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: HARRINGTON 1 NW, WA **COOP ID: 453515**

Climate Division: WA 7 **NWS Call Sign:** **Elevation: 2,190 Feet** **Lat: 47˚29N** **Lon: 118˚15W**

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	32.3	20.1	26.2	57	1971	30	34.8	1981	-24	1969	31	11.5	1979	1202	0	.0	.0	.3	14.2	27.9	2.1
Feb	39.3	24.8	32.1	62	1995	20	40.7	1991	-24	1996	1	21.6	1985	923	0	.0	.0	2.9	5.7	23.3	1.1
Mar	49.5	29.4	39.5	71+	1999	20	45.0	1992	-1	1989	3	33.1	1985	792	0	.0	.0	14.8	.5	21.6	.0
Apr	59.1	32.7	45.9	89	1977	24	50.4	1987	15+	1968	13	41.1	1972	572	0	.0	.0	27.1	.0	15.0	.0
May	67.3	38.4	52.9	95	1986	30	58.5	1993	17	1996	8	48.2	1996	379	2	.0	.2	30.8	.0	6.9	.0
Jun	74.9	43.7	59.3	99	1992	23	65.1	1992	24	1991	4	55.0	1991	197	26	.0	1.5	30.0	.0	1.3	.0
Jul	83.2	48.0	65.6	102	1968	6	70.6	1985	27	1981	8	60.1	1993	73	90	.4	8.1	31.0	.0	.3	.0
Aug	83.2	47.9	65.6	103	1972	8	69.6	1977	28	1993	25	60.2	1995	83	100	.3	7.7	31.0	.0	.4	.0
Sep	73.7	41.0	57.4	98	1988	3	62.7	1990	19	2000	23	51.9	1972	257	27	.0	1.1	30.0	.0	3.5	.0
Oct	59.8	32.4	46.1	86	1980	6	52.3	1988	9	1971	29	42.8	1984	586	0	.0	.0	26.8	.1	15.4	.0
Nov	41.7	27.1	34.4	65+	1999	14	41.5	1999	-20	1985	23	19.7	1985	919	0	.0	.0	5.5	4.0	21.7	.3
Dec	32.6	20.4	26.5	57	1980	26	33.5	1980	-23	1978	30	17.1	1983	1195	0	.0	.0	.4	14.2	27.6	2.0
Ann	58.1	33.8	46.0	103	Aug 1972	8	70.6	Jul 1985	-24+	Feb 1996	1	11.5	Jan 1979	7178	245	.7	18.6	230.6	38.7	164.9	5.5

\+ 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: 1961-2001

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

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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	1.32	1.33	.67	1976	4	2.91	1995	.37	1985
Feb	1.19	1.18	.92	1970	16	2.18	1983	.11	1988
Mar	1.25	1.26	.99	1995	9	2.88	1995	.18	1994
Apr	.99	.96	.89	1982	11	2.17	1978	.04	1977
May	1.29	1.29	.91	1988	28	2.82	1980	.13	1982
Jun	.95	.74	1.11	1999	25	2.40	1982	.07	1989
Jul	.66	.44	1.29	1990	25	3.20	1993	.00	1988
Aug	.49	.28	.60	1987	14	1.62	1979	.00+	2000
Sep	.62	.63	.86+	1995	7	1.71	1982	.00+	1999
Oct	.88	.74	.83	1994	27	2.98	1996	.00	1987
Nov	1.69	1.55	1.08	1968	11	5.00	1973	.16	1990
Dec	1.83	1.80	1.09	1966	13	3.96	1973	.38	1976
Ann	13.16	13.16	1.29	Jul 1990	25	5.00	Nov 1973	.00+	Aug 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	9.3	4.9	.2	.0
Feb	8.6	4.3	.1	.0
Mar	9.0	4.0	.4	.0
Apr	7.3	3.4	.3	.0
May	7.7	3.7	.7	.0
Jun	5.8	2.8	.5	.1
Jul	4.3	2.2	.3	@
Aug	3.6	1.5	.3	.0
Sep	4.2	2.1	.1	.0
Oct	5.7	2.8	.2	.0
Nov	10.7	5.8	.4	.0
Dec	10.4	6.5	.6	@
Ann	86.6	44.0	4.1	.1

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	.44	.57	.75	.91	1.06	1.21	1.38	1.57	1.82	2.21	2.57
Feb	.32	.44	.61	.76	.91	1.06	1.23	1.43	1.70	2.11	2.50
Mar	.32	.44	.62	.78	.94	1.11	1.29	1.51	1.80	2.25	2.68
Apr	.23	.32	.46	.59	.72	.86	1.01	1.19	1.44	1.82	2.18
May	.37	.49	.68	.84	.99	1.16	1.34	1.55	1.83	2.26	2.67
Jun	.18	.26	.40	.53	.66	.81	.97	1.16	1.42	1.83	2.23
Jul	.01	.05	.13	.23	.33	.46	.61	.80	1.08	1.55	2.01
Aug	.00	.00	.08	.16	.25	.35	.46	.61	.81	1.15	1.48
Sep	.00	.00	.11	.23	.35	.47	.61	.79	1.03	1.42	1.80
Oct	.03	.09	.21	.34	.48	.64	.84	1.08	1.42	1.99	2.55
Nov	.33	.48	.73	.96	1.19	1.44	1.72	2.06	2.51	3.23	3.92
Dec	.46	.63	.90	1.14	1.37	1.62	1.89	2.22	2.64	3.32	3.95
Ann	9.17	9.94	10.92	11.68	12.35	13.00	13.67	14.41	15.32	16.63	17.77

