

**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: CONNELL 1 W, WA**

**1971-2000**

**COOP ID: 451690**

**Climate Division: WA 8**

**NWS Call Sign:**

**Elevation: 1,020 Feet Lat: 46° 40N**

**Lon: 118° 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	37.4	25.1	31.3	67	1971	30	39.0	1983	-17	1996	31	14.5	1979	1046	0	.0	.0	4.2	9.2	24.7	1.2
Feb	45.7	29.2	37.5	70	1995	20	42.8	1983	-19	1996	3	25.2	1989	771	0	.0	.0	10.5	3.1	19.0	.5
Mar	56.0	33.2	44.6	78	1966	29	48.4	1992	4	1989	3	40.4	1971	633	0	.0	.0	26.9	.2	15.2	.0
Apr	65.0	37.7	51.4	93+	1977	25	55.8	1987	19+	1968	17	47.1+	1982	411	1	.0	.1	29.9	.0	7.5	.0
May	73.7	44.2	59.0	100+	1986	31	63.8	1993	24+	1964	23	54.6	1996	205	18	.1	1.5	31.0	.0	1.2	.0
Jun	81.0	50.2	65.6	108	1961	17	70.1	1992	33	1984	1	61.3	1991	73	90	.4	5.1	30.0	.0	.0	.0
Jul	88.6	55.3	72.0	110	1975	9	76.7	1985	37+	1971	7	65.7	1993	13	230	2.3	14.8	31.0	.0	.0	.0
Aug	88.2	54.4	71.3	116	1961	4	76.0	1971	37+	1992	23	66.5	1995	20	215	2.3	13.3	31.0	.0	.0	.0
Sep	78.7	46.6	62.7	100	1987	1	66.8	1990	25	1965	17	58.3	1985	133	62	@	2.6	30.0	.0	.6	.0
Oct	64.8	37.6	51.2	86+	1988	1	56.9	1988	11	1984	31	48.4	1984	428	0	.0	.0	30.0	.0	8.7	.0
Nov	47.0	31.9	39.5	75	1975	4	44.7	1999	-15	1985	24	25.0	1985	767	0	.0	.0	12.8	2.0	15.8	.3
Dec	37.3	25.8	31.6	66	1980	26	38.1+	1974	-15	1968	30	18.6	1985	1038	0	.0	.0	4.0	9.6	24.9	.9
Ann	63.6	39.3	51.5	116	Aug 1961	4	76.7	Jul 1985	-19	Feb 1996	3	14.5	Jan 1979	5538	616	5.1	37.4	271.3	24.1	117.6	2.9

+ 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: 1960-2001

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

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**NWS Call Sign:**

**Elevation: 1,020 Feet Lat: 46°40N**

**Lon: 118°53W**

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	.92	.90	.68	1994	1	1.98	1986	.04	1972	8.4	3.5	.1	.0	.21	.29	.43	.55	.67	.80	.94	1.12	1.35	1.71	2.05
Feb	.81	.78	.50+	1992	20	1.51	1986	.01	1988	7.9	3.2	@	.0	.11	.18	.29	.41	.52	.65	.80	.99	1.24	1.64	2.04
Mar	.89	.76	.72	1986	24	2.32	1983	.14	1994	8.1	3.3	.2	.0	.19	.27	.40	.52	.64	.77	.91	1.08	1.31	1.67	2.01
Apr	.65	.60	.73	1970	19	1.45	1993	.08	1977	6.1	2.3	.2	.0	.15	.21	.30	.39	.47	.56	.67	.79	.95	1.20	1.44
May	.81	.68	1.27	1994	15	2.07	1980	.05	1992	5.8	2.5	.2	.1	.15	.22	.34	.45	.56	.68	.82	.99	1.21	1.57	1.91
Jun	.46	.39	.72	1996	27	1.22	1995	.02	1986	4.4	1.6	@	.0	.07	.11	.17	.24	.30	.38	.46	.56	.70	.93	1.15
Jul	.36	.28	.54	1963	8	1.37	1978	.00	1984	3.0	1.1	@	.0	.02	.06	.11	.16	.22	.28	.35	.44	.56	.76	.96
Aug	.32	.14	.90	1977	30	1.68	1977	.00+	2000	2.4	.8	.2	.0	.00	.00	.00	.03	.09	.16	.26	.38	.56	.87	1.18
Sep	.40	.36	1.25	1980	13	1.48	1980	.00+	1999	3.4	1.1	.1	@	.00	.00	.02	.09	.17	.25	.36	.49	.68	1.00	1.32
Oct	.69	.60	.94	1982	29	1.81	1982	.00+	1987	5.1	2.2	.1	.0	.00	.05	.16	.26	.38	.51	.66	.85	1.11	1.54	1.97
Nov	1.16	.98	.91	1996	19	3.14	1973	.12	1976	10.2	4.3	.2	.0	.26	.36	.53	.69	.84	1.00	1.19	1.41	1.70	2.16	2.59
Dec	1.19	1.08	1.05	1977	13	3.21	1973	.28	1976	9.8	4.7	.1	@	.29	.41	.58	.73	.89	1.05	1.23	1.44	1.72	2.16	2.58
Ann	8.66	8.61	1.27	May 1994	15	3.21	Dec 1973	.00+	Aug 2000	74.6	30.6	1.4	.1	5.44	6.03	6.81	7.41	7.95	8.47	9.02	9.64	10.39	11.50	12.47

