

Climatography of the United States

No. 20

1971-2000

Station: GLENOMA, WA

COOP ID: 453177

Climate Division: WA 4

NWS Call Sign:

Elevation: 840 Feet

Lat: 46° 31N

Lon: 122° 08W

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	44.1	30.9	37.5	68	1984	31	45.7	1981	4	1982	6	32.6	1980	853	0	.0	.0	7.4	.7	17.7	.0
Feb	48.8	32.3	40.6	78	1986	28	45.7	1992	2	1989	3	34.0	1989	684	0	.0	.0	12.6	.4	14.0	.0
Mar	53.0	34.4	43.7	76+	1986	21	47.9	1986	11	1971	1	38.6	1971	661	0	.0	.0	21.4	.0	11.7	.0
Apr	58.4	37.2	47.8	90	1987	27	51.1	1987	24+	1985	21	43.1	1975	515	0	.0	@	26.0	.0	5.5	.0
May	64.9	42.5	53.7	103	1983	29	57.9	1993	28+	1992	12	50.1+	1999	350	1	@	.4	30.2	.0	.9	.0
Jun	70.4	46.8	58.6	100	1982	19	62.1	1992	30	1976	3	54.7	1971	199	8	@	.8	30.0	.0	@	.0
Jul	76.7	50.2	63.5	102	1988	20	67.5	1985	38+	1996	6	59.6	1993	89	41	.1	2.8	31.0	.0	.0	.0
Aug	77.7	49.5	63.6	104	1981	10	67.5	1986	34+	1967	1	60.2	1995	90	47	.3	2.9	31.0	.0	.0	.0
Sep	72.3	44.9	58.6	108	1988	3	63.2	1974	27	1970	13	54.4	1972	205	14	.1	1.0	30.0	.0	.5	.0
Oct	61.6	38.6	50.1	99	1987	2	55.1	1987	20	1995	31	47.4	1984	461	0	.0	.2	29.3	.0	5.3	.0
Nov	49.3	34.8	42.1	77	1987	6	46.7	1987	6	1993	24	33.6	1985	689	0	.0	.0	16.2	.1	10.1	.0
Dec	43.9	31.0	37.5	65	1988	4	42.2	1979	-2	1972	8	29.5	1990	854	0	.0	.0	7.6	1.0	17.6	.1
Ann	60.1	39.4	49.8	108	Sep 1988	3	67.5+	Aug 1986	-2	Dec 1972	8	29.5	Dec 1990	5650	111	.5	8.1	272.7	2.2	83.3	.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: 1966-2001

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

037-A

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No. 20 1971-2000

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

Station: GLENOMA, WA

COOP ID: 453177

Climate Division: WA 4

NWS Call Sign:

Elevation: 840 Feet Lat: 46°31N

Lon: 122°08W

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	9.39	9.18	2.89	1982	23	16.95	1975	.69	1985	20.6	15.9	6.6	2.5	2.48	3.37	4.73	5.92	7.10	8.33	9.71	11.33	13.45	16.78	19.90
Feb	7.44	6.67	3.65	1996	8	14.84	1996	.14	1993	18.5	13.5	5.3	1.5	1.89	2.59	3.67	4.63	5.57	6.57	7.68	8.99	10.71	13.42	15.96
Mar	6.60	6.07	1.99	1977	28	14.05	1997	1.29	1992	20.3	15.1	4.1	.9	2.68	3.28	4.14	4.84	5.51	6.18	6.91	7.75	8.82	10.45	11.93
Apr	5.40	5.05	3.10	1991	5	9.89	1991	2.41	1998	18.7	13.4	3.3	.7	2.51	2.99	3.64	4.16	4.65	5.14	5.66	6.26	7.01	8.15	9.17
May	3.89	3.84	1.58	1991	8	8.34	1984	1.16	1992	16.7	10.9	2.0	.2	1.40	1.77	2.30	2.74	3.16	3.59	4.06	4.61	5.31	6.39	7.38
Jun	3.02	2.88	2.62	1974	5	8.66	1981	.93	1979	11.8	7.7	1.6	.3	.93	1.21	1.64	2.01	2.36	2.73	3.14	3.62	4.24	5.20	6.09
Jul	1.32	1.16	1.55	1966	3	5.58	1983	.02+	1984	6.6	3.3	.9	.2	.06	.13	.28	.46	.66	.90	1.20	1.58	2.12	3.05	3.98
Aug	1.42	1.06	1.66	1977	24	4.96	1976	.00	1998	6.4	3.5	.9	.2	.04	.14	.34	.54	.77	1.03	1.34	1.74	2.29	3.21	4.13
Sep	3.03	3.51	1.95	2000	30	5.96	1972	.07	1993	10.0	6.3	2.0	.5	.26	.47	.88	1.30	1.76	2.28	2.91	3.69	4.78	6.58	8.36
Oct	5.08	3.98	2.90	1994	27	10.78	1996	.23	1987	14.0	10.5	3.2	1.1	.98	1.44	2.19	2.87	3.57	4.31	5.16	6.18	7.54	9.71	11.77
Nov	10.07	9.98	4.19	1999	24	16.06	1988	2.34	1976	21.1	16.9	8.2	2.5	3.86	4.80	6.14	7.25	8.30	9.38	10.54	11.89	13.60	16.24	18.64
Dec	10.49	8.87	5.39	1977	2	20.63	1977	2.21	1985	21.1	16.6	7.8	3.0	3.88	4.86	6.27	7.45	8.57	9.72	10.97	12.41	14.26	17.10	19.70
Ann	67.15	66.60	5.39	Dec 1977	2	20.63	Dec 1977	.00	Aug 1998	185.8	133.6	45.9	13.6	47.66	51.43	56.26	59.93	63.18	66.33	69.59	73.18	77.55	83.88	89.35

