

# Climatography of the United States No. 20

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

Station: WHITMAN MISSION, WA

1971-2000

COOP ID: 459200

Climate Division: WA 8

NWS Call Sign:

Elevation: 632 Feet

Lat: 46°03N

Lon: 118°28W

## 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	40.1	25.8	33.0	70	1968	21	40.7	1999	-22	1996	31	14.2	1979	994	0	.0	.0	8.4	8.1	23.3	1.2
Feb	46.8	29.0	37.9	76	1986	25	44.1	1991	-21+	1996	3	23.4	1989	759	0	.0	.0	13.7	2.9	18.5	.7
Mar	56.4	33.3	44.9	78+	1997	26	48.4	1986	4+	1993	1	41.0	1975	625	0	.0	.0	27.2	.3	14.5	.0
Apr	64.2	37.7	51.0	89+	1977	25	55.6	1994	15	1966	19	45.7	1975	422	0	.0	.0	29.7	.0	7.2	.0
May	72.1	43.5	57.8	98	1986	31	61.7	1987	28+	1982	5	54.4	1977	231	8	.0	1.2	31.0	.0	1.4	.0
Jun	80.1	48.8	64.5	104	1992	24	70.0	1986	32	1984	1	59.9	1976	85	69	.3	5.5	30.0	.0	@	.0
Jul	89.0	52.4	70.7	110	1994	23	76.7	1998	34	1971	6	66.4	1993	12	190	3.8	15.7	31.0	.0	.0	.0
Aug	88.5	51.0	69.8	110	1998	5	74.5	1986	33+	1980	29	65.5	1980	28	175	3.1	14.6	31.0	.0	.0	.0
Sep	78.8	42.8	60.8	103	1987	1	66.9	1998	18	1983	29	55.7	1971	171	45	.1	3.4	30.0	.0	2.7	.0
Oct	65.4	34.5	50.0	88+	1991	1	55.6	1988	14+	1971	28	47.4	1971	467	0	.0	.0	30.1	.0	12.8	.0
Nov	49.5	31.8	40.7	82	1999	13	46.4	1983	-13+	1985	24	27.9	1985	731	0	.0	.0	17.1	1.8	16.0	.1
Dec	40.7	26.6	33.7	70+	1980	27	39.5	1973	-27	1968	31	20.4	1985	973	0	.0	.0	8.6	7.7	23.2	1.1
Ann	64.3	38.1	51.2	110+	Aug 1998	5	76.7	Jul 1998	-27	Dec 1968	31	14.2	Jan 1979	5498	487	7.3	40.4	287.8	20.8	119.6	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](http://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: 1962-2001

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

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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	1.54	1.31	1.10	1969	6	3.52	1975	.43	1977	12.4	5.3	.4	.0	.49	.64	.85	1.04	1.22	1.40	1.61	1.84	2.15	2.63	3.07
Feb	1.31	1.21	1.05	1994	24	2.86	2000	.32	1990	11.4	4.5	.3	@	.44	.56	.74	.90	1.05	1.20	1.37	1.56	1.81	2.20	2.56
Mar	1.46	1.33	.90	1972	12	2.87	1989	.28	1994	11.4	5.1	.3	.0	.46	.60	.81	.98	1.15	1.33	1.52	1.75	2.04	2.50	2.92
Apr	1.31	1.14	1.40	1990	28	3.12	1988	.10	1977	8.8	3.7	.6	.1	.24	.36	.55	.73	.91	1.11	1.33	1.60	1.96	2.53	3.08
May	1.37	1.33	1.52	2000	31	4.38	1991	.27	1974	8.4	3.8	.7	.1	.32	.44	.65	.83	1.01	1.20	1.41	1.66	2.00	2.53	3.03
Jun	.94	.65	1.24	1971	2	2.86	1971	.13	1986	7.0	2.6	.4	.1	.14	.22	.36	.49	.62	.77	.94	1.14	1.42	1.87	2.31
Jul	.49	.35	.74	1966	3	1.61	1992	.01+	1999	3.2	1.4	.2	.0	.02	.05	.10	.17	.24	.34	.45	.59	.80	1.15	1.51
Aug	.66	.37	1.30+	1993	16	3.50	1977	.00+	2000	3.5	1.7	.4	.2	.00	.00	.02	.10	.21	.36	.54	.79	1.14	1.76	2.40
Sep	.69	.68	.82	1997	4	1.69	1982	.00+	1999	4.7	2.3	.2	.0	.00	.00	.03	.14	.27	.42	.61	.84	1.18	1.74	2.32
Oct	1.12	1.10	1.50	1982	29	2.58	1982	.01	1987	7.6	3.1	.4	.1	.09	.17	.31	.47	.64	.84	1.07	1.36	1.77	2.45	3.12
Nov	1.88	1.67	1.90	1996	19	4.38	1973	.27	1993	13.9	5.9	.5	.1	.59	.77	1.03	1.26	1.48	1.70	1.95	2.24	2.62	3.21	3.75
Dec	1.68	1.57	1.13	1966	13	4.98	1973	.58	1986	12.2	5.6	.5	.1	.48	.64	.88	1.09	1.30	1.51	1.74	2.02	2.38	2.94	3.46
Ann	14.45	14.62	1.90	Nov 1996	19	4.98	Dec 1973	.00+	Aug 2000	104.5	45.0	4.9	.8	9.68	10.59	11.76	12.65	13.45	14.23	15.04	15.94	17.03	18.63	20.02

