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: QUILLAYUTE AP, WA **COOP ID: 456858**

Climate Division: WA 1 **NWS Call Sign: UIL** **Elevation: 179 Feet** **Lat: 47˚56N** **Lon: 124˚34W**

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	46.6	34.6	40.6	65+	1986	12	45.5	1981	7	1969	23	35.5	1979	758	0	.0	.0	9.0	.4	12.5	.0
Feb	49.2	35.1	42.2	73	1992	26	46.0	1992	11	1989	2	35.3	1989	646	0	.0	.0	13.2	.3	9.9	.0
Mar	51.8	35.7	43.8	72	1994	27	48.0	1992	19+	1989	3	39.3	1971	642	0	.0	.0	20.8	.0	9.2	.0
Apr	55.7	37.6	46.7	83	1987	26	50.5	1989	23	1999	1	42.5	1972	548	0	.0	.0	26.2	.0	5.3	.0
May	60.4	41.9	51.2	92	1987	7	54.9	1993	29	1977	12	47.9	1974	421	1	.0	.1	30.8	.0	.4	.0
Jun	63.8	46.0	54.9	96	1982	18	58.2	1978	33+	1976	2	52.0	1971	296	3	.0	.2	30.0	.0	.0	.0
Jul	68.2	49.0	58.6	97	1988	19	60.6	1990	38+	2000	14	56.5	1977	193	7	.0	.4	31.0	.0	.0	.0
Aug	69.3	49.2	59.3	99	1981	9	60.9	1996	36+	1985	26	54.9	1973	174	8	.0	.4	31.0	.0	.0	.0
Sep	67.3	45.7	56.5	97	1988	2	60.1	1974	28	1972	27	52.2	1972	250	4	.0	.1	30.0	.0	.2	.0
Oct	59.2	40.9	50.1	83	1988	1	53.2	1988	24+	1984	31	47.7	1990	460	0	.0	.0	30.3	.0	3.2	.0
Nov	50.8	37.5	44.2	69	1976	3	48.2	1987	5	1985	23	35.4	1985	626	0	.0	.0	19.5	.3	7.6	.0
Dec	46.5	34.6	40.6	64	1969	2	44.8	1979	7	1972	8	35.7	1983	762	0	.0	.0	10.1	.9	12.9	.0
Ann	57.4	40.7	49.1	99	Aug 1981	9	60.9	Aug 1996	5	Nov 1985	23	35.3	Feb 1989	5776	23	.0	1.2	281.9	1.9	61.2	.0

\+ 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: 1966-2001

(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	13.65	14.20	7.16	1968	18	23.99	1992	1.13	1985
Feb	12.35	11.81	5.07	1982	13	26.20	1999	.87	1993
Mar	10.98	9.97	4.00	1974	15	21.86	1974	1.84	1992
Apr	7.44	6.65	2.63	1988	5	13.90	1992	2.94	1973
May	5.51	4.70	3.52	1973	23	12.45	1974	1.05	1972
Jun	3.50	2.93	2.74	1997	16	8.83	1997	1.26	1998
Jul	2.34	1.62	5.35	1983	11	11.02	1983	.36	1985
Aug	2.67	1.46	4.29	1991	8	15.07	1991	.17	1998
Sep	4.15	3.75	3.25	1968	16	12.82	1997	.12	1991
Oct	9.81	9.40	4.87	1975	16	27.17	1975	1.37	1987
Nov	14.82	14.19	5.28	1991	19	29.14	1983	4.41	1976
Dec	14.50	13.93	6.71	1972	25	27.82	1979	3.63	1985
Ann	101.72	102.06	7.16	Jan 1968	18	29.14	Nov 1983	.12	Sep 1991

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	22.1	17.9	9.2	4.5
Feb	19.5	16.0	8.8	3.8
Mar	21.3	16.7	8.3	3.1
Apr	19.1	13.9	5.4	1.7
May	17.0	10.7	3.7	1.1
Jun	14.5	7.5	2.1	.6
Jul	11.7	4.5	1.1	.4
Aug	9.8	4.1	1.5	.7
Sep	11.3	6.9	2.9	1.2
Oct	17.5	12.9	6.9	3.4
Nov	22.3	18.5	10.2	4.6
Dec	22.3	18.1	9.8	4.8
Ann	208.4	147.7	69.9	29.9

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	4.20	5.50	7.43	9.09	10.70	12.36	14.20	16.36	19.14	23.48	27.50
Feb	3.92	5.09	6.83	8.31	9.75	11.23	12.86	14.77	17.23	21.06	24.60
Mar	4.75	5.74	7.12	8.24	9.30	10.36	11.51	12.82	14.48	17.01	19.29
Apr	3.04	3.72	4.69	5.48	6.22	6.98	7.80	8.74	9.93	11.75	13.41
May	1.27	1.79	2.59	3.32	4.04	4.80	5.66	6.68	8.03	10.17	12.18
Jun	1.12	1.45	1.94	2.36	2.77	3.18	3.64	4.18	4.87	5.95	6.95
Jul	.23	.40	.71	1.04	1.39	1.79	2.26	2.85	3.66	5.00	6.32
Aug	.15	.30	.62	.98	1.39	1.87	2.46	3.22	4.28	6.08	7.89
Sep	.24	.47	.97	1.53	2.17	2.92	3.84	5.01	6.66	9.46	12.25
Oct	2.26	3.17	4.61	5.90	7.18	8.55	10.07	11.90	14.30	18.11	21.69
Nov	5.66	7.04	9.01	10.65	12.20	13.79	15.51	17.50	20.03	23.93	27.48
Dec	6.33	7.63	9.44	10.92	12.31	13.70	15.20	16.92	19.10	22.39	25.38
Ann	72.09	77.81	85.16	90.73	95.69	100.48	105.43	110.91	117.55	127.18	135.52