+ 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: 1966-2001

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

Complete documentation available from:
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Station: GLENOMA, WA

COOP ID: 453177

Climate Division: WA 4

NWS Call Sign:

Elevation: 840 Feet

Lat: 46°31N

Lon: 122°08W

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	7.1	2.8	1	#	26.0	1980	9	54.8	1980	34	1980	10	9	1980	2.3	1.9	1.0	.4	.1	2.7	1.6	1.2	.3
Feb	3.3	1.0	1	#	13.0	1990	16	22.0	1985	24	1990	16	5	1990	1.6	1.4	.6	.2	.1	1.8	1.0	.6	.2
Mar	1.3	.0	#	0	6.0	1971	4	8.5	1971	8	1971	4	1	1971	.8	.5	.1	@	.0	.6	.3	.1	.0
Apr	.4	.0	#	0	3.0	1972	17	3.0	1972	3	1972	17	#+	1983	.2	.2	@	.0	.0	.1	@	.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	0	0	.0	0	#+	1972	28	#+	1972	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	1.3	.0	#	0	13.5	1985	22	20.0	1985	16	1985	22	4	1985	.5	.4	.1	.1	@	.9	.4	.4	.3
Dec	3.1	1.2	1	0	7.0	1972	12	16.1	1972	10+	1985	2	7	1985	1.4	1.1	.3	.2	.0	2.4	1.2	.6	.1
Ann	16.5	5.0	N/A	N/A	26.0	Jan 1980	9	54.8	Jan 1980	34	Jan 1980	10	9	Jan 1980	6.8	5.5	2.1	.9	.2	8.5	4.5	2.9	.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:

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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	6/13	6/07	6/02	5/29	5/25	5/22	5/18	5/13	5/06
32	5/24	5/18	5/13	5/09	5/05	5/01	4/27	4/22	4/15
28	5/01	4/24	4/19	4/14	4/10	4/05	4/01	3/26	3/19
24	3/28	3/15	3/05	2/25	2/18	2/10	2/02	1/23	1/10
20	2/27	2/15	2/06	1/30	1/22	1/15	1/06	12/25	0/00
16	2/18	2/04	1/24	1/13	1/02	12/16	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	9/01	9/09	9/15	9/19	9/24	9/28	10/03	10/09	10/17
32	9/22	9/27	10/02	10/05	10/08	10/12	10/15	10/19	10/25
28	10/06	10/14	10/20	10/25	10/29	11/03	11/08	11/14	11/22
24	11/05	11/15	11/22	11/28	12/04	12/10	12/16	12/23	1/02
20	11/14	11/26	12/05	12/13	12/20	12/28	1/06	1/18	0/00
16	12/03	12/17	12/28	1/08	1/21	2/12	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	151	141	133	127	121	115	108	101	90
32	182	173	167	161	156	150	145	138	129
28	236	224	216	209	202	195	188	180	168
24	343	322	309	298	287	277	267	254	237
20	>365	>365	>365	348	333	321	310	298	283
16	>365	>365	>365	>365	>365	>365	357	332	310

* 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	853	684	661	515	350	199	89	90	205	461	689	854	5650
60	698	544	506	365	205	87	21	23	98	308	539	699	4093
57	605	460	413	277	132	43	6	8	53	223	449	606	3275
55	543	404	353	222	93	23	2	3	32	172	392	544	2783
50	395	271	212	104	26	3	0	0	6	73	257	394	1741
32	38	10	2	0	0	0	0	0	0	0	11	33	94

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	208	250	364	475	673	798	975	980	799	562	312	202	6598
55	0	0	2	7	53	132	264	270	140	21	4	0	893
57	0	0	0	2	31	91	206	212	102	10	0	0	654
60	0	0	0	0	11	46	128	135	56	2	0	0	378
65	0	0	0	0	1	8	41	47	14	0	0	0	111
70	0	0	0	0	0	0	6	8	2	0	0	0	16

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	48	92	155	259	443	570	735	747	578	338	122	51	48	140	295	554	997	1567	2302	3049	3627	3965	4087	4138
45	9	30	56	134	291	420	580	592	429	192	42	5	9	39	95	229	520	940	1520	2112	2541	2733	2775	2780
50	0	5	13	58	158	272	425	437	281	83	5	0	0	5	18	76	234	506	931	1368	1649	1732	1737	1737
55	0	1	0	21	72	141	272	282	148	27	0	0	0	1	1	22	94	235	507	789	937	964	964	964
60	0	0	0	3	30	59	142	143	63	9	0	0	0	0	0	3	33	92	234	377	440	449	449	449
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	16	45	88	152	248	325	441	454	355	205	50	13	16	61	149	301	549	874	1315	1769	2124	2329	2379	2392

(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