\+ 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: 1961-2001
(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	8.1	8.0	4	2	8.3	1976	4	17.0	1996	25	1993	19	18	1993	5.2	3.3	.7	.1	.0	17.0	12.4	8.9	3.5
Feb	4.5	4.3	2	#	6.2	1986	15	14.0	1990	19	1985	11	16	1985	3.8	1.9	.3	.1	.0	6.9	5.2	4.2	2.2
Mar	1.3	1.0	#	0	2.8	1975	17	4.3	1985	14	1985	1	9	1985	1.6	.5	.0	.0	.0	1.5	1.0	.7	.3
Apr	.3	.0	#	0	2.0	1975	5	3.0	1975	#+	1998	13	#+	1998	.4	.1	.0	.0	.0	.0	.0	.0	.0
May	#	.0	0	0	#	1986	11	#+	1986	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	.2	.0	#	0	1.1	1971	30	1.1	1971	1	1971	31	#+	1999	.2	.1	.0	.0	.0	.1	.0	.0	.0
Nov	3.8	2.1	#	#	6.3	1973	4	20.6	1973	9	1985	30	4	1985	3.1	1.7	.3	.1	.0	3.4	1.5	.9	.0
Dec	8.8	7.0	2	1	5.3	1981	15	27.6	1971	17+	1992	31	8	1971	6.1	4.2	.9	.1	.0	13.9	9.2	5.7	1.1
Ann	27.0	22.4	N/A	N/A	8.3	Jan 1976	4	27.6	Dec 1971	25	Jan 1993	19	18	Jan 1993	20.4	11.8	2.2	.4	.0	42.8	29.3	20.4	7.1

+ 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	7/26	7/19	7/14	7/10	7/06	7/02	6/27	6/22	6/15
32	7/09	7/02	6/26	6/22	6/17	6/13	6/08	6/03	5/26
28	6/11	6/02	5/27	5/22	5/17	5/12	5/07	5/01	4/22
24	5/24	5/15	5/09	5/03	4/28	4/23	4/17	4/10	4/01
20	5/02	4/19	4/09	4/01	3/24	3/16	3/08	2/26	2/13
16	3/18	3/08	2/28	2/22	2/16	2/10	2/04	1/27	1/17

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	8/12	8/18	8/22	8/25	8/29	9/01	9/04	9/08	9/14
32	8/21	8/28	9/03	9/08	9/12	9/16	9/21	9/27	10/04
28	9/08	9/14	9/18	9/22	9/25	9/29	10/02	10/07	10/13
24	9/19	9/26	10/01	10/05	10/10	10/14	10/18	10/23	10/30
20	10/02	10/10	10/15	10/20	10/25	10/29	11/03	11/09	11/16
16	10/11	10/23	11/01	11/08	11/15	11/21	11/29	12/07	12/19

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	75	67	62	57	53	49	44	39	32
32	117	106	99	92	86	80	73	65	55
28	162	151	143	137	130	124	117	110	99
24	204	190	180	172	164	156	148	138	124
20	268	250	236	225	214	203	192	178	160
16	318	302	290	280	271	261	251	240	223

***** 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)

Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1202	923	792	572	379	197	73	83	257	586	919	1195	7178
60	1047	783	637	422	236	100	20	28	150	431	769	1040	5663
57	954	699	544	335	163	58	8	13	100	340	679	947	4840
55	892	643	482	279	122	37	3	6	72	280	619	885	4320
50	741	511	335	155	47	9	0	1	25	148	480	731	3183
32	274	135	23	0	0	0	0	0	0	1	111	260	804

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	95	136	253	418	647	819	1041	1040	760	439	182	89	5919
55	0	0	0	7	56	166	331	333	143	4	0	0	1040
57	0	0	0	3	35	127	274	278	110	2	0	0	829
60	0	0	0	0	15	79	193	200	71	0	0	0	558
65	0	0	0	0	2	26	90	100	27	0	0	0	245
70	0	0	0	0	0	6	27	34	8	0	0	0	75

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	2	15	66	206	419	596	815	809	533	225	32	2	2	17	83	289	708	1304	2119	2928	3461	3686	3718	3720
45	0	0	18	103	272	446	660	654	387	116	8	0	0	0	18	121	393	839	1499	2153	2540	2656	2664	2664
50	0	0	0	43	149	302	505	499	254	45	0	0	0	0	0	43	192	494	999	1498	1752	1797	1797	1797
55	0	0	0	10	67	174	352	346	135	13	0	0	0	0	0	10	77	251	603	949	1084	1097	1097	1097
60	0	0	0	1	24	80	210	209	59	2	0	0	0	0	0	1	25	105	315	524	583	585	585	585
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	4	45	152	280	394	523	522	366	167	11	0	0	4	49	201	481	875	1398	1920	2286	2453	2464	2464

(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