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: VERNONIA 2, OR **COOP ID: 358884**

Climate Division: OR 2 **NWS Call Sign:** **Elevation: 625 Feet** **Lat: 45˚52N** **Lon: 123˚11W**

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	44.2	29.1	36.7	66	1968	23	41.1	1994	-2	1979	6	27.3	1979	880	0	.0	.0	7.1	1.0	19.2	.1
Feb	48.8	30.1	39.5	72	1968	29	46.0	1991	-6+	1989	5	31.0	1989	715	0	.0	.0	12.9	.4	16.8	.1
Mar	53.4	32.6	43.0	79	1994	28	48.1	1992	13	1971	1	37.9	1971	682	0	.0	.0	20.7	.0	15.0	.0
Apr	58.1	35.0	46.6	87+	1998	30	50.3	1992	22+	1978	12	41.2	1975	553	0	.0	.0	26.4	.0	9.1	.0
May	63.8	39.2	51.5	99	1983	29	56.2	1993	27	2001	5	47.9	1974	419	0	.0	.3	30.8	.0	1.9	.0
Jun	69.1	43.5	56.3	98	1978	5	59.5+	1986	30	1991	3	52.6	1971	263	1	.0	.6	30.0	.0	.1	.0
Jul	75.2	46.3	60.8	100	1998	28	64.9	1998	36+	2001	8	57.7	1993	150	18	@	2.6	31.0	.0	.0	.0
Aug	76.5	46.0	61.3	102+	1981	11	64.8	1986	32	1973	18	57.4	1973	137	20	.2	2.5	31.0	.0	@	.0
Sep	72.5	41.8	57.2	103	1988	3	62.2	1990	23+	2000	24	53.2	1971	243	7	.1	1.1	30.0	.0	1.8	.0
Oct	62.2	36.5	49.4	93	1987	2	53.9	1988	20+	1995	31	47.2	1994	485	0	.0	.1	29.7	.0	7.6	.0
Nov	50.0	33.2	41.6	73	1980	5	45.8	1995	2	1985	24	33.5	1985	701	0	.0	.0	16.5	.2	12.2	.0
Dec	43.8	29.9	36.9	63	1980	16	41.2	1979	-12+	1972	9	30.9	1972	872	0	.0	.0	5.8	1.2	18.2	.2
Ann	59.8	36.9	48.4	103	Sep 1988	3	64.9	Jul 1998	-12+	Dec 1972	9	27.3	Jan 1979	6100	46	.3	7.2	271.9	2.8	101.9	.4

\+ 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: 1967-2001

(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	7.47	7.46	2.50	1974	16	14.99	1990	.50	1985
Feb	5.91	5.70	2.75	1996	8	16.81	1999	.40	1993
Mar	5.27	5.17	1.58	1974	28	9.59	1971	1.80	1996
Apr	3.73	3.32	3.25	1991	4	8.50	1991	.87	1977
May	2.38	2.18	1.43	1975	3	4.85	1988	.27	1992
Jun	1.65	1.56	1.14	1985	7	4.16	1984	.38	1987
Jul	.62	.42	1.10	1993	17	2.77	1983	.00	1984
Aug	.79	.47	1.32	1977	24	2.96	1977	.00	1998
Sep	2.09	1.87	2.05	2000	3	4.96	1978	.02	1991
Oct	3.66	3.23	2.84	1994	27	8.03	1981	.07	1987
Nov	7.56	7.12	3.40	1997	20	15.12	1983	1.45	1976
Dec	8.01	7.90	2.57	1982	4	17.58	1996	2.22	1976
Ann	49.14	50.24	3.40	Nov 1997	20	17.58	Dec 1996	.00+	Aug 1998

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	20.1	14.5	5.2	1.6
Feb	17.3	12.7	3.9	.9
Mar	19.3	13.6	3.2	.6
Apr	17.3	10.1	1.9	.4
May	13.3	7.3	.9	.1
Jun	10.4	5.0	.8	.1
Jul	4.8	1.9	.3	@
Aug	4.9	2.4	.3	@
Sep	8.6	5.2	1.3	.2
Oct	12.9	8.3	2.2	.7
Nov	20.6	15.5	5.2	1.5
Dec	19.6	14.5	6.1	2.0
Ann	169.1	111.0	31.3	8.1

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	1.79	2.49	3.58	4.55	5.52	6.54	7.69	9.05	10.83	13.66	16.32
Feb	1.63	2.19	3.04	3.78	4.51	5.28	6.12	7.12	8.42	10.47	12.37
Mar	2.18	2.66	3.34	3.90	4.42	4.95	5.52	6.18	7.02	8.29	9.45
Apr	1.19	1.54	2.06	2.51	2.94	3.39	3.88	4.45	5.19	6.34	7.41
May	.69	.92	1.26	1.56	1.84	2.14	2.47	2.86	3.37	4.16	4.89
Jun	.49	.65	.88	1.08	1.28	1.49	1.72	1.98	2.33	2.87	3.37
Jul	.01	.05	.13	.22	.32	.43	.57	.75	1.00	1.43	1.85
Aug	.02	.08	.18	.30	.42	.57	.74	.96	1.27	1.79	2.30
Sep	.06	.14	.35	.61	.93	1.32	1.81	2.47	3.42	5.07	6.76
Oct	.48	.77	1.29	1.80	2.34	2.93	3.62	4.47	5.62	7.51	9.33
Nov	2.24	2.96	4.04	4.97	5.87	6.82	7.85	9.08	10.66	13.14	15.44
Dec	2.78	3.54	4.64	5.57	6.46	7.37	8.37	9.53	11.02	13.32	15.43
Ann	33.22	36.24	40.15	43.14	45.81	48.40	51.09	54.08	57.72	63.03	67.64

