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: LACROSSE, WA **COOP ID: 454338**

Climate Division: WA10 **NWS Call Sign:** **Elevation: 1,450 Feet** **Lat: 46˚49N** **Lon: 117˚53W**

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	37.9	24.2	31.1	63	1935	24	38.6	1994	-30	1982	6	14.1	1979	1052	0	.0	.0	3.8	8.7	23.8	1.7
Feb	45.0	27.9	36.5	70	1995	20	42.4	1991	-30	1950	1	24.5	1989	800	0	.0	.0	9.9	3.1	19.7	.9
Mar	53.8	31.5	42.7	80	1942	31	46.4	1986	0	1989	3	38.2	1976	692	0	.0	.0	22.5	.2	17.6	@
Apr	62.4	36.1	49.3	95	1977	24	53.8	1987	9	1968	13	44.8+	1982	472	0	.0	.2	29.2	.0	9.7	.0
May	71.1	41.3	56.2	100	1986	30	61.2	1993	19	1965	6	51.4	1984	280	7	@	1.0	31.0	.0	3.5	.0
Jun	79.1	47.3	63.2	105	1936	23	68.7	1977	26	1984	1	57.7	1980	120	65	.2	4.2	30.0	.0	.3	.0
Jul	88.0	51.8	69.9	110+	1939	28	75.9	1998	30	1971	7	64.1	1993	31	184	2.5	15.0	31.0	.0	.1	.0
Aug	87.4	51.3	69.4	113	1961	4	73.3	1977	28	1992	23	64.2	1980	31	166	2.5	14.0	31.0	.0	.1	.0
Sep	77.7	43.4	60.6	104	1950	2	66.3	1990	15	1934	25	54.9	1985	183	50	.2	3.5	30.0	.0	2.2	.0
Oct	63.7	34.7	49.2	92+	1935	3	55.6	1988	4	1935	31	45.0	1984	490	0	.0	.1	29.4	.0	11.9	.0
Nov	46.6	30.2	38.4	76	1999	12	44.6	1999	-17	1985	24	23.8	1985	797	0	.0	.0	11.3	2.0	17.6	.3
Dec	37.7	24.6	31.2	65	1941	2	37.8	1973	-34	1968	30	17.7	1985	1049	0	.0	.0	3.5	8.8	24.9	1.4
Ann	62.5	37.0	49.8	113	Aug 1961	4	75.9	Jul 1998	-34	Dec 1968	30	14.1	Jan 1979	5997	472	5.4	38.0	262.6	22.8	131.4	4.3

+ 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: 1931-2001

(3) Derived from 1971-2000 serially complete daily data

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: LACROSSE, WA **COOP ID: 454338**

Climate Division: WA10 **NWS Call Sign:** **Elevation: 1,450 Feet** **Lat: 46°49N** **Lon: 117°53W**

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	1.73	1.63	.96	1933	2	2.94	1974	.44	1985
Feb	1.51	1.50	1.24	1975	2	2.93	1999	.34	1988
Mar	1.49	1.47	1.25	1935	25	3.95	1989	.25	1992
Apr	1.21	1.03	1.47	1982	12	3.47	1982	.11	1977
May	1.22	1.20	1.43	2000	31	3.11	1980	.24	1992
Jun	.95	.89	1.07	1951	5	2.38	1991	.18	1986
Jul	.45	.40	.81	1975	13	1.53	1975	.00	1985
Aug	.48	.40	1.37	1959	20	1.71	1976	.00+	1988
Sep	.62	.65	1.28	1968	18	1.72	2000	.00+	1991
Oct	1.01	.92	1.35	1994	27	2.90	1996	.00	1978
Nov	1.95	1.77	1.43	1994	1	4.12	1973	.16	1976
Dec	2.20	2.00	1.21	1977	13	5.70	1996	.58	1989
Ann	14.82	14.58	1.47	Apr 1982	12	5.70	Dec 1996	.00+	Sep 1991

