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: SAINT JOHN, WA **COOP ID: 457267**

Climate Division: WA10 **NWS Call Sign:** **Elevation: 1,945 Feet** **Lat: 47˚05N** **Lon: 117˚36W**

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	37.4	23.7	30.6	61	1981	22	39.7	1994	-28	1982	6	13.3	1979	1068	0	.0	.0	2.6	8.5	24.2	1.5
Feb	43.8	27.4	35.6	67	1995	20	42.2	1991	-22	1996	2	25.0	1989	822	0	.0	.0	7.6	3.1	20.2	.6
Mar	52.0	30.9	41.5	77	1999	20	46.8	1986	7+	1989	3	37.0	1971	731	0	.0	.0	19.4	.2	19.0	.0
Apr	60.2	34.8	47.5	92	1977	24	53.1	1987	12	1984	26	40.7	1982	525	0	.0	.1	28.0	.0	11.4	.0
May	68.3	40.5	54.4	99	1973	14	61.2	1993	19	1985	12	49.1	1981	336	7	.0	.6	30.9	.0	4.8	.0
Jun	75.8	45.6	60.7	100+	1992	23	66.1	1992	25+	1982	8	56.3	1981	163	35	.1	2.0	30.0	.0	.7	.0
Jul	84.5	49.4	67.0	107	1994	22	73.5	1998	26	1981	8	61.6	1981	61	120	.7	9.7	31.0	.0	.3	.0
Aug	85.0	49.2	67.1	103+	1998	5	71.5	1986	26+	1985	22	59.8	1980	70	136	.5	10.3	31.0	.0	.3	.0
Sep	75.9	42.0	59.0	101+	1988	3	64.6+	1998	17	1983	28	53.5	1985	222	39	.1	2.1	30.0	.0	2.9	.0
Oct	62.8	33.2	48.0	91	1992	1	54.8	1988	11	1971	29	42.8	1985	528	0	.0	.1	28.6	.0	14.2	.0
Nov	45.6	29.5	37.6	72+	1999	12	45.3	1999	-18	1985	23	21.8	1985	823	0	.0	.0	9.5	1.9	18.3	.3
Dec	37.2	23.8	30.5	59+	1981	10	37.1	1979	-23	1968	30	19.0	1985	1069	0	.0	.0	2.2	8.5	25.2	1.2
Ann	60.7	35.8	48.3	107	Jul 1994	22	73.5	Jul 1998	-28	Jan 1982	6	13.3	Jan 1979	6418	337	1.4	24.9	250.8	22.2	141.5	3.6

\+ 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: 1963-2001

(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	1.74	1.67	1.22	1969	11	4.75	1974	.32	1977
Feb	1.56	1.51	1.10	1976	16	4.25	1999	.33	1994
Mar	1.55	1.33	1.12	1989	9	3.10	1989	.28	1992
Apr	1.42	1.28	1.44	1996	23	3.09	1978	.03	1977
May	1.62	1.64	1.22	1980	26	3.24	1980	.44	1982
Jun	1.23	1.03	1.02	1971	2	2.61	1995	.04	1986
Jul	.76	.52	1.62	1978	7	3.26	1993	.06	1994
Aug	.69	.43	.91	1971	31	2.21	1989	.00	2000
Sep	.82	.83	1.37	1985	15	2.67	1985	.00+	1999
Oct	1.25	1.08	1.04	1994	27	4.04	1996	.00+	1987
Nov	2.20	2.18	1.08	1988	22	4.50	1984	.37	1976
Dec	2.33	2.09	1.27	1980	25	4.78	1973	.54	1985
Ann	17.17	16.99	1.62	Jul 1978	7	4.78	Dec 1973	.00+	Aug 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.5	5.6	.5	@
Feb	9.8	5.2	.5	@
Mar	10.3	5.4	.4	@
Apr	8.7	4.3	.5	.1
May	8.2	4.8	.8	.1
Jun	6.9	3.4	.7	@
Jul	4.0	2.3	.3	.1
Aug	3.4	2.0	.4	.0
Sep	4.8	2.9	.2	@
Oct	7.2	3.5	.7	@
Nov	13.1	7.1	.8	.1
Dec	11.8	6.9	1.2	.1
Ann	99.7	53.4	7.0	.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	.57	.74	.98	1.19	1.38	1.59	1.81	2.07	2.41	2.93	3.42
Feb	.35	.49	.72	.92	1.13	1.35	1.59	1.89	2.27	2.89	3.47
Mar	.50	.64	.86	1.05	1.23	1.41	1.61	1.85	2.16	2.63	3.07
Apr	.23	.35	.56	.76	.96	1.17	1.43	1.73	2.14	2.80	3.43
May	.62	.77	.98	1.16	1.33	1.51	1.69	1.91	2.19	2.61	3.00
Jun	.21	.32	.50	.67	.84	1.03	1.24	1.50	1.84	2.39	2.92
Jul	.05	.10	.20	.31	.42	.56	.72	.93	1.21	1.69	2.17
Aug	.00	.02	.08	.17	.27	.40	.57	.80	1.13	1.72	2.33
Sep	.00	.00	.08	.20	.35	.52	.73	1.00	1.39	2.04	2.69
Oct	.00	.16	.39	.59	.79	1.01	1.26	1.56	1.96	2.62	3.25
Nov	.64	.85	1.17	1.44	1.70	1.98	2.29	2.65	3.11	3.84	4.52
Dec	.64	.86	1.19	1.49	1.78	2.08	2.41	2.81	3.32	4.13	4.89
Ann	12.17	13.13	14.37	15.30	16.14	16.94	17.78	18.70	19.81	21.43	22.84