\+ 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: 1967-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	2.9	.5	#	#	9.0	1971	13	17.5	1971	14	1971	14	3	1982	1.6	1.1	.4	.1	.0	2.1	.9	.6	.2
Feb	3.6	2.3	#	0	16.0	1990	14	18.3	1990	13	1971	28	2	1989	1.6	1.0	.3	.2	@	1.2	.6	.3	.0
Mar	.5	.0	#	0	5.0	1971	4	5.0	1971	13	1971	4	2	1971	.3	.2	@	@	.0	.2	.0	.0	.0
Apr	.0	.0	#	0	1.0	1972	17	1.0	1972	1	1972	17	#+	1985	@	@	.0	.0	.0	@	.0	.0	.0
May	#	.0	0	0	#	1976	6	#	1976	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	1.5	.0	#	0	8.0	1978	20	16.2	1985	10	1978	20	2	1978	.5	.4	.2	@	.0	.9	.6	.3	@
Dec	1.7	1.1	#	0	5.0	1990	18	6.0	1990	10+	1985	1	2	1985	1.2	.6	.1	@	.0	1.3	.3	@	.0
Ann	10.2	3.9	N/A	N/A	16.0	Feb 1990	14	18.3	Feb 1990	14	Jan 1971	14	3	Jan 1982	5.2	3.3	1.0	.3	@	5.7	2.4	1.2	.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	6/30	6/23	6/18	6/13	6/09	6/05	5/31	5/26	5/19
32	5/31	5/24	5/19	5/14	5/10	5/06	5/01	4/26	4/19
28	4/27	4/20	4/15	4/10	4/06	4/02	3/29	3/24	3/17
24	4/04	3/24	3/16	3/09	3/02	2/24	2/17	2/08	1/28
20	3/08	2/22	2/12	2/03	1/26	1/17	1/07	12/24	0/00
16	2/21	2/10	2/01	1/24	1/16	1/07	12/25	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	8/20	8/27	9/01	9/06	9/10	9/14	9/18	9/23	9/30
32	9/08	9/15	9/20	9/24	9/28	10/02	10/06	10/11	10/18
28	9/30	10/07	10/13	10/18	10/22	10/27	11/01	11/07	11/14
24	10/12	10/22	10/30	11/05	11/11	11/17	11/23	11/30	12/10
20	11/07	11/20	11/29	12/08	12/16	12/24	1/03	1/16	0/00
16	11/22	12/07	12/19	12/29	1/09	1/21	2/08	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	125	114	106	99	92	85	78	70	59
32	174	163	154	147	141	134	127	118	107
28	231	220	212	205	199	192	185	177	166
24	292	279	269	261	253	245	237	227	213
20	>365	>365	359	333	319	307	295	283	267
16	>365	>365	>365	>365	>365	365	336	318	298

***** 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	880	715	682	553	419	263	150	137	243	485	701	872	6100
60	725	575	528	403	269	129	55	47	123	330	551	717	4452
57	632	491	434	314	186	70	21	17	70	240	461	624	3560
55	570	435	373	258	138	41	10	8	43	184	404	562	3026
50	420	303	231	132	52	6	0	0	8	72	266	408	1898
32	45	19	3	0	0	0	0	0	0	0	12	31	110

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	188	228	344	437	604	728	891	906	754	538	301	183	6102
55	0	0	0	5	28	79	188	201	107	9	3	0	620
57	0	0	0	1	14	48	138	148	74	3	0	0	426
60	0	0	0	0	4	17	79	86	37	0	0	0	223
65	0	0	0	0	0	1	18	20	7	0	0	0	46
70	0	0	0	0	0	0	2	1	0	0	0	0	3

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	42	75	134	221	383	514	669	681	535	314	111	39	42	117	251	472	855	1369	2038	2719	3254	3568	3679	3718
45	1	19	48	104	232	364	514	526	385	168	29	3	1	20	68	172	404	768	1282	1808	2193	2361	2390	2393
50	0	1	3	40	111	218	359	371	238	67	5	0	0	1	4	44	155	373	732	1103	1341	1408	1413	1413
55	0	0	0	7	44	102	209	220	115	17	0	0	0	0	0	7	51	153	362	582	697	714	714	714
60	0	0	0	0	12	36	97	98	39	0	0	0	0	0	0	0	12	48	145	243	282	282	282	282
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	6	41	82	133	225	297	405	421	346	203	46	4	6	47	129	262	487	784	1189	1610	1956	2159	2205	2209

(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