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: HOLDEN VILLAGE, WA **COOP ID: 453730**

Climate Division: WA 6 **NWS Call Sign:** **Elevation: 3,220 Feet** **Lat: 48˚12N** **Lon: 120˚47W**

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	29.8	14.6	22.2	58	1984	5	30.0	1994	-22+	1980	30	10.5	1979	1327	0	.0	.0	.5	18.1	30.4	3.6
Feb	35.3	17.3	26.3	57+	1988	27	32.5+	1991	-19	1996	3	18.5	1989	1083	0	.0	.0	.5	7.8	28.1	2.4
Mar	43.3	22.5	32.9	64+	1994	27	38.5	1992	-7	1989	4	27.4	1971	995	0	.0	.0	5.7	1.1	29.7	.3
Apr	51.9	27.9	39.9	85+	1977	25	44.9	1977	9	1975	3	34.7	1972	754	0	.0	.0	17.3	.0	25.1	.0
May	61.5	34.2	47.9	91	1983	29	53.3	1993	20+	1985	15	43.3	1996	532	0	.0	.1	28.6	@	12.4	.0
Jun	68.5	40.1	54.3	94+	1992	26	60.2	1992	23	1984	1	50.7	1976	325	4	.0	.3	29.9	.0	2.8	.0
Jul	76.6	43.6	60.1	101	1965	31	65.8	1998	28	1971	7	54.2	1983	181	29	.0	2.9	31.0	.0	.4	.0
Aug	76.9	43.8	60.4	98	2001	13	65.1+	1986	28+	2000	29	55.8	1995	166	22	.0	2.9	31.0	.0	.6	.0
Sep	68.5	37.4	53.0	96	1988	5	59.7	1998	22+	1999	28	48.4	1972	368	6	.0	.4	29.4	.0	6.6	.0
Oct	54.4	30.1	42.3	82+	1991	1	47.8	1988	6	1971	28	38.2	1990	706	0	.0	.0	21.0	.2	20.9	.0
Nov	36.3	23.2	29.8	65+	1975	5	35.2	1987	-10	1977	21	22.0	1985	1056	0	.0	.0	1.3	7.1	28.2	.4
Dec	29.2	14.9	22.1	58	1979	15	28.6	1979	-32	1968	30	11.8	1983	1331	0	.0	.0	.3	19.9	30.7	2.8
Ann	52.7	29.1	40.9	101	Jul 1965	31	65.8	Jul 1998	-32	Dec 1968	30	10.5	Jan 1979	8824	61	.0	6.6	196.5	54.2	215.9	9.5

\+ 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: 1962-2001

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

Issue Date: February 2004

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: HOLDEN VILLAGE, WA

COOP ID: 453730

Climate Division: WA 6 **NWS Call Sign:** **Elevation: 3,220 Feet** **Lat: 48˚12N** **Lon: 120˚47W**

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	6.65	6.39	4.10	1997	30	14.37	1974	.71	1985
Feb	5.14	5.09	6.00	1998	21	13.85	1998	.21	1973
Mar	3.16	2.86	2.20	1998	23	7.25	1998	.14	1973
Apr	1.49	1.16	1.81	1996	24	6.21	1996	.00	1973
May	1.14	1.00	1.10	1975	11	4.08	1998	.04	1979
Jun	1.23	.97	1.30	1985	7	3.45	1992	.23	1989
Jul	.78	.63	1.28	1981	12	2.59	1983	.00+	1985
Aug	1.07	.88	2.23	1963	12	3.16	1975	.07+	1986
Sep	1.64	1.46	2.00	1972	21	4.91	1978	.00	1975
Oct	3.36	3.20	2.25	1967	27	10.36	1990	.05	1987
Nov	6.67	6.36	2.96	1999	12	13.63	1990	1.40	1979
Dec	7.35	7.01	3.80	1999	2	15.64	1996	1.59	1985
Ann	39.68	35.95	6.00	Feb 1998	21	15.64	Dec 1996	.00+	Jul 1985

