

# Climatography of the United States

No. 20

1971-2000

Station: WATERVILLE, WA

COOP ID: 459012

Climate Division: WA 7

NWS Call Sign:

Elevation: 2,620 Feet Lat: 47° 39N

Lon: 120° 04W

## 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	32.0	17.1	24.6	55+	1994	18	36.1	1994	-24	1950	25	12.5	1979	1253	0	.0	.0	.3	15.1	29.6	2.8
Feb	37.2	22.0	29.6	66	1966	5	36.6	1991	-20	1936	8	20.4	1989	992	0	.0	.0	1.2	7.2	26.3	1.2
Mar	47.5	28.4	38.0	74	1994	27	44.8	1994	-10	1955	4	32.2	1997	839	0	.0	.0	11.8	.7	23.5	.1
Apr	58.3	35.1	46.7	88	1977	24	53.8	1994	11	1936	2	40.4	1997	549	0	.0	.0	25.7	.0	11.7	.0
May	67.4	42.6	55.0	96	1986	30	60.9	1992	16	1954	1	49.9	1984	323	12	.0	.4	30.7	.0	2.5	.0
Jun	74.9	49.2	62.1	100	1992	24	70.3	1992	29	1954	4	56.2	1991	152	64	@	1.7	30.0	.0	.3	.0
Jul	83.2	54.3	68.8	105+	1994	23	75.0	1985	34	1971	7	62.6	1993	49	165	.5	8.6	31.0	.0	.0	.0
Aug	83.3	54.3	68.8	104	1961	4	73.5	1971	35+	1992	24	63.5	1995	43	162	.3	7.9	31.0	.0	.0	.0
Sep	73.5	45.9	59.7	98	1988	4	67.1	1994	22	1972	27	53.1	1985	220	60	.0	1.1	29.9	.0	1.2	.0
Oct	58.3	34.7	46.5	88	1944	11	53.0	1988	4+	1984	31	42.4	1984	574	1	.0	.0	25.4	.1	12.7	.0
Nov	40.2	25.8	33.0	66+	1967	1	37.3	1995	-14	1985	23	19.3	1985	961	0	.0	.0	4.2	5.1	24.1	.5
Dec	31.1	17.5	24.3	59	1957	14	32.7	1991	-33	1968	30	13.1	1983	1262	0	.0	.0	.2	16.7	29.7	2.0
Ann	57.2	35.6	46.4	105+	Jul 1994	23	75.0	Jul 1985	-33	Dec 1968	30	12.5	Jan 1979	7217	464	.8	19.7	221.4	44.9	161.6	6.6

+ 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/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: 1931-2001

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

# 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: WATERVILLE, WA**

**COOP ID: 459012**

**Climate Division: WA 7**

**NWS Call Sign:**

**Elevation: 2,620 Feet Lat: 47°39N**

**Lon: 120°04W**

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	1.48	1.25	1.00	1953	2	4.07	1995	.10	1977	8.8	4.7	.5	.0	.27	.40	.62	.82	1.02	1.24	1.50	1.80	2.20	2.85	3.47
Feb	1.08	1.00	.74	1989	21	2.28	1980	.00	1988	6.3	3.8	.3	.0	.13	.26	.45	.60	.76	.92	1.11	1.33	1.63	2.10	2.55
Mar	.88	.80	.89	1984	21	2.76	1983	.03+	1981	5.8	3.0	.4	.0	.08	.15	.27	.39	.52	.67	.85	1.07	1.37	1.88	2.38
Apr	.70	.62	.75	1958	2	2.07	1984	.00+	2000	4.9	2.3	.3	.0	.00	.00	.12	.24	.36	.50	.66	.87	1.15	1.62	2.09
May	.91	.74	1.13	1962	22	2.78	1990	.06+	1992	5.4	2.7	.5	@	.06	.11	.23	.35	.49	.65	.85	1.10	1.45	2.04	2.63
Jun	.89	.69	2.79	1948	11	2.98	1984	.03	1999	5.4	2.3	.4	.1	.06	.12	.23	.35	.49	.65	.83	1.07	1.41	1.97	2.52
Jul	.45	.32	.85	1992	25	1.73	1992	.00+	1994	3.1	1.7	.2	.0	.00	.00	.07	.13	.21	.30	.41	.55	.74	1.07	1.40
Aug	.56	.22	1.65	1983	25	3.22	1983	.00+	2000	3.1	1.4	.3	.1	.00	.00	.02	.08	.16	.28	.43	.64	.95	1.51	2.09
Sep	.55	.35	1.45	1952	9	2.86	1986	.00+	1999	3.9	1.5	.2	@	.00	.00	.02	.08	.16	.27	.42	.62	.93	1.47	2.03
Oct	.64	.40	1.12	1956	30	1.93	1997	.00	1978	4.6	2.0	.3	.0	.01	.04	.12	.20	.30	.42	.57	.76	1.04	1.51	1.98
Nov	1.57	1.41	1.67	1958	4	5.32	1983	.16	1993	8.4	4.8	.8	.1	.31	.45	.68	.89	1.11	1.34	1.60	1.91	2.33	3.00	3.64
Dec	1.77	1.72	1.20	1933	9	4.96	1996	.15	1976	9.0	5.4	.6	.0	.27	.42	.68	.92	1.17	1.45	1.77	2.16	2.68	3.53	4.34
Ann	11.48	11.30	2.79	Jun 1948	11	5.32	Nov 1983	.00+	Aug 2000	68.7	35.6	4.8	.3	6.62	7.48	8.63	9.52	10.34	11.14	11.98	12.92	14.09	15.82	17.35

