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: WELLPINIT, WA **COOP ID: 459058**

Climate Division: WA 9 **NWS Call Sign:** **Elevation: 2,490 Feet** **Lat: 47˚54N** **Lon: 118˚00W**

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	33.0	20.9	27.0	56	1971	29	33.4	1994	-22+	1996	31	13.9	1979	1180	0	.0	.0	.2	13.8	29.6	1.3
Feb	39.3	24.6	32.0	64	1988	28	39.4	1987	-25	1996	1	20.6	1989	926	0	.0	.0	2.5	6.7	24.0	.8
Mar	48.9	29.7	39.3	72+	1994	31	46.1	1986	2+	1989	2	33.5	1990	796	0	.0	.0	14.6	.7	20.4	.0
Apr	58.9	35.4	47.2	88+	1987	28	54.9	1987	15	1966	19	41.2	1990	536	0	.0	.0	25.8	.0	11.1	.0
May	67.6	42.3	55.0	98+	1986	31	60.5	1987	20	2001	21	48.3	1991	325	13	.0	.4	30.7	.0	2.9	.0
Jun	74.9	48.2	61.6	98+	1999	15	69.0	1986	23	1991	4	56.3	1991	159	56	.0	1.3	30.0	.0	.4	.0
Jul	84.3	53.4	68.9	104+	1994	23	77.7	1985	31+	2001	18	61.6	1993	64	183	.8	8.9	31.0	.0	.0	.0
Aug	84.7	53.2	69.0	105+	1961	5	74.3	1971	33	1965	29	61.5	1995	52	174	.3	9.2	31.0	.0	.0	.0
Sep	73.9	45.4	59.7	104+	1988	6	66.0	1987	20+	2000	23	52.9	1972	219	58	.1	1.2	29.7	.0	1.0	.0
Oct	59.3	35.7	47.5	84	1992	1	54.0	1988	12	1971	29	41.9	1995	545	1	.0	.0	25.8	.1	11.4	.0
Nov	41.0	28.7	34.9	65	1975	4	41.7	1987	0+	1959	16	27.5	1985	903	0	.0	.0	3.9	4.5	23.0	@
Dec	32.4	21.6	27.0	53	1980	26	32.7	1979	-29	1968	30	19.9	1990	1178	0	.0	.0	.2	16.2	28.7	.9
Ann	58.2	36.6	47.4	105+	Aug 1961	5	77.7	Jul 1985	-29	Dec 1968	30	13.9	Jan 1979	6883	485	1.2	21.0	225.4	42.0	152.5	3.0

\+ 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: 1948-2001

(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	1.90	1.99	1.33	1987	31	3.23	1980	.16	1985
Feb	1.84	1.63	1.51	1996	20	4.81+	1999	.13	1993
Mar	1.81	1.86	1.43	1995	9	4.43	1983	.24	1985
Apr	1.50	1.46	2.50	1964	16	3.53	1978	.00	1985
May	1.86	1.76	1.73	1957	19	4.36	1998	.47+	1992
Jun	1.49	1.52	2.02	1999	25	3.53	1984	.10	1986
Jul	.95	.64	1.30	1974	9	3.13	1993	.00+	1988
Aug	.72	.47	1.51	1978	16	3.55	1976	.00+	2000
Sep	.84	.75	1.33	1986	23	2.77	1986	.00+	1999
Oct	1.23	1.09	1.43	1962	14	4.25	1996	.00+	1988
Nov	2.67	2.48	1.78	1967	29	6.19	1983	.43	1976
Dec	2.91	2.44	2.33	1996	1	9.25	1996	.57	1976
Ann	19.72	18.88	2.50	Apr 1964	16	9.25	Dec 1996	.00+	Aug 2000

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.2	4.3	1.0	.2
Feb	6.2	4.0	1.0	.2
Mar	7.0	4.0	1.2	.3
Apr	6.7	3.8	.9	.1
May	7.2	4.4	1.0	.2
Jun	6.1	3.5	.7	.2
Jul	4.8	2.5	.5	@
Aug	3.0	1.7	.4	.1
Sep	3.9	2.5	.4	.1
Oct	5.1	2.9	.9	@
Nov	8.2	5.2	1.4	.3
Dec	7.9	5.4	1.8	.5
Ann	72.3	44.2	11.2	2.2

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	.54	.72	.99	1.23	1.46	1.70	1.97	2.29	2.69	3.33	3.93
Feb	.27	.42	.69	.94	1.21	1.50	1.83	2.25	2.80	3.70	4.57
Mar	.32	.48	.75	1.00	1.25	1.52	1.83	2.21	2.71	3.52	4.30
Apr	.21	.40	.66	.87	1.08	1.30	1.55	1.84	2.23	2.85	3.43
May	.66	.83	1.09	1.30	1.50	1.71	1.94	2.21	2.54	3.07	3.55
Jun	.22	.34	.56	.76	.98	1.21	1.48	1.82	2.26	2.99	3.69
Jul	.00	.00	.23	.39	.56	.74	.95	1.20	1.54	2.09	2.63
Aug	.00	.00	.03	.14	.27	.43	.62	.88	1.23	1.85	2.48
Sep	.00	.01	.06	.15	.27	.44	.66	.96	1.41	2.22	3.07
Oct	.00	.08	.28	.46	.67	.90	1.17	1.51	1.98	2.77	3.55
Nov	.66	.91	1.30	1.65	1.99	2.35	2.75	3.23	3.86	4.85	5.78
Dec	.47	.72	1.14	1.54	1.95	2.41	2.92	3.55	4.40	5.77	7.08
Ann	13.19	14.42	16.02	17.24	18.33	19.40	20.50	21.73	23.22	25.41	27.31