\+ 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: 1963-2001
(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	8.3	7.0	1	#
Feb	3.1	2.0	#	#
Mar	1.0	.3	#	0
Apr	.4	.0	#	0
May	#	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	#	.0	0	0
Oct	.2	.0	#	0
Nov	2.3	.6	#	0
Dec	4.5	4.9	#	#
Ann	19.8	14.8	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	11.0	1993	4	28.8	1979	29	1979	27	10	1979
Feb	6.5	1986	12	13.0	1975	10	1975	9	2	1975
Mar	4.0	1971	13	8.3	1971	3	1971	1	#+	2000
Apr	4.0	1971	24	4.0	1971	#+	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	#	1972	25	#	1972	0	0	0	0	0
Oct	2.5	1996	19	2.5	1996	2	1971	31	#+	1991
Nov	6.0	1985	22	16.0	1973	18	1985	30	10	1985
Dec	7.5	1996	26	10.0	1973	10	1977	30	3	1971
Ann	11.0	Jan 1993	4	28.8	Jan 1979	29	Jan 1979	27	10+	Nov 1985

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	4.8	2.7	1.0	.4	.1
Feb	2.6	1.5	.3	.2	.0
Mar	1.0	.4	.1	.0	.0
Apr	.3	.2	@	.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	.1	.0	.0	.0
Nov	1.9	1.1	.4	.1	.0
Dec	4.7	2.7	.7	.1	.0
Ann	15.4	8.7	2.5	.8	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	4.1	1.8	.6	.0
Feb	1.4	.8	.6	.1
Mar	.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
Nov	1.1	.6	.2	.0
Dec	2.2	.5	.4	.0
Ann	9.0	3.7	1.8	.1

+ 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	7/17	7/07	6/30	6/24	6/18	6/13	6/06	5/30	5/20
32	6/27	6/16	6/09	6/02	5/27	5/21	5/14	5/07	4/26
28	6/06	5/25	5/17	5/09	5/02	4/26	4/18	4/10	3/29
24	5/04	4/24	4/18	4/12	4/07	4/02	3/27	3/20	3/11
20	4/28	4/12	4/01	3/22	3/13	3/04	2/22	2/11	1/26
16	3/20	3/08	2/27	2/20	2/12	2/05	1/28	1/19	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	8/18	8/24	8/28	9/01	9/04	9/07	9/11	9/16	9/21
32	9/01	9/07	9/11	9/15	9/18	9/22	9/25	9/29	10/05
28	9/08	9/15	9/20	9/24	9/28	10/02	10/06	10/11	10/18
24	9/26	10/03	10/07	10/11	10/15	10/18	10/22	10/27	11/02
20	10/02	10/11	10/17	10/22	10/27	11/01	11/06	11/12	11/20
16	10/10	10/22	10/31	11/08	11/15	11/22	11/30	12/10	12/25

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	116	102	93	85	77	69	61	52	39
32	154	140	130	122	114	106	97	87	73
28	190	175	165	156	148	139	131	120	106
24	228	215	206	198	190	183	175	166	153
20	279	261	248	237	227	217	206	193	175
16	339	312	297	286	275	265	254	242	225

***** 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	1068	822	731	525	336	163	61	70	222	528	823	1069	6418
60	913	682	576	381	204	76	17	24	124	375	673	914	4959
57	820	598	483	299	141	40	7	11	80	287	589	821	4176
55	764	543	421	248	106	24	2	6	56	233	533	759	3695
50	619	413	275	141	42	5	0	1	18	120	398	608	2640
32	206	77	7	0	0	0	0	0	0	2	79	173	544

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	161	179	299	465	694	862	1082	1088	808	496	246	127	6507
55	5	1	0	23	87	196	371	381	174	15	10	0	1263
57	0	0	0	14	60	152	314	325	137	7	6	0	1015
60	0	0	0	6	30	98	231	244	92	2	0	0	703
65	0	0	0	0	7	35	120	136	39	0	0	0	337
70	0	0	0	0	0	8	47	60	13	0	0	0	128

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	15	42	107	250	464	634	846	850	579	272	67	16	15	57	164	414	878	1512	2358	3208	3787	4059	4126	4142
45	1	7	33	134	312	484	691	695	431	151	23	0	1	8	41	175	487	971	1662	2357	2788	2939	2962	2962
50	0	0	2	58	179	337	536	541	288	66	5	0	0	0	2	60	239	576	1112	1653	1941	2007	2012	2012
55	0	0	0	20	86	201	381	389	165	18	0	0	0	0	0	20	106	307	688	1077	1242	1260	1260	1260
60	0	0	0	2	36	97	237	243	79	2	0	0	0	0	0	2	38	135	372	615	694	696	696	696
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	1	18	66	171	306	407	539	547	392	210	26	0	1	19	85	256	562	969	1508	2055	2447	2657	2683	2683

(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