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	15.2	11.4	4.1	1.8
Feb	13.0	10.1	3.4	.9
Mar	10.7	7.0	2.0	.5
Apr	7.4	4.1	.8	.2
May	7.3	3.6	.4	@
Jun	8.1	3.5	.5	@
Jul	5.5	2.3	.3	@
Aug	6.0	3.0	.4	.1
Sep	7.5	3.9	1.2	.2
Oct	10.9	7.3	2.2	.7
Nov	16.4	12.2	4.5	1.5
Dec	17.2	13.3	4.5	1.9
Ann	125.2	81.7	24.3	7.8

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	1.30	1.90	2.88	3.77	4.68	5.66	6.76	8.09	9.86	12.69	15.38
Feb	.84	1.28	2.03	2.73	3.46	4.26	5.16	6.27	7.75	10.15	12.44
Mar	.64	.92	1.39	1.81	2.24	2.70	3.22	3.84	4.67	5.99	7.25
Apr	.08	.22	.45	.66	.90	1.16	1.46	1.83	2.34	3.19	4.01
May	.10	.18	.33	.49	.66	.86	1.10	1.39	1.80	2.48	3.15
Jun	.28	.39	.57	.73	.90	1.07	1.26	1.49	1.80	2.29	2.75
Jul	.00	.00	.14	.27	.41	.56	.74	.98	1.29	1.82	2.34
Aug	.04	.09	.21	.35	.52	.71	.96	1.28	1.73	2.51	3.30
Sep	.03	.11	.31	.53	.79	1.10	1.48	1.98	2.68	3.87	5.08
Oct	.30	.53	.98	1.45	1.96	2.54	3.23	4.09	5.29	7.28	9.24
Nov	1.85	2.48	3.44	4.28	5.10	5.96	6.91	8.03	9.49	11.78	13.92
Dec	2.18	2.88	3.92	4.83	5.71	6.63	7.64	8.83	10.37	12.77	15.01
Ann	25.07	27.77	31.30	34.02	36.48	38.87	41.37	44.16	47.59	52.61	57.01

\+ 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: 1962-2001
(3) Derived from 1971-2000 serially complete daily data

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

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Services

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: HOLDEN VILLAGE, WA **COOP ID: 453730**

Climate Division: WA 6 **NWS Call Sign:** **Elevation: 3,220 Feet** **Lat: 48°12N** **Lon: 120°47W**

Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	57.4	56.6	50	49	24.8	1971	15	118.6	1990	107	1997	28	92	1997	12.9	11.0	7.2	4.8	1.5	-9.9	-9.9	-9.9	-9.9
Feb	50.2	43.5	57	55	25.0	1987	1	117.2	1999	113	1997	22	95	1997	10.4	8.8	5.5	3.3	1.1	-9.9	-9.9	-9.9	-9.9
Mar	23.9	20.0	51	46	22.0	1972	5	75.1	1971	114	1972	6	92	1999	6.6	5.3	2.9	1.4	.5	-9.9	-9.9	-9.9	-9.9
Apr	5.7	4.3	27	23	10.0	1979	12	27.5	1981	90	1972	10	64	1971	2.3	1.7	.8	.4	.1	17.4	16.1	15.5	13.0
May	.3	.0	3	#	3.0	1982	2	5.8	1982	44	1971	1	20	1999	.2	.1	@	.0	.0	1.2	1.2	1.1	.9
Jun	#	.0	0	0	#	1979	6	#+	1979	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	3.8	.0	1	0	13.5	1996	18	24.4	1975	16	1975	29	4	1996	1.7	1.3	.8	.3	.1	1.6	1.2	.7	.3
Nov	44.4	39.0	9	9	22.0	1984	2	88.9	1984	51	1996	30	30	1994	10.8	8.7	4.8	3.0	.8	18.4	15.1	13.3	8.1
Dec	75.1	87.8	33	30	25.8	1996	30	123.7+	1981	115	1996	31	79	1996	14.8	12.7	8.1	4.7	1.9	-9.9	-9.9	-9.9	-9.9
Ann	260.8	251.2	N/A	N/A	25.8	Dec 1996	30	123.7+	Dec 1981	115	Dec 1996	31	95	Feb 1997	59.7	49.6	30.1	17.9	6.0	-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/normals/usnormals.html

