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 DAM, OR **COOP ID: 351902**

Climate Division: OR 2 **NWS Call Sign:** **Elevation: 831 Feet** **Lat: 43˚43N** **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	46.6	32.3	39.5	68	1961	8	44.0	1998	3+	1962	23	32.2	1979	792	0	.0	.0	10.8	.8	16.0	.0
Feb	51.1	34.0	42.6	74	1995	20	48.1	1991	1+	1989	6	31.6	1989	629	0	.0	.0	15.9	.5	11.8	.0
Mar	55.1	35.7	45.4	81	1960	20	49.8	1992	19	1960	1	41.3	1971	608	0	.0	.0	23.8	.0	9.4	.0
Apr	59.5	38.3	48.9	88	1998	30	53.1	1992	26	1968	13	43.9	1975	483	0	.0	.0	27.5	.0	3.1	.0
May	65.4	42.8	54.1	96	2001	23	58.9	1992	28	1954	1	50.9+	1999	338	1	.0	.1	30.4	.0	.2	.0
Jun	71.4	47.4	59.4	100	1961	18	63.3	1992	36+	1984	2	56.5	1976	178	10	.0	.7	30.0	.0	.0	.0
Jul	78.8	50.9	64.9	106	1946	20	68.4	1996	38+	1968	22	59.3	1989	77	73	.1	3.1	31.0	.0	.0	.0
Aug	80.1	50.7	65.4	105	1981	10	70.2	1977	39+	1973	18	61.8	1989	61	74	.4	3.7	31.0	.0	.0	.0
Sep	75.1	46.9	61.0	102	1944	5	65.0	1974	29	1965	17	56.4	1985	148	29	@	1.8	30.0	.0	.0	.0
Oct	64.4	41.2	52.8	94	1987	2	56.9	1979	24	1971	29	48.6	1971	377	0	.0	.2	29.9	.0	1.2	.0
Nov	52.0	36.5	44.3	76	1980	4	49.6	1995	12	1955	15	37.1	1985	622	0	.0	.0	19.3	.1	8.5	.0
Dec	46.0	32.4	39.2	70	1979	18	43.7	1973	-2	1972	9	32.4	1990	799	0	.0	.0	9.9	1.1	16.2	.1
Ann	62.1	40.8	51.5	106	Jul 1946	20	70.2	Aug 1977	-2	Dec 1972	9	31.6	Feb 1989	5112	187	.5	9.6	289.5	2.5	66.4	.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/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1943-2001

(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	6.89	7.14	3.35	1976	8	13.06	1996	.73	1985
Feb	5.84	5.35	4.74	1961	10	11.59	1986	1.22	1988
Mar	5.48	5.21	2.21	1963	30	9.44	1989	1.79	1978
Apr	4.32	4.15	2.49	1992	10	8.33	1993	1.73	1977
May	3.15	2.90	2.46	1991	17	7.56	1998	.69	1992
Jun	1.67	1.37	1.38	1995	15	4.54	1993	.35	1987
Jul	.68	.47	2.11	1987	19	3.80	1987	.01	1973
Aug	.97	.61	2.38	1968	26	3.04	1976	.00+	2000
Sep	1.68	1.49	2.25	1981	27	5.03	1986	.02	1993
Oct	3.66	3.25	4.15	1950	29	8.17	1996	.08	1987
Nov	7.77	7.25	5.72	1996	19	18.69	1973	1.87	1976
Dec	7.46	6.88	4.76	1981	6	17.21	1996	1.39	1976
Ann	49.57	48.86	5.72	Nov 1996	19	18.69	Nov 1973	.00+	Aug 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	19.3	12.4	4.4	1.7
Feb	17.9	12.0	4.3	.9
Mar	19.5	13.2	3.5	.6
Apr	17.1	11.5	2.6	.3
May	13.0	8.3	1.7	.3
Jun	8.6	5.0	.8	.2
Jul	4.6	1.9	.2	@
Aug	4.4	2.3	.5	@
Sep	6.8	3.9	1.2	.2
Oct	12.4	7.7	2.2	.7
Nov	20.0	14.2	5.5	1.9
Dec	19.7	13.5	5.1	1.7
Ann	163.3	105.9	32.0	8.5

