

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: PORTLAND INTL AP, OR

1971-2000

COOP ID: 356751

Climate Division: OR 2

NWS Call Sign: PDX

Elevation: 19 Feet

Lat: 45° 35N

Lon: 122° 36W

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	45.6	34.2	39.9	63	1986	18	44.3	1992	-2	1950	31	30.1	1979	765	0	.0	.0	10.0	1.3	11.6	.0
Feb	50.3	35.9	43.1	71	1988	28	48.5	1991	-3	1950	2	35.7	1989	605	0	.0	.0	17.0	.4	7.2	.0
Mar	55.7	38.6	47.2	80	1947	16	51.8	1992	11	1953	12	42.6	1971	536	0	.0	.0	27.0	.0	3.0	.0
Apr	60.5	41.9	51.2	90	1998	30	55.5	1989	29+	1955	4	46.1	1975	400	1	.0	@	29.4	.0	.7	.0
May	66.7	47.5	57.1	100	1983	28	62.5	1992	29	1954	1	52.6	1977	243	14	@	.4	31.0	.0	.0	.0
Jun	72.7	52.6	62.7	100+	1992	22	66.8	1992	39	1966	1	59.1	1971	96	43	.1	1.1	30.0	.0	.0	.0
Jul	79.3	56.9	68.1	107	1965	30	73.1	1985	43	1955	2	63.8	1993	21	133	.5	4.5	31.0	.0	.0	.0
Aug	79.7	57.3	68.5	107+	1981	10	71.8	1986	44+	1980	29	64.4	1975	21	145	.8	4.6	31.0	.0	.0	.0
Sep	74.6	52.5	63.6	105	1988	2	67.0	1994	34+	1965	17	59.9	1977	78	52	@	2.1	30.0	.0	.0	.0
Oct	63.3	45.2	54.3	92	1987	1	57.8	1988	26	1971	29	51.6	1971	319	2	.0	.1	30.6	.0	.4	.0
Nov	51.8	39.8	45.8	73	1975	3	51.2	1995	13+	1985	24	36.6	1985	560	0	.0	.0	21.3	.2	4.4	.0
Dec	45.4	35.0	40.2	65	1993	10	44.1	1973	6	1964	16	32.4	1985	756	0	.0	.0	9.2	1.2	9.8	.0
Ann	62.1	44.8	53.5	107+	Aug 1981	10	73.1	Jul 1985	-3	Feb 1950	2	30.1	Jan 1979	4400	390	1.4	12.8	297.5	3.1	37.1	.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

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1941-2001

(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	5.07	5.35	2.48	1948	6	8.51+	1980	.06	1985	17.2	11.5	3.2	.8	.99	1.45	2.19	2.87	3.57	4.31	5.15	6.17	7.52	9.68	11.73
Feb	4.18	3.97	2.16	1996	6	10.03	1996	.72	1993	15.8	10.4	2.2	.5	1.27	1.67	2.26	2.77	3.27	3.78	4.34	5.00	5.86	7.20	8.43
Mar	3.71	3.23	1.54	1983	29	7.14	1997	1.49	1978	17.2	10.4	1.7	.1	1.63	1.97	2.43	2.80	3.16	3.51	3.89	4.33	4.88	5.71	6.47
Apr	2.64	2.33	11.21	1952	2	5.26	1993	1.04+	1998	15.3	7.9	.9	.2	1.01	1.25	1.60	1.89	2.17	2.46	2.76	3.12	3.57	4.26	4.90
May	2.38	2.24	1.47	1968	19	5.55	1998	.10	1992	12.8	7.0	1.2	.1	.50	.72	1.07	1.39	1.71	2.05	2.43	2.89	3.50	4.47	5.39
Jun	1.59	1.68	1.70	1958	6	4.06	1984	.14	1987	8.8	4.5	.7	.1	.31	.46	.69	.91	1.12	1.36	1.62	1.94	2.36	3.03	3.67
Jul	.72	.56	1.06	1995	9	2.68	1983	.00	1984	4.4	2.0	.4	@	.03	.08	.19	.29	.41	.54	.69	.89	1.16	1.60	2.05
Aug	.93	.69	1.47	1977	25	3.29	1976	.00	1998	4.8	2.4	.5	.1	.02	.07	.18	.30	.45	.63	.84	1.12	1.51	2.18	2.86
Sep	1.65	1.52	2.23	1969	17	4.30	1986	.00+	1993	7.5	4.0	.9	.2	.00	.10	.34	.59	.87	1.19	1.57	2.04	2.70	3.80	4.90
Oct	2.88	2.41	2.44+	1994	31	8.41	1994	.19	1988	11.4	7.0	1.7	.3	.44	.68	1.10	1.50	1.91	2.37	2.89	3.52	4.38	5.77	7.10
Nov	5.61	5.09	2.69	1996	19	11.55	1973	.77	1976	18.9	12.8	3.3	.9	1.58	2.11	2.92	3.62	4.30	5.02	5.81	6.75	7.97	9.87	11.65
Dec	5.71	5.16	2.17	1942	27	13.35	1996	1.38	1976	18.3	11.9	3.9	1.1	1.75	2.29	3.10	3.80	4.47	5.17	5.94	6.85	8.01	9.84	11.53
Ann	37.07	36.39	11.21	Apr 1952	2	13.35	Dec 1996	.00+	Aug 1998	152.4	91.8	20.6	4.4	25.26	27.51	30.41	32.63	34.61	36.53	38.52	40.73	43.41	47.33	50.74

