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: BLAINE, WA **COOP ID: 450729**

Climate Division: WA 3 **NWS Call Sign:** **Elevation: 60 Feet** **Lat: 49˚00N** **Lon: 122˚45W**

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	43.4	30.2	36.8	61	1981	20	43.3	1994	-1	1950	18	29.8	1979	875	0	.0	.0	4.9	2.2	15.3	.0
Feb	47.5	32.1	39.8	68	1986	27	44.3	1991	-1	1950	1	31.3	1989	706	0	.0	.0	9.7	.6	11.9	.0
Mar	52.0	34.3	43.2	72	1960	20	46.5	1986	11	1951	10	38.4	1976	676	0	.0	.0	20.5	.0	9.3	.0
Apr	57.8	38.0	47.9	80	1976	30	51.1	1992	22	1951	20	43.7	1975	513	0	.0	.0	28.9	.0	3.5	.0
May	63.8	43.4	53.6	85	1959	13	58.1	1993	26	1954	1	50.4	1974	354	0	.0	.0	31.0	.0	.1	.0
Jun	68.5	48.2	58.4	92	1955	9	61.6	1992	35	1976	3	54.5	1971	203	3	.0	.0	30.0	.0	.0	.0
Jul	72.4	51.1	61.8	91	1951	12	64.5	1998	37	1949	3	59.4	1974	111	10	.0	.0	31.0	.0	.0	.0
Aug	72.2	51.1	61.7	92	1960	9	64.1	1997	37	1973	21	58.2	1973	116	12	.0	@	31.0	.0	.0	.0
Sep	67.0	46.3	56.7	86	1949	4	59.6	1995	28	1972	27	52.9	1972	252	2	.0	.0	30.0	.0	.2	.0
Oct	57.8	40.2	49.0	78	1984	3	51.3	1992	19	1991	29	46.2	1972	495	0	.0	.0	29.3	.0	3.3	.0
Nov	48.8	35.1	42.0	65	1975	4	46.1	1987	6+	1985	27	31.0	1985	692	0	.0	.0	12.3	.7	8.9	.0
Dec	43.0	30.9	37.0	62+	1980	27	41.9	1979	-1+	1968	29	30.6	1983	869	0	.0	.0	4.4	2.6	15.0	.0
Ann	57.9	40.1	49.0	92+	Aug 1960	9	64.5	Jul 1998	-1+	Dec 1968	29	29.8	Jan 1979	5862	27	.0	@	263.0	6.1	67.5	.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/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

Issue Date: February 2004

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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	5.32	5.48	2.25+	1997	30	8.53	1982	1.10	1985
Feb	4.21	4.34	2.04	1986	24	8.90	1982	.14	1993
Mar	3.61	3.67	1.48	1968	12	6.96	1997	1.27	1992
Apr	2.85	2.70	1.61	1996	23	5.70	1996	.70	1973
May	2.58	2.46	1.50	1985	29	5.42	1984	.49	1992
Jun	2.14	1.85	1.60	1993	11	5.44	1981	.46	1987
Jul	1.49	1.34	1.41	1972	12	3.32	1997	.05	1985
Aug	1.51	.89	2.75	1989	15	5.23	1989	.00	1986
Sep	1.91	1.99	2.20	1983	1	4.01	1983	.16	1975
Oct	3.74	3.42	1.84	1967	7	8.84	1975	1.09	1987
Nov	6.29	6.43	3.37	1955	3	10.65	1995	2.10	1976
Dec	5.79	6.32	2.43	1979	17	9.15	1975	1.26	1985
Ann	41.44	42.33	3.37	Nov 1955	3	10.65	Nov 1995	.00	Aug 1986

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	18.0	12.7	3.4	.8
Feb	15.6	11.1	2.4	.5
Mar	15.8	10.5	1.8	.2
Apr	14.0	8.4	1.3	.1
May	11.6	7.5	1.2	.2
Jun	10.6	5.4	1.1	.2
Jul	6.2	3.8	.9	.2
Aug	6.5	3.6	.9	.2
Sep	8.6	4.8	1.0	.3
Oct	13.6	9.1	2.2	.5
Nov	18.9	13.5	3.9	1.0
Dec	18.5	13.4	3.4	.9
Ann	157.9	103.8	23.5	5.1

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	1.93	2.43	3.15	3.75	4.33	4.92	5.56	6.30	7.26	8.72	10.07
Feb	1.22	1.62	2.22	2.74	3.25	3.78	4.37	5.06	5.96	7.37	8.67
Mar	1.77	2.08	2.49	2.83	3.14	3.45	3.78	4.16	4.63	5.33	5.97
Apr	1.09	1.35	1.73	2.05	2.35	2.65	2.98	3.36	3.85	4.60	5.28
May	.74	.98	1.35	1.67	1.99	2.31	2.68	3.10	3.66	4.52	5.33
Jun	.56	.76	1.07	1.34	1.61	1.89	2.21	2.58	3.06	3.83	4.55
Jul	.28	.41	.63	.83	1.04	1.26	1.51	1.82	2.22	2.88	3.50
Aug	.05	.15	.36	.58	.82	1.10	1.43	1.85	2.43	3.41	4.38
Sep	.28	.44	.72	.98	1.26	1.56	1.91	2.34	2.91	3.84	4.74
Oct	1.27	1.62	2.14	2.58	3.00	3.43	3.91	4.46	5.17	6.27	7.28
Nov	2.55	3.13	3.94	4.62	5.25	5.89	6.59	7.39	8.41	9.96	11.38
Dec	2.56	3.08	3.80	4.38	4.93	5.48	6.08	6.75	7.61	8.91	10.08
Ann	30.97	33.04	35.66	37.64	39.39	41.07	42.80	44.70	47.00	50.31	53.16