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	2.44	3.43	4.32	5.18	6.10	7.11	8.32	9.89	12.36	14.68
Feb	2.19	2.73	3.51	4.17	4.78	5.42	6.11	6.90	7.92	9.48	10.91
Mar	2.40	2.89	3.58	4.13	4.65	5.18	5.74	6.39	7.21	8.44	9.57
Apr	1.88	2.27	2.81	3.25	3.67	4.09	4.53	5.05	5.70	6.69	7.59
May	.93	1.23	1.68	2.07	2.44	2.84	3.27	3.78	4.44	5.47	6.43
Jun	.40	.56	.80	1.02	1.23	1.46	1.72	2.02	2.42	3.05	3.64
Jul	.02	.05	.12	.21	.32	.44	.60	.81	1.11	1.64	2.17
Aug	.00	.00	.03	.13	.27	.47	.73	1.10	1.65	2.63	3.65
Sep	.06	.14	.32	.53	.79	1.10	1.49	2.00	2.73	3.99	5.27
Oct	.55	.85	1.38	1.89	2.42	3.00	3.66	4.48	5.57	7.35	9.06
Nov	2.28	3.02	4.13	5.09	6.02	6.99	8.07	9.33	10.97	13.53	15.92
Dec	2.08	2.78	3.86	4.79	5.71	6.67	7.73	8.98	10.60	13.16	15.54
Ann	35.48	38.21	41.71	44.37	46.72	49.00	51.35	53.94	57.09	61.65	65.59

\+ 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: 1943-2001
(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	1.3	.0	#	0	12.0	1971	14	16.0	1971	11	1971	14	1	1971	.7	.4	.1	.1	.1	.3	.1	@	@
Feb	2.6	.0	#	0	16.0	1971	28	21.5	1971	16	1971	28	1	1971	.9	.6	.3	.1	.1	.3	.2	@	@
Mar	.2	.0	#	0	2.0	1980	15	2.0	1980	8	1971	1	1	1971	.2	.1	.0	.0	.0	.2	.1	.1	.0
Apr	#	.0	0	0	#	1984	8	#	1984	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	.1	.0	0	0	2.7	1977	21	2.7	1977	0	0	0	0	0	.1	.1	.0	.0	.0	.0	.0	.0	.0
Dec	.5	.0	#	0	3.0	1975	12	3.5	1975	4	1972	12	1	1972	.3	.2	.1	.0	.0	.2	@	.0	.0
Ann	4.7	.0	N/A	N/A	16.0	Feb 1971	28	21.5	Feb 1971	16	Feb 1971	28	1+	Dec 1972	2.2	1.4	.5	.2	.2	1.0	.4	.1	@

+ 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	5/29	5/23	5/19	5/16	5/12	5/09	5/05	5/01	4/25
32	5/06	4/27	4/22	4/17	4/12	4/07	4/02	3/27	3/19
28	3/30	3/19	3/12	3/05	2/27	2/21	2/14	2/06	1/27
24	2/27	2/18	2/11	2/05	1/31	1/24	1/16	1/02	0/00
20	2/13	2/04	1/29	1/23	1/17	1/10	12/31	0/00	0/00
16	1/28	1/10	12/20	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	9/21	9/27	10/02	10/06	10/10	10/14	10/18	10/22	10/29
32	10/13	10/20	10/24	10/29	11/01	11/05	11/09	11/14	11/21
28	10/25	11/03	11/10	11/16	11/22	11/28	12/04	12/11	12/20
24	11/21	12/02	12/09	12/16	12/23	12/30	1/08	1/24	0/00
20	12/08	12/22	1/02	1/12	1/22	2/03	2/26	0/00	0/00
16	12/14	1/04	1/28	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	178	168	161	155	150	144	139	132	122
32	231	221	214	208	203	197	191	184	174
28	310	296	285	276	267	259	250	239	225
24	>365	>365	>365	358	334	319	307	294	278
20	>365	>365	>365	>365	>365	>365	353	328	309
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	792	629	608	483	338	178	77	61	148	377	622	799	5112
60	637	489	453	334	196	72	20	12	61	229	472	644	3619
57	544	405	361	249	125	32	7	3	28	151	385	551	2841
55	482	353	304	195	88	16	2	0	15	108	329	489	2381
50	332	226	171	88	25	1	0	0	1	35	200	341	1420
32	13	8	1	0	0	0	0	0	0	0	5	18	45

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	243	302	417	507	686	822	1019	1036	870	646	373	242	7163
55	0	4	6	12	60	148	308	324	195	41	6	0	1104
57	0	0	1	6	36	104	251	264	148	22	2	0	834
60	0	0	0	1	13	54	171	180	91	7	0	0	517
65	0	0	0	0	1	10	73	74	29	0	0	0	187
70	0	0	0	0	0	1	18	16	5	0	0	0	40

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	73	120	185	279	446	589	779	797	639	411	161	73	73	193	378	657	1103	1692	2471	3268	3907	4318	4479	4552
45	20	44	76	144	292	439	624	642	489	262	66	25	20	64	140	284	576	1015	1639	2281	2770	3032	3098	3123
50	0	7	25	61	161	289	469	487	339	131	20	1	0	7	32	93	254	543	1012	1499	1838	1969	1989	1990
55	0	0	0	16	73	160	316	332	198	48	1	0	0	0	0	16	89	249	565	897	1095	1143	1144	1144
60	0	0	0	1	29	63	176	183	87	12	0	0	0	0	0	1	30	93	269	452	539	551	551	551
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	28	57	101	155	250	340	471	491	390	234	63	28	28	85	186	341	591	931	1402	1893	2283	2517	2580	2608

(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