+ 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: 1960-2001

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

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

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**Climate Division: WA 8**

**NWS Call Sign:**

**Elevation: 1,020 Feet**

**Lat: 46° 40N**

**Lon: 118° 53W**

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	1.6	1.0	1	#	6.0	1991	10	9.3	1991	11	1993	19	5	1979	1.3	.8	.3	.1	.0	1.0	.5	.0	.0
Feb	.3	.0	#	0	3.0	1985	7	3.0	1985	10	1996	4	4	1975	.6	.4	.1	.0	.0	.1	.0	.0	.0
Mar	.2	.0	#	0	2.5	1993	3	4.0	1993	9	1993	1	1	1993	.1	.1	.0	.0	.0	.0	.0	.0	.0
Apr	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	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	1.0	1971	31	1.0	1971	0	0	0	0	0	@	@	.0	.0	.0	.0	.0	.0	.0
Nov	.3	.0	#	0	5.5	1985	22	5.5	1985	5	1996	24	1	1996	.3	.2	.1	@	.0	.2	.1	.0	.0
Dec	2.0	1.0	1	#	3.5	1973	27	4.8	1990	11	1985	2	11	1985	1.0	.7	.1	.0	.0	.9	.7	.0	.0
Ann	4.4	2.0	N/A	N/A	6.0	Jan 1991	10	9.3	Jan 1991	11+	Jan 1993	19	11	Dec 1985	3.3	2.2	.6	.1	.0	2.2	1.3	.0	.0

+ 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	6/01	5/27	5/24	5/21	5/18	5/15	5/12	5/09	5/04
32	5/19	5/14	5/10	5/06	5/03	4/30	4/27	4/23	4/17
28	5/04	4/26	4/21	4/17	4/13	4/09	4/04	3/30	3/23
24	4/25	4/14	4/06	3/30	3/23	3/17	3/10	3/02	2/18
20	3/21	3/09	3/01	2/22	2/15	2/08	2/01	1/23	1/12
16	3/06	2/21	2/12	2/05	1/29	1/21	1/13	1/04	12/20
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	9/14	9/18	9/21	9/24	9/26	9/28	10/01	10/04	10/08
32	9/19	9/24	9/28	10/01	10/04	10/07	10/10	10/14	10/19
28	10/07	10/11	10/14	10/16	10/18	10/21	10/23	10/26	10/30
24	10/11	10/18	10/24	10/28	11/01	11/05	11/10	11/15	11/23
20	10/28	11/05	11/11	11/16	11/21	11/25	11/30	12/06	12/15
16	11/02	11/13	11/21	11/28	12/04	12/11	12/18	12/26	1/09
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	151	144	139	135	131	126	122	117	110
32	178	169	163	158	153	148	143	137	128
28	212	204	198	193	188	183	178	173	164
24	263	249	239	230	222	214	206	196	182
20	318	302	292	284	276	268	260	251	238
16	>365	343	328	316	306	297	287	275	260

\* 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:  
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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	1046	771	633	411	205	73	13	20	133	428	767	1038	5538
60	891	631	478	268	99	21	1	3	56	276	617	883	4224
57	803	547	385	191	55	8	0	1	28	191	534	790	3533
55	745	495	324	146	34	4	0	0	16	142	478	729	3113
50	601	365	184	62	7	0	0	0	2	54	345	582	2202
32	202	58	2	0	0	0	0	0	0	0	55	161	478

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	179	211	391	580	836	1008	1239	1219	919	595	278	146	7601
55	9	4	1	36	156	321	526	506	244	24	11	0	1838
57	5	0	0	21	115	266	464	445	196	11	7	0	1530
60	0	0	0	8	67	189	373	354	135	3	0	0	1129
65	0	0	0	1	18	90	230	215	62	0	0	0	616
70	0	0	0	0	3	30	115	108	21	0	0	0	277

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	25	61	165	347	592	769	992	973	687	359	92	28	25	86	251	598	1190	1959	2951	3924	4611	4970	5062	5090
45	2	18	64	208	437	619	837	818	537	222	31	4	2	20	84	292	729	1348	2185	3003	3540	3762	3793	3797
50	0	2	15	101	291	469	682	663	388	109	8	0	0	2	17	118	409	878	1560	2223	2611	2720	2728	2728
55	0	0	0	42	158	320	527	508	249	39	0	0	0	0	0	42	200	520	1047	1555	1804	1843	1843	1843
60	0	0	0	9	74	188	373	355	129	10	0	0	0	0	0	9	83	271	644	999	1128	1138	1138	1138
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	2	27	114	234	380	484	617	614	444	242	38	4	2	29	143	377	757	1241	1858	2472	2916	3158	3196	3200

(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> |
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## 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)