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: COTTAGE GROVE 1 NNE, OR **COOP ID: 351897**

Climate Division: OR 2 **NWS Call Sign:** **Elevation: 595 Feet** **Lat: 43˚48N** **Lon: 123˚03W**

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	48.0	32.3	40.2	67	1992	29	43.7	1998	-2+	1957	27	32.4	1979	770	0	.0	.0	14.6	.4	14.2	@
Feb	52.9	34.0	43.5	75+	1995	18	48.6	1991	0+	1989	6	35.3	1989	602	0	.0	.0	19.3	.3	10.6	.1
Mar	57.5	35.7	46.6	78+	1987	4	49.9+	1992	14	1956	6	42.6	1985	571	0	.0	.0	27.4	.0	10.4	.0
Apr	62.2	37.7	50.0	87	1999	16	54.0	1992	21	1968	13	45.3	1975	452	0	.0	.0	28.9	.0	5.9	.0
May	67.9	41.5	54.7	97+	2001	23	59.6	1997	23	1954	1	51.9	1977	320	1	.0	.2	30.9	.0	2.5	.0
Jun	74.1	45.5	59.8	101	1992	22	63.7	2000	29	1976	13	55.4	1976	169	12	.1	.9	30.0	.0	.4	.0
Jul	81.3	48.1	64.7	103	1961	12	68.3	1996	34+	1979	2	60.8	1983	75	65	.1	5.1	31.0	.0	.0	.0
Aug	81.9	47.6	64.8	105+	1981	9	68.2	1977	32	1988	20	60.6	1980	67	60	.5	5.5	31.0	.0	@	.0
Sep	76.5	43.7	60.1	104	1988	2	64.8	1998	25+	1970	14	55.8	1985	170	23	@	2.4	30.0	.0	1.2	.0
Oct	65.5	40.2	52.9	96+	1987	1	56.2	1988	18	1985	9	49.9	1971	377	0	.0	.2	30.5	.0	3.5	.0
Nov	53.3	37.1	45.2	76	1980	3	50.1	1995	9	1985	30	37.0	1985	594	0	.0	.0	22.2	.1	7.0	.0
Dec	47.1	33.1	40.1	72	1979	17	44.0	1973	-5	1972	8	33.4	1985	771	0	.0	.0	12.8	.7	13.7	.1
Ann	64.0	39.7	51.9	105+	Aug 1981	9	68.3	Jul 1996	-5	Dec 1972	8	32.4	Jan 1979	4938	161	.7	14.3	308.6	1.5	69.4	.2

\+ 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: 1948-2001

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

Issue Date: February 2004

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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	6.51	6.91	3.06	1974	15	11.55	1995	.82	1985
Feb	5.40	4.69	4.57	1961	10	12.05	1986	1.06	1988
Mar	5.20	4.68	1.83	1963	29	9.01	1974	1.69	1978
Apr	4.00	3.74	2.21	1992	10	8.02	1992	1.65	1999
May	2.81	2.55	2.20	1949	1	5.67	1993	.54	1992
Jun	1.53	1.27	1.36	1950	11	3.79	1995	.17	1987
Jul	.60	.38	1.84	1987	18	3.44	1987	.00	1973
Aug	.92	.49	1.44	1977	24	3.85	1976	.00+	1994
Sep	1.48	1.35	1.55	1981	27	4.33	1986	.00	1999
Oct	3.22	2.88	3.00	1956	25	6.38	1990	.09	1987
Nov	7.27	6.76	4.80	1961	22	16.89	1973	1.63	1993
Dec	6.96	6.24	3.36	1998	28	17.88	1996	1.37	1976
Ann	45.90	45.62	4.80	Nov 1961	22	17.88	Dec 1996	.00+	Sep 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	17.7	12.1	4.2	1.5
Feb	16.7	11.8	3.5	1.0
Mar	18.0	12.0	3.2	.7
Apr	15.8	10.2	2.2	.4
May	12.0	7.6	1.3	.1
Jun	7.7	3.8	.8	.1
Jul	3.2	1.8	.2	@
Aug	3.6	2.2	.6	.1
Sep	6.5	3.8	1.0	.1
Oct	11.6	7.0	2.0	.4
Nov	19.0	13.5	4.9	1.3
Dec	18.9	12.6	4.8	1.5
Ann	150.7	98.4	28.7	7.2

