

# 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: TOLEDO, WA

1971-2000

COOP ID: 458500

Climate Division: WA 4

NWS Call Sign: TDO

Elevation: 325 Feet Lat: 46° 28N Lon: 122° 50W

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	45.0	33.1	39.1	62+	1995	31	43.3	1994	0	1979	1	30.7	1979	805	0	.0	.0	8.8	.5	14.0	@
Feb	49.9	34.3	42.1	72+	1992	26	47.2	1992	3	1989	5	34.7	1989	642	0	.0	.0	15.5	.3	11.2	.0
Mar	55.4	36.6	46.0	80	1994	27	50.4	1992	12	1971	1	40.9	1971	590	0	.0	.0	25.4	.0	8.9	.0
Apr	61.0	39.1	50.1	89	1987	28	54.4	2000	23	1973	7	44.9	1975	449	0	.0	.0	28.6	.0	4.6	.0
May	67.2	43.8	55.5	93+	1987	8	60.7	1993	28	1992	21	51.7	1977	296	1	.0	.5	30.9	.0	.7	.0
Jun	72.3	47.9	60.1	97+	1982	19	64.1	1982	31+	1991	4	55.7	1971	159	12	.0	1.0	30.0	.0	.1	.0
Jul	78.5	50.9	64.7	102	1994	20	68.5	1985	31	1966	1	61.0	1986	65	56	.1	3.5	31.0	.0	.0	.0
Aug	79.5	50.4	65.0	104	1981	10	69.2	1977	31	1973	18	59.3	1973	74	72	.5	3.7	31.0	.0	.1	.0
Sep	74.4	46.3	60.4	100	1988	2	65.3	1995	25	1972	27	56.1	1972	162	23	@	1.2	30.0	.0	.9	.0
Oct	62.8	41.2	52.0	96	1987	1	55.5	1988	20+	1971	29	49.0	1985	404	0	.0	@	30.3	.0	3.8	.0
Nov	50.4	37.4	43.9	71	1980	4	48.2	1997	3	1985	24	35.5	1985	632	0	.0	.0	17.6	.3	7.7	.0
Dec	44.2	33.9	39.1	62	1995	12	43.4	1979	-2	1990	21	32.9	1990	804	0	.0	.0	6.8	1.0	12.3	.1
Ann	61.7	41.2	51.5	104	Aug 1981	10	69.2	Aug 1977	-2	Dec 1990	21	30.7	Jan 1979	5082	164	.6	9.9	285.9	2.1	64.3	.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: 1950-2001

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

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**Climate Division: WA 4**

**NWS Call Sign: TDO**

**Elevation: 325 Feet Lat: 46°28N**

**Lon: 122°50W**

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	6.06	5.77	3.77	1990	9	11.17	1975	.55	1985	20.1	13.4	4.3	1.1	1.52	2.09	2.97	3.76	4.53	5.34	6.25	7.33	8.74	10.98	13.07
Feb	5.33	5.23	7.80	1999	2	16.89	1999	.73	1993	19.1	12.6	3.5	.9	1.60	2.11	2.86	3.52	4.15	4.81	5.54	6.39	7.50	9.22	10.82
Mar	4.81	4.52	1.65	1972	5	8.26	1997	1.23	1992	20.6	13.6	3.1	.3	2.03	2.46	3.08	3.58	4.05	4.53	5.04	5.63	6.37	7.51	8.54
Apr	3.42	3.15	3.02	1991	4	7.28	1996	.93	1977	17.9	10.1	1.6	.2	1.42	1.73	2.17	2.53	2.87	3.21	3.58	4.01	4.55	5.37	6.12
May	2.44	2.38	2.05	1997	31	5.09	1977	.08	1982	15.3	7.9	1.1	.2	.60	.82	1.18	1.50	1.81	2.14	2.52	2.96	3.54	4.45	5.31
Jun	2.15	2.02	1.52	1967	22	4.00+	1993	.58	1987	12.5	6.4	.9	.2	.65	.86	1.16	1.43	1.68	1.95	2.24	2.58	3.03	3.72	4.36
Jul	.76	.61	1.31+	1995	9	2.07	1974	.00	1973	6.3	2.6	.3	.1	.06	.14	.26	.37	.49	.61	.76	.94	1.19	1.58	1.96
Aug	1.30	.93	1.41	1968	23	3.93	1977	.08	1986	6.3	3.2	.6	.1	.13	.23	.41	.59	.78	1.00	1.26	1.58	2.02	2.76	3.47
Sep	2.00	2.21	2.13	1969	19	4.87	1977	.05	1975	8.8	4.8	.8	.2	.12	.24	.48	.75	1.06	1.42	1.86	2.42	3.20	4.53	5.85
Oct	3.52	3.11	9.70	1998	13	7.43	1975	.44	1987	14.3	8.6	2.2	.6	.82	1.15	1.67	2.13	2.59	3.07	3.62	4.27	5.12	6.47	7.75
Nov	6.20	6.26	3.45	2001	14	11.70	1998	.86	1976	20.9	14.3	4.3	1.0	1.92	2.51	3.39	4.14	4.87	5.62	6.45	7.43	8.68	10.64	12.46
Dec	6.64	6.32	3.25	1996	29	15.48	1996	1.98	1985	21.8	14.2	4.5	1.2	2.47	3.09	3.98	4.73	5.43	6.16	6.94	7.85	9.01	10.80	12.43
Ann	44.63	43.41	9.70	Oct 1998	13	16.89	Feb 1999	.00	Jul 1973	183.9	111.7	27.2	6.1	31.46	34.00	37.26	39.74	41.95	44.08	46.28	48.72	51.68	55.97	59.69