+ 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

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**Lat: 46°03N**

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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	4.4	2.8	1	#	8.0	1980	9	15.3	1980	11	1993	15	9	1986	2.3	1.6	.4	.1	.0	4.6	3.0	1.6	.1
Feb	1.9	.0	1	#	12.0	1994	24	13.3	1994	12	1994	25	2	1996	1.1	.7	.2	.1	@	2.5	1.2	.6	.1
Mar	.3	.0	#	0	3.0	1989	2	3.0	1989	8	1993	3	1	1993	.2	.1	@	.0	.0	.2	@	.0	.0
Apr	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.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	1	1991	29	#	1991	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.3	.0	#	0	5.0	1978	20	5.0	1978	9	1978	21	6	1978	.3	.1	.1	@	.0	.2	@	.0	.0
Dec	2.4	1.5	1	#	6.0	1996	27	7.5	1973	11	1996	29	3	1983	1.8	1.1	.3	.1	.0	2.7	.8	.4	.0
Ann	9.3	4.3	N/A	N/A	12.0	Feb 1994	24	15.3	Jan 1980	12	Feb 1994	25	9	Jan 1986	5.7	3.6	1.0	.3	@	10.2	5.0	2.6	.2

+ 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	6/23	6/14	6/08	6/03	5/29	5/24	5/19	5/13	5/04
32	5/26	5/20	5/16	5/13	5/10	5/06	5/03	4/29	4/24
28	5/01	4/25	4/21	4/17	4/14	4/10	4/06	4/02	3/27
24	4/13	4/05	3/31	3/26	3/22	3/17	3/12	3/07	2/27
20	4/06	3/21	3/09	2/27	2/17	2/08	1/29	1/17	1/01
16	3/04	2/21	2/14	2/07	2/01	1/25	1/18	1/08	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	8/29	9/03	9/07	9/10	9/13	9/16	9/19	9/22	9/28
32	9/11	9/15	9/18	9/21	9/23	9/26	9/29	10/02	10/06
28	9/20	9/26	9/29	10/03	10/06	10/09	10/12	10/16	10/21
24	10/01	10/10	10/16	10/21	10/26	10/31	11/05	11/11	11/20
20	10/11	10/23	10/31	11/07	11/14	11/21	11/28	12/06	12/18
16	11/18	11/30	12/08	12/16	12/23	12/31	1/09	1/24	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	136	126	118	112	106	100	94	86	76
32	159	151	145	141	136	131	127	121	113
28	197	190	184	179	174	170	165	159	151
24	252	240	232	225	218	211	204	195	184
20	315	297	285	275	266	257	248	237	222
16	>365	>365	355	337	325	314	304	293	278

\* 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/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

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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	994	759	625	422	231	85	12	28	171	467	731	973	5498
60	844	619	470	280	110	26	1	6	82	313	584	818	4153
57	757	539	377	202	60	10	0	2	45	224	501	725	3442
55	699	486	316	157	36	4	0	1	28	171	445	665	3008
50	558	357	175	70	6	0	0	0	6	66	316	522	2076
32	182	60	1	0	0	0	0	0	0	0	46	132	421

Base	Cooling Degree Days <sup>(1)</sup>												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	211	224	399	568	799	974	1201	1170	864	556	305	183	7454
55	15	7	1	35	122	288	488	457	202	13	14	3	1645
57	11	3	0	20	84	234	426	397	159	5	10	0	1349
60	4	0	0	8	41	160	334	308	106	1	4	0	966
65	0	0	0	0	8	69	190	175	45	0	0	0	487
70	0	0	0	0	0	19	82	78	14	0	0	0	193

**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	52	83	184	339	564	747	966	936	637	333	122	53	52	135	319	658	1222	1969	2935	3871	4508	4841	4963	5016
45	15	28	78	202	409	597	811	781	489	197	52	22	15	43	121	323	732	1329	2140	2921	3410	3607	3659	3681
50	2	7	24	96	259	447	656	626	343	91	17	0	2	9	33	129	388	835	1491	2117	2460	2551	2568	2568
55	0	0	0	35	139	301	501	471	210	30	1	0	0	0	0	35	174	475	976	1447	1657	1687	1688	1688
60	0	0	0	8	61	172	348	320	102	6	0	0	0	0	0	8	69	241	589	909	1011	1017	1017	1017
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	25	44	121	227	354	467	595	579	437	257	66	28	25	69	190	417	771	1238	1833	2412	2849	3106	3172	3200

(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](http://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](http://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"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
|---|---|

## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)