+ 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: 1941-2001

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

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Lon: 122°36W

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	1.6	.0	#	0	13.5	1979	10	15.4	1979	10	1980	10	1	1980	1.0	.4	.2	.1	@	.8	.2	.1	@
Feb	1.6	.0	#	0	6.1	1993	19	8.3	1990	6	1993	20	#	1995	1.1	.5	.2	.1	.0	.4	.1	@	.0
Mar	.1	#	#	0	1.1	1989	2	2.0	1989	1+	1989	3	#	1989	.1	.0	.0	.0	.0	.1	.0	.0	.0
Apr	#	#	0	0	#	1995	18	#+	1995	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
May	#	.0	#	0	#	1978	4	#	1978	0	0	0	#	1995	.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	7.0	1977	22	7.6	1977	5+	1977	23	#	1985	.4	.2	.1	@	.0	.1	.1	.1	.0
Dec	1.3	.1	#	0	3.8	1972	11	6.1	1972	5	1972	12	1	1972	1.3	.6	@	.0	.0	.8	.3	@	.0
Ann	5.2	.1	N/A	N/A	13.5	Jan 1979	10	15.4	Jan 1979	10	Jan 1980	10	1+	Jan 1980	3.9	1.7	.5	.2	@	2.2	.7	.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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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	5/01	4/26	4/22	4/19	4/16	4/13	4/09	4/06	3/31
32	4/15	4/07	4/01	3/27	3/23	3/18	3/13	3/07	2/27
28	3/16	3/06	2/27	2/21	2/15	2/10	2/04	1/28	1/18
24	2/22	2/13	2/05	1/30	1/24	1/17	1/09	12/28	0/00
20	2/11	1/28	1/17	1/07	12/25	12/04	0/00	0/00	0/00
16	1/31	1/15	12/30	12/07	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	10/12	10/18	10/22	10/25	10/28	10/31	11/03	11/07	11/13
32	10/24	10/31	11/06	11/10	11/15	11/19	11/23	11/29	12/06
28	11/06	11/15	11/21	11/26	12/01	12/06	12/11	12/17	12/26
24	11/22	12/04	12/13	12/21	12/29	1/06	1/15	1/30	0/00
20	12/05	12/21	1/02	1/15	1/30	0/00	0/00	0/00	0/00
16	12/19	1/05	1/20	2/13	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	218	210	204	199	195	190	185	179	171
32	267	256	249	242	236	230	224	216	206
28	333	318	306	297	288	279	269	258	243
24	>365	>365	>365	355	338	327	316	305	290
20	>365	>365	>365	>365	>365	>365	>365	342	317
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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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	765	605	536	400	243	96	21	21	78	319	560	756	4400
60	623	474	398	269	134	32	6	5	34	187	430	613	3205
57	530	390	308	189	82	11	1	0	13	113	347	520	2504
55	469	334	250	143	54	5	0	0	6	75	293	459	2088
50	326	205	126	57	14	0	0	0	0	20	179	314	1241
32	23	3	0	0	0	0	0	0	0	0	6	16	48

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	271	330	491	600	803	942	1139	1152	965	708	431	282	8114
55	0	1	3	32	122	253	426	439	277	63	4	1	1621
57	0	0	1	18	88	197	364	377	221	37	1	0	1304
60	0	0	0	7	49	123	272	284	144	15	0	0	894
65	0	0	0	1	14	43	133	145	52	2	0	0	390
70	0	0	0	0	2	11	50	51	12	0	0	0	126

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	90	145	256	367	564	714	901	912	736	471	215	92	90	235	491	858	1422	2136	3037	3949	4685	5156	5371	5463
45	28	52	116	218	409	564	746	757	586	319	97	33	28	80	196	414	823	1387	2133	2890	3476	3795	3892	3925
50	0	10	34	100	257	414	591	602	436	174	29	3	0	10	44	144	401	815	1406	2008	2444	2618	2647	2650
55	0	0	0	35	127	265	436	447	287	69	3	0	0	0	0	35	162	427	863	1310	1597	1666	1669	1669
60	0	0	0	5	52	130	281	292	152	15	0	0	0	0	0	5	57	187	468	760	912	927	927	927
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	24	53	114	181	297	412	571	583	440	243	67	24	24	77	191	372	669	1081	1652	2235	2675	2918	2985	3009

(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

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
- 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.

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| <ol style="list-style-type: none">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. Freeze Data Table
1971-2000 serially complete daily data |
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References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/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