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	1.83	2.45	3.38	4.20	4.99	5.82	6.75	7.83	9.25	11.46	13.53
Feb	1.65	2.17	2.93	3.59	4.23	4.89	5.61	6.47	7.57	9.29	10.89
Mar	2.27	2.74	3.39	3.92	4.42	4.92	5.45	6.07	6.85	8.03	9.10
Apr	1.57	1.94	2.47	2.90	3.31	3.73	4.18	4.71	5.37	6.39	7.31
May	.81	1.08	1.48	1.83	2.17	2.53	2.92	3.38	3.97	4.91	5.78
Jun	.37	.51	.74	.93	1.13	1.34	1.57	1.85	2.21	2.78	3.32
Jul	.01	.03	.10	.17	.27	.38	.53	.71	.98	1.45	1.92
Aug	.00	.00	.04	.13	.26	.44	.68	1.02	1.54	2.48	3.47
Sep	.01	.07	.21	.40	.63	.91	1.28	1.75	2.44	3.65	4.88
Oct	.57	.86	1.33	1.77	2.22	2.70	3.26	3.93	4.82	6.27	7.64
Nov	2.20	2.89	3.92	4.81	5.67	6.57	7.56	8.72	10.21	12.56	14.73
Dec	1.71	2.36	3.38	4.28	5.17	6.12	7.17	8.42	10.06	12.66	15.10
Ann	32.89	35.41	38.64	41.09	43.27	45.37	47.53	49.93	52.83	57.03	60.67

\+ 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

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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	1.2	.0	#	0	6.0	1971	13	13.0	1971	7	1971	14	1+	1982	.6	.3	.2	.1	.0	.5	.2	.1	.0
Feb	1.6	.0	#	0	7.0	1971	28	13.8	1971	8	1971	28	1	1990	.6	.4	.3	.2	.0	.5	.3	.2	.0
Mar	.2	.0	#	0	1.5	1976	31	1.5+	1980	5	1971	1	#+	1986	.1	.1	.0	.0	.0	.1	@	@	.0
Apr	#	.0	0	0	#	1976	1	#+	1976	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	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.2	.0	#	0	2.0	1977	21	2.0	1977	1+	1985	28	#+	1985	.1	.1	.0	.0	.0	.1	.0	.0	.0
Dec	1.1	.0	#	0	3.0	1972	12	6.0	1972	5	1987	16	1	1972	.7	.4	.2	.0	.0	.9	.2	@	.0
Ann	4.3	.0	N/A	N/A	7.0	Feb 1971	28	13.8	Feb 1971	8	Feb 1971	28	1+	Feb 1990	2.1	1.3	.7	.3	.0	2.1	.7	.3	.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

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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	7/06	6/27	6/20	6/15	6/09	6/04	5/29	5/22	5/13
32	6/13	6/03	5/27	5/21	5/16	5/10	5/04	4/27	4/17
28	5/15	5/03	4/24	4/16	4/09	4/02	3/25	3/16	3/04
24	3/19	3/06	2/24	2/15	2/07	1/30	1/21	1/09	12/18
20	2/24	2/12	2/02	1/25	1/16	1/06	12/22	0/00	0/00
16	2/08	1/28	1/18	1/06	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	8/16	8/25	9/01	9/06	9/12	9/17	9/23	9/29	10/08
32	9/06	9/16	9/23	9/28	10/04	10/09	10/15	10/22	10/31
28	10/07	10/19	10/28	11/04	11/12	11/19	11/26	12/05	12/18
24	11/01	11/18	11/30	12/11	12/21	1/01	1/12	1/27	2/24
20	11/16	12/02	12/14	12/25	1/06	1/20	2/14	0/00	0/00
16	12/04	12/23	1/08	1/27	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	138	123	112	102	94	85	76	65	50
32	181	167	157	149	140	132	124	114	100
28	270	251	238	226	216	205	194	180	162
24	>365	>365	359	333	316	302	287	271	250
20	>365	>365	>365	>365	>365	356	327	304	279
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

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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	770	602	571	452	320	169	75	67	170	377	594	771	4938
60	615	462	416	304	178	67	17	13	74	224	444	616	3430
57	522	378	324	221	109	29	6	3	36	141	359	523	2651
55	460	325	267	170	74	14	2	1	20	94	304	461	2192
50	312	198	137	73	18	1	0	0	3	23	180	315	1260
32	12	3	0	0	0	0	0	0	0	0	4	14	33

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	265	324	452	538	704	833	1013	1015	843	646	400	266	7299
55	0	2	6	17	65	157	301	303	172	27	9	1	1060
57	0	0	1	9	38	112	243	244	129	12	5	0	793
60	0	0	0	2	14	60	162	161	77	2	0	0	478
65	0	0	0	0	1	12	65	60	23	0	0	0	161
70	0	0	0	0	0	1	13	10	4	0	0	0	28

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	101	147	220	309	471	607	787	789	627	415	195	94	101	248	468	777	1248	1855	2642	3431	4058	4473	4668	4762
45	35	58	98	173	316	457	632	634	477	264	89	35	35	93	191	364	680	1137	1769	2403	2880	3144	3233	3268
50	1	11	27	69	175	307	477	479	327	134	26	2	1	12	39	108	283	590	1067	1546	1873	2007	2033	2035
55	0	0	0	20	74	167	323	324	187	45	1	0	0	0	0	20	94	261	584	908	1095	1140	1141	1141
60	0	0	0	2	27	62	176	177	76	8	0	0	0	0	0	2	29	91	267	444	520	528	528	528
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	40	74	128	195	292	379	503	509	413	260	82	31	40	114	242	437	729	1108	1611	2120	2533	2793	2875	2906

(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