

Climatography of the United States No. 20

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: SNOQUALMIE FALLS, WA

1971-2000

COOP ID: 457773

Climate Division: WA 4

NWS Call Sign:

Elevation: 440 Feet

Lat: 47° 33N

Lon: 121° 50W

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	45.7	33.1	39.4	66	1931	28	46.2	1981	-1+	1957	26	33.3	1980	794	0	.0	.0	9.6	1.0	13.3	@
Feb	49.5	34.1	41.8	75+	1968	29	46.4	1992	-3	1950	1	32.9	1989	650	0	.0	.0	14.0	.4	11.2	.0
Mar	53.2	35.4	44.3	79	1994	30	47.7	1986	8	1955	5	40.0	1971	641	0	.0	.0	21.6	.1	8.9	.0
Apr	58.2	38.5	48.4	90	1934	19	51.5	1992	24+	1952	8	43.2	1975	500	0	.0	.0	26.9	.0	3.6	.0
May	63.7	43.9	53.8	97	1983	28	57.9	1993	26	1954	1	50.3	1999	347	0	.0	.1	30.7	.0	.2	.0
Jun	68.3	48.6	58.5	99+	1982	18	62.3	1978	31	1947	11	54.8	1971	204	8	.0	.2	30.0	.0	@	.0
Jul	74.2	52.0	63.1	99	1951	12	67.7	1985	36	1952	6	58.7	1993	96	37	.0	1.1	31.0	.0	.0	.0
Aug	75.2	52.1	63.7	102	1960	9	67.3	1977	35	1945	19	59.6	1973	89	46	.0	1.2	31.0	.0	.0	.0
Sep	70.0	47.1	58.6	98	1981	7	62.1	1974	30+	1984	10	55.4	1983	204	10	.0	.3	30.0	.0	.2	.0
Oct	60.0	41.6	50.8	95	1987	1	53.6	1988	23	1949	20	47.4	1984	440	0	.0	@	29.3	.0	3.2	.0
Nov	50.3	37.4	43.9	75	1949	2	48.4	1997	2	1955	15	33.0	1985	634	0	.0	.0	16.3	.4	8.3	.0
Dec	45.0	33.8	39.4	67	1980	26	44.1+	1980	3	1990	28	32.8	1985	794	0	.0	.0	8.4	1.5	14.2	.0
Ann	59.4	41.5	50.5	102	Aug 1960	9	67.7	Jul 1985	-3	Feb 1950	1	32.8	Dec 1985	5393	101	.0	2.9	278.8	3.4	63.1	@

+ 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/normal/usnormals.html

Issue Date: February 2004

(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

094-A

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: SNOQUALMIE FALLS, WA

COOP ID: 457773

Climate Division: WA 4

NWS Call Sign:

Elevation: 440 Feet Lat: 47°33N

Lon: 121°50W

Precipitation (inches)

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	8.45	8.69	3.38	1983	4	16.22	1974	1.11	1985	20.7	14.3	6.0	2.2	2.71	3.51	4.69	5.71	6.68	7.69	8.80	10.10	11.77	14.37	16.77
Feb	6.46	6.05	4.21	1951	9	12.83	1972	.38	1993	17.5	12.7	4.8	1.4	1.83	2.44	3.37	4.18	4.97	5.79	6.70	7.78	9.17	11.36	13.40
Mar	6.18	5.75	4.63	1972	5	12.29	1997	1.73	1992	20.6	13.6	4.1	.7	2.58	3.14	3.94	4.58	5.19	5.81	6.48	7.24	8.21	9.68	11.02
Apr	4.63	4.29	2.03	1991	4	8.03	1996	1.51	1983	17.7	11.4	2.7	.6	2.04	2.46	3.03	3.50	3.94	4.38	4.85	5.40	6.08	7.12	8.06
May	3.79	3.67	2.00	1969	29	6.96	1996	1.49	1992	16.5	10.1	2.1	.3	1.83	2.15	2.60	2.96	3.29	3.62	3.97	4.37	4.88	5.64	6.32
Jun	2.94	2.99	2.42	1968	1	5.50	1993	.52	1987	13.5	7.4	1.7	.3	.84	1.12	1.54	1.91	2.27	2.64	3.05	3.54	4.17	5.16	6.08
Jul	1.60	1.44	1.56	1948	27	4.35	1983	.15	1973	8.2	3.9	1.0	.2	.25	.38	.61	.84	1.06	1.31	1.60	1.95	2.42	3.19	3.92
Aug	1.50	1.05	1.79	1977	23	4.57	1975	.21	1986	7.6	4.1	1.0	.1	.22	.35	.57	.77	.99	1.23	1.50	1.83	2.28	3.01	3.72
Sep	2.80	3.12	2.72	1947	16	6.03	1978	.06	1975	10.7	6.6	2.0	.5	.32	.54	.93	1.32	1.73	2.20	2.74	3.42	4.34	5.85	7.33
Oct	5.26	4.46	3.62	1942	31	12.39	1975	.59	1987	15.2	10.6	3.5	1.3	1.19	1.68	2.45	3.14	3.83	4.57	5.39	6.38	7.68	9.74	11.68
Nov	9.43	9.04	4.64	1986	23	18.24	1990	1.93	1979	21.3	15.6	6.4	2.6	2.96	3.86	5.19	6.32	7.42	8.56	9.82	11.29	13.18	16.13	18.86
Dec	9.02	8.99	3.81	1959	15	17.90	1979	3.14	1985	20.4	14.3	6.6	2.5	3.91	4.72	5.85	6.78	7.65	8.52	9.46	10.54	11.90	13.97	15.84
Ann	62.06	61.32	4.64	Nov 1986	23	18.24	Nov 1990	.06	Sep 1975	189.9	124.6	41.9	12.7	46.48	49.56	53.47	56.41	59.01	61.51	64.08	66.91	70.33	75.25	79.48