+ 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: 1966-2001
(3) Derived from 1971-2000 serially complete daily data

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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	3.9	.3	#	0	7.0	1971	12	26.4	1971	16	1971	14	2+	1982	2.6	1.2	.4	.1	.0	2.1	1.2	.7	.1
Feb	3.0	.8	#	0	7.1	1971	26	16.1	1990	7	1971	27	1	1990	2.0	1.0	.3	.1	.0	1.0	.2	.1	.0
Mar	1.6	.1	#	0	7.5	1989	1	10.2	1971	7	1989	2	#	1994	1.2	.5	.2	.1	.0	.5	.2	.1	.0
Apr	.3	.0	0	0	2.1	1975	3	2.8	1975	#+	1982	18	0	0	.7	.1	.0	.0	.0	.0	.0	.0	.0
May	#	.0	#	0	#	1988	1	#+	1988	0	0	0	#	1996	.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	#	1972	22	#	1972	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	#	.0	0	0	#	1996	22	#+	1996	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	1.2	#	#	0	7.7	1985	21	15.6	1985	6	1985	22	1	1985	.9	.5	@	@	.0	.5	.1	@	.0
Dec	2.7	.9	#	0	7.3	1981	31	11.6	1972	6	1972	6	1+	1980	1.8	.8	.3	.1	.0	1.2	.6	.2	.0
Ann	12.7	2.1	N/A	N/A	7.7	Nov 1985	21	26.4	Jan 1971	16	Jan 1971	14	2+	Jan 1982	9.2	4.1	1.2	.4	.0	5.3	2.3	1.1	.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	6/16	6/09	6/04	5/30	5/26	5/22	5/18	5/13	5/06
32	5/19	5/11	5/05	4/30	4/26	4/21	4/16	4/11	4/03
28	4/27	4/16	4/08	4/01	3/26	3/20	3/13	3/05	2/22
24	3/25	3/14	3/06	2/27	2/21	2/14	2/08	1/31	1/20
20	2/17	2/05	1/26	1/18	1/10	12/31	12/19	0/00	0/00
16	2/03	1/20	1/08	12/19	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	9/05	9/12	9/17	9/21	9/25	9/29	10/03	10/08	10/14
32	9/28	10/04	10/09	10/13	10/16	10/20	10/24	10/28	11/03
28	10/15	10/25	11/02	11/08	11/14	11/19	11/25	12/03	12/13
24	11/05	11/17	11/25	12/02	12/09	12/16	12/23	12/31	1/12
20	11/28	12/11	12/21	12/29	1/07	1/18	2/02	0/00	0/00
16	12/17	12/31	1/15	0/00	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	155	143	135	128	121	114	107	98	86
32	208	196	187	180	173	166	158	150	138
28	274	260	249	240	232	223	214	204	189
24	339	321	308	298	289	280	270	259	243
20	>365	>365	>365	>365	>365	345	331	319	304
16	>365	>365	>365	>365	>365	>365	>365	>365	340

***** 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)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	758	646	642	548	421	296	193	174	250	460	626	762	5776
60	603	500	503	401	274	158	66	62	130	309	477	604	4087
57	510	416	410	311	187	86	21	21	75	219	387	511	3154
55	448	360	348	252	134	51	7	8	46	164	331	449	2598
50	302	228	206	121	42	6	0	0	9	58	197	302	1471
32	12	3	0	0	0	0	0	0	0	0	3	11	29

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	273	287	367	443	602	697	837	856	743	562	365	272	6304
55	0	0	0	4	22	47	129	146	83	12	0	0	443
57	0	0	0	2	12	25	79	93	50	5	0	0	266
60	0	0	0	0	5	11	32	39	20	1	0	0	108
65	0	0	0	0	1	3	7	8	4	0	0	0	23
70	0	0	0	0	0	1	1	2	0	0	0	0	4

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	88	107	138	214	363	467	596	617	514	327	153	87	88	195	333	547	910	1377	1973	2590	3104	3431	3584	3671
45	28	34	39	87	209	317	441	462	364	179	60	30	28	62	101	188	397	714	1155	1617	1981	2160	2220	2250
50	0	2	0	23	79	170	286	307	214	65	13	0	0	2	2	25	104	274	560	867	1081	1146	1159	1159
55	0	0	0	2	26	54	137	152	88	11	0	0	0	0	0	2	28	82	219	371	459	470	470	470
60	0	0	0	0	3	14	34	45	26	0	0	0	0	0	0	0	3	17	51	96	122	122	122	122
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	10	31	54	100	172	221	314	335	283	155	46	9	10	41	95	195	367	588	902	1237	1520	1675	1721	1730

(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