

# 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: POWERS, OR**

**1971-2000**

**COOP ID: 356820**

**Climate Division: OR 1**

**NWS Call Sign:**

**Elevation: 230 Feet**

**Lat: 42° 53N**

**Lon: 124° 04W**

### 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	53.5	34.7	44.1	74	1981	22	48.3	1981	9	1949	10	40.4	1972	647	0	.0	.0	23.0	.0	12.3	.0
Feb	56.7	36.4	46.6	83	1992	26	52.2	1991	7	1989	5	39.2	1989	518	0	.0	.0	23.4	.1	8.2	.0
Mar	59.2	38.0	48.6	82+	1994	28	53.3	1992	23	1955	5	44.6	1985	509	0	.0	.0	28.2	.0	4.8	.0
Apr	62.9	40.1	51.5	90	1989	10	56.0	1989	27+	1968	13	46.4	1975	406	0	.0	@	29.0	.0	1.6	.0
May	67.9	44.1	56.0	98	1987	8	61.2	1992	28	1954	1	52.6	1977	281	1	.0	.4	30.9	.0	.1	.0
Jun	72.9	48.2	60.6	100	1966	16	63.5	1992	33	1952	12	57.6	1980	142	8	.0	.7	30.0	.0	.0	.0
Jul	78.9	51.3	65.1	101	1978	22	67.7	1998	37	1949	6	62.1	1982	47	50	@	1.7	31.0	.0	.0	.0
Aug	80.1	50.7	65.4	104+	1987	31	68.3	1977	35	1949	13	62.6	1973	40	53	.1	2.2	31.0	.0	.0	.0
Sep	78.2	46.8	62.5	103+	1991	25	65.4	1995	29	1970	14	58.7	1986	101	26	.3	2.7	30.0	.0	@	.0
Oct	69.9	42.2	56.1	103+	1991	11	60.1	1988	24	1949	20	52.2	1971	280	2	.1	.7	31.0	.0	1.2	.0
Nov	58.0	38.7	48.4	85	1962	1	53.2	1995	17	1978	14	42.9	1985	499	0	.0	.0	27.4	.0	5.6	.0
Dec	52.6	34.9	43.8	73	1979	18	48.8	1995	5	1990	21	37.4	1990	658	0	.0	.0	21.9	.2	11.6	.0
Ann	65.9	42.2	54.1	104+	Aug 1987	31	68.3	Aug 1977	5	Dec 1990	21	37.4	Dec 1990	4128	140	.5	8.4	336.8	.3	45.4	.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/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: 1948-2001

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

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**COOP ID: 356820**

**Climate Division: OR 1**

**NWS Call Sign:**

**Elevation: 230 Feet Lat: 42°53N**

**Lon: 124°04W**

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	9.45	10.25	4.30	1959	8	18.70	1995	.85	1985	17.3	13.2	6.9	3.1	2.25	3.14	4.52	5.75	6.97	8.27	9.72	11.44	13.71	17.30	20.67
Feb	8.26	7.24	3.80	1961	10	17.58	1999	1.01	1988	16.7	12.6	6.1	2.5	2.32	3.10	4.29	5.32	6.33	7.39	8.56	9.95	11.74	14.56	17.19
Mar	7.43	7.30	2.81	1966	9	13.49	1983	2.00	1992	19.1	13.3	5.6	1.9	2.76	3.46	4.46	5.29	6.09	6.90	7.78	8.80	10.10	12.11	13.94
Apr	5.14	4.61	2.50	1992	9	12.13	1982	.97	1987	16.0	11.1	3.7	.9	1.40	1.89	2.63	3.28	3.92	4.58	5.32	6.20	7.34	9.13	10.80
May	2.96	2.98	3.24	1953	26	6.83	1998	.13	1982	11.5	7.2	1.9	.4	.47	.72	1.15	1.56	1.98	2.44	2.97	3.61	4.47	5.87	7.21
Jun	1.14	.86	1.56	1952	28	2.83	1988	.00	1996	6.3	3.5	.4	.1	.07	.18	.36	.53	.71	.90	1.13	1.41	1.79	2.41	3.02
Jul	.32	.18	1.36	1958	1	1.72	1983	.00+	1998	2.4	.9	.2	.0	.00	.00	.02	.06	.11	.17	.26	.37	.54	.83	1.12
Aug	.69	.25	1.78	1977	24	2.62	1976	.00+	1996	3.5	1.6	.4	.1	.00	.00	.01	.08	.18	.32	.52	.78	1.17	1.88	2.62
Sep	1.62	.97	2.35	1981	27	6.95	1986	.00+	1993	5.4	3.5	1.1	.3	.00	.00	.12	.31	.56	.89	1.31	1.88	2.72	4.21	5.73
Oct	3.53	2.92	4.17	1950	29	8.33	1975	.08	1987	9.7	6.6	2.3	.9	.41	.68	1.18	1.67	2.19	2.78	3.46	4.31	5.46	7.35	9.19
Nov	8.98	7.11	6.25	1996	19	26.99	1973	1.85	1976	18.5	13.9	6.5	2.9	2.11	2.94	4.26	5.43	6.60	7.84	9.23	10.89	13.06	16.51	19.76
Dec	9.87	8.77	4.95	1969	21	24.92	1996	1.45	1976	17.6	13.9	7.2	3.2	2.46	3.39	4.83	6.10	7.36	8.69	10.18	11.94	14.24	17.89	21.31
Ann	59.39	56.45	6.25	Nov 1996	19	26.99	Nov 1973	.00+	Jul 1998	144.0	101.3	42.3	16.3	37.25	41.33	46.67	50.80	54.52	58.16	61.95	66.19	71.39	79.03	85.73