+ 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: 1950-2001

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

Complete documentation available from:  
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**COOP ID: 458500**

**Climate Division: WA 4**

**NWS Call Sign: TDO**

**Elevation: 325 Feet**

**Lat: 46° 28N**

**Lon: 122° 50W**

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	.8	.0	1	#	2.9	1971	11	6.7	1971	15	1980	10	9	1998	.9	.5	.0	.0	.0	1.0	.0	.0	.0
Feb	.4	.0	1	0	6.0	1990	15	6.0	1990	8	1980	15	6	1990	.3	.1	.0	.0	.0	.1	.0	.0	.0
Mar	.1	.0	#	0	1.0	1980	15	1.0	1980	1+	1999	27	1	1999	.1	.1	.0	.0	.0	.1	.0	.0	.0
Apr	#	.0	0	0	#	1975	4	#+	1975	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
May	#	.0	0	0	#	1974	15	#	1974	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	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.6	.0	#	0	4.8	1978	19	4.8	1978	5	1978	21	1	1978	.5	.3	.1	.0	.0	.7	.5	.2	.0
Dec	.7	.0	1	#	3.6	1975	13	4.7	1975	5	1971	28	3+	1996	.3	.3	.1	.0	.0	.3	.1	.0	.0
Ann	2.6	.0	N/A	N/A	6.0	Feb 1990	15	6.7	Jan 1971	15	Jan 1980	10	9	Jan 1998	2.1	1.3	.2	.0	.0	2.2	.6	.2	.0

+ 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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Climate Division: WA 4

NWS Call Sign: TDO

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Lat: 46°28N

Lon: 122°50W

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	6/18	6/10	6/03	5/28	5/22	5/16	5/08	4/27
32	5/26	5/18	5/13	5/09	5/04	4/30	4/26	4/20	4/13
28	5/01	4/22	4/15	4/10	4/04	3/30	3/24	3/17	3/08
24	3/30	3/16	3/06	2/26	2/18	2/10	2/01	1/22	1/05
20	2/24	2/14	2/07	2/01	1/26	1/20	1/13	1/01	0/00
16	2/17	2/07	1/29	1/22	1/14	1/04	12/18	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	8/30	9/07	9/12	9/17	9/21	9/26	9/30	10/06	10/13
32	9/07	9/17	9/25	10/01	10/07	10/13	10/19	10/26	11/06
28	9/23	10/04	10/12	10/19	10/25	11/01	11/08	11/15	11/26
24	10/20	11/03	11/12	11/21	11/29	12/07	12/16	12/26	1/12
20	11/07	11/21	12/01	12/10	12/19	12/28	1/08	1/25	0/00
16	12/02	12/17	12/28	1/08	1/19	2/02	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	153	140	131	123	115	108	100	90	77
32	195	181	171	163	155	147	138	129	115
28	244	230	220	212	204	195	187	177	163
24	>365	317	301	290	280	270	260	249	233
20	>365	>365	>365	361	333	317	303	289	271
16	>365	>365	>365	>365	>365	>365	346	328	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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**Elevation: 325 Feet    Lat: 46° 28N    Lon: 122° 50W**

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	805	642	590	449	296	159	65	74	162	404	632	804	5082
60	650	502	435	301	157	60	11	18	67	252	482	649	3584
57	557	418	343	218	93	25	2	6	31	169	395	556	2813
55	495	362	285	168	61	12	0	2	16	121	339	494	2355
50	349	232	154	72	13	1	0	0	1	40	209	345	1416
32	24	5	0	0	0	0	0	0	0	0	6	18	53

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	242	288	433	541	729	843	1013	1021	851	619	364	237	7181
55	0	0	6	19	76	164	301	310	177	27	7	0	1087
57	0	0	1	9	47	117	240	252	132	13	3	0	814
60	0	0	0	2	18	63	157	171	78	3	0	0	492
65	0	0	0	0	1	12	56	72	23	0	0	0	164
70	0	0	0	0	0	0	9	16	4	0	0	0	29

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	80	119	210	313	493	620	782	783	625	385	160	77	80	199	409	722	1215	1835	2617	3400	4025	4410	4570	4647
45	25	43	86	171	338	470	627	628	475	235	66	23	25	68	154	325	663	1133	1760	2388	2863	3098	3164	3187
50	1	5	26	75	194	321	472	473	325	110	17	0	1	6	32	107	301	622	1094	1567	1892	2002	2019	2019
55	0	1	0	24	91	176	318	319	184	36	0	0	0	1	1	25	116	292	610	929	1113	1149	1149	1149
60	0	0	0	1	32	71	168	171	75	7	0	0	0	0	0	1	33	104	272	443	518	525	525	525
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	11	45	111	179	284	360	479	488	391	215	48	9	11	56	167	346	630	990	1469	1957	2348	2563	2611	2620

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