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: HOLDEN VILLAGE, WA **COOP ID: 453730**

Climate Division: WA 6 **NWS Call Sign:** **Elevation: 3,220 Feet** **Lat: 48˚12N** **Lon: 120˚47W**

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	8/03	7/26	7/21	7/16	7/12	7/07	7/03	6/27	6/20
32	7/09	7/01	6/26	6/21	6/17	6/12	6/08	6/02	5/26
28	6/11	6/04	5/30	5/26	5/22	5/18	5/14	5/09	5/02
24	5/15	5/09	5/04	4/30	4/27	4/23	4/20	4/15	4/09
20	4/27	4/21	4/16	4/13	4/09	4/05	4/02	3/28	3/22
16	4/12	4/05	3/31	3/26	3/22	3/17	3/13	3/07	2/28

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	8/06	8/11	8/14	8/17	8/20	8/23	8/26	8/30	9/03
32	8/21	8/26	8/31	9/03	9/06	9/10	9/13	9/17	9/23
28	9/08	9/14	9/19	9/22	9/26	9/29	10/03	10/08	10/14
24	9/24	9/30	10/05	10/09	10/12	10/16	10/19	10/24	10/30
20	10/16	10/22	10/26	10/29	11/01	11/04	11/07	11/11	11/16
16	10/24	10/31	11/05	11/09	11/12	11/16	11/20	11/25	12/01

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	67	57	50	44	39	33	27	20	10
32	108	99	92	86	81	76	70	63	54
28	153	144	137	131	126	121	115	109	100
24	196	186	179	173	167	162	156	148	139
20	229	221	215	210	205	201	196	190	182
16	262	253	246	240	235	229	224	217	208

***** 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/normals/usnormals.html

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: HOLDEN VILLAGE, WA **COOP ID: 453730**

Climate Division: WA 6 **NWS Call Sign:** **Elevation: 3,220 Feet** **Lat: 48˚12N** **Lon: 120˚47W**

Degree Days to Selected Base Temperatures (˚F)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1327	1083	995	754	532	325	181	166	368	706	1056	1331	8824
60	1172	943	840	604	379	193	88	71	237	551	906	1176	7160
57	1079	859	747	514	290	128	47	34	171	458	816	1083	6226
55	1017	803	685	454	234	93	29	19	133	398	756	1021	5642
50	862	663	530	307	118	30	7	3	61	253	606	866	4306
32	343	193	84	9	0	0	0	0	0	5	139	332	1105

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	39	35	112	245	491	669	871	879	628	323	72	25	4389
55	0	0	0	0	12	71	186	184	71	2	0	0	526
57	0	0	0	0	6	47	143	138	49	1	0	0	384
60	0	0	0	0	1	21	91	82	25	0	0	0	220
65	0	0	0	0	0	4	29	22	6	0	0	0	61
70	0	0	0	0	0	0	7	3	0	0	0	0	10

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	0	4	69	264	440	633	642	404	133	3	0	0	0	4	73	337	777	1410	2052	2456	2589	2592	2592
45	0	0	0	17	134	290	478	487	262	54	0	0	0	0	0	17	151	441	919	1406	1668	1722	1722	1722
50	0	0	0	1	58	163	326	334	151	17	0	0	0	0	0	1	59	222	548	882	1033	1050	1050	1050
55	0	0	0	0	19	70	190	194	64	1	0	0	0	0	0	0	19	89	279	473	537	538	538	538
60	0	0	0	0	2	22	87	90	17	0	0	0	0	0	0	0	2	24	111	201	218	218	218	218
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	0	12	69	197	285	416	423	289	112	0	0	0	0	12	81	278	563	979	1402	1691	1803	1803	1803

(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.
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