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	14.0	5.8	.4	.0
Feb	11.9	5.0	.3	@
Mar	11.2	5.3	.3	.0
Apr	9.0	4.0	.5	.1
May	8.3	3.7	.5	@
Jun	6.9	3.0	.3	.0
Jul	4.1	1.4	.2	.0
Aug	3.8	1.5	.1	.0
Sep	4.8	2.0	.2	.0
Oct	7.4	3.0	.4	@
Nov	14.1	6.7	.6	.1
Dec	14.3	7.1	.7	@
Ann	109.8	48.5	4.5	.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	.69	.85	1.08	1.26	1.44	1.62	1.82	2.04	2.33	2.76	3.16
Feb	.44	.58	.80	.98	1.16	1.35	1.56	1.81	2.13	2.63	3.09
Mar	.43	.57	.79	.97	1.15	1.34	1.55	1.79	2.11	2.60	3.07
Apr	.27	.38	.56	.72	.88	1.05	1.24	1.47	1.77	2.25	2.70
May	.39	.51	.68	.82	.97	1.11	1.27	1.46	1.70	2.07	2.42
Jun	.28	.37	.50	.62	.73	.85	.98	1.14	1.33	1.64	1.93
Jul	.01	.05	.11	.17	.25	.33	.43	.56	.73	1.02	1.32
Aug	.00	.01	.05	.10	.17	.27	.39	.55	.79	1.22	1.66
Sep	.00	.00	.09	.19	.30	.42	.58	.77	1.03	1.49	1.94
Oct	.04	.12	.27	.42	.58	.76	.97	1.24	1.61	2.23	2.83
Nov	.57	.75	1.03	1.27	1.51	1.75	2.03	2.34	2.76	3.41	4.01
Dec	.63	.84	1.16	1.43	1.70	1.97	2.28	2.64	3.11	3.84	4.52
Ann	10.37	11.23	12.32	13.16	13.90	14.62	15.37	16.19	17.19	18.65	19.91

\+ 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: 1931-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Services

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: LACROSSE, WA **COOP ID: 454338**

Climate Division: WA10 **NWS Call Sign:** **Elevation: 1,450 Feet** **Lat: 46°49N** **Lon: 117°53W**

Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	4.3	3.8	1	1
Feb	2.4	1.0	1	#
Mar	.8	.2	#	0
Apr	.1	.0	#	0
May	#	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.0	.0	0	0
Nov	1.0	.0	#	0
Dec	5.6	4.9	1	1
Ann	14.2	9.9	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	7.0	1989	8	16.9	1996	11	1979	30	7	1979
Feb	6.2	1975	7	11.4	1985	10	1979	3	3	1985
Mar	2.5	1989	2	6.3	1989	4	1989	3	1	1989
Apr	1.0	1982	4	1.5	1982	#+	1999	4	#+	1999
May	#	1999	9	#	1999	#	1999	9	#	1999
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	.0	0	0	.0	0	0	0	0	0	0
Oct	.5	1991	27	.8	1991	0	0	0	0	0
Nov	6.0	1978	19	6.0	1975	10	1978	20	2	1985
Dec	7.5	1996	26	20.9	1996	15	1996	29	6	1985
Ann	7.5	Dec 1996	26	20.9	Dec 1996	15	Dec 1996	29	7	Jan 1979

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	4.1	2.1	.5	.1	.0
Feb	1.7	1.0	.4	@	.0
Mar	.9	.4	.0	.0	.0
Apr	.1	@	.0	.0	.0
May	.0	.0	.0	.0	.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	.1	.0	.0	.0	.0
Nov	1.1	1.0	.1	@	.0
Dec	4.5	2.2	.6	.1	.0
Ann	12.5	6.7	1.6	.2	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	8.2	4.8	3.0	.5
Feb	2.9	1.9	1.1	.1
Mar	.4	.2	.0	.0
Apr	.0	.0	.0	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.0	.0	.0	.0
Nov	1.3	.6	.4	.0
Dec	7.1	3.3	1.7	.2
Ann	19.9	10.8	6.2	.8