\+ 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)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	4.3	1.4	1	#
Feb	2.1	.5	#	0
Mar	.5	.0	#	0
Apr	#	.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	.1	.0	#	0
Nov	1.1	.0	#	0
Dec	5.3	2.0	#	#
Ann	13.4	3.9	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	9.0	1978	3	17.6	1971	16	1991	8	3	1996
Feb	8.0	1990	15	16.0	1975	8+	1990	15	1+	1996
Mar	5.0	1971	4	5.0+	1991	5	1976	1	1	1976
Apr	#	1976	15	#+	1976	0	0	0	0	0
May	.0	0	0	.0	0	0	0	0	0	0
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	1.5	1991	28	1.5	1991	2	1991	28	#	1991
Nov	8.0	1975	30	8.1	1985	8	1975	30	1+	1996
Dec	13.0	1996	29	30.0	1996	21	1996	29	3	1996
Ann	13.0	Dec 1996	29	30.0	Dec 1996	21	Dec 1996	29	3+	Dec 1996

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.3	1.4	.7	.4	.0
Feb	1.3	.7	.4	.1	.0
Mar	.3	.2	.1	@	.0
Apr	.0	.0	.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	@	@	.0	.0	.0
Nov	.5	.3	.1	.1	.0
Dec	2.1	1.5	.7	.2	.1
Ann	6.5	4.1	2.0	.8	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	3.1	2.0	1.5	.2
Feb	1.6	1.0	.3	.0
Mar	.1	@	.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
Nov	1.0	.4	.1	.0
Dec	2.8	1.9	1.0	.2
Ann	8.6	5.3	2.9	.4

+ 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	5/20	5/16	5/12	5/09	5/06	5/02	4/28	4/23
32	5/04	4/29	4/25	4/22	4/19	4/16	4/12	4/09	4/03
28	4/12	4/05	3/31	3/26	3/22	3/18	3/13	3/08	3/01
24	3/08	2/26	2/19	2/14	2/08	2/03	1/28	1/21	1/12
20	2/27	2/17	2/09	2/03	1/28	1/21	1/15	1/06	12/25
16	2/19	2/07	1/29	1/21	1/13	1/04	12/23	0/00	0/00

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	9/21	9/25	9/29	10/01	10/04	10/06	10/09	10/12	10/16
32	10/04	10/09	10/12	10/15	10/18	10/21	10/24	10/28	11/02
28	10/15	10/23	10/29	11/02	11/07	11/11	11/16	11/22	11/29
24	11/01	11/11	11/18	11/23	11/29	12/04	12/10	12/17	12/26
20	11/11	11/23	12/01	12/08	12/15	12/22	12/30	1/08	1/22
16	11/30	12/13	12/23	12/31	1/10	1/20	2/05	0/00	0/00

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	167	160	155	151	147	143	139	134	127
32	208	199	192	187	182	177	171	165	156
28	260	250	242	235	229	223	216	209	198
24	337	320	309	300	291	283	274	264	249
20	>365	351	338	328	319	311	303	293	280
16	>365	>365	>365	>365	>365	>365	336	320	303

***** 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	875	706	676	513	354	203	111	116	252	495	692	869	5862
60	720	566	521	363	205	82	22	28	121	340	542	714	4224
57	627	482	428	274	128	37	4	7	63	248	452	621	3371
55	565	426	366	218	87	17	1	2	35	188	397	559	2861
50	420	292	219	98	21	1	0	0	4	67	262	410	1794
32	60	14	1	0	0	0	0	0	0	0	15	44	134

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	208	232	348	478	669	790	922	919	740	528	313	198	6345
55	0	0	0	5	42	117	210	208	85	2	5	0	674
57	0	0	0	2	22	77	151	151	53	0	0	0	456
60	0	0	0	0	6	32	76	79	21	0	0	0	214
65	0	0	0	0	0	3	10	12	2	0	0	0	27
70	0	0	0	0	0	0	0	0	0	0	0	0	0

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	58	82	141	259	445	570	690	690	514	305	123	56	58	140	281	540	985	1555	2245	2935	3449	3754	3877	3933
45	8	25	39	123	290	420	535	535	365	163	41	10	8	33	72	195	485	905	1440	1975	2340	2503	2544	2554
50	0	0	0	31	142	270	380	380	216	57	7	0	0	0	0	31	173	443	823	1203	1419	1476	1483	1483
55	0	0	0	2	41	126	225	225	87	8	0	0	0	0	0	2	43	169	394	619	706	714	714	714
60	0	0	0	0	5	31	84	85	15	0	0	0	0	0	0	0	5	36	120	205	220	220	220	220
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	1	21	48	119	218	295	391	394	265	126	25	3	1	22	70	189	407	702	1093	1487	1752	1878	1903	1906

(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