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: O O RANCH, OR **COOP ID: 356302**

Climate Division: OR 7 **NWS Call Sign:** **Elevation: 4,136 Feet** **Lat: 43˚17N** **Lon: 119˚19W**

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	40.2	18.3	29.3	64	1974	18	35.8	1998	-36	1962	22	19.2	1979	1107	0	.0	.0	3.1	7.7	28.2	2.4
Feb	45.4	23.3	34.4	69	1995	24	42.3	1995	-18+	1972	2	21.2	1989	858	0	.0	.0	7.5	3.1	25.3	.9
Mar	52.8	27.4	40.1	78	1972	17	46.4	1972	-7	1976	3	32.9	1976	773	0	.0	.0	18.2	.5	24.5	.1
Apr	60.5	31.3	45.9	90	1968	30	51.9	1987	12+	1972	30	39.3	1975	574	0	.0	.0	25.4	.0	18.6	.0
May	68.2	36.7	52.5	93+	1986	31	57.1	1972	18	2001	3	45.2	1998	394	5	.0	.2	29.8	.0	8.9	.0
Jun	77.3	42.8	60.1	100+	2001	30	66.0	1986	24	1973	18	56.1	1980	186	37	.0	1.4	30.0	.0	1.6	.0
Jul	86.4	47.8	67.1	103	1968	28	72.0	1985	26	1962	5	58.4	1993	62	127	.0	9.6	31.0	.0	.1	.0
Aug	85.8	45.3	65.6	102	1961	4	71.1	1971	23	1992	26	61.7	1995	74	92	.1	8.2	31.0	.0	.4	.0
Sep	77.8	36.9	57.4	99	1998	1	62.0	1974	11	1970	25	51.8	1985	243	14	.0	1.0	30.0	.0	7.4	.0
Oct	66.8	30.2	48.5	89+	1996	8	55.1	1988	7	1998	30	42.3	1984	511	0	.0	.0	28.6	@	20.9	.0
Nov	50.1	24.2	37.2	72	1975	3	42.6	1986	-16	1955	15	27.5	1985	835	0	.0	.0	13.4	1.6	25.2	.4
Dec	40.9	18.3	29.6	61+	1979	17	37.4	1996	-35+	1972	10	18.6	1985	1098	0	.0	.0	3.2	6.3	28.8	2.4
Ann	62.7	31.9	47.3	103	Jul 1968	28	72.0	Jul 1985	-36	Jan 1962	22	18.6	Dec 1985	6715	275	.1	20.4	251.2	19.2	189.9	6.2

\+ 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: 1950-2001

(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	.92	.74	1.05	1997	26	2.85	1997	.07	1992
Feb	.65	.49	.65	2000	12	1.86	1986	.10	1999
Mar	1.07	.99	1.49	1995	31	3.11	1983	.00	1997
Apr	.84	.79	1.01	1951	28	2.54	1978	.00	1977
May	1.33	1.08	1.80	1991	19	3.70	1998	.03	1975
Jun	.77	.70	.92	1955	28	1.93	1984	.00	1974
Jul	.45	.37	.89	1980	30	1.45	1975	.00+	2000
Aug	.65	.35	2.02	1984	31	4.64	1976	.00+	2000
Sep	.57	.41	1.60	2000	1	1.80+	2000	.00+	1999
Oct	.71	.60	1.30	1962	10	2.12	1975	.00+	1998
Nov	.92	.85	1.02	1951	29	2.27	1981	.06	1974
Dec	.87	.69	1.02	1981	19	4.24	1981	.00+	2000
Ann	9.75	9.56	2.02	Aug 1984	31	4.64	Aug 1976	.00+	Dec 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.7	2.9	.3	@
Feb	5.9	2.5	.1	.0
Mar	7.7	3.3	.4	@
Apr	5.8	2.6	.2	@
May	6.5	3.5	.4	.1
Jun	5.0	3.0	.2	.0
Jul	1.9	1.2	.2	.0
Aug	3.5	1.9	.2	@
Sep	3.0	1.7	.2	.1
Oct	4.4	2.4	.3	.0
Nov	7.2	3.2	.3	.0
Dec	7.9	3.2	.2	@
Ann	64.5	31.4	3.0	.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	.12	.19	.32	.45	.58	.73	.91	1.13	1.42	1.90	2.37
Feb	.12	.18	.27	.36	.45	.55	.66	.79	.97	1.26	1.53
Mar	.06	.15	.31	.47	.64	.83	1.04	1.31	1.68	2.29	2.88
Apr	.16	.27	.41	.53	.64	.76	.89	1.04	1.23	1.54	1.82
May	.14	.24	.43	.61	.81	1.03	1.29	1.62	2.06	2.80	3.51
Jun	.06	.15	.27	.39	.50	.63	.78	.95	1.19	1.58	1.95
Jul	.00	.00	.06	.13	.21	.31	.42	.56	.75	1.07	1.39
Aug	.00	.01	.08	.16	.27	.40	.56	.78	1.09	1.63	2.18
Sep	.00	.00	.03	.13	.24	.37	.52	.71	.98	1.43	1.89
Oct	.00	.04	.14	.24	.36	.50	.67	.87	1.17	1.66	2.15
Nov	.13	.20	.33	.46	.59	.74	.91	1.13	1.41	1.88	2.33
Dec	.00	.00	.18	.35	.51	.68	.88	1.12	1.44	1.94	2.44
Ann	5.14	5.94	7.01	7.86	8.64	9.41	10.23	11.16	12.31	14.04	15.57