+ 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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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: LACROSSE, WA **COOP ID: 454338**

Climate Division: WA10 **NWS Call Sign:** **Elevation: 1,450 Feet** **Lat: 46˚49N** **Lon: 117˚53W**

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	7/12	7/02	6/25	6/19	6/13	6/08	6/02	5/26	5/16
32	6/16	6/08	6/02	5/28	5/24	5/19	5/14	5/08	4/30
28	5/25	5/17	5/11	5/07	5/02	4/28	4/23	4/17	4/09
24	5/07	4/28	4/21	4/16	4/10	4/05	3/31	3/24	3/15
20	4/15	4/04	3/27	3/20	3/13	3/07	2/28	2/20	2/09
16	3/15	3/03	2/22	2/15	2/08	2/01	1/25	1/16	1/04

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	8/23	8/29	9/02	9/05	9/08	9/12	9/15	9/19	9/25
32	9/04	9/10	9/14	9/18	9/21	9/25	9/29	10/03	10/09
28	9/14	9/20	9/25	9/28	10/02	10/05	10/09	10/13	10/19
24	10/01	10/05	10/09	10/11	10/14	10/17	10/19	10/23	10/27
20	10/06	10/14	10/20	10/25	10/29	11/03	11/08	11/14	11/22
16	10/25	11/03	11/10	11/16	11/22	11/28	12/04	12/11	12/20

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	123	111	102	94	86	79	71	62	50
32	152	141	133	126	120	114	107	99	89
28	183	173	165	158	152	146	139	132	121
24	219	208	200	192	186	179	172	164	152
20	268	255	245	237	229	222	213	204	190
16	330	315	304	295	286	277	268	257	242

***** 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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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: LACROSSE, WA **COOP ID: 454338**

Climate Division: WA10 **NWS Call Sign:** **Elevation: 1,450 Feet** **Lat: 46˚49N** **Lon: 117˚53W**

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	1052	800	692	472	280	120	31	31	183	490	797	1049	5997
60	897	660	537	327	153	49	8	6	95	336	647	894	4609
57	804	576	444	245	95	23	2	2	57	248	562	801	3859
55	747	521	382	196	65	13	0	1	37	195	506	739	3402
50	603	390	234	96	18	2	0	0	10	85	371	593	2402
32	194	66	3	0	0	0	0	0	0	0	64	169	496

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	165	190	334	518	750	936	1175	1158	857	534	256	143	7016
55	5	1	0	23	102	259	463	446	204	15	9	0	1527
57	0	0	0	13	70	209	402	385	163	6	5	0	1253
60	0	0	0	5	35	144	315	297	111	2	0	0	909
65	0	0	0	0	7	65	184	166	50	0	0	0	472
70	0	0	0	0	0	21	89	73	17	0	0	0	200

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	22	55	126	290	514	707	941	925	633	309	77	25	22	77	203	493	1007	1714	2655	3580	4213	4522	4599	4624
45	2	14	47	166	361	557	786	770	484	179	29	3	2	16	63	229	590	1147	1933	2703	3187	3366	3395	3398
50	0	0	9	74	221	409	631	615	339	84	6	0	0	0	9	83	304	713	1344	1959	2298	2382	2388	2388
55	0	0	0	24	111	268	477	460	205	27	0	0	0	0	0	24	135	403	880	1340	1545	1572	1572	1572
60	0	0	0	6	45	144	324	311	105	7	0	0	0	0	0	6	51	195	519	830	935	942	942	942
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	3	25	89	200	338	452	583	581	422	226	33	2	3	28	117	317	655	1107	1690	2271	2693	2919	2952	2954

(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/normals/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.
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