+ 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](http://www.ncdc.noaa.gov)

Station: WATERVILLE, WA

COOP ID: 459012

Climate Division: WA 7

NWS Call Sign:

Elevation: 2,620 Feet

Lat: 47°39N

Lon: 120°04W

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	11.9	11.5	7	7	11.5	1971	15	27.8	1986	25+	1986	23	21	1986	5.3	3.9	1.6	.6	@	-9.9	-9.9	-9.9	-9.9
Feb	6.9	6.5	4	0	6.0	1986	23	19.1	1986	31	1986	23	25	1986	3.5	2.6	.9	.1	.0	-9.9	-9.9	-9.9	-9.9
Mar	3.0	.2	#	0	6.3	1985	27	12.6	1971	23	1986	1	5	1986	1.7	1.3	.4	.2	.0	-9.9	-9.9	-9.9	-9.9
Apr	.2	.0	#	0	2.5	1975	5	2.5	1975	#+	1999	5	#+	1999	.1	.1	.0	.0	.0	.0	.0	.0	.0
May	#	.0	0	0	#	1978	4	#	1978	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	.4	.0	#	0	4.0	1994	31	4.0+	1994	1	1971	31	#	1971	.2	.2	.1	.0	.0	.1	.0	.0	.0
Nov	6.2	5.9	#	0	12.0	1995	7	20.6	1984	12	1983	24	3	1983	3.0	2.2	.9	.4	.1	-9.9	-9.9	-9.9	-9.9
Dec	15.0	14.8	5	2	10.0	1971	12	30.8	1982	22	1982	22	16	1971	6.0	4.4	1.7	.4	@	-9.9	-9.9	-9.9	-9.9
Ann	43.6	38.9	N/A	N/A	12.0	Nov 1995	7	30.8	Dec 1982	31	Feb 1986	23	25	Feb 1986	19.8	14.7	5.6	1.7	.1	-9.9	-9.9	-9.9	-9.9

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

# Climatography of the United States

## No. 20 1971-2000

**Station: WATERVILLE, WA**

**COOP ID: 459012**

**Climate Division: WA 7**

**NWS Call Sign:**

**Elevation: 2,620 Feet**

**Lat: 47° 39N**

**Lon: 120° 04W**

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	6/22	6/14	6/08	6/03	5/30	5/25	5/20	5/14	5/06
32	6/01	5/25	5/20	5/16	5/12	5/07	5/03	4/28	4/21
28	5/15	5/08	5/02	4/28	4/24	4/20	4/15	4/10	4/03
24	4/25	4/18	4/13	4/09	4/05	4/01	3/28	3/23	3/16
20	4/14	4/05	3/29	3/24	3/19	3/13	3/08	3/01	2/20
16	3/24	3/16	3/10	3/05	2/28	2/23	2/18	2/12	2/04
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	9/05	9/09	9/13	9/15	9/18	9/20	9/23	9/26	10/01
32	9/19	9/24	9/27	9/29	10/02	10/04	10/07	10/10	10/14
28	9/29	10/03	10/07	10/10	10/12	10/15	10/18	10/21	10/26
24	10/05	10/11	10/15	10/19	10/23	10/26	10/30	11/03	11/09
20	10/20	10/27	10/31	11/04	11/08	11/12	11/16	11/20	11/27
16	10/30	11/06	11/12	11/16	11/21	11/25	11/30	12/05	12/13
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	139	129	122	116	110	105	99	92	82
32	170	160	154	148	143	137	131	125	115
28	199	189	182	176	171	165	159	152	142
24	232	221	213	206	200	194	187	179	168
20	269	257	248	241	234	227	219	210	198
16	298	286	278	271	265	258	251	243	232

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

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

**Station: WATERVILLE, WA**

**COOP ID: 459012**

**Climate Division: WA 7**

**NWS Call Sign:**

**Elevation: 2,620 Feet    Lat: 47°39N    Lon: 120°04W**

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	1253	992	839	549	323	152	49	43	220	574	961	1262	7217
60	1098	852	684	403	197	74	15	13	130	422	811	1107	5806
57	1005	768	591	320	137	42	6	5	89	335	721	1014	5033
55	943	712	530	267	104	27	3	2	66	280	661	952	4547
50	788	572	382	156	41	7	0	0	27	160	517	797	3447
32	298	139	40	2	0	0	0	0	0	3	122	306	910

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	68	71	224	444	712	902	1139	1142	830	452	151	68	6203
55	0	0	1	18	102	239	429	431	206	16	0	0	1442
57	0	0	0	11	74	194	370	371	169	9	0	0	1198
60	0	0	0	4	41	136	286	286	120	4	0	0	877
65	0	0	0	0	12	64	165	162	60	1	0	0	464
70	0	0	0	0	2	22	80	75	24	0	0	0	203

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	1	50	217	460	635	888	886	591	226	18	0	0	1	51	268	728	1363	2251	3137	3728	3954	3972	3972
45	0	0	10	111	309	486	733	731	444	117	1	0	0	0	10	121	430	916	1649	2380	2824	2941	2942	2942
50	0	0	0	46	180	336	579	576	307	48	0	0	0	0	0	46	226	562	1141	1717	2024	2072	2072	2072
55	0	0	0	13	90	205	425	421	183	16	0	0	0	0	0	13	103	308	733	1154	1337	1353	1353	1353
60	0	0	0	2	40	103	278	279	94	3	0	0	0	0	0	2	42	145	423	702	796	799	799	799
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	1	34	141	281	395	561	561	372	149	9	0	0	1	35	176	457	852	1413	1974	2346	2495	2504	2504

(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 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> |
|---|---|

## 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)