0	0	2	17	74	141	98	28	1	0	0	361

### 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	8	64	274	631	880	1051	972	677	339	65	4	0	8	72	346	977	1857	2908	3880	4557	4896	4961	4965
45	0	1	29	165	479	730	896	817	530	214	27	1	0	1	30	195	674	1404	2300	3117	3647	3861	3888	3889
50	0	1	13	93	332	580	741	662	386	120	11	0	0	1	14	107	439	1019	1760	2422	2808	2928	2939	2939
55	0	0	6	47	205	431	586	507	252	60	1	0	0	0	6	53	258	689	1275	1782	2034	2094	2095	2095
60	0	0	0	23	114	292	431	352	144	23	0	0	0	0	0	23	137	429	860	1212	1356	1379	1379	1379
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	1	42	166	383	573	712	650	416	193	30	2	0	1	43	209	592	1165	1877	2527	2943	3136	3166	3168

(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:

[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

## 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.  
Complete documentation for the 1971-2000 Normals is available on the internet from:  
[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/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.

- |   |   |
|---|---|
| <ol style="list-style-type: none"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
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## References

- U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)