+ 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

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: SNOQUALMIE FALLS, WA

COOP ID: 457773

Climate Division: WA 4

NWS Call Sign:

Elevation: 440 Feet

Lat: 47°33N

Lon: 121°50W

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	2.3	1.4	#	#	7.3	1973	4	9.3	1973	11	1982	4	2	1982	1.6	1.3	.3	.2	.0	1.5	.6	.4	.1
Feb	2.0	.5	#	0	6.2	1975	19	16.3	1985	9	1985	8	2	1989	1.3	.8	.2	@	.0	1.0	.3	.2	.0
Mar	1.1	.0	#	0	12.0	1989	1	12.0	1989	12	1989	1	1	1989	.4	.3	.1	@	@	.2	.1	.1	.1
Apr	.1	.0	#	0	1.0	1972	29	1.0	1972	#+	1990	27	#+	1990	.1	@	.0	.0	.0	.0	.0	.0	.0
May	#	.0	0	0	#	1975	24	#	1975	0	0	0	0	0	.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	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.0	.0	#	0	.0	0	0	.0	0	3	1996	20	#	1996	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.4	.0	#	0	9.0	1985	21	9.0+	1985	14	1985	21	3	1985	.5	.2	.1	.1	.0	.1	.0	.0	.0
Dec	2.6	.8	#	0	12.0	1974	26	12.0	1974	12	1974	26	1+	1990	1.3	.9	.2	.2	@	.9	.2	.2	.1
Ann	8.5	2.7	N/A	N/A	12.0+	Mar 1989	1	16.3	Feb 1985	14	Nov 1985	21	3	Nov 1985	5.2	3.5	.9	.5	@	3.7	1.2	.9	.3

+ 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/normal/usnormals.html

**Climatography
of the United States
No. 20
1971-2000**

Station: SNOQUALMIE FALLS, WA

COOP ID: 457773

Climate Division: WA 4

NWS Call Sign:

Elevation: 440 Feet

Lat: 47° 33N

Lon: 121° 50W

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	5/28	5/22	5/18	5/14	5/11	5/08	5/04	4/30	4/25
32	5/11	5/03	4/28	4/23	4/19	4/14	4/10	4/04	3/28
28	4/12	4/02	3/25	3/19	3/13	3/07	2/28	2/21	2/10
24	3/04	2/22	2/14	2/08	2/02	1/27	1/21	1/14	1/03
20	2/24	2/12	2/03	1/26	1/18	1/09	12/30	12/10	0/00
16	1/26	1/14	1/03	12/20	0/00	0/00	0/00	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	9/19	9/25	9/30	10/03	10/07	10/10	10/14	10/18	10/24
32	10/03	10/09	10/14	10/18	10/21	10/25	10/29	11/02	11/08
28	10/21	10/30	11/05	11/11	11/16	11/21	11/26	12/02	12/11
24	11/09	11/21	11/29	12/06	12/13	12/20	12/27	1/04	1/16
20	11/25	12/07	12/16	12/24	1/01	1/10	1/22	0/00	0/00
16	12/15	12/28	1/09	1/24	0/00	0/00	0/00	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	177	167	160	154	148	142	136	128	118
32	217	206	198	191	185	178	171	163	152
28	285	272	263	255	247	240	232	222	209
24	355	339	328	320	312	304	296	286	273
20	>365	>365	>365	>365	350	337	326	315	300
16	>365	>365	>365	>365	>365	>365	>365	>365	352

* 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/normal/usnormals.html

**Climatography
of the United States
No. 20
1971-2000**

Station: SNOQUALMIE FALLS, WA

COOP ID: 457773

Climate Division: WA 4

NWS Call Sign:

Elevation: 440 Feet

Lat: 47°33N

Lon: 121°50W

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	794	650	641	500	347	204	96	89	204	440	634	794	5393
60	639	510	486	350	201	91	25	22	91	285	484	639	3823
57	546	426	393	261	126	46	8	7	45	195	399	546	2998
55	485	371	331	205	86	25	2	2	24	141	343	485	2500
50	341	243	191	89	21	3	0	0	2	44	215	339	1488
32	26	9	1	0	0	0	0	0	0	0	9	22	67

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	255	283	382	490	676	794	964	980	796	583	365	251	6819
55	1	1	0	6	49	128	253	270	130	11	9	1	859
57	0	0	0	2	26	89	196	213	91	3	5	0	625
60	0	0	0	0	8	44	120	135	47	0	0	0	354
65	0	0	0	0	0	8	37	46	10	0	0	0	101
70	0	0	0	0	0	0	5	8	1	0	0	0	14

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	84	114	161	265	438	561	720	735	557	330	146	76	84	198	359	624	1062	1623	2343	3078	3635	3965	4111	4187
45	24	40	58	133	285	411	565	580	407	186	59	23	24	64	122	255	540	951	1516	2096	2503	2689	2748	2771
50	0	6	8	52	146	261	410	425	258	77	14	0	0	6	14	66	212	473	883	1308	1566	1643	1657	1657
55	0	0	0	12	62	127	255	271	125	19	0	0	0	0	0	12	74	201	456	727	852	871	871	871
60	0	0	0	2	19	46	126	131	42	2	0	0	0	0	0	2	21	67	193	324	366	368	368	368
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	22	43	77	139	224	300	418	436	317	167	50	18	22	65	142	281	505	805	1223	1659	1976	2143	2193	2211

(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.
Complete documentation for the 1971-2000 Normals is available on the internet from:
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 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">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. Freeze Data Table
1971-2000 serially complete daily data |
|---|---|

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/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