\+ 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: 1948-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	14.0	13.3	6	5
Feb	8.3	7.5	4	1
Mar	3.2	.0	1	0
Apr	.6	.0	#	0
May	#	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.6	.0	#	0
Nov	5.8	.8	#	0
Dec	20.6	14.0	4	2
Ann	53.1	35.6	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	7.2	1975	26	28.8	1975	22	1975	12	17+	1997
Feb	6.9	1975	19	27.1	1975	27	1975	10	22	1975
Mar	5.3	1976	24	16.0	1975	16	1975	1	11	1975
Apr	4.0	1972	12	5.1	1975	7	1975	2	2	1975
May	#	1999	10	#	1999	#+	1999	10	#+	1999
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	4.1	1975	25	5.2	1975	4+	1996	19	#+	1996
Nov	8.9	1973	4	31.7	1973	15	1973	26	5	1973
Dec	10.1	1974	27	40.4	1971	25	1996	27	18	1996
Ann	10.1	Dec 1974	27	40.4	Dec 1971	27	Feb 1975	10	22	Feb 1975

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	3.5	2.2	1.2	.4	.0
Feb	2.7	1.8	.5	.2	.0
Mar	1.5	.9	.3	.1	.0
Apr	.3	.1	.1	.0	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.3	.3	.1	.0	.0
Nov	1.7	1.3	.4	.1	.0
Dec	-9.9	-9.9	-9.9	-9.9	-9.9
Ann	-9.9	-9.9	-9.9	-9.9	-9.9

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	-9.9	-9.9	-9.9	-9.9
Feb	7.8	3.3	2.3	2.0
Mar	3.0	2.1	1.8	1.0
Apr	.4	.3	.2	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.3	.1	.0	.0
Nov	2.2	1.4	1.1	.4
Dec	-9.9	-9.9	-9.9	-9.9
Ann	-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

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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	6/28	6/19	6/13	6/07	6/02	5/28	5/23	5/17	5/08
32	6/07	5/29	5/23	5/18	5/13	5/08	5/03	4/27	4/18
28	5/20	5/09	5/02	4/25	4/19	4/12	4/06	3/29	3/18
24	5/02	4/20	4/11	4/04	3/28	3/22	3/14	3/06	2/22
20	3/27	3/18	3/12	3/07	3/02	2/25	2/20	2/14	2/05
16	3/18	3/08	2/28	2/22	2/16	2/10	2/03	1/26	1/16

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	8/31	9/07	9/13	9/17	9/21	9/25	9/30	10/05	10/12
32	9/19	9/25	9/28	10/02	10/05	10/08	10/12	10/16	10/21
28	9/25	10/02	10/06	10/10	10/14	10/17	10/21	10/26	11/01
24	10/04	10/13	10/19	10/24	10/29	11/03	11/08	11/15	11/23
20	10/18	10/27	11/02	11/08	11/13	11/18	11/24	12/01	12/10
16	11/03	11/12	11/18	11/24	11/29	12/04	12/09	12/16	12/25

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	148	135	126	118	110	103	94	85	72
32	177	166	158	151	144	138	131	123	111
28	220	205	195	186	177	169	160	149	135
24	260	245	233	223	214	205	195	184	168
20	290	278	270	262	255	249	241	233	221
16	323	309	299	291	284	277	269	260	248

***** 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	1180	926	796	536	325	159	64	52	219	545	903	1178	6883
60	1025	786	641	391	199	78	23	17	129	395	753	1023	5460
57	932	702	549	309	140	44	12	7	87	310	663	930	4685
55	870	646	489	258	107	27	7	3	65	258	603	868	4201
50	715	507	346	150	44	7	0	0	26	146	457	713	3111
32	221	111	33	2	0	0	0	0	0	2	78	217	664

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	65	109	260	457	711	887	1143	1146	829	481	165	62	6315
55	0	0	3	22	104	225	437	436	204	25	0	0	1456
57	0	0	1	14	76	181	380	378	166	15	0	0	1211
60	0	0	0	5	42	125	298	294	118	7	0	0	889
65	0	0	0	0	13	56	183	174	58	1	0	0	485
70	0	0	0	0	2	19	100	88	23	0	0	0	232

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	9	63	229	459	636	890	888	585	245	23	0	0	9	72	301	760	1396	2286	3174	3759	4004	4027	4027
45	0	0	18	115	312	486	735	733	437	128	4	0	0	0	18	133	445	931	1666	2399	2836	2964	2968	2968
50	0	0	0	50	183	344	580	578	295	48	0	0	0	0	0	50	233	577	1157	1735	2030	2078	2078	2078
55	0	0	0	17	86	213	426	424	175	15	0	0	0	0	0	17	103	316	742	1166	1341	1356	1356	1356
60	0	0	0	5	35	110	281	280	86	2	0	0	0	0	0	5	40	150	431	711	797	799	799	799
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	3	34	142	277	390	553	560	363	150	9	0	0	3	37	179	456	846	1399	1959	2322	2472	2481	2481

(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