+ 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

Complete documentation available from:  
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Station: POWERS, OR

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Climate Division: OR 1

NWS Call Sign:

Elevation: 230 Feet

Lat: 42° 53N

Lon: 124° 04W

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	.9	.0	#	0	6.0	1972	27	8.5	1971	8	1972	27	1	1972	.3	.3	.2	@	.0	.4	.2	.1	.0
Feb	.7	.0	#	0	8.0	1989	2	17.0	1989	2	1990	17	#+	1999	.2	.1	.1	.1	.0	@	.0	.0	.0
Mar	.1	.0	#	0	2.0	1973	19	2.0	1973	2	1973	19	#	1973	.1	@	.0	.0	.0	@	.0	.0	.0
Apr	.0	.0	#	0	1.0	1975	4	1.0	1975	1	1975	4	#	1975	@	@	.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	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.0	.0	0	0	.5	1977	19	.5	1977	0	0	0	0	0	@	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.5	.0	#	0	4.0	1990	20	6.1	1990	4	1972	7	1	1972	.2	.2	.1	.0	.0	.3	.2	.0	.0
Ann	2.2	.0	N/A	N/A	8.0	Feb 1989	2	17.0	Feb 1989	8	Jan 1972	27	1+	Dec 1972	.8	.6	.4	.1	.0	.7	.4	.1	.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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**Elevation: 230 Feet**

**Lat: 42° 53N**

**Lon: 124° 04W**

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	6/01	5/25	5/21	5/17	5/13	5/09	5/05	5/01	4/24
32	5/03	4/26	4/20	4/16	4/11	4/07	4/02	3/28	3/20
28	3/18	3/07	2/27	2/21	2/14	2/08	2/02	1/25	1/14
24	2/22	2/10	2/01	1/24	1/15	1/06	12/25	0/00	0/00
20	1/27	1/15	1/03	0/00	0/00	0/00	0/00	0/00	0/00
16	1/12	12/22	0/00	0/00	0/00	0/00	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	9/18	9/25	9/30	10/05	10/09	10/13	10/17	10/22	10/29
32	10/07	10/15	10/21	10/26	10/31	11/05	11/10	11/16	11/24
28	10/31	11/10	11/17	11/23	11/29	12/05	12/11	12/18	12/28
24	11/27	12/11	12/21	12/30	1/09	1/20	2/06	0/00	0/00
20	12/18	1/03	1/20	0/00	0/00	0/00	0/00	0/00	0/00
16	12/27	1/16	0/00	0/00	0/00	0/00	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	175	166	159	153	148	143	137	131	121
32	232	222	214	208	202	196	190	182	172
28	332	316	305	296	287	278	268	257	241
24	>365	>365	>365	>365	>365	344	328	313	295
20	>365	>365	>365	>365	>365	>365	>365	>365	>365
16	>365	>365	>365	>365	>365	>365	>365	>365	>365

\* 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: 230 Feet Lat: 42°53N Lon: 124°04W**

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	647	518	509	406	281	142	47	40	101	280	499	658	4128
60	492	378	355	262	143	43	5	3	27	143	350	503	2704
57	399	299	269	182	82	14	0	0	8	82	267	410	2012
55	339	247	215	137	51	5	0	0	3	51	214	351	1613
50	199	135	108	55	9	0	0	0	0	11	108	211	836
32	0	0	0	0	0	0	0	0	0	0	0	2	2

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	376	406	514	584	743	857	1026	1035	915	745	491	366	8058
55	2	9	16	31	81	172	313	322	228	83	15	3	1275
57	0	5	9	17	50	120	251	260	173	51	8	0	944
60	0	0	1	6	18	60	162	171	102	20	2	0	542
65	0	0	0	0	1	8	50	53	26	2	0	0	140
70	0	0	0	0	0	0	5	5	2	0	0	0	12

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	161	207	275	350	497	622	779	786	679	505	259	154	161	368	643	993	1490	2112	2891	3677	4356	4861	5120	5274
45	57	96	136	209	342	472	624	631	529	351	135	61	57	153	289	498	840	1312	1936	2567	3096	3447	3582	3643
50	12	27	48	94	196	322	469	476	380	208	49	11	12	39	87	181	377	699	1168	1644	2024	2232	2281	2292
55	0	3	6	33	88	178	314	321	231	88	7	0	0	3	9	42	130	308	622	943	1174	1262	1269	1269
60	0	0	0	2	31	66	167	174	106	21	0	0	0	0	0	2	33	99	266	440	546	567	567	567
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	81	113	153	199	286	359	481	490	427	312	131	69	81	194	347	546	832	1191	1672	2162	2589	2901	3032	3101

(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)