+ 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: 1950-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	3.2	2.5	1	0
Feb	2.5	2.3	#	0
Mar	2.0	.3	#	0
Apr	.6	.0	#	0
May	.1	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	#	0
Oct	.7	.0	#	0
Nov	1.1	1.0	#	0
Dec	7.7	4.9	#	0
Ann	17.9	11.0	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	5.0	1977	2	7.2	1979	20	1982	4	13	1982
Feb	4.0	1981	5	5.0	1981	7	1976	29	4	1982
Mar	7.0	1982	18	8.0	1971	7	1982	18	#+	1982
Apr	3.0	1978	6	5.0	1978	1	1984	9	#+	1984
May	1.0	1982	9	1.0	1982	#+	1981	5	#+	1981
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.1	1971	26	.1	1971	#	1971	26	#	1971
Oct	5.5	1984	19	7.3	1984	6	1984	19	#	1984
Nov	1.5	1980	14	3.1	1982	2+	1982	21	#+	1982
Dec	10.5	1981	29	25.0	1981	18	1981	31	2	1981
Ann	10.5	Dec 1981	29	25.0	Dec 1981	20	Jan 1982	4	13	Jan 1982

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	1.9	1.5	.6	.1	.0
Feb	-9.9	-9.9	-9.9	-9.9	-9.9
Mar	.8	.6	.3	.1	.0
Apr	.4	.3	.1	.0	.0
May	.1	.1	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.1	.0	.0	.0	.0
Oct	.4	.2	.1	.1	.0
Nov	-9.9	-9.9	-9.9	-9.9	-9.9
Dec	-9.9	-9.9	-9.9	-9.9	-9.9
Ann	-9.9	-9.9	-9.9	-9.9	-9.9

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	1.2	.2	.0	.0
Feb	.7	.1	.0	.0
Mar	.4	.1	.1	.0
Apr	.0	.0	.0	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.2	.1	.1	.0
Nov	1.2	.0	.0	.0
Dec	3.2	1.4	.4	.2
Ann	6.9	1.9	.6	.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	7/17	7/12	7/08	7/04	7/01	6/28	6/24	6/20	6/15
32	6/30	6/24	6/20	6/16	6/13	6/09	6/06	6/02	5/27
28	6/10	6/02	5/27	5/22	5/17	5/12	5/07	5/01	4/23
24	5/26	5/16	5/10	5/04	4/29	4/23	4/17	4/11	4/01
20	5/05	4/26	4/19	4/14	4/08	4/03	3/28	3/22	3/13
16	4/12	4/01	3/25	3/18	3/12	3/06	2/28	2/20	2/10

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	8/12	8/16	8/20	8/23	8/26	8/28	8/31	9/04	9/08
32	8/21	8/27	8/31	9/03	9/06	9/09	9/13	9/17	9/22
28	9/09	9/14	9/17	9/20	9/23	9/26	9/29	10/02	10/07
24	9/17	9/22	9/26	9/30	10/03	10/06	10/10	10/14	10/20
20	9/26	10/03	10/08	10/12	10/15	10/19	10/23	10/28	11/03
16	10/06	10/13	10/19	10/23	10/28	11/01	11/05	11/11	11/18

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	77	69	64	59	55	51	46	41	33
32	109	101	95	89	85	80	75	68	60
28	158	148	140	134	129	123	117	109	99
24	188	178	170	163	157	151	144	136	125
20	220	209	202	195	189	183	177	169	158
16	267	254	244	236	229	221	213	203	190

***** 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	1107	858	773	574	394	186	62	74	243	511	835	1098	6715
60	952	718	618	426	256	95	18	22	131	358	685	943	5222
57	859	634	525	342	185	56	8	9	80	271	595	850	4414
55	797	581	468	288	145	37	3	3	54	218	536	788	3918
50	646	450	325	170	67	10	0	0	15	109	397	635	2824
32	198	104	29	3	0	0	0	0	0	1	61	184	580

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	114	171	280	419	633	840	1088	1041	761	513	217	109	6186
55	0	3	6	14	65	187	378	331	126	17	1	0	1128
57	0	0	0	8	43	147	321	274	92	8	0	0	893
60	0	0	0	2	21	96	238	194	52	2	0	0	605
65	0	0	0	0	5	37	127	92	14	0	0	0	275
70	0	0	0	0	0	10	52	29	2	0	0	0	93

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	8	23	77	185	373	584	816	772	502	249	45	6	8	31	108	293	666	1250	2066	2838	3340	3589	3634	3640
45	0	1	19	91	231	434	661	617	354	127	11	0	0	1	20	111	342	776	1437	2054	2408	2535	2546	2546
50	0	0	0	35	121	290	506	462	221	48	0	0	0	0	0	35	156	446	952	1414	1635	1683	1683	1683
55	0	0	0	9	54	166	352	312	116	11	0	0	0	0	0	9	63	229	581	893	1009	1020	1020	1020
60	0	0	0	0	14	73	210	171	36	0	0	0	0	0	0	0	14	87	297	468	504	504	504	504
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	20	71	155	270	401	527	515	392	244	45	2	0	20	91	246	516	917	1444	1959	2351	2595	2640	2642

(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